



Method PT For All Labs

## Magruder Fertilizer Proficiency Testing Program

# Methods: 108

Sample # 250411

Regular PT Scheme

# Labs Reporting: 73

DAP

Statistical Summary

Issue Date : 05/31/2025

| Method Code | Analyte & Method<br>Sample # 250411                          | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|-------------|--------------------------------------------------------------|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|-----------------|--------------------------|--------------|
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%)                     | 4                    | 4                                 | 17.05    | 0.3474 | 17.05                         |                       | 0.3474    | 0.2171                    | 2.04%        |                 | 0.1267                   | 2.42%        |
| 001.99      | Ammoniacal N, Other (%)                                      | 20                   | 19                                | 17.67    | 0.5025 | 17.67                         |                       | 0.5468    | 0.1568                    | 3.10%        |                 | 0.0903                   | 2.38%        |
| 003.10      | Water Insoluble N, Method I (%)                              | 1                    |                                   | 1.615    |        |                               |                       |           |                           |              |                 |                          |              |
| 005.99      | Urea N, Other (%)                                            | 1                    |                                   | 0.0854   |        |                               |                       |           |                           |              |                 |                          |              |
| 009.10      | Ammoniacal Plus Nitrate N, Devarda (%)                       | 1                    |                                   | 17.86    |        |                               |                       |           |                           |              |                 |                          |              |
| 010.11      | Total N, Modified Comprehensive (18%)                        | 1                    |                                   | 17.88    |        |                               |                       |           |                           |              |                 |                          |              |
| 010.12      | Total N, Salicylic (18%)                                     | 2                    | 2                                 | 17.62    | 0.0212 |                               |                       |           |                           |              |                 |                          |              |
| 010.60      | Total N, Combustion (18%)                                    | 48                   | 46                                | 18.33    | 4.089  | 17.74                         | 0.6962                | 0.2416    | 0.0445                    | 1.36%        | 0.81            | 0.0946                   | 2.37%        |
| 010.99      | Total N, Other (18%)                                         | 8                    | 8                                 | 17.90    | 0.3609 | 17.90                         | 0.6985                | 0.4093    | 0.1809                    | 2.29%        | 1.37            | 0.0784                   | 2.36%        |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%)            | 14                   | 14                                | 47.17    | 2.234  | 46.71                         |                       | 0.5182    | 0.1731                    | 1.11%        |                 | 0.1950                   | 1.46%        |
| 020.40      | Total P2O5, Automated (%)                                    | 1                    |                                   | 47.10    |        |                               |                       |           |                           |              |                 |                          |              |
| 020.50      | Total P2O5, ICP (%)                                          | 16                   | 15                                | 44.04    | 7.496  | 44.96                         |                       | 3.135     | 1.012                     | 6.97%        |                 | 0.2360                   | 1.49%        |
| 020.99      | Total P2O5, Other (%)                                        | 5                    | 5                                 | 44.95    | 3.198  | 44.95                         |                       | 3.198     | 1.788                     | 7.12%        |                 | 0.6000                   | 1.49%        |
| 030.20      | Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP    | 1                    |                                   | 0.1300   |        |                               |                       |           |                           |              |                 |                          |              |
| 040.50      | Indirect Available P2O5, ICP (46%)                           | 1                    |                                   | 45.55    |        |                               |                       |           |                           |              |                 |                          |              |
| 040.99      | Indirect Available P2O5, Other (46%)                         | 2                    | 2                                 | 46.37    | 0.0389 |                               |                       |           |                           |              |                 |                          |              |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (46%)         | 4                    | 4                                 | 46.85    | 0.2129 | 46.85                         | 1.0127                | 0.2129    | 0.1331                    | 0.45%        | 0.49            | 0.1565                   | 1.46%        |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA | 5                    | 5                                 | 46.40    | 0.2704 | 46.40                         | 1.0059                | 0.2704    | 0.1512                    | 0.58%        | 0.63            | 0.0750                   | 1.47%        |
| 041.20      | Direct Available P2O5, Spectrophotometric (46%)              | 4                    | 4                                 | 46.20    | 0.4145 | 46.20                         | 1.0030                | 0.4145    | 0.2590                    | 0.90%        | 0.96            | 0.5525                   | 1.47%        |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. | 9                    | 9                                 | 46.08    | 0.7838 | 46.08                         | 1.0012                | 0.8888    | 0.3704                    | 1.93%        | 2.07            | 0.5143                   | 1.47%        |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)    | 2                    | 2                                 | 46.83    | 0.9228 |                               |                       |           |                           |              |                 |                          |              |
| 041.50      | Direct Available P2O5, ICP (46%)                             | 4                    | 4                                 | 39.06    | 12.51  | 39.06                         | 0.8812                | 12.51     | 7.819                     | 32.03%       | 33.08           | 0.5300                   | 1.60%        |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)          | 9                    | 9                                 | 46.32    | 1.276  | 46.23                         | 1.0035                | 1.203     | 0.5012                    | 2.60%        | 2.79            | 0.3302                   | 1.47%        |
| 041.99      | Direct Available P2O5, Other (46%)                           | 5                    | 5                                 | 46.23    | 0.1708 | 46.23                         | 1.0034                | 0.1708    | 0.0955                    | 0.37%        | 0.40            | 0.2100                   | 1.47%        |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)                   | 7                    | 7                                 | 41.35    | 0.8338 | 41.46                         |                       | 0.6685    | 0.3158                    | 1.61%        |                 | 0.0970                   | 1.55%        |
| 048.50      | Water Soluble P2O5, ICP (%)                                  | 1                    |                                   | 18.52    |        |                               |                       |           |                           |              |                 |                          |              |
| 048.99      | Water Soluble P2O5, Other (%)                                | 2                    | 2                                 | 42.13    | 0.3783 |                               |                       |           |                           |              |                 |                          |              |
| 050.32      | Soluble K2O, AA (Citrate-EDTA) (%)                           | 1                    |                                   | 0.0850   |        |                               |                       |           |                           |              |                 |                          |              |
| 050.50      | Soluble K2O, ICP (Oxalate) (%)                               | 1                    |                                   | 0.1678   |        |                               |                       |           |                           |              |                 |                          |              |

| Method Code | Analyte & Method<br>Sample # 250411                     | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|-------------|---------------------------------------------------------|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|-----------------|--------------------------|--------------|
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)                     | 1                    |                                   | 0.1550   |        |                               |                       |           |                           |              |                 |                          |              |
| 050.99      | Soluble K2O, Other (%)                                  | 3                    | 3                                 | 0.1464   | 0.0211 | 0.1464                        | 0.4100                | 0.0211    | 0.0152                    | 14.42%       | 0.12            | 0.0062                   | 5.34%        |
| 060.00      | Water (Free), Vacuum Oven (%)                           | 2                    | 2                                 | 0.9950   | 0.3748 |                               |                       |           |                           |              |                 |                          |              |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%) | 2                    | 2                                 | 0.2740   | 0.0297 |                               |                       |           |                           |              |                 |                          |              |
| 101.32      | Acid Soluble Ca, ICP, test portion 2006.03A-C (%)       | 1                    |                                   | 0.5000   |        |                               |                       |           |                           |              |                 |                          |              |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)                       | 3                    | 3                                 | 0.2050   | 0.0329 | 0.2050                        | 0.2102                | 0.0329    | 0.0237                    | 16.04%       | 0.36            | 0.0082                   | 5.08%        |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%) | 3                    | 3                                 | 0.8000   | 0.0397 | 0.8000                        | 0.2400                | 0.0397    | 0.0286                    | 4.96%        | 0.39            | 0.0110                   | 4.14%        |
| 121.32      | Acid Soluble Mg, ICP, test portion 2006.03A-C (%)       | 1                    |                                   | 0.9060   |        |                               |                       |           |                           |              |                 |                          |              |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)                       | 3                    | 3                                 | 0.7960   | 0.0147 | 0.7960                        | 0.2398                | 0.0147    | 0.0106                    | 1.85%        | 0.14            | 0.0074                   | 4.14%        |
| 121.99      | Acid Soluble Mg, Other (%)                              | 1                    |                                   | 0.8937   |        |                               |                       |           |                           |              |                 |                          |              |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)            | 2                    | 2                                 | 1.368    | 0.0536 |                               |                       |           |                           |              |                 |                          |              |
| 148.99      | Total S, Other (%)                                      | 3                    | 3                                 | 1.379    | 0.2428 | 1.379                         | 0.2689                | 0.2428    | 0.1752                    | 17.61%       | 2.10            | 0.0135                   | 3.81%        |
| 149.04      | S - HNO3 soluble, ICP (%)                               | 1                    |                                   | 1.389    |        |                               |                       |           |                           |              |                 |                          |              |
| 151.30      | Acid Soluble As, ICP (ppm)                              | 5                    | 4                                 | 11.73    | 6.621  | 14.66                         |                       | 1.075     | 0.6721                    | 7.34%        |                 | 0.6447                   | 10.68%       |
| 151.32      | Acid Soluble As, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 14.63    | 4.773  |                               |                       |           |                           |              |                 |                          |              |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                     | 6                    | 6                                 | 14.78    | 1.959  | 14.78                         |                       | 2.222     | 1.134                     | 15.03%       |                 | 1.218                    | 10.67%       |
| 151.34      | Acid Soluble As, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 17.29    |        |                               |                       |           |                           |              |                 |                          |              |
| 151.99      | Acid Soluble As, Other (ppm)                            | 2                    | 2                                 | 13.20    | 2.263  |                               |                       |           |                           |              |                 |                          |              |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%)         | 2                    | 2                                 | 0.0175   | 0.0035 |                               |                       |           |                           |              |                 |                          |              |
| 165.99      | Acid Soluble B, Other (%)                               | 4                    | 4                                 | 0.0099   | 0.0053 | 0.0099                        | 0.0045                | 0.0053    | 0.0033                    | 53.69%       | 2.76            | 0.0034                   | 8.01%        |
| 181.30      | Acid Soluble Cd, ICP (ppm)                              | 6                    | 6                                 | 8.727    | 1.093  | 8.727                         |                       | 1.239     | 0.6324                    | 14.20%       |                 | 0.2716                   | 11.55%       |
| 181.32      | Acid Soluble Cd, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 9.150    | 1.202  |                               |                       |           |                           |              |                 |                          |              |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)                     | 5                    | 5                                 | 8.707    | 1.919  | 8.707                         |                       | 1.919     | 1.073                     | 22.04%       |                 | 1.057                    | 11.55%       |
| 181.34      | Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 5.010    |        |                               |                       |           |                           |              |                 |                          |              |
| 181.99      | Acid Soluble Cd, Other (ppm)                            | 2                    | 2                                 | 8.623    | 0.3854 |                               |                       |           |                           |              |                 |                          |              |
| 191.30      | Acid Soluble Cr, ICP (ppm)                              | 6                    | 6                                 | 133.7    | 10.27  | 135.4                         |                       | 7.304     | 3.727                     | 5.39%        |                 | 6.522                    | 7.64%        |
| 191.32      | Acid Soluble Cr, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 125.5    | 16.26  |                               |                       |           |                           |              |                 |                          |              |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 6                    | 6                                 | 130.3    | 6.820  | 130.3                         |                       | 7.734     | 3.947                     | 5.94%        |                 | 1.741                    | 7.69%        |
| 191.34      | Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 136.5    |        |                               |                       |           |                           |              |                 |                          |              |
| 191.99      | Acid Soluble Cr, Other (ppm)                            | 2                    | 2                                 | 116.4    | 4.426  |                               |                       |           |                           |              |                 |                          |              |
| 202.30      | Acid Soluble Co, ICP (ppm)                              | 4                    | 4                                 | 3.014    | 1.603  | 3.014                         | 1.9043                | 1.603     | 1.002                     | 53.19%       | 1.96            | 0.1211                   | 13.55%       |
| 202.32      | Acid Soluble Co, ICP, 2006.03 (ppm)                     | 3                    | 3                                 | 6.167    | 5.237  | 6.167                         | 2.8500                | 5.237     | 3.779                     | 84.92%       | 4.28            | 0.6000                   | 12.17%       |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 6                    | 5                                 | 2.710    | 1.256  | 3.200                         | 1.9600                | 0.4149    | 0.2319                    | 12.96%       | 0.49            | 0.1073                   | 13.43%       |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 0.1390   |        |                               |                       |           |                           |              |                 |                          |              |
| 202.99      | Acid Soluble Co, Other (ppm)                            | 3                    | 3                                 | 9.127    | 11.21  | 9.127                         | 3.7381                | 11.21     | 8.087                     | 122.78%      | 6.98            | 15.36                    | 11.47%       |
| 221.00      | Acid Soluble Cu, AA, inorganic 965.09 (%)               | 2                    | 2                                 | 0.0024   | 0.0032 |                               |                       |           |                           |              |                 |                          |              |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%) | 4                    | 1                                 | 0.0029   | 0.0048 | 0.0024                        | 0.0052                | 0.0032    | 0.0040                    | 135.47%      | 1.43            | 0.0002                   | 9.93%        |
| 221.32      | Acid Soluble Cu, ICP, test portion 2006.03A-C (%)       | 1                    |                                   | 0.0002   |        |                               |                       |           |                           |              |                 |                          |              |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 7                    | 2                                 | 0.0373   | 0.0982 | 0.0003                        | 0.0050                | 0.0003    | 0.0003                    | 97.91%       | 0.15            | 0.0001                   | 13.40%       |
| 221.99      | Acid Soluble Cu, Other (%)                              | 1                    |                                   | 0.1950   |        |                               |                       |           |                           |              |                 |                          |              |

| Method Code | Analyte & Method<br>Sample # 250411                     | # Tests<br>Submitted | # Tests in Robust<br>Calculations | Raw Mean | Raw SD | Assigned Value<br>Robust Mean | IA at Method<br>Value | Robust sd | Robust<br>Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range<br>(R-bar) | Horwitz %RSD |
|-------------|---------------------------------------------------------|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|-----------------|--------------------------|--------------|
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%) | 3                    | 3                                 | 1.038    | 0.0404 | 1.038                         | 0.1088                | 0.0404    | 0.0292                    | 3.89%        | 0.87            | 0.0367                   | 3.98%        |
| 241.32      | Acid Soluble Fe, ICP, test portion 2006.03A-C (%)       | 1                    |                                   | 1.129    |        |                               |                       |           |                           |              |                 |                          |              |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                       | 3                    | 3                                 | 1.011    | 0.0260 | 1.011                         | 0.1061                | 0.0260    | 0.0188                    | 2.57%        | 0.57            | 0.0168                   | 3.99%        |
| 241.99      | Acid Soluble Fe, Other (%)                              | 1                    |                                   | 1.028    |        |                               |                       |           |                           |              |                 |                          |              |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 5                    | 3                                 | 2.674    | 2.858  | 2.373                         |                       | 2.495     | 1.801                     | 105.15%      |                 | 0.1109                   | 14.05%       |
| 251.32      | Acid Soluble Pb, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 3.500    | 4.243  |                               |                       |           |                           |              |                 |                          |              |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 5                    | 4                                 | 1.679    | 0.9103 | 1.348                         |                       | 0.6144    | 0.3840                    | 45.56%       |                 | 0.0615                   | 15.29%       |
| 251.34      | Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 9.660    |        |                               |                       |           |                           |              |                 |                          |              |
| 251.99      | Acid Soluble Pb, Other (ppm)                            | 2                    | 2                                 | 0.8675   | 0.3076 |                               |                       |           |                           |              |                 |                          |              |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)          | 2                    | 2                                 | 0.0240   | 0.0057 |                               |                       |           |                           |              |                 |                          |              |
| 261.32      | Acid Soluble Mn, ICP, test portion inorganic 965.09 (%) | 1                    |                                   | 0.0300   |        |                               |                       |           |                           |              |                 |                          |              |
| 261.34      | Acid Soluble Mn, ICP, test portion 2006.03A-C (%)       | 1                    |                                   | 0.0365   |        |                               |                       |           |                           |              |                 |                          |              |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                       | 2                    | 2                                 | 0.0284   | 0.0023 |                               |                       |           |                           |              |                 |                          |              |
| 261.99      | Acid Soluble Mn, Other (%)                              | 1                    |                                   | 0.0283   |        |                               |                       |           |                           |              |                 |                          |              |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 6                    | 0                                 | 0.5668   | 0.8541 | 0.0284                        |                       | 0.0023    |                           | 8.23%        |                 | 0.0001                   | 22.00%       |
| 281.99      | Acid Soluble Hg, Other (ppm)                            | 3                    | 1                                 | 0.0062   | 0.0050 | 0.0284                        |                       | 0.0023    | 0.0029                    | 8.23%        |                 | 0.0001                   | 22.00%       |
| 289.30      | Acid Soluble Mo, ICP (ppm)                              | 5                    | 5                                 | 12.35    | 0.9465 | 12.35                         | 4.7037                | 0.9465    | 0.5291                    | 7.67%        | 0.47            | 0.5090                   | 10.96%       |
| 289.32      | Acid Soluble Mo, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 12.00    | 1.414  |                               |                       |           |                           |              |                 |                          |              |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)                     | 8                    | 7                                 | 23.80    | 28.92  | 13.51                         | 5.0534                | 3.092     | 1.461                     | 22.88%       | 1.43            | 0.5566                   | 10.81%       |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 140.7    |        |                               |                       |           |                           |              |                 |                          |              |
| 289.99      | Acid Soluble Mo, Other (ppm)                            | 2                    | 2                                 | 11.99    | 1.114  |                               |                       |           |                           |              |                 |                          |              |
| 291.30      | Acid Soluble Ni, ICP (ppm)                              | 6                    | 6                                 | 14.73    | 1.619  | 14.75                         |                       | 1.789     | 0.9129                    | 12.13%       |                 | 0.5382                   | 10.67%       |
| 291.32      | Acid Soluble Ni, ICP, 2006.03 (ppm)                     | 2                    | 2                                 | 16.33    | 3.783  |                               |                       |           |                           |              |                 |                          |              |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                     | 6                    | 5                                 | 33.58    | 44.79  | 15.30                         |                       | 1.877     | 1.049                     | 12.27%       |                 | 0.8990                   | 10.61%       |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 111.5    |        |                               |                       |           |                           |              |                 |                          |              |
| 291.99      | Acid Soluble Ni, Other (ppm)                            | 3                    | 3                                 | 29.67    | 27.36  | 29.67                         |                       | 27.36     | 19.75                     | 92.24%       |                 | 13.06                    | 9.60%        |
| 301.30      | Acid Soluble Se, ICP (ppm)                              | 2                    | 1                                 | 3.273    | 4.210  |                               |                       |           |                           |              |                 |                          |              |
| 301.32      | Acid Soluble Se, ICP, 2006.03 (ppm)                     | 2                    | 0                                 | 5.150    | 6.859  |                               |                       |           |                           |              |                 |                          |              |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                     | 4                    | 3                                 | 1.489    | 1.672  | 1.982                         |                       | 1.654     | 1.194                     | 83.47%       |                 | 1.123                    | 14.43%       |
| 301.34      | Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)             | 1                    |                                   | 8.850    |        |                               |                       |           |                           |              |                 |                          |              |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 3                    | 1                                 | 0.4583   | 0.5547 | 1.982                         |                       | 1.654     | 2.068                     | 83.47%       |                 | 0.0800                   | 14.43%       |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 4                    | 4                                 | 0.1533   | 0.0498 | 0.1533                        | 0.0203                | 0.0498    | 0.0311                    | 32.47%       | 5.71            | 0.0054                   | 5.30%        |
| 311.99      | Sodium, Other (%)                                       | 2                    | 2                                 | 0.1625   | 0.0389 |                               |                       |           |                           |              |                 |                          |              |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)               | 1                    |                                   | 0.0123   |        |                               |                       |           |                           |              |                 |                          |              |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 5                    | 4                                 | 0.0133   | 0.0024 | 0.0141                        | 0.0064                | 0.0018    | 0.0011                    | 12.51%       | 0.64            | 0.0033                   | 7.59%        |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)       | 3                    | 3                                 | 0.0108   | 0.0012 | 0.0108                        | 0.0061                | 0.0012    | 0.0009                    | 11.54%       | 0.48            | 0.0008                   | 7.91%        |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 7                    | 7                                 | 0.0253   | 0.0373 | 0.0116                        | 0.0062                | 0.0017    | 0.0008                    | 14.29%       | 0.63            | 0.0005                   | 7.82%        |
| 321.99      | Acid Soluble Zn, Other (%)                              | 5                    | 5                                 | 0.0110   | 0.0015 | 0.0110                        | 0.0061                | 0.0015    | 0.0008                    | 13.50%       | 0.57            | 0.0010                   | 7.89%        |
| 325.00      | Water Soluble Zn, AA (%)                                | 1                    |                                   | 0.0011   |        |                               |                       |           |                           |              |                 |                          |              |

The Method IA Ratio = 2.33 \* Robust SD / IA at the Method Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates

|                                     |
|-------------------------------------|
| Horwitz %RSD                        |
| Average Range (R-bar)               |
| Method IA Ratio                     |
| Robust % RSD                        |
| Robust Uncertainty (U)              |
| Robust sd                           |
| IA at Method Value                  |
| Assigned Value Robust Mean          |
| Raw SD                              |
| Raw Mean                            |
| # Tests in Robust Calculations      |
| # Tests Submitted                   |
| Analyte & Method<br>Sample # 250411 |
| Method Code                         |

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 usin the Thompson Modification, Analyst,2000,125,385-386.



Method PT For All Labs

## Magruder Fertilizer Proficiency Testing Program

Sample # 250411

Regular PT Scheme

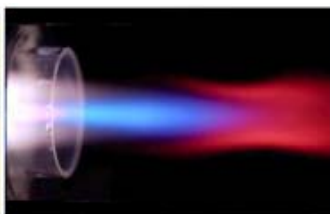
DAP

### Method Precision Report

Issue Date : 05/31/2025

| Method Code | Analyte & Method                                               | # Tests Submitted | # Tests Used in Precision Calcs | Mean   | SD     | Between Labs sL | Within Labs sr | Reproducibility sR | Between Labs %RSD | Within Labs %rSD | Reproducibility %RSD | sR/sr |
|-------------|----------------------------------------------------------------|-------------------|---------------------------------|--------|--------|-----------------|----------------|--------------------|-------------------|------------------|----------------------|-------|
| 001.99      | Ammoniacal N, Other (%)                                        | 20                | 19                              | 17.66  | 0.5103 | 0.5068          | 0.0838         | 0.5137             | 2.87%             | 0.47%            | 2.91%                | 6.128 |
| 010.60      | Total N, Combustion (18%)                                      | 48                | 44                              | 17.75  | 0.3158 | 0.3111          | 0.0774         | 0.3206             | 1.75%             | 0.44%            | 1.81%                | 4.139 |
| 010.99      | Total N, Other (18%)                                           | 8                 | 8                               | 17.90  | 0.3609 | 0.3578          | 0.0675         | 0.3641             | 2.00%             | 0.38%            | 2.03%                | 5.391 |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%)              | 14                | 13                              | 46.59  | 0.5585 | 0.5389          | 0.2073         | 0.5774             | 1.16%             | 0.44%            | 1.24%                | 2.786 |
| 020.50      | Total P2O5, ICP (%)                                            | 16                | 13                              | 45.48  | 2.531  | 2.522           | 0.3073         | 2.540              | 5.54%             | 0.68%            | 5.59%                | 8.266 |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA E | 5                 | 5                               | 46.40  | 0.2704 | 0.2667          | 0.0637         | 0.2742             | 0.57%             | 0.14%            | 0.59%                | 4.307 |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 9                 | 9                               | 46.08  | 0.7838 | 0.6630          | 0.5912         | 0.8883             | 1.44%             | 1.28%            | 1.93%                | 1.503 |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 9                 | 9                               | 46.32  | 1.276  | 1.257           | 0.3094         | 1.295              | 2.71%             | 0.67%            | 2.80%                | 4.184 |
| 041.99      | Direct Available P2O5, Other (46%)                             | 5                 | 5                               | 46.23  | 0.1708 | 0.1211          | 0.1703         | 0.2090             | 0.26%             | 0.37%            | 0.45%                | 1.227 |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)                     | 7                 | 6                               | 41.63  | 0.4271 | 0.4237          | 0.0759         | 0.4304             | 1.02%             | 0.18%            | 1.03%                | 5.673 |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)                            | 6                 | 5                               | 15.05  | 2.056  | 2.026           | 0.4919         | 2.085              | 13.46%            | 3.27%            | 13.85%               | 4.239 |
| 181.30      | Acid Soluble Cd, ICP (ppm)                                     | 6                 | 6                               | 8.727  | 1.093  | 1.079           | 0.2450         | 1.107              | 12.36%            | 2.81%            | 12.68%               | 4.516 |
| 191.30      | Acid Soluble Cr, ICP (ppm)                                     | 6                 | 5                               | 137.6  | 3.981  | 1.632           | 5.135          | 5.388              | 1.19%             | 3.73%            | 3.92%                | 1.049 |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                            | 6                 | 6                               | 130.3  | 6.820  | 6.674           | 1.990          | 6.964              | 5.12%             | 1.53%            | 5.35%                | 3.500 |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                            | 6                 | 5                               | 3.200  | 0.4149 | 0.4107          | 0.0827         | 0.4190             | 12.83%            | 2.59%            | 13.09%               | 5.063 |
| 289.30      | Acid Soluble Mo, ICP (ppm)                                     | 5                 | 5                               | 12.35  | 0.9465 | 0.9139          | 0.3486         | 0.9781             | 7.40%             | 2.82%            | 7.92%                | 2.806 |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)                            | 8                 | 7                               | 13.62  | 2.945  | 2.928           | 0.4573         | 2.963              | 21.50%            | 3.36%            | 21.76%               | 6.479 |
| 291.30      | Acid Soluble Ni, ICP (ppm)                                     | 6                 | 6                               | 14.73  | 1.619  | 1.582           | 0.4856         | 1.655              | 10.74%            | 3.30%            | 11.24%               | 3.408 |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)                            | 6                 | 5                               | 15.30  | 1.877  | 1.818           | 0.6634         | 1.935              | 11.88%            | 4.34%            | 12.65%               | 2.917 |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                              | 7                 | 6                               | 0.0112 | 0.0011 | 0.0010          | 0.0004         | 0.0011             | 9.15%             | 3.47%            | 9.78%                | 2.822 |
| 321.99      | Acid Soluble Zn, Other (%)                                     | 5                 | 5                               | 0.0110 | 0.0015 | 0.0014          | 0.0006         | 0.0015             | 12.83%            | 5.93%            | 14.14%               | 2.385 |

Notes: Precision data calculated when 5 or more Tests included.



Method PT For All Labs

## Magruder Fertilizer Proficiency Testing Program

# Methods: 108

Sample # 250411

Regular PT Scheme

# Labs Reporting: 73

DAP

Lab Values

Issue Date : 05/31/2025

| Method Code | Analyte Name and Method (Units)          | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                          |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0231     | 16.63    | 0.2500 | 17.05                 | 0.3474 | 0.1267    | 4       | -1.22               |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0563     | 16.92    | 0.0800 | 17.05                 | 0.3474 | 0.1267    | 4       | -0.37               |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0389     | 17.26    | 0.0500 | 17.05                 | 0.3474 | 0.1267    | 4       | 0.59                |                  | 0    |
| 001.10      | Ammoniacal N, Magnesium Oxide Method (%) | 0547     | 17.40    | 0.0000 | 17.05                 | 0.3474 | 0.1267    | 4       | 1.01                |                  | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0524     | 16.61    | 0.2477 | 17.67                 | 0.5468 | 0.0903    | 19      | -1.94               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0027     | 16.88    | 0.0580 | 17.67                 | 0.5468 | 0.0903    | 19      | -1.44               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0394     | 17.00    | 0.1800 | 17.67                 | 0.5468 | 0.0903    | 19      | -1.22               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0136     | 17.20    | 0.0000 | 17.67                 | 0.5468 | 0.0903    | 19      | -0.85               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0405     | 17.34    | 0.0500 | 17.67                 | 0.5468 | 0.0903    | 19      | -0.61               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0371     | 17.42    | 0.0200 | 17.67                 | 0.5468 | 0.0903    | 19      | -0.45               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0255     | 17.48    | 0.1000 | 17.67                 | 0.5468 | 0.0903    | 19      | -0.34               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0476     | 17.58    | 0.0499 | 17.67                 | 0.5468 | 0.0903    | 19      | -0.15               | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0513     | 17.68    | 0.0800 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.03                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0600     | 17.70    | 0.2000 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.06                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0605     | 17.71    | 0.0860 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.08                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0169     | 17.85    | 0.1000 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.34                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0517     | 17.86    | 0.0900 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.35                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0548     | 17.86    | 0.0500 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.35                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0472     | 18.00    | 0.0000 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.61                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0559     | 18.16    | 0.0100 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.89                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0653     | 18.16    | 0.0100 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.89                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0584     | 18.47    | 0.2800 | 17.67                 | 0.5468 | 0.0903    | 19      | 1.47                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0545     | 18.52    | 0.0400 | 17.67                 | 0.5468 | 0.0903    | 19      | 1.56                | NA               | 0    |
| 001.99      | Ammoniacal N, Other (%)                  | 0553     | 18.00    | 0.4900 | 17.67                 | 0.5468 | 0.0903    | 19      | 0.60                | NA               | 1    |
| 003.10      | Water Insoluble N, Method I (%)          | 0547     | 1.615    | 0.1100 |                       |        |           | 1       |                     |                  | 0    |
| 005.99      | Urea N, Other (%)                        | 0524     | 0.0854   | 0.0057 |                       |        |           | 1       |                     |                  | 0    |
| 009.10      | Ammoniacal Plus Nitrate N, Devarda (%)   | 0517     | 17.86    | 0.0900 |                       |        |           | 1       |                     |                  | 0    |
| 010.11      | Total N, Modified Comprehensive (18%)    | 0309     | 17.88    | 0.0800 |                       |        |           | 1       |                     |                  | 0    |
| 010.12      | Total N, Salicylic (18%)                 | 0117     | 17.60    | 0.2000 |                       |        |           | 2       |                     |                  | 0    |
| 010.12      | Total N, Salicylic (18%)                 | 0563     | 17.63    | 0.0600 |                       |        |           | 2       |                     |                  | 0    |
| 010.60      | Total N, Combustion (18%)                | 0027     | 16.80    | 0.1100 | 17.74                 | 0.2416 | 0.0946    | 46      | -3.93               | Low              | 0    |

| Method Code | Analyte Name and Method (Units) | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                 |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 010.60      | Total N, Combustion (18%)       | 0102     | 17.16    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -2.44               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0422     | 17.38    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -1.52               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0292     | 17.38    | 0.0800 | 17.74                 | 0.2416 | 0.0946    | 46      | -1.50               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0572     | 17.40    | 0.2000 | 17.74                 | 0.2416 | 0.0946    | 46      | -1.42               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0233     | 17.44    | 0.2200 | 17.74                 | 0.2416 | 0.0946    | 46      | -1.26               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0542     | 17.50    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -1.03               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0234     | 17.53    | 0.3900 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.90               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0494     | 17.55    | 0.1900 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.82               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0324     | 17.55    | 0.1000 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.80               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0177     | 17.61    | 0.2040 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.56               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0043     | 17.64    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.45               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0389     | 17.64    | 0.0300 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.45               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0028     | 17.64    | 0.0200 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.43               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0035     | 17.65    | 0.1000 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.39               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0534     | 17.65    | 0.1000 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.39               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0220     | 17.66    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.37               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0231     | 17.67    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.32               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0086     | 17.67    | 0.0290 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.30               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0360     | 17.68    | 0.0200 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.26               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0040     | 17.70    | 0.0000 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.18               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0543     | 17.72    | 0.0500 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.12               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0095     | 17.73    | 0.0400 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.06               | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0451     | 17.75    | 0.1900 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.01                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0423     | 17.76    | 0.2300 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.05                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0034     | 17.76    | 0.0800 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.07                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0106     | 17.77    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.09                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0023     | 17.80    | 0.1130 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.25                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0055     | 17.82    | 0.0600 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.32                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0472     | 17.82    | 0.0600 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.32                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0521     | 17.84    | 0.0000 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.38                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0255     | 17.85    | 0.3340 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.43                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0354     | 17.85    | 0.1000 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.44                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0131     | 17.89    | 0.1310 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.61                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0291     | 17.91    | 0.0100 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.67                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0561     | 17.92    | 0.0000 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.73                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0405     | 17.93    | 0.0000 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.77                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0007     | 17.96    | 0.2400 | 17.74                 | 0.2416 | 0.0946    | 46      | 0.90                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0029     | 17.99    | 0.0700 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.00                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0136     | 18.00    | 0.2000 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.06                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0527     | 18.02    | 0.1510 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.16                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0377     | 18.07    | 0.1700 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.33                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0049     | 18.09    | 0.0150 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.42                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)       | 0452     | 18.16    | 0.0740 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.70                | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                   | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                   |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 010.60      | Total N, Combustion (18%)                         | 0025     | 18.19    | 0.0400 | 17.74                 | 0.2416 | 0.0946    | 46      | 1.85                | OK               | 0    |
| 010.60      | Total N, Combustion (18%)                         | 0402     | 18.90    | 0.0410 | 17.74                 | 0.2416 | 0.0946    | 46      | 4.80                | High             | 0    |
| 010.60      | Total N, Combustion (18%)                         | 0042     | 17.70    | 0.8000 | 17.74                 | 0.2416 | 0.0946    | 46      | -0.18               | OK               | 1    |
| 010.60      | Total N, Combustion (18%)                         | 0612     | 46.00    | 1.290  | 17.74                 | 0.2416 | 0.0946    | 46      | 116.93              | High             | 1    |
| 010.99      | Total N, Other (18%)                              | 0524     | 17.38    | 0.1414 | 17.90                 | 0.4093 | 0.0784    | 8       | -1.16               | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0371     | 17.42    | 0.0200 | 17.90                 | 0.4093 | 0.0784    | 8       | -1.08               | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0605     | 17.71    | 0.0860 | 17.90                 | 0.4093 | 0.0784    | 8       | -0.44               | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0577     | 17.95    | 0.0900 | 17.90                 | 0.4093 | 0.0784    | 8       | 0.09                | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0538     | 18.04    | 0.1200 | 17.90                 | 0.4093 | 0.0784    | 8       | 0.31                | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0600     | 18.18    | 0.1500 | 17.90                 | 0.4093 | 0.0784    | 8       | 0.61                | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0559     | 18.28    | 0.0100 | 17.90                 | 0.4093 | 0.0784    | 8       | 0.83                | OK               | 0    |
| 010.99      | Total N, Other (18%)                              | 0653     | 18.28    | 0.0100 | 17.90                 | 0.4093 | 0.0784    | 8       | 0.83                | OK               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0324     | 45.15    | 0.7000 | 46.71                 | 0.5182 | 0.1950    | 14      | -3.00               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0309     | 46.29    | 0.0800 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.80               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0534     | 46.42    | 0.0500 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.56               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0292     | 46.42    | 0.0000 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.55               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0405     | 46.48    | 0.0200 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.44               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0563     | 46.49    | 0.0200 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.42               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0169     | 46.57    | 0.2000 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.26               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0548     | 46.63    | 0.2500 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.16               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0561     | 46.69    | 0.1100 | 46.71                 | 0.5182 | 0.1950    | 14      | -0.04               | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0517     | 46.83    | 0.1500 | 46.71                 | 0.5182 | 0.1950    | 14      | 0.23                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0231     | 46.84    | 0.0800 | 46.71                 | 0.5182 | 0.1950    | 14      | 0.26                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0394     | 47.41    | 0.6480 | 46.71                 | 0.5182 | 0.1950    | 14      | 1.35                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0476     | 47.43    | 0.2317 | 46.71                 | 0.5182 | 0.1950    | 14      | 1.40                | NA               | 0    |
| 020.20      | Total P2O5, Spectrophotometric MolybdovanadoP (%) | 0371     | 54.70    | 0.4000 | 46.71                 | 0.5182 | 0.1950    | 14      | 15.42               | NA               | 0    |
| 020.40      | Total P2O5, Automated (%)                         | 0035     | 47.10    | 0.2000 |                       |        |           | 1       |                     |                  | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0612     | 18.20    | 0.1700 | 44.96                 | 3.135  | 0.2360    | 15      | -8.54               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0389     | 40.30    | 0.0000 | 44.96                 | 3.135  | 0.2360    | 15      | -1.49               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0543     | 42.11    | 0.2590 | 44.96                 | 3.135  | 0.2360    | 15      | -0.91               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0042     | 42.25    | 0.1000 | 44.96                 | 3.135  | 0.2360    | 15      | -0.86               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0157     | 42.85    | 2.100  | 44.96                 | 3.135  | 0.2360    | 15      | -0.67               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0472     | 44.74    | 0.2900 | 44.96                 | 3.135  | 0.2360    | 15      | -0.07               | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0524     | 45.72    | 0.4858 | 44.96                 | 3.135  | 0.2360    | 15      | 0.24                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0433     | 45.87    | 0.1600 | 44.96                 | 3.135  | 0.2360    | 15      | 0.29                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0527     | 46.20    | 0.1320 | 44.96                 | 3.135  | 0.2360    | 15      | 0.40                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0402     | 46.40    | 0.0840 | 44.96                 | 3.135  | 0.2360    | 15      | 0.46                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0451     | 46.43    | 0.1800 | 44.96                 | 3.135  | 0.2360    | 15      | 0.47                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0234     | 46.73    | 0.0500 | 44.96                 | 3.135  | 0.2360    | 15      | 0.56                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0291     | 47.03    | 0.1000 | 44.96                 | 3.135  | 0.2360    | 15      | 0.66                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0255     | 48.53    | 1.374  | 44.96                 | 3.135  | 0.2360    | 15      | 1.14                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0422     | 48.95    | 0.2749 | 44.96                 | 3.135  | 0.2360    | 15      | 1.27                | NA               | 0    |
| 020.50      | Total P2O5, ICP (%)                               | 0542     | 52.38    | 3.894  | 44.96                 | 3.135  | 0.2360    | 15      | 2.37                | NA               | 1    |

| Method Code | Analyte Name and Method (Units)                                | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|----------------------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                                |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 020.99      | Total P2O5, Other (%)                                          | 0515     | 39.24    | 2.660  | 44.95                 | 3.198  | 0.6000    | 5       | -1.78               |                  | 0    |
| 020.99      | Total P2O5, Other (%)                                          | 0600     | 46.23    | 0.2500 | 44.95                 | 3.198  | 0.6000    | 5       | 0.40                |                  | 0    |
| 020.99      | Total P2O5, Other (%)                                          | 0559     | 46.25    | 0.0100 | 44.95                 | 3.198  | 0.6000    | 5       | 0.41                |                  | 0    |
| 020.99      | Total P2O5, Other (%)                                          | 0653     | 46.25    | 0.0100 | 44.95                 | 3.198  | 0.6000    | 5       | 0.41                |                  | 0    |
| 020.99      | Total P2O5, Other (%)                                          | 0513     | 46.78    | 0.0700 | 44.95                 | 3.198  | 0.6000    | 5       | 0.57                |                  | 0    |
| 030.20      | Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (    | 0405     | 0.1300   | 0.0000 |                       |        |           | 1       |                     |                  | 0    |
| 040.50      | Indirect Available P2O5, ICP (46%)                             | 0547     | 45.55    | 0.3000 |                       |        |           | 1       |                     |                  | 0    |
| 040.99      | Indirect Available P2O5, Other (46%)                           | 0405     | 46.35    | 0.0100 |                       |        |           | 2       |                     |                  | 0    |
| 040.99      | Indirect Available P2O5, Other (46%)                           | 0572     | 46.40    | 0.4000 |                       |        |           | 2       |                     |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (46%)           | 0177     | 46.56    | 0.0760 | 46.85                 | 0.2129 | 0.1565    | 4       | -1.36               |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (46%)           | 0040     | 46.85    | 0.1000 | 46.85                 | 0.2129 | 0.1565    | 4       | 0.01                |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (46%)           | 0102     | 46.92    | 0.3600 | 46.85                 | 0.2129 | 0.1565    | 4       | 0.34                |                  | 0    |
| 041.10      | Direct Available P2O5, Gravimetric Quinolinium (46%)           | 0494     | 47.07    | 0.0900 | 46.85                 | 0.2129 | 0.1565    | 4       | 1.02                |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I | 0049     | 46.17    | 0.0300 | 46.40                 | 0.2704 | 0.0750    | 5       | -0.86               |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I | 0055     | 46.24    | 0.0850 | 46.40                 | 0.2704 | 0.0750    | 5       | -0.59               |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I | 0513     | 46.31    | 0.0800 | 46.40                 | 0.2704 | 0.0750    | 5       | -0.32               |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I | 0405     | 46.42    | 0.0200 | 46.40                 | 0.2704 | 0.0750    | 5       | 0.09                |                  | 0    |
| 041.11      | Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I | 0220     | 46.85    | 0.1600 | 46.40                 | 0.2704 | 0.0750    | 5       | 1.68                |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (46%)                | 0027     | 45.64    | 0.5800 | 46.20                 | 0.4145 | 0.5525    | 4       | -1.35               |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (46%)                | 0452     | 46.22    | 0.2000 | 46.20                 | 0.4145 | 0.5525    | 4       | 0.05                |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (46%)                | 0517     | 46.31    | 0.0800 | 46.20                 | 0.4145 | 0.5525    | 4       | 0.26                |                  | 0    |
| 041.20      | Direct Available P2O5, Spectrophotometric (46%)                | 0553     | 46.64    | 1.350  | 46.20                 | 0.4145 | 0.5525    | 4       | 1.05                |                  | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0106     | 44.78    | 1.610  | 46.08                 | 0.8888 | 0.5143    | 9       | -1.36               | Low              | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0472     | 45.00    | 0.1000 | 46.08                 | 0.8888 | 0.5143    | 9       | -1.12               | Low              | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0055     | 45.55    | 0.0400 | 46.08                 | 0.8888 | 0.5143    | 9       | -0.55               | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0563     | 46.27    | 0.0000 | 46.08                 | 0.8888 | 0.5143    | 9       | 0.20                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0095     | 46.37    | 1.890  | 46.08                 | 0.8888 | 0.5143    | 9       | 0.30                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0177     | 46.46    | 0.1571 | 46.08                 | 0.8888 | 0.5143    | 9       | 0.40                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0394     | 46.58    | 0.2190 | 46.08                 | 0.8888 | 0.5143    | 9       | 0.52                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0231     | 46.72    | 0.0500 | 46.08                 | 0.8888 | 0.5143    | 9       | 0.66                | OK               | 0    |
| 041.21      | Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. ( | 0354     | 47.00    | 0.2000 | 46.08                 | 0.8888 | 0.5143    | 9       | 0.96                | OK               | 0    |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)      | 0029     | 46.18    | 1.470  |                       |        |           | 2       |                     |                  | 0    |
| 041.40      | Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)      | 0034     | 47.48    | 0.8800 |                       |        |           | 2       |                     |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (46%)                               | 0605     | 20.49    | 0.2200 | 39.06                 | 12.51  | 0.5300    | 4       | -1.48               |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (46%)                               | 0521     | 42.78    | 0.0000 | 39.06                 | 12.51  | 0.5300    | 4       | 0.30                |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (46%)                               | 0007     | 45.95    | 0.9000 | 39.06                 | 12.51  | 0.5300    | 4       | 0.55                |                  | 0    |
| 041.50      | Direct Available P2O5, ICP (46%)                               | 0131     | 47.03    | 0.4700 | 39.06                 | 12.51  | 0.5300    | 4       | 0.64                |                  | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0025     | 44.35    | 0.9000 | 46.23                 | 1.203  | 0.3302    | 9       | -1.44               | Low              | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0423     | 45.32    | 0.1500 | 46.23                 | 1.203  | 0.3302    | 9       | -0.70               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0377     | 45.92    | 0.1300 | 46.23                 | 1.203  | 0.3302    | 9       | -0.24               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0043     | 45.95    | 0.4000 | 46.23                 | 1.203  | 0.3302    | 9       | -0.22               | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0360     | 46.26    | 0.1400 | 46.23                 | 1.203  | 0.3302    | 9       | 0.02                | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)            | 0494     | 46.28    | 0.0700 | 46.23                 | 1.203  | 0.3302    | 9       | 0.03                | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)     | 0136     | 46.45    | 0.7000 | 46.23                 | 1.203  | 0.3302    | 9       | 0.17                | OK               | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)     | 0072     | 47.45    | 0.2563 | 46.23                 | 1.203  | 0.3302    | 9       | 0.93                | High             | 0    |
| 041.51      | Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)     | 0023     | 48.88    | 0.3660 | 46.23                 | 1.203  | 0.3302    | 9       | 2.03                | High             | 0    |
| 041.99      | Direct Available P2O5, Other (46%)                      | 0538     | 46.00    | 0.0300 | 46.23                 | 0.1708 | 0.2100    | 5       | -1.36               |                  | 0    |
| 041.99      | Direct Available P2O5, Other (46%)                      | 0600     | 46.18    | 0.2500 | 46.23                 | 0.1708 | 0.2100    | 5       | -0.30               |                  | 0    |
| 041.99      | Direct Available P2O5, Other (46%)                      | 0545     | 46.22    | 0.2700 | 46.23                 | 0.1708 | 0.2100    | 5       | -0.07               |                  | 0    |
| 041.99      | Direct Available P2O5, Other (46%)                      | 0577     | 46.29    | 0.1300 | 46.23                 | 0.1708 | 0.2100    | 5       | 0.34                |                  | 0    |
| 041.99      | Direct Available P2O5, Other (46%)                      | 0584     | 46.47    | 0.3700 | 46.23                 | 0.1708 | 0.2100    | 5       | 1.39                |                  | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0472     | 39.68    | 0.1900 | 41.46                 | 0.6685 | 0.0970    | 7       | -2.41               | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0394     | 40.77    | 0.1620 | 41.46                 | 0.6685 | 0.0970    | 7       | -0.93               | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0476     | 41.70    | 0.0072 | 41.46                 | 0.6685 | 0.0970    | 7       | 0.33                | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0220     | 41.73    | 0.0300 | 41.46                 | 0.6685 | 0.0970    | 7       | 0.36                | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0561     | 41.77    | 0.0300 | 41.46                 | 0.6685 | 0.0970    | 7       | 0.42                | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0517     | 41.87    | 0.0700 | 41.46                 | 0.6685 | 0.0970    | 7       | 0.55                | NA               | 0    |
| 048.20      | Water Soluble P2O5, Spectrophotometric (%)              | 0231     | 41.93    | 0.1900 | 41.46                 | 0.6685 | 0.0970    | 7       | 0.63                | NA               | 0    |
| 048.50      | Water Soluble P2O5, ICP (%)                             | 0605     | 18.52    | 0.3510 |                       |        |           | 1       |                     |                  | 0    |
| 048.99      | Water Soluble P2O5, Other (%)                           | 0513     | 41.87    | 0.0700 |                       |        |           | 2       |                     |                  | 0    |
| 048.99      | Water Soluble P2O5, Other (%)                           | 0572     | 42.40    | 1.760  |                       |        |           | 2       |                     |                  | 0    |
| 050.32      | Soluble K2O, AA (Citrate-EDTA) (%)                      | 0472     | 0.0850   | 0.0100 |                       |        |           | 1       |                     |                  | 0    |
| 050.50      | Soluble K2O, ICP (Oxalate) (%)                          | 0422     | 0.1678   | 0.0003 |                       |        |           | 1       |                     |                  | 0    |
| 050.52      | Soluble K2O, ICP (Citrate-EDTA) (%)                     | 0354     | 0.1550   | 0.0000 |                       |        |           | 1       |                     |                  | 0    |
| 050.99      | Soluble K2O, Other (%)                                  | 0542     | 0.1340   | 0.0140 | 0.1464                | 0.0211 | 0.0062    | 3       | -0.59               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)                                  | 0527     | 0.1344   | 0.0022 | 0.1464                | 0.0211 | 0.0062    | 3       | -0.57               |                  | 0    |
| 050.99      | Soluble K2O, Other (%)                                  | 0524     | 0.1708   | 0.0023 | 0.1464                | 0.0211 | 0.0062    | 3       | 1.15                |                  | 0    |
| 060.00      | Water (Free), Vacuum Oven (%)                           | 0517     | 0.7300   | 0.0400 |                       |        |           | 2       |                     |                  | 0    |
| 060.00      | Water (Free), Vacuum Oven (%)                           | 0513     | 1.260    | 0.0200 |                       |        |           | 2       |                     |                  | 0    |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%) | 0035     | 0.2530   | 0.0020 |                       |        |           | 2       |                     |                  | 0    |
| 101.30      | Acid Soluble Ca, ICP, test portion inorganic 965.09 (%) | 0354     | 0.2950   | 0.0100 |                       |        |           | 2       |                     |                  | 0    |
| 101.32      | Acid Soluble Ca, ICP, test portion 2006.03A-C (%)       | 0423     | < 0.5    |        |                       |        |           | 0       |                     |                  | 5    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)                       | 0472     | 0.1800   | 0.0200 | 0.2050                | 0.0329 | 0.0082    | 3       | -0.76               |                  | 0    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)                       | 0527     | 0.1927   | 0.0025 | 0.2050                | 0.0329 | 0.0082    | 3       | -0.37               |                  | 0    |
| 101.33      | Acid Soluble Ca, ICP, 2017.02 (%)                       | 0494     | 0.2422   | 0.0022 | 0.2050                | 0.0329 | 0.0082    | 3       | 1.13                |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%) | 0371     | 0.7700   | 0.0000 | 0.8000                | 0.0397 | 0.0110    | 3       | -0.76               |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%) | 0354     | 0.7850   | 0.0100 | 0.8000                | 0.0397 | 0.0110    | 3       | -0.38               |                  | 0    |
| 121.30      | Acid Soluble Mg, ICP, test portion inorganic 965.09 (%) | 0035     | 0.8450   | 0.0120 | 0.8000                | 0.0397 | 0.0110    | 3       | 1.13                |                  | 0    |
| 121.32      | Acid Soluble Mg, ICP, test portion 2006.03A-C (%)       | 0423     | 0.9060   | 0.0020 |                       |        |           | 1       |                     |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)                       | 0472     | 0.7800   | 0.0000 | 0.7960                | 0.0147 | 0.0074    | 3       | -1.08               |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)                       | 0494     | 0.7988   | 0.0022 | 0.7960                | 0.0147 | 0.0074    | 3       | 0.19                |                  | 0    |
| 121.33      | Acid Soluble Mg, ICP, 2017.02 (%)                       | 0527     | 0.8091   | 0.0125 | 0.7960                | 0.0147 | 0.0074    | 3       | 0.89                |                  | 0    |
| 121.99      | Acid Soluble Mg, Other (%)                              | 0524     | 0.8937   | 0.0006 |                       |        |           | 1       |                     |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)            | 0472     | 1.330    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 148.07      | Total S, ICP, test portion as in 2017.02 (%)            | 0494     | 1.406    | 0.0083 |                       |        |           | 2       |                     |                  | 0    |
| 148.99      | Total S, Other (%)                                      | 0422     | 1.146    | 0.0070 | 1.379                 | 0.2428 | 0.0135    | 3       | -0.96               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                 | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|-------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                 |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 148.99      | Total S, Other (%)                              | 0354     | 1.360    | 0.0000 | 1.379                 | 0.2428 | 0.0135    | 3       | -0.08               |                  | 0    |
| 148.99      | Total S, Other (%)                              | 0371     | 1.630    | 0.0200 | 1.379                 | 0.2428 | 0.0135    | 3       | 1.04                |                  | 0    |
| 149.04      | S - HNO3 soluble, ICP (%)                       | 0524     | 1.389    | 0.0991 |                       |        |           | 1       |                     |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)                      | 0605     | 13.23    | 1.638  | 14.66                 | 1.075  | 0.6447    | 4       | -1.33               |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)                      | 0027     | 14.61    | 0.7330 | 14.66                 | 1.075  | 0.6447    | 4       | -0.04               |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)                      | 0524     | 14.99    | 0.0478 | 14.66                 | 1.075  | 0.6447    | 4       | 0.31                |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)                      | 0513     | 15.80    | 0.1600 | 14.66                 | 1.075  | 0.6447    | 4       | 1.06                |                  | 0    |
| 151.30      | Acid Soluble As, ICP (ppm)                      | 0255     | 0.0000   | 0.0000 | 14.66                 | 1.075  | 0.6447    | 4       |                     |                  | 4    |
| 151.32      | Acid Soluble As, ICP, 2006.03 (ppm)             | 0220     | 11.25    | 0.9000 |                       |        |           | 2       |                     |                  | 0    |
| 151.32      | Acid Soluble As, ICP, 2006.03 (ppm)             | 0405     | 18.00    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0494     | 12.20    | 1.000  | 14.78                 | 2.222  | 1.218     | 6       | -1.03               | NA               | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0515     | 13.40    | 3.200  | 14.78                 | 2.222  | 1.218     | 6       | -0.55               | NA               | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0548     | 14.84    | 0.5500 | 14.78                 | 2.222  | 1.218     | 6       | 0.02                | NA               | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0136     | 15.00    | 1.000  | 14.78                 | 2.222  | 1.218     | 6       | 0.09                | NA               | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0527     | 15.24    | 0.3419 | 14.78                 | 2.222  | 1.218     | 6       | 0.18                | NA               | 0    |
| 151.33      | Acid Soluble As, ICP, 2017.02 (ppm)             | 0563     | 18.00    | 0.0000 | 14.78                 | 2.222  | 1.218     | 6       | 1.29                | NA               | 0    |
| 151.34      | Acid Soluble As, ICP, EPA 3050B/6010C (ppm)     | 0515     | 17.29    | 9.820  |                       |        |           | 1       |                     |                  | 0    |
| 151.99      | Acid Soluble As, Other (ppm)                    | 0220     | 11.60    | 0.2000 |                       |        |           | 2       |                     |                  | 0    |
| 151.99      | Acid Soluble As, Other (ppm)                    | 0572     | 14.80    | 0.3200 |                       |        |           | 2       |                     |                  | 0    |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%) | 0371     | 0.0150   | 0.0100 |                       |        |           | 2       |                     |                  | 0    |
| 165.30      | Acid Soluble B, ICP, test portion in 982.01 (%) | 0354     | 0.0200   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 165.99      | Acid Soluble B, Other (%)                       | 0527     | 0.0050   | 0.0001 | 0.0099                | 0.0053 | 0.0034    | 4       | -0.93               |                  | 0    |
| 165.99      | Acid Soluble B, Other (%)                       | 0524     | 0.0057   | 0.0002 | 0.0099                | 0.0053 | 0.0034    | 4       | -0.79               |                  | 0    |
| 165.99      | Acid Soluble B, Other (%)                       | 0423     | 0.0140   | 0.0000 | 0.0099                | 0.0053 | 0.0034    | 4       | 0.77                |                  | 0    |
| 165.99      | Acid Soluble B, Other (%)                       | 0472     | 0.0150   | 0.0100 | 0.0099                | 0.0053 | 0.0034    | 4       | 0.96                |                  | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0524     | 6.985    | 0.2093 | 8.727                 | 1.239  | 0.2716    | 6       | -1.25               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0513     | 7.900    | 0.0800 | 8.727                 | 1.239  | 0.2716    | 6       | -0.59               | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0035     | 8.925    | 0.1300 | 8.727                 | 1.239  | 0.2716    | 6       | 0.14                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0255     | 9.045    | 0.3180 | 8.727                 | 1.239  | 0.2716    | 6       | 0.23                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0394     | 9.685    | 0.3213 | 8.727                 | 1.239  | 0.2716    | 6       | 0.69                | NA               | 0    |
| 181.30      | Acid Soluble Cd, ICP (ppm)                      | 0605     | 9.821    | 0.6700 | 8.727                 | 1.239  | 0.2716    | 6       | 0.79                | NA               | 0    |
| 181.32      | Acid Soluble Cd, ICP, 2006.03 (ppm)             | 0220     | 8.300    | 0.8000 |                       |        |           | 2       |                     |                  | 0    |
| 181.32      | Acid Soluble Cd, ICP, 2006.03 (ppm)             | 0405     | 10.00    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)             | 0515     | 5.308    | 3.556  | 8.707                 | 1.919  | 1.057     | 5       | -1.77               |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)             | 0527     | 9.207    | 0.1126 | 8.707                 | 1.919  | 1.057     | 5       | 0.26                |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)             | 0136     | 9.450    | 0.5000 | 8.707                 | 1.919  | 1.057     | 5       | 0.39                |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)             | 0548     | 9.630    | 0.0000 | 8.707                 | 1.919  | 1.057     | 5       | 0.48                |                  | 0    |
| 181.33      | Acid Soluble Cd, ICP, 2017.02 (ppm)             | 0494     | 9.940    | 0.0600 | 8.707                 | 1.919  | 1.057     | 5       | 0.64                |                  | 0    |
| 181.34      | Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)     | 0515     | 5.010    | 0.3000 |                       |        |           | 1       |                     |                  | 0    |
| 181.99      | Acid Soluble Cd, Other (ppm)                    | 0220     | 8.350    | 0.3000 |                       |        |           | 2       |                     |                  | 0    |
| 181.99      | Acid Soluble Cd, Other (ppm)                    | 0572     | 8.895    | 0.0700 |                       |        |           | 2       |                     |                  | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)                      | 0035     | 114.0    | 8.000  | 135.4                 | 7.304  | 6.522     | 6       | -2.61               | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)                      | 0605     | 132.9    | 9.660  | 135.4                 | 7.304  | 6.522     | 6       | -0.30               | NA               | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 191.30      | Acid Soluble Cr, ICP (ppm)                              | 0513     | 135.9    | 3.900  | 135.4                 | 7.304  | 6.522     | 6       | 0.06                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)                              | 0027     | 136.5    | 11.76  | 135.4                 | 7.304  | 6.522     | 6       | 0.13                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)                              | 0394     | 139.2    | 3.020  | 135.4                 | 7.304  | 6.522     | 6       | 0.46                | NA               | 0    |
| 191.30      | Acid Soluble Cr, ICP (ppm)                              | 0524     | 143.5    | 2.798  | 135.4                 | 7.304  | 6.522     | 6       | 0.99                | NA               | 0    |
| 191.32      | Acid Soluble Cr, ICP, 2006.03 (ppm)                     | 0220     | 114.0    | 10.00  |                       |        |           | 2       |                     |                  | 0    |
| 191.32      | Acid Soluble Cr, ICP, 2006.03 (ppm)                     | 0405     | 137.0    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0494     | 121.0    | 2.000  | 130.3                 | 7.734  | 1.741     | 6       | -1.07               | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0515     | 125.0    | 6.000  | 130.3                 | 7.734  | 1.741     | 6       | -0.61               | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0136     | 129.4    | 0.7000 | 130.3                 | 7.734  | 1.741     | 6       | -0.11               | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0527     | 130.9    | 1.324  | 130.3                 | 7.734  | 1.741     | 6       | 0.07                | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0563     | 136.0    | 2.000  | 130.3                 | 7.734  | 1.741     | 6       | 0.66                | NA               | 0    |
| 191.33      | Acid Soluble Cr, ICP, 2017.02 (ppm)                     | 0548     | 139.5    | 1.120  | 130.3                 | 7.734  | 1.741     | 6       | 1.06                | NA               | 0    |
| 191.34      | Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)             | 0515     | 136.5    | 21.00  |                       |        |           | 1       |                     |                  | 0    |
| 191.99      | Acid Soluble Cr, Other (ppm)                            | 0572     | 113.2    | 10.12  |                       |        |           | 2       |                     |                  | 0    |
| 191.99      | Acid Soluble Cr, Other (ppm)                            | 0220     | 119.5    | 1.000  |                       |        |           | 2       |                     |                  | 0    |
| 202.30      | Acid Soluble Co, ICP (ppm)                              | 0513     | 0.7700   | 0.0600 | 3.014                 | 1.603  | 0.1211    | 4       | -1.40               |                  | 0    |
| 202.30      | Acid Soluble Co, ICP (ppm)                              | 0035     | 3.220    | 0.1200 | 3.014                 | 1.603  | 0.1211    | 4       | 0.13                |                  | 0    |
| 202.30      | Acid Soluble Co, ICP (ppm)                              | 0605     | 3.508    | 0.2170 | 3.014                 | 1.603  | 0.1211    | 4       | 0.31                |                  | 0    |
| 202.30      | Acid Soluble Co, ICP (ppm)                              | 0524     | 4.560    | 0.0872 | 3.014                 | 1.603  | 0.1211    | 4       | 0.96                |                  | 0    |
| 202.32      | Acid Soluble Co, ICP, 2006.03 (ppm)                     | 0220     | 2.800    | 0.2000 | 6.167                 | 5.237  | 0.6000    | 3       | -0.64               |                  | 0    |
| 202.32      | Acid Soluble Co, ICP, 2006.03 (ppm)                     | 0405     | 3.500    | 1.000  | 6.167                 | 5.237  | 0.6000    | 3       | -0.51               |                  | 0    |
| 202.32      | Acid Soluble Co, ICP, 2006.03 (ppm)                     | 0423     | 12.20    | 0.0000 | 6.167                 | 5.237  | 0.6000    | 3       | 1.15                |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0563     | 2.800    | 0.2000 | 3.200                 | 0.4149 | 0.1073    | 5       | -0.84               |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0494     | 2.925    | 0.0500 | 3.200                 | 0.4149 | 0.1073    | 5       | -0.58               |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0527     | 3.115    | 0.0192 | 3.200                 | 0.4149 | 0.1073    | 5       | -0.18               |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0136     | 3.300    | 0.0000 | 3.200                 | 0.4149 | 0.1073    | 5       | 0.21                |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0548     | 3.860    | 0.1600 | 3.200                 | 0.4149 | 0.1073    | 5       | 1.39                |                  | 0    |
| 202.33      | Acid Soluble Co, ICP, 2017.02 (ppm)                     | 0515     | < 0.26   |        | 3.200                 | 0.4149 | 0.1073    | 5       |                     |                  | 5    |
| 202.34      | Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)             | 0515     | < 0.139  |        |                       |        |           | 0       |                     |                  | 5    |
| 202.99      | Acid Soluble Co, Other (ppm)                            | 0572     | 2.515    | 0.2100 | 9.127                 | 11.21  | 15.36     | 3       | -0.59               |                  | 0    |
| 202.99      | Acid Soluble Co, Other (ppm)                            | 0220     | 2.800    | 0.0000 | 9.127                 | 11.21  | 15.36     | 3       | -0.56               |                  | 0    |
| 202.99      | Acid Soluble Co, Other (ppm)                            | 0255     | 22.07    | 30.51  | 9.127                 | 11.21  | 15.36     | 3       | 1.15                |                  | 0    |
| 221.00      | Acid Soluble Cu, AA, inorganic 965.09 (%)               | 0513     | 0.0001   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 221.00      | Acid Soluble Cu, AA, inorganic 965.09 (%)               | 0538     | 0.0047   | 0.0003 |                       |        |           | 2       |                     |                  | 0    |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%) | 0402     | 0.0017   | 0.0001 |                       |        |           | 1       |                     |                  | 0    |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%) | 0255     | 0.0000   | 0.0000 |                       |        |           | 1       |                     |                  | 4    |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%) | 0371     | 0.0000   | 0.0000 |                       |        |           | 1       |                     |                  | 4    |
| 221.30      | Acid Soluble Cu, ICP, test portion inorganic 965.09 (%) | 0354     | < 0.01   |        |                       |        |           | 1       |                     |                  | 5    |
| 221.32      | Acid Soluble Cu, ICP, test portion 2006.03A-C (%)       | 0405     | < 0.0002 |        |                       |        |           | 0       |                     |                  | 5    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0548     | 0.0001   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0494     | 0.0006   | 0.0001 |                       |        |           | 2       |                     |                  | 0    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0106     | 0.0000   | 0.0000 |                       |        |           | 2       |                     |                  | 4    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0527     | < 0.0001 |        |                       |        |           | 2       |                     |                  | 5    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0136     | < 0.0002 |        |                       |        |           | 2       |                     |                  | 5    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0394     | < 0.0002 |        |                       |        |           | 2       |                     |                  | 5    |
| 221.33      | Acid Soluble Cu, ICP, 2017.02 (%)                       | 0515     | < 0.26   |        |                       |        |           | 2       |                     |                  | 5    |
| 221.99      | Acid Soluble Cu, Other (%)                              | 0515     | < 0.195  |        |                       |        |           | 0       |                     |                  | 5    |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%) | 0354     | 0.9950   | 0.0100 | 1.038                 | 0.0404 | 0.0367    | 3       | -1.07               |                  | 0    |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%) | 0035     | 1.045    | 0.0300 | 1.038                 | 0.0404 | 0.0367    | 3       | 0.16                |                  | 0    |
| 241.30      | Acid Soluble Fe, ICP, test portion inorganic 965.09 (%) | 0371     | 1.075    | 0.0700 | 1.038                 | 0.0404 | 0.0367    | 3       | 0.91                |                  | 0    |
| 241.32      | Acid Soluble Fe, ICP, test portion 2006.03A-C (%)       | 0423     | 1.129    | 0.0010 |                       |        |           | 1       |                     |                  | 0    |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                       | 0494     | 0.9905   | 0.0190 | 1.011                 | 0.0260 | 0.0168    | 3       | -0.77               |                  | 0    |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                       | 0527     | 1.001    | 0.0145 | 1.011                 | 0.0260 | 0.0168    | 3       | -0.36               |                  | 0    |
| 241.33      | Acid Soluble Fe, ICP, 2017.02 (%)                       | 0472     | 1.040    | 0.0000 | 1.011                 | 0.0260 | 0.0168    | 3       | 1.13                |                  | 0    |
| 241.99      | Acid Soluble Fe, Other (%)                              | 0524     | 1.028    | 0.0089 |                       |        |           | 1       |                     |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 0513     | 0.8350   | 0.0700 | 2.373                 | 2.495  | 0.1109    | 3       | -0.62               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 0524     | 1.032    | 0.2565 | 2.373                 | 2.495  | 0.1109    | 3       | -0.54               |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 0394     | 5.253    | 0.0061 | 2.373                 | 2.495  | 0.1109    | 3       | 1.15                |                  | 0    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 0255     | 0.0000   | 0.0000 | 2.373                 | 2.495  | 0.1109    | 3       |                     |                  | 4    |
| 251.30      | Acid Soluble Pb, ICP (ppm)                              | 0605     | < 6.25   |        | 2.373                 | 2.495  | 0.1109    | 3       |                     |                  | 5    |
| 251.32      | Acid Soluble Pb, ICP, 2006.03 (ppm)                     | 0220     | 0.5000   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 251.32      | Acid Soluble Pb, ICP, 2006.03 (ppm)                     | 0405     | 6.500    | 1.000  |                       |        |           | 2       |                     |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 0563     | 0.9200   | 0.0200 | 1.348                 | 0.6144 | 0.0615    | 4       | -0.70               |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 0527     | 1.098    | 0.0670 | 1.348                 | 0.6144 | 0.0615    | 4       | -0.41               |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 0548     | 1.115    | 0.0700 | 1.348                 | 0.6144 | 0.0615    | 4       | -0.38               |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 0515     | 2.261    | 0.0890 | 1.348                 | 0.6144 | 0.0615    | 4       | 1.48                |                  | 0    |
| 251.33      | Acid Soluble Pb, ICP, 2017.02 (ppm)                     | 0136     | < 3      |        | 1.348                 | 0.6144 | 0.0615    | 4       |                     |                  | 5    |
| 251.34      | Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)             | 0515     | 9.660    | 8.480  |                       |        |           | 1       |                     |                  | 0    |
| 251.99      | Acid Soluble Pb, Other (ppm)                            | 0220     | 0.6500   | 0.1000 |                       |        |           | 2       |                     |                  | 0    |
| 251.99      | Acid Soluble Pb, Other (ppm)                            | 0572     | 1.085    | 0.0700 |                       |        |           | 2       |                     |                  | 0    |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)          | 0354     | 0.0200   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 261.30      | Acid Soluble Mn, ICP, test portion 972.02a (%)          | 0035     | 0.0280   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 261.32      | Acid Soluble Mn, ICP, test portion inorganic 965.09 (%) | 0371     | 0.0300   | 0.0000 |                       |        |           | 1       |                     |                  | 0    |
| 261.34      | Acid Soluble Mn, ICP, test portion 2006.03A-C (%)       | 0423     | 0.0365   | 0.0010 |                       |        |           | 1       |                     |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                       | 0527     | 0.0267   | 0.0002 |                       |        |           | 2       |                     |                  | 0    |
| 261.35      | Acid Soluble Mn, ICP, 2017.02 (%)                       | 0472     | 0.0300   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 261.99      | Acid Soluble Mn, Other (%)                              | 0524     | 0.0283   | 0.0000 |                       |        |           | 1       |                     |                  | 0    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0513     | 0.0000   | 0.0000 |                       |        |           | 0       |                     |                  | 4    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0527     | < 0.001  |        |                       |        |           | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0563     | < 0.05   |        |                       |        |           | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0515     | < 0.1    |        |                       |        |           | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0605     | < 1.25   |        |                       |        |           | 0       |                     |                  | 5    |
| 281.30      | Acid Soluble Hg, ICP (ppm)                              | 0405     | < 2      |        |                       |        |           | 0       |                     |                  | 5    |
| 281.99      | Acid Soluble Hg, Other (ppm)                            | 0524     | 0.0005   | 0.0001 |                       |        |           | 1       |                     |                  | 0    |
| 281.99      | Acid Soluble Hg, Other (ppm)                            | 0572     | < 0.008  |        |                       |        |           | 1       |                     |                  | 5    |
| 281.99      | Acid Soluble Hg, Other (ppm)                            | 0220     | < 0.01   |        |                       |        |           | 1       |                     |                  | 5    |

| Method Code | Analyte Name and Method (Units)             | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                             |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 289.30      | Acid Soluble Mo, ICP (ppm)                  | 0255     | 11.41    | 0.7000 | 12.35                 | 0.9465 | 0.5090    | 5       | -0.99               |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                  | 0513     | 11.44    | 0.1900 | 12.35                 | 0.9465 | 0.5090    | 5       | -0.96               |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                  | 0524     | 12.33    | 0.4460 | 12.35                 | 0.9465 | 0.5090    | 5       | -0.01               |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                  | 0402     | 13.00    | 0.0000 | 12.35                 | 0.9465 | 0.5090    | 5       | 0.69                |                  | 0    |
| 289.30      | Acid Soluble Mo, ICP (ppm)                  | 0035     | 13.55    | 0.7000 | 12.35                 | 0.9465 | 0.5090    | 5       | 1.27                |                  | 0    |
| 289.32      | Acid Soluble Mo, ICP, 2006.03 (ppm)         | 0220     | 11.00    | 0.6000 |                       |        |           | 2       |                     |                  | 0    |
| 289.32      | Acid Soluble Mo, ICP, 2006.03 (ppm)         | 0405     | 13.00    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0548     | 10.42    | 0.3600 | 13.51                 | 3.092  | 0.5566    | 7       | -0.90               | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0563     | 10.50    | 1.000  | 13.51                 | 3.092  | 0.5566    | 7       | -0.88               | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0136     | 12.45    | 0.5000 | 13.51                 | 3.092  | 0.5566    | 7       | -0.31               | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0527     | 13.51    | 0.1364 | 13.51                 | 3.092  | 0.5566    | 7       | 0.00                | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0106     | 14.50    | 1.000  | 13.51                 | 3.092  | 0.5566    | 7       | 0.29                | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0494     | 15.05    | 0.7000 | 13.51                 | 3.092  | 0.5566    | 7       | 0.45                | OK               | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0423     | 18.90    | 0.2000 | 13.51                 | 3.092  | 0.5566    | 7       | 1.58                | High             | 0    |
| 289.33      | Acid Soluble Mo, ICP, 2017.02 (ppm)         | 0515     | 95.05    | 20.90  | 13.51                 | 3.092  | 0.5566    | 7       | 23.84               | High             | 1    |
| 289.34      | Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm) | 0515     | 140.7    | 82.60  |                       |        |           | 1       |                     |                  | 0    |
| 289.99      | Acid Soluble Mo, Other (ppm)                | 0220     | 11.20    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 289.99      | Acid Soluble Mo, Other (ppm)                | 0572     | 12.78    | 0.2300 |                       |        |           | 2       |                     |                  | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0513     | 11.95    | 0.4100 | 14.75                 | 1.789  | 0.5382    | 6       | -1.40               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0524     | 14.37    | 0.1880 | 14.75                 | 1.789  | 0.5382    | 6       | -0.19               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0394     | 14.58    | 0.2790 | 14.75                 | 1.789  | 0.5382    | 6       | -0.08               | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0027     | 15.19    | 1.086  | 14.75                 | 1.789  | 0.5382    | 6       | 0.22                | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0035     | 15.45    | 0.1000 | 14.75                 | 1.789  | 0.5382    | 6       | 0.35                | NA               | 0    |
| 291.30      | Acid Soluble Ni, ICP (ppm)                  | 0605     | 16.84    | 1.166  | 14.75                 | 1.789  | 0.5382    | 6       | 1.04                | NA               | 0    |
| 291.32      | Acid Soluble Ni, ICP, 2006.03 (ppm)         | 0220     | 13.65    | 0.7000 |                       |        |           | 2       |                     |                  | 0    |
| 291.32      | Acid Soluble Ni, ICP, 2006.03 (ppm)         | 0405     | 19.00    | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0563     | 12.00    | 0.0000 | 15.30                 | 1.877  | 0.8990    | 5       | -1.54               |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0494     | 15.70    | 0.8000 | 15.30                 | 1.877  | 0.8990    | 5       | 0.18                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0136     | 15.90    | 1.800  | 15.30                 | 1.877  | 0.8990    | 5       | 0.28                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0527     | 16.38    | 0.3858 | 15.30                 | 1.877  | 0.8990    | 5       | 0.50                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0548     | 16.54    | 0.6100 | 15.30                 | 1.877  | 0.8990    | 5       | 0.57                |                  | 0    |
| 291.33      | Acid Soluble Ni, ICP, 2017.02 (ppm)         | 0515     | 125.0    | 59.10  | 15.30                 | 1.877  | 0.8990    | 5       | 50.98               |                  | 1    |
| 291.34      | Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm) | 0515     | 111.5    | 11.00  |                       |        |           | 1       |                     |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                | 0572     | 13.44    | 1.240  | 29.67                 | 27.36  | 13.06     | 3       | -0.59               |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                | 0220     | 14.30    | 0.2000 | 29.67                 | 27.36  | 13.06     | 3       | -0.56               |                  | 0    |
| 291.99      | Acid Soluble Ni, Other (ppm)                | 0255     | 61.26    | 37.74  | 29.67                 | 27.36  | 13.06     | 3       | 1.15                |                  | 0    |
| 301.30      | Acid Soluble Se, ICP (ppm)                  | 0524     | 0.2967   | 0.0448 |                       |        |           | 1       |                     |                  | 0    |
| 301.30      | Acid Soluble Se, ICP (ppm)                  | 0605     | < 6.25   |        |                       |        |           | 1       |                     |                  | 5    |
| 301.32      | Acid Soluble Se, ICP, 2006.03 (ppm)         | 0220     | < 0.3    |        |                       |        |           | 0       |                     |                  | 5    |
| 301.32      | Acid Soluble Se, ICP, 2006.03 (ppm)         | 0405     | < 10     |        |                       |        |           | 0       |                     |                  | 5    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)         | 0548     | 0.3700   | 0.0800 | 1.982                 | 1.654  | 1.123     | 3       | -0.97               |                  | 0    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)         | 0563     | 1.900    | 0.2000 | 1.982                 | 1.654  | 1.123     | 3       | -0.05               |                  | 0    |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)         | 0515     | 3.675    | 3.090  | 1.982                 | 1.654  | 1.123     | 3       | 1.02                |                  | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | *Robust Method Values |        |           | # Tests | Magruder PT Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|-----------------------|--------|-----------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean              | Rob SD | Rob R-bar |         |                     |                  |      |
| 301.33      | Acid Soluble Se, ICP, 2017.02 (ppm)                     | 0527     | < 0.01   |        | 1.982                 | 1.654  | 1.123     | 3       |                     |                  | 5    |
| 301.34      | Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)             | 0515     | 8.850    | 11.30  |                       |        |           | 1       |                     |                  | 0    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0572     | 1.075    | 0.2300 |                       |        |           | 1       |                     |                  | 0    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0255     | 0.0000   | 0.0000 |                       |        |           | 1       |                     |                  | 4    |
| 301.99      | Acid Soluble Se, Other (ppm)                            | 0220     | < 0.3    |        |                       |        |           | 1       |                     |                  | 5    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0423     | 0.0795   | 0.0030 | 0.1533                | 0.0498 | 0.0054    | 4       | -1.48               |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0494     | 0.1675   | 0.0039 | 0.1533                | 0.0498 | 0.0054    | 4       | 0.28                |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0527     | 0.1813   | 0.0006 | 0.1533                | 0.0498 | 0.0054    | 4       | 0.56                |                  | 0    |
| 311.33      | Sodium, ICP, test portion as in 2017.02 (%)             | 0035     | 0.1850   | 0.0140 | 0.1533                | 0.0498 | 0.0054    | 4       | 0.64                |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0572     | 0.1350   | 0.0100 |                       |        |           | 2       |                     |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0354     | 0.1900   | 0.0000 |                       |        |           | 2       |                     |                  | 0    |
| 321.00      | Acid Soluble Zn, AA, inorganic 965.09 (%)               | 0513     | 0.0123   | 0.0001 |                       |        |           | 1       |                     |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0255     | 0.0120   | 0.0020 | 0.0141                | 0.0018 | 0.0033    | 4       | -1.21               |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0035     | 0.0135   | 0.0010 | 0.0141                | 0.0018 | 0.0033    | 4       | -0.36               |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0371     | 0.0150   | 0.0100 | 0.0141                | 0.0018 | 0.0033    | 4       | 0.49                |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0402     | 0.0161   | 0.0003 | 0.0141                | 0.0018 | 0.0033    | 4       | 1.08                |                  | 0    |
| 321.30      | Acid Soluble Zn, ICP, test portion inorganic 965.09 (%) | 0354     | < 0.01   |        | 0.0141                | 0.0018 | 0.0033    | 4       |                     |                  | 5    |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)       | 0095     | 0.0100   | 0.0000 | 0.0108                | 0.0012 | 0.0008    | 3       | -0.62               |                  | 0    |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)       | 0220     | 0.0101   | 0.0012 | 0.0108                | 0.0012 | 0.0008    | 3       | -0.54               |                  | 0    |
| 321.32      | Acid Soluble Zn, ICP, test portion 2006.03A-C (%)       | 0405     | 0.0122   | 0.0004 | 0.0108                | 0.0012 | 0.0008    | 3       | 1.15                |                  | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0472     | 0.0100   | 0.0000 | 0.0116                | 0.0017 | 0.0005    | 7       | -0.90               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0106     | 0.0105   | 0.0007 | 0.0116                | 0.0017 | 0.0005    | 7       | -0.65               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0515     | 0.0110   | 0.0005 | 0.0116                | 0.0017 | 0.0005    | 7       | -0.38               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0136     | 0.0112   | 0.0010 | 0.0116                | 0.0017 | 0.0005    | 7       | -0.24               | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0527     | 0.0118   | 0.0002 | 0.0116                | 0.0017 | 0.0005    | 7       | 0.08                | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0394     | 0.0130   | 0.0002 | 0.0116                | 0.0017 | 0.0005    | 7       | 0.73                | OK               | 0    |
| 321.33      | Acid Soluble Zn, ICP, 2017.02 (%)                       | 0548     | 0.1100   | 0.0000 | 0.0116                | 0.0017 | 0.0005    | 7       | 53.41               | High             | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                              | 0572     | 0.0092   | 0.0009 | 0.0110                | 0.0015 | 0.0010    | 5       | -1.22               |                  | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                              | 0220     | 0.0102   | 0.0004 | 0.0110                | 0.0015 | 0.0010    | 5       | -0.51               |                  | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                              | 0027     | 0.0105   | 0.0010 | 0.0110                | 0.0015 | 0.0010    | 5       | -0.31               |                  | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                              | 0515     | 0.0123   | 0.0015 | 0.0110                | 0.0015 | 0.0010    | 5       | 0.87                |                  | 0    |
| 321.99      | Acid Soluble Zn, Other (%)                              | 0524     | 0.0127   | 0.0000 | 0.0110                | 0.0015 | 0.0010    | 5       | 1.18                |                  | 0    |
| 325.00      | Water Soluble Zn, AA (%)                                | 0538     | 0.0011   | 0.0002 |                       |        |           | 1       |                     |                  | 0    |

#### 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. IA Status describes where your result is relative to the Assigned Value  $\pm$  IA. Red indicates Higher or Lower and Green indicates within the IA range about the Robust mean. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for