

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

# Methods: 113

Sample # 180111

### Statistical Summary

# Labs Reporting: 87

Secondary & Micronutrients

Issue Date : 02/28/2018

| Method Code | Analyte & Method<br>Sample # 180111                       | # 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<br>Ratio | Average Range<br>(R-bar) | Honwitz %RSD |
|-------------|-----------------------------------------------------------|----------------------|-----------------------------------|----------|--------|-------------------------------|-----------------------|-----------|---------------------------|--------------|--------------------|--------------------------|--------------|
| 001.99      | Ammoniacal Nitrogen, Other (%)                            | 3                    | 3                                 | 1.397    | 1.852  | 1.397                         |                       | 1.852     | 1.336                     | 132.60%      |                    | 0.0343                   | 3.80%        |
| 002.99      | Nitrate Nitrogen, Other (%)                               | 1                    |                                   | 0.0000   |        |                               |                       |           |                           |              |                    |                          |              |
| 010.12      | Total Nitrogen, Salicylic (%)                             | 1                    |                                   | 13.00    |        |                               |                       |           |                           |              |                    |                          |              |
| 010.60      | Total Nitrogen, Combustion (%)                            | 9                    | 9                                 | 0.5840   | 0.0581 | 0.5811                        | 0.4900                | 0.0347    | 0.0145                    | 5.97%        | 0.16               | 0.0126                   | 4.34%        |
| 010.99      | Total Nitrogen, Other (%)                                 | 1                    |                                   | 0.5212   |        |                               |                       |           |                           |              |                    |                          |              |
| 020.20      | Total Phosphorus as P2O5, Spectrophotometric Molyb        | 1                    |                                   | 0.0900   |        |                               |                       |           |                           |              |                    |                          |              |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                         | 5                    | 4                                 | 0.0308   | 0.0299 | 0.0308                        |                       | 0.0299    | 0.0187                    | 96.85%       |                    | 0.0027                   | 6.75%        |
| 020.99      | Total Phosphorus as P2O5, Other (%)                       | 1                    |                                   | 0.0141   |        |                               |                       |           |                           |              |                    |                          |              |
| 041.50      | Direct Available Phosphorus as P2O5, ICP (%)              | 1                    |                                   | 0.1000   |        |                               |                       |           |                           |              |                    |                          |              |
| 041.51      | Direct Available Phosphorus as P2O5, ICP, Citrate-...     | 1                    |                                   | 0.0000   |        |                               |                       |           |                           |              |                    |                          |              |
| 041.60      | Direct Available Phosphorus as P2O5, Citrate-EDTA ..      | 1                    |                                   | 0.0925   |        |                               |                       |           |                           |              |                    |                          |              |
| 050.51      | Soluble Potassium as K2O, ICP (Citrate) (%)               | 2                    | 2                                 | 0.0500   | 0.0141 |                               |                       |           |                           |              |                    |                          |              |
| 050.52      | Soluble Potassium as K2O, ICP (Citrate-EDTA) (%)          | 2                    | 2                                 | 0.0960   | 0.0085 |                               |                       |           |                           |              |                    |                          |              |
| 050.99      | Soluble Potassium as K2O, Other (%)                       | 5                    | 5                                 | 0.0815   | 0.0193 | 0.0815                        | 0.4100                | 0.0193    | 0.0108                    | 23.65%       | 0.11               | 0.0056                   | 5.83%        |
| 060.00      | Water (Free), Vacuum Oven (%)                             | 1                    |                                   | 0.8450   |        |                               |                       |           |                           |              |                    |                          |              |
| 060.30      | Water (Free), AFPC No. 2B (105°C oven for 2 hours,...     | 2                    | 2                                 | 1.865    | 1.393  |                               |                       |           |                           |              |                    |                          |              |
| 060.99      | Water (Free), Other (%)                                   | 2                    | 2                                 | 0.7564   | 0.2140 |                               |                       |           |                           |              |                    |                          |              |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)          | 5                    | 5                                 | 19.11    | 0.7036 | 19.11                         | 1.0000                | 0.7036    | 0.3933                    | 3.68%        | 1.64               | 0.6800                   | 2.57%        |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorganic ... (18 | 26                   | 25                                | 18.80    | 3.158  | 18.96                         | 1.0000                | 1.726     | 0.4316                    | 9.10%        | 4.02               | 0.2746                   | 2.57%        |
| 101.32      | Acid Soluble Calcium, ICP, test portion 2006.03A-C...     | 3                    | 3                                 | 19.49    | 0.4770 | 19.49                         | 1.0000                | 0.4770    | 0.3442                    | 2.45%        | 1.11               | 0.2457                   | 2.56%        |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.03A-C...     | 13                   | 13                                | 18.42    | 2.465  | 18.83                         | 1.0000                | 1.039     | 0.3602                    | 5.52%        | 2.42               | 0.3484                   | 2.57%        |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                   | 6                    | 6                                 | 17.60    | 2.008  | 18.23                         | 1.0000                | 0.5793    | 0.2956                    | 3.18%        | 1.35               | 0.0996                   | 2.58%        |
| 101.99      | Acid Soluble Calcium, Other (18%)                         | 11                   | 11                                | 18.97    | 2.647  | 18.79                         | 1.0000                | 1.245     | 0.4693                    | 6.63%        | 2.90               | 0.1610                   | 2.57%        |
| 121.00      | Acid Soluble Magnesium, AA, inorganic 965.09 (%)          | 1                    |                                   | 1.531    |        |                               |                       |           |                           |              |                    |                          |              |
| 121.30      | Acid Soluble Magnesium, ICP, test portion inorgani...     | 6                    | 5                                 | 0.1089   | 0.0034 | 0.1089                        | 0.2054                | 0.0034    | 0.0019                    | 3.09%        | 0.04               | 0.0022                   | 5.58%        |
| 121.32      | Acid Soluble Magnesium, ICP, test portion 2006.03A...     | 2                    | 2                                 | 0.1020   | 0.0021 |                               |                       |           |                           |              |                    |                          |              |
| 121.33      | Acid Soluble Magnesium, ICP, test portion 2006.03A...     | 4                    | 4                                 | 0.8333   | 1.431  | 0.8333                        | 0.2417                | 1.431     | 0.8944                    | 171.75%      | 13.80              | 0.0950                   | 4.11%        |
| 121.99      | Acid Soluble Magnesium, Other (%)                         | 3                    | 3                                 | 0.1011   | 0.0016 | 0.1011                        | 0.2051                | 0.0016    | 0.0012                    | 1.61%        | 0.02               | 0.0037                   | 5.65%        |
| 143.99      | Elemental Sulfur, Other (%)                               | 4                    | 4                                 | 15.97    | 0.9886 | 15.97                         |                       | 0.9886    | 0.6179                    | 6.19%        |                    | 0.2668                   | 2.64%        |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulfur - ... (%) | 8                    | 8                                 | 15.61    | 1.109  | 15.80                         |                       | 0.7711    | 0.3408                    | 4.88%        |                    | 0.1225                   | 2.64%        |
| 145.99      | Sulfate Sulfur, HCl soluble, Other (%)                    | 3                    | 3                                 | 15.84    | 0.2877 | 15.84                         |                       | 0.2877    | 0.2076                    | 1.82%        |                    | 0.3000                   | 2.64%        |

| Method Code | Analyte & Method<br>Sample # 180111                       | # Tests Submitted | # Tests in Robust Calculations | Raw Mean | Raw SD | Assigned Value Robust Mean | IA at Method Value | Robust sd | Robust Uncertainty (U) | Robust % RSD | Method IA Ratio | Average Range (R-bar) | Howitz %RSD |
|-------------|-----------------------------------------------------------|-------------------|--------------------------------|----------|--------|----------------------------|--------------------|-----------|------------------------|--------------|-----------------|-----------------------|-------------|
| 148.00      | Total Sulfur, Combustion (16%)                            | 7                 | 7                              | 15.92    | 1.558  | 16.36                      | 1.0000             | 0.5448    | 0.2574                 | 3.33%        | 1.27            | 0.3186                | 2.63%       |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elemental...      | 16                | 15                             | 16.39    | 0.8685 | 16.45                      | 1.0000             | 0.6354    | 0.2051                 | 3.86%        | 1.48            | 0.1839                | 2.62%       |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03 modi...     | 16                | 11                             | 16.48    | 2.521  | 16.64                      | 1.0000             | 1.288     | 0.4855                 | 7.74%        | 3.00            | 0.4077                | 2.62%       |
| 148.99      | Total Sulfur, Other (16%)                                 | 15                | 14                             | 16.00    | 1.597  | 16.26                      | 1.0000             | 0.9753    | 0.3258                 | 6.00%        | 2.27            | 0.1850                | 2.63%       |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                            | 5                 | 5                              | 15.82    | 0.2681 | 15.82                      |                    | 0.2681    | 0.1499                 | 1.69%        |                 | 0.1104                | 2.64%       |
| 151.00      | Acid Soluble Arsenic , AA, test portion as in 2006...     | 1                 |                                | 1.200    |        |                            |                    |           |                        |              |                 |                       |             |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                          | 8                 | 7                              | 2.324    | 2.155  | 1.813                      |                    | 1.074     | 0.5074                 | 59.24%       |                 | 0.0813                | 14.63%      |
| 151.33      | Acid Soluble Arsenic , ICP, 2006.03 modified w/9:3...     | 3                 | 3                              | 2.855    | 1.324  | 2.855                      |                    | 1.324     | 0.9555                 | 46.37%       |                 | 1.781                 | 13.66%      |
| 151.34      | Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)         | 2                 | 1                              | 4.750    |        |                            |                    |           |                        |              |                 |                       |             |
| 151.99      | Acid Soluble Arsenic , Other (ppm)                        | 3                 | 3                              | 1.266    | 0.4406 | 1.266                      |                    | 0.4406    | 0.3179                 | 34.80%       |                 | 0.0628                | 15.44%      |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)            | 11                | 10                             | 0.4985   | 0.0644 | 0.4877                     | 0.0762             | 0.0430    | 0.0170                 | 8.81%        | 1.31            | 0.0136                | 4.46%       |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982.01 (0.5%)   | 17                | 17                             | 0.5210   | 0.0409 | 0.5186                     | 0.0808             | 0.0404    | 0.0122                 | 7.79%        | 1.16            | 0.0119                | 4.42%       |
| 165.99      | Acid Soluble Boron , Other (0.5%)                         | 25                | 25                             | 0.5075   | 0.0555 | 0.5040                     | 0.0786             | 0.0384    | 0.0096                 | 7.62%        | 1.14            | 0.0101                | 4.43%       |
| 171.00      | Water Soluble Boron , AA, JAOAC 52.950 (%)                | 1                 |                                | 0.4700   |        |                            |                    |           |                        |              |                 |                       |             |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)              | 9                 | 9                              | 0.4222   | 0.0833 | 0.4222                     |                    | 0.0944    | 0.0393                 | 22.36%       |                 | 0.0200                | 4.55%       |
| 171.99      | Water Soluble Boron , Other (%)                           | 2                 | 2                              | 0.3975   | 0.1450 |                            |                    |           |                        |              |                 |                       |             |
| 181.00      | Acid Soluble Cadmium , AA, test portion as in 2006...     | 1                 |                                | 0.4000   |        |                            |                    |           |                        |              |                 |                       |             |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                          | 9                 | 7                              | 0.3204   | 0.0843 | 0.3204                     |                    | 0.0956    | 0.0452                 | 29.83%       |                 | 0.0213                | 18.99%      |
| 181.33      | Acid Soluble Cadmium , ICP, 2006.03 modified w/9:3..      | 3                 | 2                              | 0.2985   | 0.0043 | 0.2985                     |                    | 0.0043    | 0.0038                 | 1.43%        |                 | 0.0546                | 19.19%      |
| 181.34      | Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm)         | 3                 | 3                              | 0.4142   | 0.1686 | 0.4142                     |                    | 0.1686    | 0.1217                 | 40.72%       |                 | 0.2703                | 18.27%      |
| 181.99      | Acid Soluble Cadmium , Other (ppm)                        | 3                 | 3                              | 0.2147   | 0.0450 | 0.2147                     |                    | 0.0450    | 0.0325                 | 20.96%       |                 | 0.0433                | 20.17%      |
| 190.99      | Water Soluble Chlorine, Other (%)                         | 1                 |                                | 0.1770   |        |                            |                    |           |                        |              |                 |                       |             |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                         | 13                | 13                             | 13.06    | 5.327  | 13.54                      |                    | 4.794     | 1.662                  | 35.40%       |                 | 0.8104                | 10.81%      |
| 191.32      | Acid Soluble Chromium , ICP, 2006.03 (ppm)                | 1                 |                                | 24.82    |        |                            |                    |           |                        |              |                 |                       |             |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified w/9:...     | 5                 | 5                              | 23.60    | 2.728  | 23.60                      |                    | 2.728     | 1.525                  | 11.56%       |                 | 1.458                 | 9.94%       |
| 191.34      | Acid Soluble Chromium , ICP, EPA 3050B/6010C (ppn         | 3                 | 3                              | 16.23    | 0.5686 | 16.23                      |                    | 0.5686    | 0.4104                 | 3.50%        |                 | 0.8790                | 10.52%      |
| 191.99      | Acid Soluble Chromium , Other (ppm)                       | 3                 | 3                              | 14.45    | 5.851  | 14.45                      |                    | 5.851     | 4.222                  | 40.48%       |                 | 0.0090                | 10.70%      |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                           | 10                | 10                             | 1.613    | 0.6017 | 1.613                      | 1.4839             | 0.6824    | 0.2697                 | 42.31%       | 1.07            | 0.1101                | 14.89%      |
| 202.32      | Acid Soluble Cobalt , ICP, 2006.03 (ppm)                  | 2                 | 2                              | 2.554    | 0.6201 |                            |                    |           |                        |              |                 |                       |             |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w/9:3 ... (p  | 5                 | 5                              | 2.927    | 1.467  | 2.927                      | 1.8780             | 1.467     | 0.8201                 | 50.12%       | 1.82            | 1.491                 | 13.61%      |
| 202.34      | Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)          | 3                 | 3                              | 1.745    | 0.3468 | 1.745                      | 1.5234             | 0.3468    | 0.2503                 | 19.88%       | 0.53            | 0.1403                | 14.71%      |
| 202.99      | Acid Soluble Cobalt , Other (ppm)                         | 4                 | 4                              | 1.781    | 0.8513 | 1.781                      | 1.5343             | 0.8513    | 0.5320                 | 47.80%       | 1.29            | 0.0526                | 14.67%      |
| 221.03      | Acid Soluble Copper , AA, 965.09, test portion 200... (c  | 1                 |                                | 4.610    |        |                            |                    |           |                        |              |                 |                       |             |
| 221.30      | Acid Soluble Copper , ICP, test portion inorganic ... (%) | 10                | 5                              | 0.0009   | 0.0010 | 0.0009                     | 0.0051             | 0.0010    | 0.0006                 | 107.50%      | 0.46            | 0.0001                | 11.44%      |
| 221.32      | Acid Soluble Copper , ICP, test portion 2006.03A-C (%)    | 3                 | 3                              | 0.2626   | 0.4507 | 0.2626                     | 0.0313             | 0.4507    | 0.3253                 | 171.66%      | 33.60           | 0.0817                | 4.89%       |
| 221.33      | Acid Soluble Copper , ICP, test portion 2006.03A-C...     | 3                 | 3                              | 0.0006   | 0.0005 | 0.0006                     | 0.0051             | 0.0005    | 0.0003                 | 81.51%       | 0.21            | 0.0003                | 12.32%      |
| 221.99      | Acid Soluble Copper , Other (%)                           | 7                 | 7                              | 0.0017   | 0.0037 | 0.0003                     | 0.0050             | 0.0001    | 0.0001                 | 41.56%       | 0.06            | 0.0000                | 13.43%      |
| 241.30      | Acid Soluble Iron, ICP, test portion inorganic 965... (%) | 6                 | 5                              | 0.0670   | 0.0073 | 0.0670                     | 0.0117             | 0.0073    | 0.0041                 | 10.95%       | 1.46            | 0.0022                | 6.01%       |
| 241.32      | Acid Soluble Iron, ICP, test portion 2006.03A-C (%)       | 2                 | 2                              | 0.0671   | 0.0105 |                            |                    |           |                        |              |                 |                       |             |
| 241.33      | Acid Soluble Iron, ICP, test portion 2006.03A-C, w... (%) | 4                 | 4                              | 0.0796   | 0.0029 | 0.0796                     | 0.0130             | 0.0029    | 0.0018                 | 3.60%        | 0.52            | 0.0026                | 5.85%       |
| 241.99      | Acid Soluble Iron, Other (%)                              | 4                 | 4                              | 0.0781   | 0.0184 | 0.0781                     | 0.0128             | 0.0184    | 0.0115                 | 23.53%       | 3.34            | 0.0038                | 5.87%       |
| 251.00      | Acid Soluble Lead , AA, test portion as in 2006.03... (p  | 1                 |                                | 2.500    |        |                            |                    |           |                        |              |                 |                       |             |

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|-------------|------------------------------------------------------------|-------------------|--------------------------------|----------|--------|-------------------------------|--------------------|-----------|------------------------|--------------|-----------------|-----------------------|-------------|
| 251.30      | Acid Soluble Lead , ICP (ppm)                              | 8                 | 7                              | 2.717    | 3.425  | 1.652                         |                    | 0.8634    | 0.4079                 | 52.26%       |                 | 0.1881                | 14.83%      |
| 251.32      | Acid Soluble Lead , ICP, 2006.03 (ppm)                     | 1                 |                                | 2.775    |        |                               |                    |           |                        |              |                 |                       |             |
| 251.33      | Acid Soluble Lead , ICP, 2006.03 modified w/9:3 HN...      | 3                 | 2                              | 1.125    | 0.0331 | 1.125                         |                    | 0.0331    | 0.0293                 | 2.94%        |                 | 0.0376                | 15.72%      |
| 251.34      | Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)             | 3                 | 2                              | 1.370    | 0.0424 | 1.370                         |                    | 0.0424    | 0.0375                 | 3.10%        |                 | 0.4400                | 15.26%      |
| 251.99      | Acid Soluble Lead , Other (ppm)                            | 3                 | 3                              | 1.282    | 0.2418 | 1.282                         |                    | 0.2418    | 0.1745                 | 18.86%       |                 | 0.2437                | 15.41%      |
| 261.30      | Acid Soluble Manganese , ICP, test portion 972.02a (%)     | 3                 | 3                              | 17.72    | 30.68  | 17.72                         | 1.0000             | 30.68     | 22.14                  | 173.15%      | 71.49           | 0.7004                | 2.59%       |
| 261.31      | Acid Soluble Manganese , ICP, test portion 972.02b (%)     | 2                 | 1                              | 0.0100   |        |                               |                    |           |                        |              |                 |                       |             |
| 261.34      | Acid Soluble Manganese , ICP, test portion 2006.03...      | 2                 | 2                              | 0.0052   | 0.0012 |                               |                    |           |                        |              |                 |                       |             |
| 261.35      | Acid Soluble Manganese , ICP, test portion 2006.03...      | 4                 | 3                              | 0.0052   | 0.0002 | 0.0052                        | 0.0055             | 0.0002    | 0.0001                 | 2.96%        | 0.06            | 0.0001                | 8.83%       |
| 261.99      | Acid Soluble Manganese , Other (%)                         | 3                 | 3                              | 0.0049   | 0.0011 | 0.0049                        | 0.0055             | 0.0011    | 0.0008                 | 22.75%       | 0.47            | 0.0004                | 8.92%       |
| 281.00      | Acid Soluble Mercury , AA (ppm)                            | 2                 | 2                              | 0.2003   | 0.0528 |                               |                    |           |                        |              |                 |                       |             |
| 281.30      | Acid Soluble Mercury , ICP (ppm)                           | 3                 | 2                              | 0.5270   | 0.3005 | 0.5270                        |                    | 0.3005    | 0.2656                 | 57.02%       |                 | 0.0990                | 17.62%      |
| 281.99      | Acid Soluble Mercury , Other (ppm)                         | 2                 | 2                              | 0.2517   | 0.2993 |                               |                    |           |                        |              |                 |                       |             |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                        | 11                | 9                              | 5.907    | 11.70  | 2.199                         | 1.6596             | 0.9801    | 0.4084                 | 44.58%       | 1.38            | 0.2303                | 14.21%      |
| 289.32      | Acid Soluble Molybdenum , ICP, 2006.03 (ppm)               | 1                 |                                | 1.377    |        |                               |                    |           |                        |              |                 |                       |             |
| 289.33      | Acid Soluble Molybdenum , ICP, 2006.03 modified w/...      | 4                 | 3                              | 1.529    | 0.1338 | 1.529                         | 1.4587             | 0.1338    | 0.0966                 | 8.75%        | 0.21            | 0.0220                | 15.01%      |
| 289.34      | Acid Soluble Molybdenum , ICP, EPA 3050B/6010C (p          | 3                 | 3                              | 8.781    | 13.09  | 8.781                         | 3.6342             | 13.09     | 9.450                  | 149.12%      | 8.39            | 0.8020                | 11.54%      |
| 289.99      | Acid Soluble Molybdenum , Other (ppm)                      | 2                 | 2                              | 3.325    | 3.146  |                               |                    |           |                        |              |                 |                       |             |
| 291.00      | Acid Soluble Nickel , AA, test portion as in 2006.... (pp  | 1                 |                                | 5.200    |        |                               |                    |           |                        |              |                 |                       |             |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                            | 12                | 12                             | 4.741    | 1.131  | 4.560                         |                    | 0.7137    | 0.2575                 | 15.65%       |                 | 0.8701                | 12.73%      |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w/9:3 ... (p   | 5                 | 5                              | 5.003    | 0.1418 | 5.003                         |                    | 0.1418    | 0.0792                 | 2.83%        |                 | 0.0923                | 12.55%      |
| 291.34      | Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)           | 3                 | 3                              | 4.633    | 1.329  | 4.633                         |                    | 1.329     | 0.9592                 | 28.69%       |                 | 3.479                 | 12.70%      |
| 291.99      | Acid Soluble Nickel , Other (ppm)                          | 4                 | 4                              | 4.747    | 0.7131 | 4.747                         |                    | 0.7131    | 0.4457                 | 15.02%       |                 | 0.5336                | 12.65%      |
| 301.30      | Acid Soluble Selenium , ICP (ppm)                          | 4                 | 2                              | 0.8400   | 0.4384 | 0.8400                        |                    | 0.4384    | 0.3875                 | 52.19%       |                 | 0.0600                | 16.42%      |
| 301.32      | Acid Soluble Selenium , ICP, 2006.03 (ppm)                 | 1                 |                                | 2.875    |        |                               |                    |           |                        |              |                 |                       |             |
| 301.33      | Acid Soluble Selenium , ICP, 2006.03 modified w/9:...      | 2                 | 1                              | 1.296    |        |                               |                    |           |                        |              |                 |                       |             |
| 301.34      | Acid Soluble Selenium , ICP, EPA 3050B/6010C (ppm)         | 2                 | 1                              | 3.248    |        |                               |                    |           |                        |              |                 |                       |             |
| 301.99      | Acid Soluble Selenium , Other (ppm)                        | 4                 | 4                              | 1.369    | 0.3671 | 1.369                         |                    | 0.3671    | 0.2294                 | 26.81%       |                 | 0.2323                | 15.26%      |
| 311.32      | Sodium, ICP, 2006.03 test portion (%)                      | 2                 | 2                              | 0.3111   | 0.0147 |                               |                    |           |                        |              |                 |                       |             |
| 311.33      | Sodium, ICP, 2006.03 modified w/9:3 HNO3:HCl test .        | 4                 | 4                              | 0.2664   | 0.1566 | 0.2664                        | 0.0316             | 0.1566    | 0.0979                 | 58.79%       | 11.53           | 0.0233                | 4.88%       |
| 311.99      | Sodium, Other (%)                                          | 4                 | 4                              | 0.3368   | 0.0039 | 0.3368                        | 0.0387             | 0.0039    | 0.0025                 | 1.17%        | 0.24            | 0.0110                | 4.71%       |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)            | 10                | 10                             | 1.563    | 0.2031 | 1.512                         | 0.1562             | 0.0676    | 0.0267                 | 4.47%        | 1.01            | 0.0200                | 3.76%       |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorganic 96... (1.5 | 23                | 22                             | 1.513    | 0.0981 | 1.511                         | 0.1561             | 0.0706    | 0.0188                 | 4.67%        | 1.05            | 0.0321                | 3.76%       |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03A-C ... (1.   | 5                 | 5                              | 1.353    | 0.4660 | 1.353                         | 0.1403             | 0.4660    | 0.2605                 | 34.44%       | 7.74            | 0.0132                | 3.82%       |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03A-C, ... (1.  | 14                | 13                             | 1.549    | 0.0609 | 1.548                         | 0.1598             | 0.0670    | 0.0232                 | 4.33%        | 0.98            | 0.0321                | 3.75%       |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                           | 13                | 12                             | 1.435    | 0.2824 | 1.465                         | 0.1515             | 0.2299    | 0.0830                 | 15.69%       | 3.54            | 0.0377                | 3.78%       |
| 325.00      | Water Soluble Zinc , AA (%)                                | 7                 | 7                              | 1.471    | 0.0441 | 1.471                         |                    | 0.0494    | 0.0233                 | 3.36%        |                 | 0.0271                | 3.77%       |
| 325.10      | Water Soluble Zinc , Gravimetric (%)                       | 1                 |                                | 1.550    |        |                               |                    |           |                        |              |                 |                       |             |
| 325.30      | Water Soluble Zinc , ICP (%)                               | 4                 | 4                              | 1.260    | 0.1343 | 1.260                         |                    | 0.1343    | 0.0839                 | 10.66%       |                 | 0.0275                | 3.86%       |
| 325.99      | Water Soluble Zinc , Other (%)                             | 1                 |                                | 1.375    |        |                               |                    |           |                        |              |                 |                       |             |

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 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.

|                                     |
|-------------------------------------|
| Howitz %RSD                         |
| Average Range<br>(R-bar)            |
| Method IA<br>Ratio                  |
| Robust % RSD                        |
| Robust<br>Uncertainty (U)           |
| Robust sd                           |
| IA at Method<br>Value               |
| Assigned Value<br>Robust Mean       |
| Raw SD                              |
| Raw Mean                            |
| # Tests in Robust<br>Calculations   |
| # Tests<br>Submitted                |
| Analyte & Method<br>Sample # 180111 |
| Method Code                         |

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 180111

### Method Precision Report

Secondary & Micronutrients

Issue Date : 02/28/2018

| 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 |
|-------------|-----------------------------------------------------------------------------|-------------------|---------------------------------|--------|--------|-----------------|----------------|--------------------|-------------------|------------------|----------------------|-------|
| 010.60      | Total Nitrogen, Combustion (%)                                              | 9                 | 8                               | 0.5689 | 0.0387 | 0.0381          | 0.0094         | 0.0393             | 6.71%             | 1.65%            | 6.91%                | 4.186 |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorganic 965.09 (18%)              | 26                | 22                              | 18.95  | 1.480  | 1.471           | 0.2217         | 1.488              | 7.77%             | 1.17%            | 7.85%                | 6.713 |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.03A-C, w/dual acid (18%)       | 13                | 11                              | 19.08  | 1.072  | 1.051           | 0.3016         | 1.093              | 5.51%             | 1.58%            | 5.73%                | 3.625 |
| 101.99      | Acid Soluble Calcium, Other (18%)                                           | 11                | 10                              | 18.32  | 1.654  | 1.648           | 0.1931         | 1.660              | 8.99%             | 1.05%            | 9.06%                | 8.593 |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elemental (16%)                     | 16                | 14                              | 16.56  | 0.6090 | 0.5930          | 0.1958         | 0.6245             | 3.58%             | 1.18%            | 3.77%                | 3.190 |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03 modified w/9:3 HNO3:HCl (16%) | 12                | 10                              | 17.09  | 1.613  | 1.588           | 0.4031         | 1.638              | 9.29%             | 2.36%            | 9.59%                | 4.064 |
| 148.99      | Total Sulfur, Other (16%)                                                   | 15                | 13                              | 16.37  | 0.7805 | 0.7708          | 0.1743         | 0.7902             | 4.71%             | 1.06%            | 4.83%                | 4.534 |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)                              | 11                | 9                               | 0.4806 | 0.0322 | 0.0314          | 0.0102         | 0.0330             | 6.53%             | 2.13%            | 6.87%                | 3.233 |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982.01 (0.5%)                     | 17                | 14                              | 0.5157 | 0.0310 | 0.0306          | 0.0072         | 0.0314             | 5.94%             | 1.39%            | 6.10%                | 4.378 |
| 165.99      | Acid Soluble Boron , Other (0.5%)                                           | 25                | 23                              | 0.5001 | 0.0408 | 0.0403          | 0.0092         | 0.0413             | 8.06%             | 1.83%            | 8.27%                | 4.508 |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)                                | 9                 | 9                               | 0.4222 | 0.0833 | 0.0823          | 0.0176         | 0.0842             | 19.50%            | 4.18%            | 19.94%               | 4.773 |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                                           | 13                | 11                              | 13.98  | 3.936  | 3.900           | 0.7479         | 3.971              | 27.90%            | 5.35%            | 28.41%               | 5.310 |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                                             | 10                | 9                               | 1.705  | 0.5587 | 0.5562          | 0.0750         | 0.5612             | 32.62%            | 4.40%            | 32.92%               | 7.482 |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                                             | 12                | 10                              | 4.324  | 0.4735 | 0.4110          | 0.3326         | 0.5287             | 9.50%             | 7.69%            | 12.23%               | 1.590 |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)                             | 10                | 9                               | 1.501  | 0.0507 | 0.0491          | 0.0180         | 0.0523             | 3.27%             | 1.20%            | 3.48%                | 2.902 |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorganic 965.09 (1.5%)               | 23                | 20                              | 1.523  | 0.0863 | 0.0848          | 0.0227         | 0.0878             | 5.57%             | 1.49%            | 5.76%                | 3.870 |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03A-C, w/dual acid (1.5%)        | 14                | 12                              | 1.540  | 0.0551 | 0.0526          | 0.0230         | 0.0574             | 3.42%             | 1.49%            | 3.73%                | 2.500 |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                                            | 13                | 11                              | 1.499  | 0.1838 | 0.1825          | 0.0312         | 0.1851             | 12.18%            | 2.08%            | 12.35%               | 5.936 |

Notes: Precision data calculated when 8 or more Tests included.

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

# Methods: 113

Sample # 180111

Lab Values

# Labs Reporting: 87

Secondary & Micronutrients

Issue Date : 02/28/2018

| Method Code | Analyte Name and Method (Units)                      | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                      |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 001.99      | Ammoniacal Nitrogen, Other (%)                       | 0096     | 0.3050   | 0.0500 | 1.397         | 1.852  | 0.0343 | 3       | -0.59               |                  | 0    |
| 001.99      | Ammoniacal Nitrogen, Other (%)                       | 0511     | 0.3500   | 0.0000 | 1.397         | 1.852  | 0.0343 | 3       | -0.57               |                  | 0    |
| 001.99      | Ammoniacal Nitrogen, Other (%)                       | 0524     | 3.535    | 0.0530 | 1.397         | 1.852  | 0.0343 | 3       | 1.15                |                  | 0    |
| 002.99      | Nitrate Nitrogen, Other (%)                          | 0511     | 0.0000   | 0.0000 |               |        |        | 0       |                     |                  | 4    |
| 010.12      | Total Nitrogen, Salicylic (%)                        | 0117     | 13.00    | 0.2000 |               |        |        | 1       |                     |                  | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0521     | 0.4835   | 0.0000 | 0.5811        | 0.0347 | 0.0126 | 9       | -2.60               | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0325     | 0.5650   | 0.0300 | 0.5811        | 0.0347 | 0.0126 | 9       | -0.43               | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0389     | 0.5700   | 0.0000 | 0.5811        | 0.0347 | 0.0126 | 9       | -0.29               | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0292     | 0.5700   | 0.0200 | 0.5811        | 0.0347 | 0.0126 | 9       | -0.29               | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0354     | 0.5710   | 0.0000 | 0.5811        | 0.0347 | 0.0126 | 9       | -0.27               | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0482     | 0.5850   | 0.0100 | 0.5811        | 0.0347 | 0.0126 | 9       | 0.10                | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0483     | 0.5865   | 0.0030 | 0.5811        | 0.0347 | 0.0126 | 9       | 0.14                | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0511     | 0.6200   | 0.0000 | 0.5811        | 0.0347 | 0.0126 | 9       | 1.04                | OK               | 0    |
| 010.60      | Total Nitrogen, Combustion (%)                       | 0096     | 0.7050   | 0.0500 | 0.5811        | 0.0347 | 0.0126 | 9       | 3.30                | OK               | 0    |
| 010.99      | Total Nitrogen, Other (%)                            | 0524     | 0.5212   | 0.0030 |               |        |        | 1       |                     |                  | 0    |
| 020.20      | Total Phosphorus as P2O5, Spectrophotometric ... (%) | 0292     | 0.0900   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                    | 0389     | 0.0100   | 0.0000 | 0.0308        | 0.0299 | 0.0027 | 4       | -0.70               |                  | 0    |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                    | 0524     | 0.0163   | 0.0006 | 0.0308        | 0.0299 | 0.0027 | 4       | -0.49               |                  | 0    |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                    | 0521     | 0.0220   | 0.0000 | 0.0308        | 0.0299 | 0.0027 | 4       | -0.30               |                  | 0    |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                    | 0483     | 0.0750   | 0.0100 | 0.0308        | 0.0299 | 0.0027 | 4       | 1.48                |                  | 0    |
| 020.50      | Total Phosphorus as P2O5, ICP (%)                    | 0511     | 0.0000   | 0.0000 | 0.0308        | 0.0299 | 0.0027 | 4       |                     |                  | 4    |
| 020.99      | Total Phosphorus as P2O5, Other (%)                  | 0515     | 0.0141   | 0.0025 |               |        |        | 1       |                     |                  | 0    |
| 041.50      | Direct Available Phosphorus as P2O5, ICP (%)         | 0325     | 0.1000   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 041.51      | Direct Available Phosphorus as P2O5, ICP, Cit... (%) | 0511     | 0.0000   | 0.0000 |               |        |        | 0       |                     |                  | 4    |
| 041.60      | Direct Available Phosphorus as P2O5, Citrate-... (%) | 0354     | 0.0925   | 0.0030 |               |        |        | 1       |                     |                  | 0    |
| 050.51      | Soluble Potassium as K2O, ICP (Citrate) (%)          | 0511     | 0.0400   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 050.51      | Soluble Potassium as K2O, ICP (Citrate) (%)          | 0483     | 0.0600   | 0.0200 |               |        |        | 2       |                     |                  | 0    |
| 050.52      | Soluble Potassium as K2O, ICP (Citrate-EDTA) (%)     | 0354     | 0.0900   | 0.0180 |               |        |        | 2       |                     |                  | 0    |
| 050.52      | Soluble Potassium as K2O, ICP (Citrate-EDTA) (%)     | 0423     | 0.1020   | 0.0060 |               |        |        | 2       |                     |                  | 0    |
| 050.99      | Soluble Potassium as K2O, Other (%)                  | 0389     | 0.0605   | 0.0010 | 0.0815        | 0.0193 | 0.0056 | 5       | -1.09               |                  | 0    |
| 050.99      | Soluble Potassium as K2O, Other (%)                  | 0482     | 0.0700   | 0.0200 | 0.0815        | 0.0193 | 0.0056 | 5       | -0.60               |                  | 0    |
| 050.99      | Soluble Potassium as K2O, Other (%)                  | 0524     | 0.0732   | 0.0069 | 0.0815        | 0.0193 | 0.0056 | 5       | -0.43               |                  | 0    |
| 050.99      | Soluble Potassium as K2O, Other (%)                  | 0325     | 0.1000   | 0.0000 | 0.0815        | 0.0193 | 0.0056 | 5       | 0.96                |                  | 0    |

| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 050.99      | Soluble Potassium as K2O, Other (%)                    | 0521     | 0.1039   | 0.0000 | 0.0815        | 0.0193 | 0.0056 | 5       | 1.16                |                  | 0    |
| 060.00      | Water (Free), Vacuum Oven (%)                          | 0096     | 0.8450   | 0.1500 |               |        |        | 1       |                     |                  | 0    |
| 060.30      | Water (Free), AFPC No. 2B (105°C oven for 2 h... (%)   | 0518     | 0.8800   | 0.0600 |               |        |        | 2       |                     |                  | 0    |
| 060.30      | Water (Free), AFPC No. 2B (105°C oven for 2 h... (%)   | 0055     | 2.850    | 1.500  |               |        |        | 2       |                     |                  | 0    |
| 060.99      | Water (Free), Other (%)                                | 0055     | 0.6050   | 0.0100 |               |        |        | 2       |                     |                  | 0    |
| 060.99      | Water (Free), Other (%)                                | 0510     | 0.9077   | 0.0116 |               |        |        | 2       |                     |                  | 0    |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)       | 0307     | 18.34    | 0.8500 | 19.11         | 0.7036 | 0.6800 | 5       | -1.10               |                  | 0    |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)       | 0534     | 18.47    | 0.5400 | 19.11         | 0.7036 | 0.6800 | 5       | -0.91               |                  | 0    |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)       | 0157     | 19.15    | 0.9000 | 19.11         | 0.7036 | 0.6800 | 5       | 0.06                |                  | 0    |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)       | 0029     | 19.69    | 0.3000 | 19.11         | 0.7036 | 0.6800 | 5       | 0.82                |                  | 0    |
| 101.00      | Acid Soluble Calcium, AA, inorganic 965.09 (18%)       | 0040     | 19.91    | 0.8100 | 19.11         | 0.7036 | 0.6800 | 5       | 1.13                |                  | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0542     | 7.373    | 1.495  | 18.96         | 1.726  | 0.2746 | 25      | -6.71               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0035     | 15.95    | 0.1000 | 18.96         | 1.726  | 0.2746 | 25      | -1.74               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0511     | 16.54    | 0.0000 | 18.96         | 1.726  | 0.2746 | 25      | -1.40               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0482     | 17.10    | 0.6000 | 18.96         | 1.726  | 0.2746 | 25      | -1.08               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0230     | 17.45    | 0.1000 | 18.96         | 1.726  | 0.2746 | 25      | -0.88               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0073     | 17.92    | 0.8800 | 18.96         | 1.726  | 0.2746 | 25      | -0.60               | Low              | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0324     | 18.05    | 0.1000 | 18.96         | 1.726  | 0.2746 | 25      | -0.53               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0102     | 18.13    | 0.0987 | 18.96         | 1.726  | 0.2746 | 25      | -0.48               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0354     | 18.72    | 0.0620 | 18.96         | 1.726  | 0.2746 | 25      | -0.14               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0377     | 18.74    | 0.0000 | 18.96         | 1.726  | 0.2746 | 25      | -0.13               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0096     | 18.76    | 0.0800 | 18.96         | 1.726  | 0.2746 | 25      | -0.12               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0157     | 18.90    | 0.0000 | 18.96         | 1.726  | 0.2746 | 25      | -0.04               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0405     | 18.90    | 0.0000 | 18.96         | 1.726  | 0.2746 | 25      | -0.04               | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0486     | 19.04    | 0.0500 | 18.96         | 1.726  | 0.2746 | 25      | 0.04                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0472     | 19.07    | 0.1900 | 18.96         | 1.726  | 0.2746 | 25      | 0.06                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0231     | 19.08    | 0.0500 | 18.96         | 1.726  | 0.2746 | 25      | 0.07                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0255     | 19.17    | 1.269  | 18.96         | 1.726  | 0.2746 | 25      | 0.12                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0444     | 19.69    | 0.2100 | 18.96         | 1.726  | 0.2746 | 25      | 0.42                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0402     | 19.93    | 0.1200 | 18.96         | 1.726  | 0.2746 | 25      | 0.56                | OK               | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0234     | 20.61    | 0.1300 | 18.96         | 1.726  | 0.2746 | 25      | 0.95                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0452     | 20.71    | 0.1700 | 18.96         | 1.726  | 0.2746 | 25      | 1.01                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0325     | 20.80    | 0.2000 | 18.96         | 1.726  | 0.2746 | 25      | 1.06                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0433     | 20.91    | 0.0200 | 18.96         | 1.726  | 0.2746 | 25      | 1.13                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0451     | 21.82    | 0.8900 | 18.96         | 1.726  | 0.2746 | 25      | 1.65                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0541     | 26.69    | 0.0500 | 18.96         | 1.726  | 0.2746 | 25      | 4.47                | High             | 0    |
| 101.30      | Acid Soluble Calcium, ICP, test portion inorg... (18%) | 0483     | 21.95    | 2.300  | 18.96         | 1.726  | 0.2746 | 25      | 1.73                | High             | 1    |
| 101.32      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0547     | 19.13    | 0.7300 | 19.49         | 0.4770 | 0.2457 | 3       | -0.76               |                  | 0    |
| 101.32      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0521     | 19.31    | 0.0000 | 19.49         | 0.4770 | 0.2457 | 3       | -0.38               |                  | 0    |
| 101.32      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0423     | 20.03    | 0.0070 | 19.49         | 0.4770 | 0.2457 | 3       | 1.13                |                  | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0494     | 10.90    | 0.3446 | 18.83         | 1.039  | 0.3484 | 13      | -7.63               | Low              | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0527     | 18.03    | 0.0050 | 18.83         | 1.039  | 0.3484 | 13      | -0.77               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0136     | 18.27    | 0.0600 | 18.83         | 1.039  | 0.3484 | 13      | -0.54               | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0025     | 18.29    | 1.240  | 18.83         | 1.039  | 0.3484 | 13      | -0.52               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0037     | 18.36    | 0.3340 | 18.83         | 1.039  | 0.3484 | 13      | -0.45               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0177     | 18.36    | 0.0520 | 18.83         | 1.039  | 0.3484 | 13      | -0.45               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0023     | 18.67    | 1.518  | 18.83         | 1.039  | 0.3484 | 13      | -0.15               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0117     | 18.69    | 0.5300 | 18.83         | 1.039  | 0.3484 | 13      | -0.14               | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0034     | 19.08    | 0.0100 | 18.83         | 1.039  | 0.3484 | 13      | 0.24                | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0055     | 19.19    | 0.0200 | 18.83         | 1.039  | 0.3484 | 13      | 0.35                | OK               | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0292     | 19.84    | 0.1800 | 18.83         | 1.039  | 0.3484 | 13      | 0.97                | High             | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0421     | 20.34    | 0.0700 | 18.83         | 1.039  | 0.3484 | 13      | 1.45                | High             | 0    |
| 101.33      | Acid Soluble Calcium, ICP, test portion 2006.... (18%) | 0546     | 21.48    | 0.1660 | 18.83         | 1.039  | 0.3484 | 13      | 2.55                | High             | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0510     | 13.54    | 0.0278 | 18.23         | 0.5793 | 0.0996 | 6       | -7.22               | Low              | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0544     | 18.18    | 0.2600 | 18.23         | 0.5793 | 0.0996 | 6       | -0.08               | OK               | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0522     | 18.21    | 0.0100 | 18.23         | 0.5793 | 0.0996 | 6       | -0.04               | OK               | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0493     | 18.30    | 0.1000 | 18.23         | 0.5793 | 0.0996 | 6       | 0.10                | OK               | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0476     | 18.40    | 0.1795 | 18.23         | 0.5793 | 0.0996 | 6       | 0.26                | OK               | 0    |
| 101.70      | Acid Soluble Calcium, Titrimetric (18%)                | 0500     | 18.95    | 0.0200 | 18.23         | 0.5793 | 0.0996 | 6       | 1.10                | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0476     | 14.13    | 0.5312 | 18.79         | 1.245  | 0.1610 | 11      | -3.50               | Low              | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0501     | 18.00    | 0.0000 | 18.79         | 1.245  | 0.1610 | 11      | -0.59               | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0508     | 18.08    | 0.0600 | 18.79         | 1.245  | 0.1610 | 11      | -0.53               | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0519     | 18.16    | 0.0900 | 18.79         | 1.245  | 0.1610 | 11      | -0.48               | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0523     | 18.20    | 0.6000 | 18.79         | 1.245  | 0.1610 | 11      | -0.44               | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0368     | 18.78    | 0.1094 | 18.79         | 1.245  | 0.1610 | 11      | -0.01               | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0389     | 18.82    | 0.0400 | 18.79         | 1.245  | 0.1610 | 11      | 0.02                | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0042     | 19.04    | 0.2800 | 18.79         | 1.245  | 0.1610 | 11      | 0.19                | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0371     | 19.75    | 0.0000 | 18.79         | 1.245  | 0.1610 | 11      | 0.72                | OK               | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0291     | 20.29    | 0.0100 | 18.79         | 1.245  | 0.1610 | 11      | 1.12                | High             | 0    |
| 101.99      | Acid Soluble Calcium, Other (18%)                      | 0489     | 25.40    | 0.0500 | 18.79         | 1.245  | 0.1610 | 11      | 4.96                | High             | 0    |
| 121.00      | Acid Soluble Magnesium, AA, inorganic 965.09 (%)       | 0516     | 1.531    | 0.0334 |               |        |        | 1       |                     |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0035     | 0.1030   | 0.0060 | 0.1089        | 0.0034 | 0.0022 | 5       | -1.53               |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0096     | 0.1100   | 0.0000 | 0.1089        | 0.0034 | 0.0022 | 5       | 0.29                |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0482     | 0.1100   | 0.0000 | 0.1089        | 0.0034 | 0.0022 | 5       | 0.29                |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0511     | 0.1100   | 0.0000 | 0.1089        | 0.0034 | 0.0022 | 5       | 0.29                |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0354     | 0.1115   | 0.0050 | 0.1089        | 0.0034 | 0.0022 | 5       | 0.68                |                  | 0    |
| 121.30      | Acid Soluble Magnesium, ICP, test portion ino... (%)   | 0483     | 0.1495   | 0.0370 | 0.1089        | 0.0034 | 0.0022 | 5       | 10.54               |                  | 1    |
| 121.32      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0423     | 0.1005   | 0.0110 |               |        |        | 2       |                     |                  | 0    |
| 121.32      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0521     | 0.1034   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 121.33      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0117     | 0.1129   | 0.0005 | 0.8333        | 1.431  | 0.0950 | 4       | -0.50               |                  | 0    |
| 121.33      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0494     | 0.1183   | 0.0020 | 0.8333        | 1.431  | 0.0950 | 4       | -0.50               |                  | 0    |
| 121.33      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0527     | 0.1220   | 0.0020 | 0.8333        | 1.431  | 0.0950 | 4       | -0.50               |                  | 0    |
| 121.33      | Acid Soluble Magnesium, ICP, test portion 200... (%)   | 0515     | 2.980    | 0.3755 | 0.8333        | 1.431  | 0.0950 | 4       | 1.50                |                  | 0    |
| 121.99      | Acid Soluble Magnesium, Other (%)                      | 0515     | 0.0998   | 0.0034 | 0.1011        | 0.0016 | 0.0037 | 3       | -0.78               |                  | 0    |
| 121.99      | Acid Soluble Magnesium, Other (%)                      | 0389     | 0.1005   | 0.0010 | 0.1011        | 0.0016 | 0.0037 | 3       | -0.35               |                  | 0    |
| 121.99      | Acid Soluble Magnesium, Other (%)                      | 0524     | 0.1029   | 0.0066 | 0.1011        | 0.0016 | 0.0037 | 3       | 1.13                |                  | 0    |



| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 143.99      | Elemental Sulfur, Other (%)                            | 0472     | 15.07    | 0.1400 | 15.97         | 0.9886 | 0.2668 | 4       | -0.91               |                  | 0    |
| 143.99      | Elemental Sulfur, Other (%)                            | 0255     | 15.17    | 0.8970 | 15.97         | 0.9886 | 0.2668 | 4       | -0.81               |                  | 0    |
| 143.99      | Elemental Sulfur, Other (%)                            | 0291     | 16.75    | 0.0100 | 15.97         | 0.9886 | 0.2668 | 4       | 0.78                |                  | 0    |
| 143.99      | Elemental Sulfur, Other (%)                            | 0389     | 16.91    | 0.0200 | 15.97         | 0.9886 | 0.2668 | 4       | 0.95                |                  | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0544     | 13.16    | 0.1700 | 15.80         | 0.7711 | 0.1225 | 8       | -3.14               | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0511     | 14.93    | 0.0000 | 15.80         | 0.7711 | 0.1225 | 8       | -1.03               | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0522     | 15.72    | 0.0300 | 15.80         | 0.7711 | 0.1225 | 8       | -0.10               | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0095     | 16.03    | 0.0200 | 15.80         | 0.7711 | 0.1225 | 8       | 0.27                | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0220     | 16.05    | 0.0200 | 15.80         | 0.7711 | 0.1225 | 8       | 0.30                | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0444     | 16.07    | 0.2400 | 15.80         | 0.7711 | 0.1225 | 8       | 0.32                | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0493     | 16.35    | 0.1000 | 15.80         | 0.7711 | 0.1225 | 8       | 0.65                | NA               | 0    |
| 145.00      | Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)   | 0027     | 16.60    | 0.4000 | 15.80         | 0.7711 | 0.1225 | 8       | 0.95                | NA               | 0    |
| 145.99      | Sulfate Sulfur, HCl soluble, Other (%)                 | 0486     | 15.56    | 0.2300 | 15.84         | 0.2877 | 0.3000 | 3       | -0.98               |                  | 0    |
| 145.99      | Sulfate Sulfur, HCl soluble, Other (%)                 | 0444     | 15.83    | 0.2100 | 15.84         | 0.2877 | 0.3000 | 3       | -0.04               |                  | 0    |
| 145.99      | Sulfate Sulfur, HCl soluble, Other (%)                 | 0518     | 16.13    | 0.4600 | 15.84         | 0.2877 | 0.3000 | 3       | 1.02                |                  | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0360     | 12.47    | 0.3700 | 16.36         | 0.5448 | 0.3186 | 7       | -6.47               | Low              | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0025     | 16.10    | 0.0200 | 16.36         | 0.5448 | 0.3186 | 7       | -0.44               | OK               | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0029     | 16.28    | 0.4400 | 16.36         | 0.5448 | 0.3186 | 7       | -0.14               | OK               | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0185     | 16.30    | 0.2000 | 16.36         | 0.5448 | 0.3186 | 7       | -0.11               | OK               | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0451     | 16.60    | 0.8000 | 16.36         | 0.5448 | 0.3186 | 7       | 0.39                | OK               | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0157     | 16.65    | 0.1000 | 16.36         | 0.5448 | 0.3186 | 7       | 0.47                | OK               | 0    |
| 148.00      | Total Sulfur, Combustion (16%)                         | 0136     | 17.07    | 0.3000 | 16.36         | 0.5448 | 0.3186 | 7       | 1.17                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0405     | 14.08    | 0.0000 | 16.45         | 0.6354 | 0.1839 | 15      | -3.72               | Low              | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0231     | 15.75    | 0.1000 | 16.45         | 0.6354 | 0.1839 | 15      | -1.09               | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0114     | 15.83    | 0.6300 | 16.45         | 0.6354 | 0.1839 | 15      | -0.98               | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0549     | 15.95    | 0.1000 | 16.45         | 0.6354 | 0.1839 | 15      | -0.78               | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0371     | 16.16    | 0.0600 | 16.45         | 0.6354 | 0.1839 | 15      | -0.45               | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0444     | 16.21    | 0.1800 | 16.45         | 0.6354 | 0.1839 | 15      | -0.37               | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0476     | 16.48    | 0.2640 | 16.45         | 0.6354 | 0.1839 | 15      | 0.05                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0055     | 16.49    | 0.5000 | 16.45         | 0.6354 | 0.1839 | 15      | 0.07                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0500     | 16.54    | 0.0000 | 16.45         | 0.6354 | 0.1839 | 15      | 0.15                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0545     | 16.56    | 0.0800 | 16.45         | 0.6354 | 0.1839 | 15      | 0.18                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0324     | 16.80    | 0.0000 | 16.45         | 0.6354 | 0.1839 | 15      | 0.56                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0534     | 16.81    | 0.0000 | 16.45         | 0.6354 | 0.1839 | 15      | 0.57                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0105     | 16.82    | 0.0900 | 16.45         | 0.6354 | 0.1839 | 15      | 0.58                | OK               | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0037     | 17.55    | 0.3550 | 16.45         | 0.6354 | 0.1839 | 15      | 1.74                | High             | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0157     | 17.90    | 0.4000 | 16.45         | 0.6354 | 0.1839 | 15      | 2.29                | High             | 0    |
| 148.01      | Total Sulfur, Gravimetric - sulfate and elem... (16%)  | 0230     | 15.30    | 1.800  | 16.45         | 0.6354 | 0.1839 | 15      | -1.80               | Low              | 1    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0494     | 10.44    | 0.1104 | 16.64         | 1.288  | 0.4077 | 11      | -4.81               | Low              | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0444     | 15.30    | 0.1400 | 16.64         | 1.288  | 0.4077 | 11      | -1.04               | Low              | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0117     | 15.96    | 0.3500 | 16.64         | 1.288  | 0.4077 | 11      | -0.53               | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0023     | 16.31    | 0.7180 | 16.64         | 1.288  | 0.4077 | 11      | -0.26               | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0177     | 16.44    | 0.0585 | 16.64         | 1.288  | 0.4077 | 11      | -0.15               | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0421     | 16.50    | 0.2000 | 16.64         | 1.288  | 0.4077 | 11      | -0.11               | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0102     | 16.68    | 0.5279 | 16.64         | 1.288  | 0.4077 | 11      | 0.03                | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0527     | 16.90    | 0.1280 | 16.64         | 1.288  | 0.4077 | 11      | 0.20                | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0292     | 17.62    | 0.1400 | 16.64         | 1.288  | 0.4077 | 11      | 0.76                | OK               | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0483     | 18.05    | 1.100  | 16.64         | 1.288  | 0.4077 | 11      | 1.10                | High             | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0546     | 21.11    | 1.012  | 16.64         | 1.288  | 0.4077 | 11      | 3.47                | High             | 0    |
| 148.07      | Total Sulfur, ICP, test portion as in 2006.03... (16%) | 0515     | 17.53    | 4.118  | 16.64         | 1.288  | 0.4077 | 11      | 0.69                | OK               | 1    |
| 148.99      | Total Sulfur, Other (16%)                              | 0523     | 11.10    | 0.4000 | 16.26         | 0.9753 | 0.1850 | 14      | -5.29               | Low              | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0040     | 15.38    | 0.4800 | 16.26         | 0.9753 | 0.1850 | 14      | -0.90               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0368     | 15.49    | 0.1977 | 16.26         | 0.9753 | 0.1850 | 14      | -0.80               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0096     | 15.65    | 0.2100 | 16.26         | 0.9753 | 0.1850 | 14      | -0.63               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0541     | 15.92    | 0.0600 | 16.26         | 0.9753 | 0.1850 | 14      | -0.35               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0501     | 16.00    | 0.0000 | 16.26         | 0.9753 | 0.1850 | 14      | -0.27               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0526     | 16.10    | 0.0000 | 16.26         | 0.9753 | 0.1850 | 14      | -0.17               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0220     | 16.15    | 0.0300 | 16.26         | 0.9753 | 0.1850 | 14      | -0.12               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0482     | 16.20    | 0.2000 | 16.26         | 0.9753 | 0.1850 | 14      | -0.06               | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0354     | 16.28    | 0.0620 | 16.26         | 0.9753 | 0.1850 | 14      | 0.02                | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0377     | 17.22    | 0.1900 | 16.26         | 0.9753 | 0.1850 | 14      | 0.98                | OK               | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0433     | 17.49    | 0.6100 | 16.26         | 0.9753 | 0.1850 | 14      | 1.25                | High             | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0452     | 17.50    | 0.0100 | 16.26         | 0.9753 | 0.1850 | 14      | 1.26                | High             | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0402     | 17.51    | 0.1400 | 16.26         | 0.9753 | 0.1850 | 14      | 1.28                | High             | 0    |
| 148.99      | Total Sulfur, Other (16%)                              | 0542     | 7.095    | 1.251  | 16.26         | 0.9753 | 0.1850 | 14      | -9.40               | Low              | 1    |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                         | 0524     | 15.54    | 0.3020 | 15.82         | 0.2681 | 0.1104 | 5       | -1.04               |                  | 0    |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                         | 0547     | 15.55    | 0.0300 | 15.82         | 0.2681 | 0.1104 | 5       | -1.04               |                  | 0    |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                         | 0519     | 15.90    | 0.0200 | 15.82         | 0.2681 | 0.1104 | 5       | 0.28                |                  | 0    |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                         | 0423     | 16.00    | 0.2000 | 15.82         | 0.2681 | 0.1104 | 5       | 0.66                |                  | 0    |
| 149.04      | Sulfur - HNO3 soluble, ICP (%)                         | 0521     | 16.13    | 0.0000 | 15.82         | 0.2681 | 0.1104 | 5       | 1.15                |                  | 0    |
| 151.00      | Acid Soluble Arsenic , AA, test portion as in...       | 0136     | 1.200    | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0102     | 0.3610   | 0.0000 | 1.813         | 1.074  | 0.0813 | 7       | -1.22               | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0389     | 1.385    | 0.0100 | 1.813         | 1.074  | 0.0813 | 7       | -0.36               | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0255     | 1.535    | 0.1490 | 1.813         | 1.074  | 0.0813 | 7       | -0.23               | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0523     | 1.535    | 0.3100 | 1.813         | 1.074  | 0.0813 | 7       | -0.23               | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0511     | 2.200    | 0.0000 | 1.813         | 1.074  | 0.0813 | 7       | 0.33                | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0501     | 2.250    | 0.1000 | 1.813         | 1.074  | 0.0813 | 7       | 0.37                | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0405     | 7.000    | 0.0000 | 1.813         | 1.074  | 0.0813 | 7       | 4.37                | NA               | 0    |
| 151.30      | Acid Soluble Arsenic , ICP (ppm)                       | 0541     | 2.185    | 0.7100 | 1.813         | 1.074  | 0.0813 | 7       | 0.31                | NA               | 1    |
| 151.33      | Acid Soluble Arsenic , ICP, 2006.03 modified ... (ppm) | 0527     | 1.707    | 0.0440 | 2.855         | 1.324  | 1.781  | 3       | -0.87               |                  | 0    |
| 151.33      | Acid Soluble Arsenic , ICP, 2006.03 modified ... (ppm) | 0494     | 2.555    | 0.4330 | 2.855         | 1.324  | 1.781  | 3       | -0.23               |                  | 0    |
| 151.33      | Acid Soluble Arsenic , ICP, 2006.03 modified ... (ppm) | 0515     | 4.304    | 4.867  | 2.855         | 1.324  | 1.781  | 3       | 1.09                |                  | 0    |
| 151.34      | Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)      | 0368     | 4.750    | 0.3000 |               |        |        | 1       |                     |                  | 0    |
| 151.34      | Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)      | 0515     | 0.6665   | 1.333  |               |        |        | 1       |                     |                  | 4    |
| 151.99      | Acid Soluble Arsenic , Other (ppm)                     | 0220     | 0.9000   | 0.0000 | 1.266         | 0.4406 | 0.0628 | 3       | -0.83               |                  | 0    |
| 151.99      | Acid Soluble Arsenic , Other (ppm)                     | 0476     | 1.143    | 0.0985 | 1.266         | 0.4406 | 0.0628 | 3       | -0.28               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 151.99      | Acid Soluble Arsenic , Other (ppm)                      | 0519     | 1.755    | 0.0900 | 1.266         | 0.4406 | 0.0628 | 3       | 1.11                |                  | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0531     | 0.4450   | 0.0100 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.92               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0169     | 0.4465   | 0.0130 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.89               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0535     | 0.4550   | 0.0100 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.71               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0540     | 0.4600   | 0.0200 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.60               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0220     | 0.4790   | 0.0020 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.19               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0539     | 0.4800   | 0.0200 | 0.4877        | 0.0430 | 0.0136 | 10      | -0.17               | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0029     | 0.5115   | 0.0170 | 0.4877        | 0.0430 | 0.0136 | 10      | 0.51                | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0055     | 0.5180   | 0.0040 | 0.4877        | 0.0430 | 0.0136 | 10      | 0.66                | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0534     | 0.5300   | 0.0200 | 0.4877        | 0.0430 | 0.0136 | 10      | 0.92                | OK               | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0489     | 0.6600   | 0.0200 | 0.4877        | 0.0430 | 0.0136 | 10      | 3.73                | High             | 0    |
| 165.00      | Acid Soluble Boron , Spectrophotometric (0.5%)          | 0309     | 0.4000   | 0.0800 | 0.4877        | 0.0430 | 0.0136 | 10      | -1.90               | Low              | 1    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0324     | 0.4650   | 0.0500 | 0.5186        | 0.0404 | 0.0119 | 17      | -1.33               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0494     | 0.4716   | 0.0082 | 0.5186        | 0.0404 | 0.0119 | 17      | -1.16               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0486     | 0.4750   | 0.0100 | 0.5186        | 0.0404 | 0.0119 | 17      | -1.08               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0354     | 0.4865   | 0.0050 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.79               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0023     | 0.4950   | 0.0000 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.58               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0292     | 0.5000   | 0.0000 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.46               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0537     | 0.5015   | 0.0210 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.42               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0102     | 0.5086   | 0.0214 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.25               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0377     | 0.5130   | 0.0080 | 0.5186        | 0.0404 | 0.0119 | 17      | -0.14               | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0234     | 0.5250   | 0.0100 | 0.5186        | 0.0404 | 0.0119 | 17      | 0.16                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0444     | 0.5250   | 0.0100 | 0.5186        | 0.0404 | 0.0119 | 17      | 0.16                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0389     | 0.5380   | 0.0080 | 0.5186        | 0.0404 | 0.0119 | 17      | 0.48                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0521     | 0.5440   | 0.0000 | 0.5186        | 0.0404 | 0.0119 | 17      | 0.63                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0073     | 0.5520   | 0.0460 | 0.5186        | 0.0404 | 0.0119 | 17      | 0.83                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0136     | 0.5600   | 0.0000 | 0.5186        | 0.0404 | 0.0119 | 17      | 1.03                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0433     | 0.5765   | 0.0050 | 0.5186        | 0.0404 | 0.0119 | 17      | 1.43                | OK               | 0    |
| 165.30      | Acid Soluble Boron , ICP, test portion in 982... (0.5%) | 0542     | 0.6200   | 0.0000 | 0.5186        | 0.0404 | 0.0119 | 17      | 2.51                | High             | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0476     | 0.3852   | 0.0006 | 0.5040        | 0.0384 | 0.0101 | 25      | -3.09               | Low              | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0472     | 0.4450   | 0.0100 | 0.5040        | 0.0384 | 0.0101 | 25      | -1.54               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0527     | 0.4605   | 0.0270 | 0.5040        | 0.0384 | 0.0101 | 25      | -1.13               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0368     | 0.4723   | 0.0095 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.83               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0519     | 0.4750   | 0.0100 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.75               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0231     | 0.4900   | 0.0200 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.36               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0325     | 0.4900   | 0.0400 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.36               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0452     | 0.4900   | 0.0000 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.36               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0025     | 0.4915   | 0.0043 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.33               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0421     | 0.4915   | 0.0010 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.33               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0482     | 0.4950   | 0.0100 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.23               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0230     | 0.4960   | 0.0100 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.21               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0515     | 0.4976   | 0.0007 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.17               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                       | 0405     | 0.4990   | 0.0000 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.13               | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                   | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                   |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0501     | 0.5000   | 0.0000 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.10               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0423     | 0.5030   | 0.0040 | 0.5040        | 0.0384 | 0.0101 | 25      | -0.03               | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0117     | 0.5085   | 0.0015 | 0.5040        | 0.0384 | 0.0101 | 25      | 0.12                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0508     | 0.5100   | 0.0200 | 0.5040        | 0.0384 | 0.0101 | 25      | 0.16                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0042     | 0.5195   | 0.0090 | 0.5040        | 0.0384 | 0.0101 | 25      | 0.40                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0511     | 0.5200   | 0.0000 | 0.5040        | 0.0384 | 0.0101 | 25      | 0.42                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0524     | 0.5539   | 0.0209 | 0.5040        | 0.0384 | 0.0101 | 25      | 1.30                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0483     | 0.5590   | 0.0320 | 0.5040        | 0.0384 | 0.0101 | 25      | 1.43                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0546     | 0.5645   | 0.0130 | 0.5040        | 0.0384 | 0.0101 | 25      | 1.58                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0291     | 0.5750   | 0.0100 | 0.5040        | 0.0384 | 0.0101 | 25      | 1.85                | OK               | 0    |
| 165.99      | Acid Soluble Boron , Other (0.5%)                 | 0255     | 0.6960   | 0.0000 | 0.5040        | 0.0384 | 0.0101 | 25      | 5.00                | High             | 0    |
| 171.00      | Water Soluble Boron , AA, JAOAC 52.950 (%)        | 0500     | 0.4700   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0220     | 0.2900   | 0.0000 | 0.4222        | 0.0944 | 0.0200 | 9       | -1.29               | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0535     | 0.3700   | 0.0200 | 0.4222        | 0.0944 | 0.0200 | 9       | -0.51               | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0540     | 0.3700   | 0.0200 | 0.4222        | 0.0944 | 0.0200 | 9       | -0.51               | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0531     | 0.3750   | 0.0100 | 0.4222        | 0.0944 | 0.0200 | 9       | -0.46               | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0539     | 0.3750   | 0.0100 | 0.4222        | 0.0944 | 0.0200 | 9       | -0.46               | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0533     | 0.4900   | 0.0400 | 0.4222        | 0.0944 | 0.0200 | 9       | 0.66                | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0538     | 0.5000   | 0.0200 | 0.4222        | 0.0944 | 0.0200 | 9       | 0.76                | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0536     | 0.5050   | 0.0500 | 0.4222        | 0.0944 | 0.0200 | 9       | 0.81                | NA               | 0    |
| 171.10      | Water Soluble Boron , Spectrophotometric (%)      | 0532     | 0.5250   | 0.0100 | 0.4222        | 0.0944 | 0.0200 | 9       | 1.00                | NA               | 0    |
| 171.99      | Water Soluble Boron , Other (%)                   | 0444     | 0.2950   | 0.0100 |               |        |        | 2       |                     |                  | 0    |
| 171.99      | Water Soluble Boron , Other (%)                   | 0402     | 0.5000   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 181.00      | Acid Soluble Cadmium , AA, test portion as in...  | 0136     | 0.4000   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0444     | 0.2300   | 0.0400 | 0.3204        | 0.0956 | 0.0213 | 7       | -0.86               | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0255     | 0.2380   | 0.0260 | 0.3204        | 0.0956 | 0.0213 | 7       | -0.78               | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0389     | 0.2900   | 0.0200 | 0.3204        | 0.0956 | 0.0213 | 7       | -0.29               | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0102     | 0.3010   | 0.0000 | 0.3204        | 0.0956 | 0.0213 | 7       | -0.18               | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0524     | 0.3137   | 0.0430 | 0.3204        | 0.0956 | 0.0213 | 7       | -0.06               | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0541     | 0.4300   | 0.0000 | 0.3204        | 0.0956 | 0.0213 | 7       | 1.04                | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0452     | 0.4400   | 0.0200 | 0.3204        | 0.0956 | 0.0213 | 7       | 1.13                | NA               | 0    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0511     | 0.0000   | 0.0000 | 0.3204        | 0.0956 | 0.0213 | 7       |                     |                  | 4    |
| 181.30      | Acid Soluble Cadmium , ICP (ppm)                  | 0377     | 0.0500   | 0.1000 | 0.3204        | 0.0956 | 0.0213 | 7       |                     |                  | 4    |
| 181.33      | Acid Soluble Cadmium , ICP, 2006.03 modified ...  | 0527     | 0.2955   | 0.0030 |               |        |        | 2       |                     |                  | 0    |
| 181.33      | Acid Soluble Cadmium , ICP, 2006.03 modified ...  | 0494     | 0.3016   | 0.1061 |               |        |        | 2       |                     |                  | 0    |
| 181.33      | Acid Soluble Cadmium , ICP, 2006.03 modified ...  | 0515     | 2.790    | 5.579  |               |        |        | 2       |                     |                  | 4    |
| 181.34      | Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm) | 0515     | 0.2305   | 0.0650 | 0.4142        | 0.1686 | 0.2703 | 3       | -1.09               |                  | 0    |
| 181.34      | Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm) | 0368     | 0.4500   | 0.3000 | 0.4142        | 0.1686 | 0.2703 | 3       | 0.21                |                  | 0    |
| 181.34      | Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm) | 0230     | 0.5620   | 0.4460 | 0.4142        | 0.1686 | 0.2703 | 3       | 0.88                |                  | 0    |
| 181.99      | Acid Soluble Cadmium , Other (ppm)                | 0476     | 0.1640   | 0.0098 | 0.2147        | 0.0450 | 0.0433 | 3       | -1.13               |                  | 0    |
| 181.99      | Acid Soluble Cadmium , Other (ppm)                | 0519     | 0.2300   | 0.0200 | 0.2147        | 0.0450 | 0.0433 | 3       | 0.34                |                  | 0    |
| 181.99      | Acid Soluble Cadmium , Other (ppm)                | 0220     | 0.2500   | 0.1000 | 0.2147        | 0.0450 | 0.0433 | 3       | 0.79                |                  | 0    |
| 190.99      | Water Soluble Chlorine, Other (%)                 | 0511     | 0.1770   | 0.0000 |               |        |        | 1       |                     |                  | 0    |

| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0541     | 0.1000   | 0.1200 | 13.54         | 4.794  | 0.8104 | 13      | -2.80               | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0501     | 7.150    | 0.1000 | 13.54         | 4.794  | 0.8104 | 13      | -1.33               | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0377     | 8.855    | 3.010  | 13.54         | 4.794  | 0.8104 | 13      | -0.98               | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0389     | 9.400    | 1.000  | 13.54         | 4.794  | 0.8104 | 13      | -0.86               | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0102     | 13.58    | 0.5150 | 13.54         | 4.794  | 0.8104 | 13      | 0.01                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0096     | 14.05    | 1.100  | 13.54         | 4.794  | 0.8104 | 13      | 0.11                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0444     | 14.07    | 0.7800 | 13.54         | 4.794  | 0.8104 | 13      | 0.11                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0035     | 15.95    | 3.500  | 13.54         | 4.794  | 0.8104 | 13      | 0.50                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0405     | 16.00    | 0.0000 | 13.54         | 4.794  | 0.8104 | 13      | 0.51                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0452     | 16.29    | 0.0200 | 13.54         | 4.794  | 0.8104 | 13      | 0.57                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0523     | 17.96    | 0.3900 | 13.54         | 4.794  | 0.8104 | 13      | 0.92                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0482     | 18.20    | 0.0000 | 13.54         | 4.794  | 0.8104 | 13      | 0.97                | NA               | 0    |
| 191.30      | Acid Soluble Chromium , ICP (ppm)                      | 0511     | 18.20    | 0.0000 | 13.54         | 4.794  | 0.8104 | 13      | 0.97                | NA               | 0    |
| 191.32      | Acid Soluble Chromium , ICP, 2006.03 (ppm)             | 0542     | 24.82    | 0.0800 |               |        |        | 1       |                     |                  | 0    |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified... (ppm) | 0527     | 20.51    | 0.0810 | 23.60         | 2.728  | 1.458  | 5       | -1.13               |                  | 0    |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified... (ppm) | 0037     | 22.00    | 0.0990 | 23.60         | 2.728  | 1.458  | 5       | -0.59               |                  | 0    |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified... (ppm) | 0494     | 22.97    | 1.120  | 23.60         | 2.728  | 1.458  | 5       | -0.23               |                  | 0    |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified... (ppm) | 0117     | 25.01    | 0.2700 | 23.60         | 2.728  | 1.458  | 5       | 0.52                |                  | 0    |
| 191.33      | Acid Soluble Chromium , ICP, 2006.03 modified... (ppm) | 0515     | 27.51    | 5.722  | 23.60         | 2.728  | 1.458  | 5       | 1.43                |                  | 0    |
| 191.34      | Acid Soluble Chromium , ICP, EPA 3050B/6010C (ppm)     | 0230     | 15.70    | 0.6000 | 16.23         | 0.5686 | 0.8790 | 3       | -0.93               |                  | 0    |
| 191.34      | Acid Soluble Chromium , ICP, EPA 3050B/6010C (ppm)     | 0368     | 16.15    | 0.3000 | 16.23         | 0.5686 | 0.8790 | 3       | -0.13               |                  | 0    |
| 191.34      | Acid Soluble Chromium , ICP, EPA 3050B/6010C (ppm)     | 0515     | 16.83    | 1.737  | 16.23         | 0.5686 | 0.8790 | 3       | 1.06                |                  | 0    |
| 191.99      | Acid Soluble Chromium , Other (ppm)                    | 0519     | 7.700    | 0.0200 | 14.45         | 5.851  | 0.0090 | 3       | -1.15               |                  | 0    |
| 191.99      | Acid Soluble Chromium , Other (ppm)                    | 0476     | 17.66    | 0.0071 | 14.45         | 5.851  | 0.0090 | 3       | 0.55                |                  | 0    |
| 191.99      | Acid Soluble Chromium , Other (ppm)                    | 0220     | 18.00    | 0.0000 | 14.45         | 5.851  | 0.0090 | 3       | 0.61                |                  | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0377     | 0.7850   | 0.4100 | 1.613         | 0.6824 | 0.1101 | 10      | -1.13               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0405     | 1.000    | 0.0000 | 1.613         | 0.6824 | 0.1101 | 10      | -0.84               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0511     | 1.140    | 0.0000 | 1.613         | 0.6824 | 0.1101 | 10      | -0.64               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0102     | 1.256    | 0.0880 | 1.613         | 0.6824 | 0.1101 | 10      | -0.49               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0524     | 1.373    | 0.0532 | 1.613         | 0.6824 | 0.1101 | 10      | -0.33               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0035     | 1.535    | 0.0900 | 1.613         | 0.6824 | 0.1101 | 10      | -0.11               | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0482     | 2.075    | 0.0500 | 1.613         | 0.6824 | 0.1101 | 10      | 0.63                | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0389     | 2.120    | 0.2000 | 1.613         | 0.6824 | 0.1101 | 10      | 0.69                | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0452     | 2.395    | 0.0100 | 1.613         | 0.6824 | 0.1101 | 10      | 1.07                | OK               | 0    |
| 202.30      | Acid Soluble Cobalt , ICP (ppm)                        | 0096     | 2.450    | 0.2000 | 1.613         | 0.6824 | 0.1101 | 10      | 1.14                | OK               | 0    |
| 202.32      | Acid Soluble Cobalt , ICP, 2006.03 (ppm)               | 0423     | 2.115    | 0.0100 |               |        |        | 2       |                     |                  | 0    |
| 202.32      | Acid Soluble Cobalt , ICP, 2006.03 (ppm)               | 0542     | 2.992    | 0.0260 |               |        |        | 2       |                     |                  | 0    |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w... (ppm) | 0546     | 1.888    | 0.0920 | 2.927         | 1.467  | 1.491  | 5       | -0.71               |                  | 0    |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w... (ppm) | 0527     | 2.278    | 0.1020 | 2.927         | 1.467  | 1.491  | 5       | -0.44               |                  | 0    |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w... (ppm) | 0037     | 2.325    | 0.0150 | 2.927         | 1.467  | 1.491  | 5       | -0.41               |                  | 0    |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w... (ppm) | 0494     | 2.635    | 0.0298 | 2.927         | 1.467  | 1.491  | 5       | -0.20               |                  | 0    |
| 202.33      | Acid Soluble Cobalt , ICP, 2006.03 modified w... (ppm) | 0515     | 5.508    | 7.217  | 2.927         | 1.467  | 1.491  | 5       | 1.76                |                  | 0    |
| 202.34      | Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)       | 0230     | 1.395    | 0.0500 | 1.745         | 0.3468 | 0.1403 | 3       | -1.01               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                      | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                      |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 202.34      | Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)     | 0368     | 1.750    | 0.3000 | 1.745         | 0.3468 | 0.1403 | 3       | 0.02                |                  | 0    |
| 202.34      | Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)     | 0515     | 2.089    | 0.0710 | 1.745         | 0.3468 | 0.1403 | 3       | 0.99                |                  | 0    |
| 202.99      | Acid Soluble Cobalt , Other (ppm)                    | 0519     | 0.5800   | 0.0400 | 1.781         | 0.8513 | 0.0526 | 4       | -1.41               |                  | 0    |
| 202.99      | Acid Soluble Cobalt , Other (ppm)                    | 0476     | 1.774    | 0.0014 | 1.781         | 0.8513 | 0.0526 | 4       | -0.01               |                  | 0    |
| 202.99      | Acid Soluble Cobalt , Other (ppm)                    | 0220     | 2.350    | 0.1000 | 1.781         | 0.8513 | 0.0526 | 4       | 0.67                |                  | 0    |
| 202.99      | Acid Soluble Cobalt , Other (ppm)                    | 0255     | 2.420    | 0.0690 | 1.781         | 0.8513 | 0.0526 | 4       | 0.75                |                  | 0    |
| 221.03      | Acid Soluble Copper , AA, 965.09, test portio... (%) | 0037     | 4.610    | 0.3690 |               |        |        | 1       |                     |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0483     | 0.0002   | 0.0002 | 0.0009        | 0.0010 | 0.0001 | 5       | -0.64               |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0096     | 0.0002   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       | -0.64               |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0230     | 0.0002   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       | -0.64               |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0354     | 0.0020   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       | 0.93                |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0035     | 0.0021   | 0.0001 | 0.0009        | 0.0010 | 0.0001 | 5       | 0.98                |                  | 0    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0541     | 5.000    | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       | 4364.64             |                  | 2    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0255     | 0.0000   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       |                     |                  | 4    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0472     | 0.0000   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       |                     |                  | 4    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0511     | 0.0000   | 0.0000 | 0.0009        | 0.0010 | 0.0001 | 5       |                     |                  | 4    |
| 221.30      | Acid Soluble Copper , ICP, test portion inorg... (%) | 0377     | 0.0002   | 0.0003 | 0.0009        | 0.0010 | 0.0001 | 5       |                     |                  | 4    |
| 221.32      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0521     | 0.0002   | 0.0000 | 0.2626        | 0.4507 | 0.0817 | 3       | -0.58               |                  | 0    |
| 221.32      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0423     | 0.0045   | 0.0010 | 0.2626        | 0.4507 | 0.0817 | 3       | -0.57               |                  | 0    |
| 221.32      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0542     | 0.7830   | 0.2440 | 0.2626        | 0.4507 | 0.0817 | 3       | 1.15                |                  | 0    |
| 221.33      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0494     | 0.0003   | 0.0000 | 0.0006        | 0.0005 | 0.0003 | 3       | -0.58               |                  | 0    |
| 221.33      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0546     | 0.0003   | 0.0000 | 0.0006        | 0.0005 | 0.0003 | 3       | -0.58               |                  | 0    |
| 221.33      | Acid Soluble Copper , ICP, test portion 2006.... (%) | 0515     | 0.0011   | 0.0010 | 0.0006        | 0.0005 | 0.0003 | 3       | 1.15                |                  | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0476     | 0.0001   | 0.0000 | 0.0003        | 0.0001 | 0.0000 | 7       | -1.50               | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0389     | 0.0003   | 0.0001 | 0.0003        | 0.0001 | 0.0000 | 7       | -0.48               | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0220     | 0.0003   | 0.0000 | 0.0003        | 0.0001 | 0.0000 | 7       | -0.14               | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0524     | 0.0003   | 0.0000 | 0.0003        | 0.0001 | 0.0000 | 7       | -0.14               | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0515     | 0.0004   | 0.0001 | 0.0003        | 0.0001 | 0.0000 | 7       | 0.20                | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0368     | 0.0004   | 0.0000 | 0.0003        | 0.0001 | 0.0000 | 7       | 0.54                | OK               | 0    |
| 221.99      | Acid Soluble Copper , Other (%)                      | 0519     | 0.0100   | 0.0000 | 0.0003        | 0.0001 | 0.0000 | 7       | 65.82               | High             | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0354     | 0.0585   | 0.0010 | 0.0670        | 0.0073 | 0.0022 | 5       | -1.01               |                  | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0096     | 0.0600   | 0.0000 | 0.0670        | 0.0073 | 0.0022 | 5       | -0.84               |                  | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0511     | 0.0700   | 0.0000 | 0.0670        | 0.0073 | 0.0022 | 5       | 0.35                |                  | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0483     | 0.0716   | 0.0002 | 0.0670        | 0.0073 | 0.0022 | 5       | 0.54                |                  | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0482     | 0.0750   | 0.0100 | 0.0670        | 0.0073 | 0.0022 | 5       | 0.95                |                  | 0    |
| 241.30      | Acid Soluble Iron, ICP, test portion inorgani... (%) | 0035     | 0.0890   | 0.0460 | 0.0670        | 0.0073 | 0.0022 | 5       | 2.61                |                  | 1    |
| 241.32      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0521     | 0.0597   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 241.32      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0423     | 0.0745   | 0.0030 |               |        |        | 2       |                     |                  | 0    |
| 241.33      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0117     | 0.0757   | 0.0015 | 0.0796        | 0.0029 | 0.0026 | 4       | -1.38               |                  | 0    |
| 241.33      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0527     | 0.0800   | 0.0000 | 0.0796        | 0.0029 | 0.0026 | 4       | 0.14                |                  | 0    |
| 241.33      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0494     | 0.0803   | 0.0002 | 0.0796        | 0.0029 | 0.0026 | 4       | 0.24                |                  | 0    |
| 241.33      | Acid Soluble Iron, ICP, test portion 2006.03A... (%) | 0515     | 0.0825   | 0.0088 | 0.0796        | 0.0029 | 0.0026 | 4       | 1.01                |                  | 0    |
| 241.99      | Acid Soluble Iron, Other (%)                         | 0524     | 0.0606   | 0.0049 | 0.0781        | 0.0184 | 0.0038 | 4       | -0.95               |                  | 0    |

| Method Code | Analyte Name and Method (Units)                  | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                  |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 241.99      | Acid Soluble Iron, Other (%)                     | 0389     | 0.0655   | 0.0010 | 0.0781        | 0.0184 | 0.0038 | 4       | -0.68               |                  | 0    |
| 241.99      | Acid Soluble Iron, Other (%)                     | 0515     | 0.0863   | 0.0093 | 0.0781        | 0.0184 | 0.0038 | 4       | 0.44                |                  | 0    |
| 241.99      | Acid Soluble Iron, Other (%)                     | 0501     | 0.1000   | 0.0000 | 0.0781        | 0.0184 | 0.0038 | 4       | 1.19                |                  | 0    |
| 251.00      | Acid Soluble Lead , AA, test portion as in 20... | 0136     | 2.500    | 1.000  |               |        |        | 1       |                     |                  | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0255     | 0.8230   | 0.1340 | 1.652         | 0.8634 | 0.1881 | 7       | -0.87               | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0501     | 1.150    | 0.1000 | 1.652         | 0.8634 | 0.1881 | 7       | -0.53               | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0524     | 1.304    | 0.2829 | 1.652         | 0.8634 | 0.1881 | 7       | -0.36               | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0096     | 1.350    | 0.1000 | 1.652         | 0.8634 | 0.1881 | 7       | -0.32               | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0511     | 1.540    | 0.0000 | 1.652         | 0.8634 | 0.1881 | 7       | -0.12               | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0389     | 2.450    | 0.5000 | 1.652         | 0.8634 | 0.1881 | 7       | 0.84                | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0035     | 10.40    | 0.2000 | 1.652         | 0.8634 | 0.1881 | 7       | 9.16                | NA               | 0    |
| 251.30      | Acid Soluble Lead , ICP (ppm)                    | 0541     | 77.05    | 10.99  | 1.652         | 0.8634 | 0.1881 | 7       | 78.95               | NA               | 1    |
| 251.32      | Acid Soluble Lead , ICP, 2006.03 (ppm)           | 0542     | 2.775    | 0.0500 |               |        |        | 1       |                     |                  | 0    |
| 251.33      | Acid Soluble Lead , ICP, 2006.03 modified w/9... | 0494     | 1.101    | 0.0372 |               |        |        | 2       |                     |                  | 0    |
| 251.33      | Acid Soluble Lead , ICP, 2006.03 modified w/9... | 0527     | 1.148    | 0.0380 |               |        |        | 2       |                     |                  | 0    |
| 251.33      | Acid Soluble Lead , ICP, 2006.03 modified w/9... | 0515     | 3.506    | 7.011  |               |        |        | 2       |                     |                  | 4    |
| 251.34      | Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)   | 0230     | 1.340    | 0.2800 |               |        |        | 2       |                     |                  | 0    |
| 251.34      | Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)   | 0368     | 1.400    | 0.6000 |               |        |        | 2       |                     |                  | 0    |
| 251.34      | Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)   | 0515     | 0.6445   | 1.289  |               |        |        | 2       |                     |                  | 4    |
| 251.99      | Acid Soluble Lead , Other (ppm)                  | 0519     | 1.005    | 0.0300 | 1.282         | 0.2418 | 0.2437 | 3       | -1.15               |                  | 0    |
| 251.99      | Acid Soluble Lead , Other (ppm)                  | 0476     | 1.392    | 0.0011 | 1.282         | 0.2418 | 0.2437 | 3       | 0.45                |                  | 0    |
| 251.99      | Acid Soluble Lead , Other (ppm)                  | 0220     | 1.450    | 0.7000 | 1.282         | 0.2418 | 0.2437 | 3       | 0.69                |                  | 0    |
| 261.30      | Acid Soluble Manganese , ICP, test portion 97... | 0035     | 0.0052   | 0.0003 | 17.72         | 30.68  | 0.7004 | 3       | -0.58               |                  | 0    |
| 261.30      | Acid Soluble Manganese , ICP, test portion 97... | 0354     | 0.0055   | 0.0010 | 17.72         | 30.68  | 0.7004 | 3       | -0.58               |                  | 0    |
| 261.30      | Acid Soluble Manganese , ICP, test portion 97... | 0096     | 53.15    | 2.100  | 17.72         | 30.68  | 0.7004 | 3       | 1.15                |                  | 0    |
| 261.31      | Acid Soluble Manganese , ICP, test portion 97... | 0482     | 0.0100   | 0.0000 |               |        |        | 1       |                     |                  | 0    |
| 261.31      | Acid Soluble Manganese , ICP, test portion 97... | 0511     | 0.0000   | 0.0000 |               |        |        | 1       |                     |                  | 4    |
| 261.34      | Acid Soluble Manganese , ICP, test portion 20... | 0521     | 0.0043   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 261.34      | Acid Soluble Manganese , ICP, test portion 20... | 0423     | 0.0060   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 261.35      | Acid Soluble Manganese , ICP, test portion 20... | 0527     | 0.0050   | 0.0000 | 0.0052        | 0.0002 | 0.0001 | 3       | -1.09               |                  | 0    |
| 261.35      | Acid Soluble Manganese , ICP, test portion 20... | 0117     | 0.0052   | 0.0000 | 0.0052        | 0.0002 | 0.0001 | 3       | 0.22                |                  | 0    |
| 261.35      | Acid Soluble Manganese , ICP, test portion 20... | 0494     | 0.0053   | 0.0002 | 0.0052        | 0.0002 | 0.0001 | 3       | 0.87                |                  | 0    |
| 261.35      | Acid Soluble Manganese , ICP, test portion 20... | 0515     | 0.0298   | 0.0595 | 0.0052        | 0.0002 | 0.0001 | 3       |                     |                  | 4    |
| 261.99      | Acid Soluble Manganese , Other (%)               | 0515     | 0.0038   | 0.0006 | 0.0049        | 0.0011 | 0.0004 | 3       | -0.95               |                  | 0    |
| 261.99      | Acid Soluble Manganese , Other (%)               | 0389     | 0.0048   | 0.0001 | 0.0049        | 0.0011 | 0.0004 | 3       | -0.09               |                  | 0    |
| 261.99      | Acid Soluble Manganese , Other (%)               | 0524     | 0.0060   | 0.0006 | 0.0049        | 0.0011 | 0.0004 | 3       | 1.04                |                  | 0    |
| 281.00      | Acid Soluble Mercury , AA (ppm)                  | 0511     | 0.1630   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 281.00      | Acid Soluble Mercury , AA (ppm)                  | 0117     | 0.2377   | 0.0739 |               |        |        | 2       |                     |                  | 0    |
| 281.30      | Acid Soluble Mercury , ICP (ppm)                 | 0527     | 0.3145   | 0.0050 |               |        |        | 2       |                     |                  | 0    |
| 281.30      | Acid Soluble Mercury , ICP (ppm)                 | 0515     | 0.7395   | 0.1930 |               |        |        | 2       |                     |                  | 0    |
| 281.30      | Acid Soluble Mercury , ICP (ppm)                 | 0541     | 0.0000   | 0.0000 |               |        |        | 2       |                     |                  | 4    |
| 281.99      | Acid Soluble Mercury , Other (ppm)               | 0519     | 0.0400   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 281.99      | Acid Soluble Mercury , Other (ppm)               | 0476     | 0.4633   | 0.0240 |               |        |        | 2       |                     |                  | 0    |

| Method Code | Analyte Name and Method (Units)                        | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                        |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0524     | 1.035    | 0.1324 | 2.199         | 0.9801 | 0.2303 | 9       | -1.10               | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0389     | 1.050    | 0.1000 | 2.199         | 0.9801 | 0.2303 | 9       | -1.08               | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0255     | 1.944    | 0.6810 | 2.199         | 0.9801 | 0.2303 | 9       | -0.24               | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0405     | 2.000    | 0.0000 | 2.199         | 0.9801 | 0.2303 | 9       | -0.19               | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0541     | 2.044    | 0.0690 | 2.199         | 0.9801 | 0.2303 | 9       | -0.15               | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0521     | 2.228    | 0.0000 | 2.199         | 0.9801 | 0.2303 | 9       | 0.03                | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0096     | 2.900    | 1.000  | 2.199         | 0.9801 | 0.2303 | 9       | 0.66                | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0511     | 2.920    | 0.0000 | 2.199         | 0.9801 | 0.2303 | 9       | 0.68                | OK               | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0519     | 37.05    | 0.0900 | 2.199         | 0.9801 | 0.2303 | 9       | 32.82               | High             | 0    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0035     | 5.295    | 2.010  | 2.199         | 0.9801 | 0.2303 | 9       | 2.92                | High             | 1    |
| 289.30      | Acid Soluble Molybdenum , ICP (ppm)                    | 0377     | 0.0000   | 0.0000 | 2.199         | 0.9801 | 0.2303 | 9       |                     |                  | 4    |
| 289.32      | Acid Soluble Molybdenum , ICP, 2006.03 (ppm)           | 0542     | 1.377    | 0.0610 |               |        |        | 1       |                     |                  | 0    |
| 289.33      | Acid Soluble Molybdenum , ICP, 2006.03 modifi... (ppm) | 0546     | 1.376    | 0.0250 | 1.529         | 0.1338 | 0.0220 | 3       | -1.15               |                  | 0    |
| 289.33      | Acid Soluble Molybdenum , ICP, 2006.03 modifi... (ppm) | 0527     | 1.591    | 0.0310 | 1.529         | 0.1338 | 0.0220 | 3       | 0.46                |                  | 0    |
| 289.33      | Acid Soluble Molybdenum , ICP, 2006.03 modifi... (ppm) | 0037     | 1.621    | 0.0100 | 1.529         | 0.1338 | 0.0220 | 3       | 0.69                |                  | 0    |
| 289.33      | Acid Soluble Molybdenum , ICP, 2006.03 modifi... (ppm) | 0515     | 3.598    | 7.195  | 1.529         | 0.1338 | 0.0220 | 3       |                     |                  | 4    |
| 289.34      | Acid Soluble Molybdenum , ICP, EPA 3050B/6010... (ppm) | 0515     | 1.142    | 0.3860 | 8.781         | 13.09  | 0.8020 | 3       | -0.58               |                  | 0    |
| 289.34      | Acid Soluble Molybdenum , ICP, EPA 3050B/6010... (ppm) | 0230     | 1.300    | 0.0200 | 8.781         | 13.09  | 0.8020 | 3       | -0.57               |                  | 0    |
| 289.34      | Acid Soluble Molybdenum , ICP, EPA 3050B/6010... (ppm) | 0368     | 23.90    | 2.000  | 8.781         | 13.09  | 0.8020 | 3       | 1.15                |                  | 0    |
| 289.99      | Acid Soluble Molybdenum , Other (ppm)                  | 0220     | 1.100    | 1.000  |               |        |        | 2       |                     |                  | 0    |
| 289.99      | Acid Soluble Molybdenum , Other (ppm)                  | 0476     | 5.550    | 1.511  |               |        |        | 2       |                     |                  | 0    |
| 291.00      | Acid Soluble Nickel , AA, test portion as in ... (ppm) | 0136     | 5.200    | 0.4000 |               |        |        | 1       |                     |                  | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0521     | 3.274    | 0.0000 | 4.560         | 0.7137 | 0.8701 | 12      | -1.80               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0405     | 4.000    | 0.0000 | 4.560         | 0.7137 | 0.8701 | 12      | -0.78               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0444     | 4.050    | 0.3600 | 4.560         | 0.7137 | 0.8701 | 12      | -0.71               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0511     | 4.210    | 0.0000 | 4.560         | 0.7137 | 0.8701 | 12      | -0.49               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0102     | 4.349    | 0.1820 | 4.560         | 0.7137 | 0.8701 | 12      | -0.30               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0377     | 4.500    | 1.260  | 4.560         | 0.7137 | 0.8701 | 12      | -0.08               | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0524     | 4.606    | 0.3490 | 4.560         | 0.7137 | 0.8701 | 12      | 0.06                | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0096     | 4.650    | 0.5000 | 4.560         | 0.7137 | 0.8701 | 12      | 0.13                | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0389     | 4.650    | 0.3000 | 4.560         | 0.7137 | 0.8701 | 12      | 0.13                | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0452     | 4.955    | 0.0100 | 4.560         | 0.7137 | 0.8701 | 12      | 0.55                | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0541     | 5.925    | 3.950  | 4.560         | 0.7137 | 0.8701 | 12      | 1.91                | NA               | 0    |
| 291.30      | Acid Soluble Nickel , ICP (ppm)                        | 0035     | 7.725    | 3.530  | 4.560         | 0.7137 | 0.8701 | 12      | 4.43                | NA               | 0    |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w... (ppm) | 0494     | 4.796    | 0.0595 | 5.003         | 0.1418 | 0.0923 | 5       | -1.46               |                  | 0    |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w... (ppm) | 0037     | 4.943    | 0.0260 | 5.003         | 0.1418 | 0.0923 | 5       | -0.42               |                  | 0    |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w... (ppm) | 0515     | 5.031    | 0.1250 | 5.003         | 0.1418 | 0.0923 | 5       | 0.19                |                  | 0    |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w... (ppm) | 0117     | 5.078    | 0.1830 | 5.003         | 0.1418 | 0.0923 | 5       | 0.52                |                  | 0    |
| 291.33      | Acid Soluble Nickel , ICP, 2006.03 modified w... (ppm) | 0527     | 5.169    | 0.0680 | 5.003         | 0.1418 | 0.0923 | 5       | 1.17                |                  | 0    |
| 291.34      | Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)       | 0230     | 3.695    | 0.0100 | 4.633         | 1.329  | 3.479  | 3       | -0.71               |                  | 0    |
| 291.34      | Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)       | 0368     | 4.050    | 1.100  | 4.633         | 1.329  | 3.479  | 3       | -0.44               |                  | 0    |
| 291.34      | Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)       | 0515     | 6.154    | 9.328  | 4.633         | 1.329  | 3.479  | 3       | 1.14                |                  | 0    |
| 291.99      | Acid Soluble Nickel , Other (ppm)                      | 0476     | 3.910    | 0.7552 | 4.747         | 0.7131 | 0.5336 | 4       | -1.17               |                  | 0    |



| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 291.99      | Acid Soluble Nickel , Other (ppm)                       | 0220     | 4.400    | 0.4000 | 4.747         | 0.7131 | 0.5336 | 4       | -0.49               |                  | 0    |
| 291.99      | Acid Soluble Nickel , Other (ppm)                       | 0255     | 5.299    | 0.6390 | 4.747         | 0.7131 | 0.5336 | 4       | 0.77                |                  | 0    |
| 291.99      | Acid Soluble Nickel , Other (ppm)                       | 0519     | 5.380    | 0.3400 | 4.747         | 0.7131 | 0.5336 | 4       | 0.89                |                  | 0    |
| 301.30      | Acid Soluble Selenium , ICP (ppm)                       | 0524     | 0.5300   | 0.0400 |               |        |        | 2       |                     |                  | 0    |
| 301.30      | Acid Soluble Selenium , ICP (ppm)                       | 0389     | 1.150    | 0.0800 |               |        |        | 2       |                     |                  | 0    |
| 301.30      | Acid Soluble Selenium , ICP (ppm)                       | 0511     | 0.0000   | 0.0000 |               |        |        | 2       |                     |                  | 4    |
| 301.30      | Acid Soluble Selenium , ICP (ppm)                       | 0541     | 0.2150   | 0.4300 |               |        |        | 2       |                     |                  | 4    |
| 301.32      | Acid Soluble Selenium , ICP, 2006.03 (ppm)              | 0542     | 2.875    | 0.0500 |               |        |        | 1       |                     |                  | 0    |
| 301.33      | Acid Soluble Selenium , ICP, 2006.03 modified... (ppm)  | 0527     | 1.296    | 0.1460 |               |        |        | 1       |                     |                  | 0    |
| 301.33      | Acid Soluble Selenium , ICP, 2006.03 modified... (ppm)  | 0515     | 4.495    | 8.989  |               |        |        | 1       |                     |                  | 4    |
| 301.34      | Acid Soluble Selenium , ICP, EPA 3050B/6010C (ppm)      | 0515     | 3.248    | 0.8190 |               |        |        | 1       |                     |                  | 0    |
| 301.34      | Acid Soluble Selenium , ICP, EPA 3050B/6010C (ppm)      | 0368     | 0.0000   | 0.0000 |               |        |        | 1       |                     |                  | 4    |
| 301.99      | Acid Soluble Selenium , Other (ppm)                     | 0220     | 1.000    | 0.2000 | 1.369         | 0.3671 | 0.2323 | 4       | -1.01               |                  | 0    |
| 301.99      | Acid Soluble Selenium , Other (ppm)                     | 0476     | 1.143    | 0.2992 | 1.369         | 0.3671 | 0.2323 | 4       | -0.62               |                  | 0    |
| 301.99      | Acid Soluble Selenium , Other (ppm)                     | 0519     | 1.525    | 0.0500 | 1.369         | 0.3671 | 0.2323 | 4       | 0.42                |                  | 0    |
| 301.99      | Acid Soluble Selenium , Other (ppm)                     | 0255     | 1.808    | 0.3800 | 1.369         | 0.3671 | 0.2323 | 4       | 1.20                |                  | 0    |
| 311.32      | Sodium, ICP, 2006.03 test portion (%)                   | 0521     | 0.3007   | 0.0000 |               |        |        | 2       |                     |                  | 0    |
| 311.32      | Sodium, ICP, 2006.03 test portion (%)                   | 0389     | 0.3215   | 0.0010 |               |        |        | 2       |                     |                  | 0    |
| 311.33      | Sodium, ICP, 2006.03 modified w/9:3 HNO3:HCl ... (%)    | 0423     | 0.0375   | 0.0010 | 0.2664        | 0.1566 | 0.0233 | 4       | -1.46               |                  | 0    |
| 311.33      | Sodium, ICP, 2006.03 modified w/9:3 HNO3:HCl ... (%)    | 0527     | 0.3075   | 0.0050 | 0.2664        | 0.1566 | 0.0233 | 4       | 0.26                |                  | 0    |
| 311.33      | Sodium, ICP, 2006.03 modified w/9:3 HNO3:HCl ... (%)    | 0035     | 0.3295   | 0.0730 | 0.2664        | 0.1566 | 0.0233 | 4       | 0.40                |                  | 0    |
| 311.33      | Sodium, ICP, 2006.03 modified w/9:3 HNO3:HCl ... (%)    | 0494     | 0.3909   | 0.0140 | 0.2664        | 0.1566 | 0.0233 | 4       | 0.80                |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0354     | 0.3320   | 0.0340 | 0.3368        | 0.0039 | 0.0110 | 4       | -1.20               |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0096     | 0.3350   | 0.0100 | 0.3368        | 0.0039 | 0.0110 | 4       | -0.44               |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0482     | 0.3400   | 0.0000 | 0.3368        | 0.0039 | 0.0110 | 4       | 0.82                |                  | 0    |
| 311.99      | Sodium, Other (%)                                       | 0511     | 0.3400   | 0.0000 | 0.3368        | 0.0039 | 0.0110 | 4       | 0.82                |                  | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0029     | 1.455    | 0.0560 | 1.512         | 0.0676 | 0.0200 | 10      | -0.78               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0539     | 1.455    | 0.0100 | 1.512         | 0.0676 | 0.0200 | 10      | -0.78               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0540     | 1.460    | 0.0200 | 1.512         | 0.0676 | 0.0200 | 10      | -0.71               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0535     | 1.475    | 0.0100 | 1.512         | 0.0676 | 0.0200 | 10      | -0.51               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0531     | 1.485    | 0.0100 | 1.512         | 0.0676 | 0.0200 | 10      | -0.37               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0533     | 1.510    | 0.0400 | 1.512         | 0.0676 | 0.0200 | 10      | -0.03               | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0040     | 1.516    | 0.0010 | 1.512         | 0.0676 | 0.0200 | 10      | 0.05                | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0169     | 1.541    | 0.0030 | 1.512         | 0.0676 | 0.0200 | 10      | 0.39                | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0534     | 1.610    | 0.0200 | 1.512         | 0.0676 | 0.0200 | 10      | 1.35                | OK               | 0    |
| 321.00      | Acid Soluble Zinc , AA, inorganic 965.09 (1.5%)         | 0489     | 2.125    | 0.0300 | 1.512         | 0.0676 | 0.0200 | 10      | 8.43                | High             | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0291     | 1.275    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | -3.34               | Low              | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0433     | 1.385    | 0.0090 | 1.511         | 0.0706 | 0.0321 | 22      | -1.79               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0035     | 1.395    | 0.0300 | 1.511         | 0.0706 | 0.0321 | 22      | -1.64               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0102     | 1.469    | 0.0332 | 1.511         | 0.0706 | 0.0321 | 22      | -0.59               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0255     | 1.477    | 0.0560 | 1.511         | 0.0706 | 0.0321 | 22      | -0.48               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0444     | 1.485    | 0.0300 | 1.511         | 0.0706 | 0.0321 | 22      | -0.37               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0096     | 1.490    | 0.0390 | 1.511         | 0.0706 | 0.0321 | 22      | -0.30               | OK               | 0    |

| Method Code | Analyte Name and Method (Units)                         | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|---------------------------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                                         |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0157     | 1.495    | 0.0700 | 1.511         | 0.0706 | 0.0321 | 22      | -0.23               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0230     | 1.495    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | -0.23               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0234     | 1.495    | 0.0300 | 1.511         | 0.0706 | 0.0321 | 22      | -0.23               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0325     | 1.495    | 0.0300 | 1.511         | 0.0706 | 0.0321 | 22      | -0.23               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0472     | 1.505    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | -0.08               | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0354     | 1.513    | 0.0380 | 1.511         | 0.0706 | 0.0321 | 22      | 0.03                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0073     | 1.515    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | 0.06                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0292     | 1.530    | 0.0000 | 1.511         | 0.0706 | 0.0321 | 22      | 0.27                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0377     | 1.532    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | 0.30                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0482     | 1.535    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | 0.34                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0324     | 1.555    | 0.1700 | 1.511         | 0.0706 | 0.0321 | 22      | 0.63                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0231     | 1.595    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | 1.19                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0402     | 1.610    | 0.0400 | 1.511         | 0.0706 | 0.0321 | 22      | 1.40                | OK               | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0371     | 1.715    | 0.0500 | 1.511         | 0.0706 | 0.0321 | 22      | 2.89                | High             | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0452     | 1.735    | 0.0100 | 1.511         | 0.0706 | 0.0321 | 22      | 3.18                | High             | 0    |
| 321.30      | Acid Soluble Zinc , ICP, test portion inorgan... (1.5%) | 0483     | 1.600    | 0.2000 | 1.511         | 0.0706 | 0.0321 | 22      | 1.26                | OK               | 1    |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0542     | 0.5457   | 0.0001 | 1.353         | 0.4660 | 0.0132 | 5       | -1.73               |                  | 0    |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0521     | 1.473    | 0.0000 | 1.353         | 0.4660 | 0.0132 | 5       | 0.26                |                  | 0    |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0220     | 1.495    | 0.0300 | 1.353         | 0.4660 | 0.0132 | 5       | 0.30                |                  | 0    |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0547     | 1.497    | 0.0260 | 1.353         | 0.4660 | 0.0132 | 5       | 0.31                |                  | 0    |
| 321.32      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0423     | 1.755    | 0.0100 | 1.353         | 0.4660 | 0.0132 | 5       | 0.86                |                  | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0527     | 1.464    | 0.0470 | 1.548         | 0.0670 | 0.0321 | 13      | -1.26               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0136     | 1.485    | 0.0100 | 1.548         | 0.0670 | 0.0321 | 13      | -0.94               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0025     | 1.488    | 0.0350 | 1.548         | 0.0670 | 0.0321 | 13      | -0.90               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0117     | 1.500    | 0.0070 | 1.548         | 0.0670 | 0.0321 | 13      | -0.72               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0494     | 1.516    | 0.0217 | 1.548         | 0.0670 | 0.0321 | 13      | -0.47               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0037     | 1.540    | 0.0160 | 1.548         | 0.0670 | 0.0321 | 13      | -0.12               | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0177     | 1.549    | 0.0232 | 1.548         | 0.0670 | 0.0321 | 13      | 0.02                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0486     | 1.550    | 0.0600 | 1.548         | 0.0670 | 0.0321 | 13      | 0.03                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0023     | 1.562    | 0.0040 | 1.548         | 0.0670 | 0.0321 | 13      | 0.21                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0034     | 1.573    | 0.0140 | 1.548         | 0.0670 | 0.0321 | 13      | 0.37                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0055     | 1.600    | 0.0200 | 1.548         | 0.0670 | 0.0321 | 13      | 0.78                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0421     | 1.650    | 0.1000 | 1.548         | 0.0670 | 0.0321 | 13      | 1.52                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0546     | 1.659    | 0.0600 | 1.548         | 0.0670 | 0.0321 | 13      | 1.66                | OK               | 0    |
| 321.33      | Acid Soluble Zinc , ICP, test portion 2006.03... (1.5%) | 0515     | 1.871    | 0.5316 | 1.548         | 0.0670 | 0.0321 | 13      | 4.83                | High             | 1    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0523     | 0.7315   | 0.0750 | 1.465         | 0.2299 | 0.0377 | 12      | -3.19               | Low              | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0541     | 1.185    | 0.0300 | 1.465         | 0.2299 | 0.0377 | 12      | -1.22               | Low              | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0476     | 1.278    | 0.0007 | 1.465         | 0.2299 | 0.0377 | 12      | -0.81               | Low              | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0500     | 1.325    | 0.0100 | 1.465         | 0.2299 | 0.0377 | 12      | -0.61               | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0519     | 1.485    | 0.0300 | 1.465         | 0.2299 | 0.0377 | 12      | 0.09                | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0508     | 1.490    | 0.0400 | 1.465         | 0.2299 | 0.0377 | 12      | 0.11                | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0501     | 1.500    | 0.0000 | 1.465         | 0.2299 | 0.0377 | 12      | 0.15                | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)                        | 0389     | 1.540    | 0.0200 | 1.465         | 0.2299 | 0.0377 | 12      | 0.33                | OK               | 0    |

| Method Code | Analyte Name and Method (Units)      | Lab Code | Lab Data |        | Method Values |        |        | # Tests | Magruder CS Z Score | Method IA Status | Flag |
|-------------|--------------------------------------|----------|----------|--------|---------------|--------|--------|---------|---------------------|------------------|------|
|             |                                      |          | Value    | Range  | Rob Mean      | Rob SD | R-bar  |         |                     |                  |      |
| 321.99      | Acid Soluble Zinc , Other (1.5%)     | 0042     | 1.569    | 0.0970 | 1.465         | 0.2299 | 0.0377 | 12      | 0.45                | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)     | 0027     | 1.615    | 0.0300 | 1.465         | 0.2299 | 0.0377 | 12      | 0.65                | OK               | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)     | 0368     | 1.666    | 0.0631 | 1.465         | 0.2299 | 0.0377 | 12      | 0.87                | High             | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)     | 0524     | 1.834    | 0.0566 | 1.465         | 0.2299 | 0.0377 | 12      | 1.60                | High             | 0    |
| 321.99      | Acid Soluble Zinc , Other (1.5%)     | 0515     | 1.318    | 0.3523 | 1.465         | 0.2299 | 0.0377 | 12      | -0.64               | OK               | 1    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0539     | 1.395    | 0.0100 | 1.471         | 0.0494 | 0.0271 | 7       | -1.39               | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0540     | 1.435    | 0.0300 | 1.471         | 0.0494 | 0.0271 | 7       | -0.66               | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0535     | 1.460    | 0.0200 | 1.471         | 0.0494 | 0.0271 | 7       | -0.20               | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0537     | 1.480    | 0.0200 | 1.471         | 0.0494 | 0.0271 | 7       | 0.17                | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0536     | 1.500    | 0.0200 | 1.471         | 0.0494 | 0.0271 | 7       | 0.53                | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0027     | 1.505    | 0.0700 | 1.471         | 0.0494 | 0.0271 | 7       | 0.62                | NA               | 0    |
| 325.00      | Water Soluble Zinc , AA (%)          | 0532     | 1.520    | 0.0200 | 1.471         | 0.0494 | 0.0271 | 7       | 0.90                | NA               | 0    |
| 325.10      | Water Soluble Zinc , Gravimetric (%) | 0549     | 1.550    | 0.1000 |               |        |        | 1       |                     |                  | 0    |
| 325.30      | Water Soluble Zinc , ICP (%)         | 0405     | 1.100    | 0.0000 | 1.260         | 0.1343 | 0.0275 | 4       | -1.19               |                  | 0    |
| 325.30      | Water Soluble Zinc , ICP (%)         | 0230     | 1.200    | 0.0000 | 1.260         | 0.1343 | 0.0275 | 4       | -0.44               |                  | 0    |
| 325.30      | Water Soluble Zinc , ICP (%)         | 0444     | 1.345    | 0.0700 | 1.260         | 0.1343 | 0.0275 | 4       | 0.64                |                  | 0    |
| 325.30      | Water Soluble Zinc , ICP (%)         | 0546     | 1.393    | 0.0400 | 1.260         | 0.1343 | 0.0275 | 4       | 0.99                |                  | 0    |
| 325.99      | Water Soluble Zinc , Other (%)       | 0371     | 1.375    | 0.0300 |               |        |        | 1       |                     |                  | 0    |

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 and a 4 flag indicates rejected due to 0 value submitted. A 9 flag indicates a data problem - scores not calculated. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are grey and included for information only. IA Status describes where your result is relative to the Assigned Value  $\pm$  IA. Red indicates Higher or Lower, Green indicates within the IA range. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.