



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver British Columbia V6P 6E5 Canada

PHONE (604) 253-3158

**Client:** **Fireweed Zinc Ltd.**  
Suite 1020, 800 Pender Street  
Vancouver British Columbia V5C 2V6 Canada

Submitted By: Confirmation & Email Distribution List  
Receiving Lab: Canada-Whitehorse  
Received: October 02, 2020  
Analysis Start: January 06, 2021  
Report Date: January 15, 2021  
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# CERTIFICATE OF ANALYSIS

WHI20000502.1

## CLIENT JOB INFORMATION

Project: MacMillan Pass  
Shipment ID: FWZ20-BV-009  
P.O. Number  
Number of Samples: 30

## SAMPLE DISPOSAL

RTRN-PLP Return After 90 days  
RTRN-RJT Return After 60 days

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

## SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

| Procedure Code | Number of Samples | Code Description                                  | Test Wgt (g) | Report Status | Lab |
|----------------|-------------------|---------------------------------------------------|--------------|---------------|-----|
| PRP70-500      | 28                | Crush, split and pulverize 500g rock to 200 mesh  |              |               | WHI |
| SLBHP          | 2                 | Sort, label and box pulps                         |              |               | WHI |
| CRUBW          | 28                | Extra clean rock wash between samples in crusher  |              |               | WHI |
| PULSW          | 28                | Extra Wash with Silica between each sample        |              |               | VAN |
| AQ270          | 30                | 1:1:1 Aqua Regia digestion ICP-ES/ICP-MS analysis | 1            | Completed     | VAN |
| LF725          | 30                | Li2B4O7/LiBO2 fusion, analysis by XRF             |              | Completed     | VAN |
| SHP01          | 30                | Per sample shipping charges for branch shipments  |              |               | VAN |
| TC000          | 30                | Total C/S Analysis by Leco                        | 0.1          | Completed     | VAN |
| TC007          | 30                | Graphite and Organic C by Leco After Ignition     | 0.1          | Completed     | VAN |
| TC006          | 30                | Inorganic Carbon                                  | 0.2          | Completed     | VAN |
| TC010          | 30                | Analysis by Leco after sodium carbonate leach     | 0.1          | Completed     | VAN |

## ADDITIONAL COMMENTS

V205 from LF725 is Qualitative Data only.

Invoice To: Fireweed Zinc Ltd.  
Suite 1020, 800 Pender Street  
Vancouver British Columbia V5C 2V6  
Canada

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.  
\*\*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



**BUREAU VERITAS** MINERAL LABORATORIES  
Canada

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# CERTIFICATE OF ANALYSIS

WHI20000502.1

|         | Method    | Analyte | Unit | MDL   | WGHT    | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 |     |      |       |
|---------|-----------|---------|------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|------|-------|
|         |           |         |      |       | Wgt     | Mo    | Cu    | Pb    | Zn    | Ag    | Ni    | Co    | Mn    | Fe    | As    | U     | Th    | Sr    | Cd    | Sb    | Bi    | V   | Ca   | P     |
|         |           |         |      |       | kg      | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm | %    | %     |
|         |           |         |      |       | 0.01    | 0.5   | 0.5   | 0.5   | 5     | 0.5   | 0.5   | 0.5   | 5     | 0.01  | 5     | 0.5   | 0.5   | 5     | 0.5   | 0.5   | 0.5   | 10  | 0.01 | 0.001 |
| 3204758 | RC Chip   | 1.36    | 10.4 | 49.0  | 98.4    | 83    | 1.4   | 11.6  | 1.7   | 34    | 0.69  | 10    | 1.0   | 2.9   | 17    | <0.5  | 5.4   | <0.5  | 12    | 0.01  | 0.013 |     |      |       |
| 3204759 | RC Chip   | 1.68    | 21.3 | 12.3  | 247.9   | 100   | 2.3   | 2.3   | <0.5  | 18    | 0.31  | 9     | 0.6   | 3.9   | 10    | <0.5  | 6.3   | <0.5  | 27    | <0.01 | 0.007 |     |      |       |
| 3204760 | Rock Pulp | 0.03    | 2.6  | 225.8 | 17397.7 | 29907 | 33.9  | 22.7  | 19.2  | 1791  | 5.23  | 92    | 1.6   | 7.0   | 24    | 98.7  | 49.3  | <0.5  | 11    | 5.04  | 0.063 |     |      |       |
| 3204761 | RC Chip   | 2.85    | 4.6  | 12.1  | 70.5    | <5    | 1.1   | 1.7   | <0.5  | 28    | 0.69  | <5    | <0.5  | 6.0   | 7     | <0.5  | 3.2   | <0.5  | 14    | <0.01 | 0.004 |     |      |       |
| 3204762 | RC Chip   | 3.21    | 12.2 | 10.9  | 92.8    | 18    | 1.0   | 2.5   | <0.5  | 25    | 0.83  | <5    | <0.5  | 2.8   | 8     | <0.5  | 3.0   | <0.5  | 11    | <0.01 | 0.003 |     |      |       |
| 3204763 | RC Chip   | 2.22    | 6.0  | 22.9  | 71.5    | 13    | 1.1   | 3.0   | <0.5  | 23    | 0.44  | <5    | <0.5  | 7.6   | 8     | <0.5  | 3.3   | <0.5  | 16    | <0.01 | 0.003 |     |      |       |
| 3204764 | RC Chip   | 2.03    | 8.5  | 15.7  | 64.8    | 22    | 1.0   | 4.5   | 0.7   | 21    | 0.67  | <5    | <0.5  | 5.9   | 7     | <0.5  | 2.5   | <0.5  | 13    | <0.01 | 0.004 |     |      |       |
| 3204765 | RC Chip   | 2.39    | 4.5  | 11.5  | 48.2    | 92    | 0.6   | 10.0  | 1.0   | 33    | 1.09  | <5    | <0.5  | 2.4   | <5    | <0.5  | 1.3   | <0.5  | <10   | <0.01 | 0.003 |     |      |       |
| 3204766 | RC Chip   | 2.40    | 9.3  | 24.4  | 65.7    | 22    | 1.2   | 16.0  | 2.2   | 31    | 1.78  | <5    | <0.5  | 3.8   | 7     | <0.5  | 2.8   | <0.5  | 11    | <0.01 | 0.003 |     |      |       |
| 3204767 | RC Chip   | 2.88    | 14.6 | 43.1  | 158.6   | 26    | 0.7   | 16.1  | 2.3   | 40    | 1.22  | <5    | <0.5  | 3.8   | 6     | <0.5  | 2.3   | <0.5  | 14    | <0.01 | 0.006 |     |      |       |
| 3204768 | RC Chip   | 3.16    | 5.7  | 49.6  | 70.8    | 14    | 0.6   | 19.3  | 3.1   | 37    | 1.19  | <5    | <0.5  | 3.1   | <5    | <0.5  | 1.7   | <0.5  | 12    | <0.01 | 0.002 |     |      |       |
| 3204769 | RC Chip   | 2.39    | 8.4  | 50.5  | 111.0   | 13    | 0.8   | 16.7  | 2.2   | 34    | 0.94  | <5    | <0.5  | 4.6   | 7     | <0.5  | 2.8   | <0.5  | 15    | <0.01 | 0.003 |     |      |       |
| 3204770 | RC Chip   | 3.42    | 6.5  | 65.8  | 195.5   | 32    | 0.6   | 14.1  | 1.7   | 27    | 1.10  | <5    | <0.5  | 4.3   | 6     | <0.5  | 2.4   | <0.5  | 12    | <0.01 | 0.002 |     |      |       |
| 3204771 | RC Chip   | 2.05    | 17.0 | 22.4  | 264.9   | 31    | 1.1   | 3.5   | 0.5   | 21    | 0.32  | <5    | 0.8   | 6.1   | 8     | <0.5  | 3.8   | <0.5  | 18    | <0.01 | 0.005 |     |      |       |
| 3204772 | RC Chip   | 2.50    | 12.5 | 14.2  | 746.8   | 19    | 1.8   | 3.6   | 0.8   | 17    | 0.29  | <5    | 0.8   | 6.3   | 9     | <0.5  | 4.2   | <0.5  | 19    | <0.01 | 0.010 |     |      |       |
| 3204773 | RC Chip   | 2.26    | 12.6 | 13.1  | 397.1   | 15    | 1.0   | 13.0  | 1.7   | 31    | 0.87  | 6     | 0.6   | 4.8   | 5     | <0.5  | 4.4   | <0.5  | 25    | <0.01 | 0.004 |     |      |       |
| 3204774 | RC Chip   | 2.46    | 15.2 | 24.3  | 223.3   | 12    | 1.0   | 19.6  | 3.1   | 36    | 1.59  | 9     | 0.7   | 3.7   | 6     | <0.5  | 7.0   | <0.5  | 19    | <0.01 | 0.003 |     |      |       |
| 3204775 | RC Chip   | 2.88    | 17.9 | 47.3  | 276.5   | 13    | 1.1   | 43.5  | 5.8   | 66    | 1.88  | 18    | 1.0   | 4.5   | 5     | <0.5  | 9.8   | <0.5  | 27    | <0.01 | 0.005 |     |      |       |
| 3204776 | RC Chip   | 2.42    | 16.5 | 51.2  | 263.5   | 17    | 1.1   | 43.1  | 6.0   | 78    | 2.00  | 20    | 1.0   | 4.6   | 5     | <0.5  | 9.3   | <0.5  | 25    | <0.01 | 0.005 |     |      |       |
| 3204777 | RC Chip   | 3.55    | 14.9 | 44.7  | 391.1   | 22    | 1.0   | 42.2  | 7.5   | 66    | 2.07  | 27    | 1.0   | 4.9   | 12    | <0.5  | 10.3  | <0.5  | 23    | <0.01 | 0.009 |     |      |       |
| 3204778 | RC Chip   | 2.89    | 5.8  | 57.0  | 466.4   | 25    | 0.7   | 30.6  | 7.0   | 73    | 1.80  | 24    | 0.8   | 4.8   | 10    | <0.5  | 6.5   | <0.5  | 15    | <0.01 | 0.013 |     |      |       |
| 3204779 | RC Chip   | 2.70    | 4.3  | 51.5  | 563.9   | 36    | <0.5  | 24.5  | 12.7  | 48    | 1.48  | 12    | 0.7   | 3.0   | 20    | 1.7   | 4.2   | <0.5  | 13    | <0.01 | 0.021 |     |      |       |
| 3204780 | Rock Pulp | 0.03    | 3.6  | 486.2 | 34958.8 | 48519 | 57.1  | 17.5  | 45.0  | 2191  | 7.48  | 160   | 1.5   | 6.1   | 23    | 175.0 | 45.9  | <0.5  | 10    | 4.89  | 0.052 |     |      |       |
| 3204781 | RC Chip   | 3.25    | 4.9  | 39.6  | 282.2   | 65    | 0.6   | 36.0  | 6.7   | 61    | 1.69  | 16    | <0.5  | 2.4   | 7     | 1.0   | 4.4   | <0.5  | <10   | 0.02  | 0.017 |     |      |       |
| 3204782 | RC Chip   | 1.93    | 4.1  | 37.1  | 256.2   | 49    | 0.6   | 35.0  | 6.3   | 62    | 1.69  | 16    | <0.5  | 2.3   | 7     | 0.8   | 4.1   | <0.5  | 11    | 0.02  | 0.011 |     |      |       |
| 3204783 | RC Chip   | 2.34    | 3.8  |       |         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |      |       |



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# CERTIFICATE OF ANALYSIS

WHI20000502.1

|         | Method<br>Analyte<br>Unit<br>MDL | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | LF725 | LF725 | LF725 | LF725 | LF725 |
|---------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|         |                                  | La    | Cr    | Mg    | Ba    | Ti    | Al    | Na    | K     | W     | Hg    | Sc    | Ti    | S     | Ga    | Se    | SiO2  | Al2O3 | Fe2O3 | CaO   | MgO   |
|         |                                  | ppm   | ppm   | %     | ppm   | %     | %     | %     | %     | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | %     | %     | %     | %     | %     |
|         |                                  | 0.5   | 0.5   | 0.01  | 5     | 0.001 | 0.01  | 0.01  | 0.01  | 0.5   | 0.05  | 0.5   | 0.5   | 0.05  | 5     | 2     | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |
| 3204758 | RC Chip                          | 13.9  | 7.1   | <0.01 | 1724  | 0.002 | 0.21  | <0.01 | 0.09  | 0.8   | 0.13  | 1.8   | <0.5  | 0.50  | <5    | <2    | 87.14 | 5.98  | 1.12  | 0.03  | 0.17  |
| 3204759 | RC Chip                          | 19.6  | 8.1   | <0.01 | 829   | 0.003 | 0.19  | <0.01 | 0.10  | 0.5   | 0.22  | 2.2   | <0.5  | 0.08  | <5    | <2    | 83.94 | 7.65  | 0.63  | 0.01  | 0.20  |
| 3204760 | Rock Pulp                        | 27.5  | 14.4  | 2.92  | 141   | 0.018 | 1.03  | 0.01  | 0.72  | 0.7   | 0.96  | 4.7   | 26.0  | 4.56  | <5    | <2    | 43.63 | 8.77  | 8.26  | 7.45  | 5.42  |
| 3204761 | RC Chip                          | 25.3  | 7.1   | <0.01 | 1167  | 0.003 | 0.27  | <0.01 | 0.14  | <0.5  | 0.19  | 1.7   | <0.5  | 0.07  | <5    | 8     | 83.16 | 9.01  | 1.24  | 0.01  | 0.26  |
| 3204762 | RC Chip                          | 13.4  | 6.8   | <0.01 | 1505  | 0.003 | 0.17  | <0.01 | 0.10  | 0.5   | 0.13  | 1.5   | <0.5  | 0.13  | <5    | 6     | 89.66 | 4.68  | 1.28  | 0.01  | 0.13  |
| 3204763 | RC Chip                          | 30.2  | 7.7   | <0.01 | 1384  | 0.004 | 0.29  | <0.01 | 0.16  | <0.5  | 0.15  | 1.8   | <0.5  | 0.14  | <5    | 7     | 80.43 | 10.64 | 0.90  | 0.01  | 0.32  |
| 3204764 | RC Chip                          | 20.3  | 6.8   | <0.01 | 1132  | 0.003 | 0.23  | <0.01 | 0.11  | <0.5  | 0.15  | 1.3   | <0.5  | 0.31  | <5    | 7     | 83.19 | 8.20  | 1.18  | 0.01  | 0.23  |
| 3204765 | RC Chip                          | 8.7   | 8.7   | <0.01 | 810   | 0.002 | 0.15  | <0.01 | 0.07  | 1.0   | 0.10  | 1.3   | <0.5  | 0.72  | <5    | 3     | 89.72 | 4.04  | 1.67  | 0.01  | 0.11  |
| 3204766 | RC Chip                          | 9.9   | 7.6   | <0.01 | 878   | 0.002 | 0.16  | <0.01 | 0.08  | 1.1   | 0.17  | 1.5   | <0.5  | 1.65  | <5    | 6     | 85.39 | 5.53  | 2.69  | 0.02  | 0.16  |
| 3204767 | RC Chip                          | 9.8   | 12.1  | <0.01 | 755   | 0.002 | 0.15  | <0.01 | 0.08  | 2.0   | 0.07  | 2.5   | <0.5  | 0.85  | <5    | 27    | 89.72 | 3.72  | 1.81  | 0.01  | 0.11  |
| 3204768 | RC Chip                          | 10.7  | 10.4  | <0.01 | 624   | 0.002 | 0.19  | <0.01 | 0.09  | 1.4   | <0.05 | 2.4   | 0.5   | 0.89  | <5    | 27    | 88.92 | 5.07  | 1.86  | 0.04  | 0.15  |
| 3204769 | RC Chip                          | 16.9  | 9.1   | <0.01 | 857   | 0.003 | 0.22  | <0.01 | 0.12  | 0.7   | 0.06  | 3.6   | 0.8   | 0.70  | <5    | 13    | 85.21 | 6.56  | 1.49  | 0.01  | 0.20  |
| 3204770 | RC Chip                          | 15.4  | 7.9   | <0.01 | 830   | 0.003 | 0.19  | <0.01 | 0.09  | 0.6   | 0.07  | 2.2   | 0.6   | 0.90  | <5    | 5     | 86.26 | 6.07  | 1.72  | 0.01  | 0.18  |
| 3204771 | RC Chip                          | 24.1  | 8.9   | <0.01 | 1440  | 0.004 | 0.21  | <0.01 | 0.11  | 0.7   | 0.18  | 2.8   | 0.6   | 0.17  | <5    | 5     | 81.04 | 8.53  | 0.66  | 0.01  | 0.29  |
| 3204772 | RC Chip                          | 25.7  | 9.8   | <0.01 | 1447  | 0.005 | 0.21  | <0.01 | 0.11  | <0.5  | 0.17  | 3.0   | 0.8   | 0.15  | <5    | 5     | 83.40 | 7.89  | 0.55  | 0.02  | 0.24  |
| 3204773 | RC Chip                          | 19.0  | 9.2   | <0.01 | 944   | 0.003 | 0.22  | <0.01 | 0.10  | <0.5  | 0.08  | 2.6   | 0.7   | 0.72  | <5    | 4     | 82.48 | 7.13  | 1.36  | <0.01 | 0.22  |
| 3204774 | RC Chip                          | 16.4  | 7.6   | <0.01 | 1675  | 0.002 | 0.21  | <0.01 | 0.11  | <0.5  | 0.13  | 2.3   | 0.6   | 1.54  | <5    | 3     | 81.82 | 7.11  | 2.38  | <0.01 | 0.23  |
| 3204775 | RC Chip                          | 21.6  | 8.8   | <0.01 | 1171  | 0.003 | 0.29  | <0.01 | 0.13  | <0.5  | 0.08  | 3.0   | 1.0   | 1.88  | <5    | 5     | 79.20 | 8.51  | 2.86  | <0.01 | 0.26  |
| 3204776 | RC Chip                          | 21.9  | 9.9   | <0.01 | 1023  | 0.002 | 0.24  | <0.01 | 0.11  | 0.7   | 0.14  | 2.9   | 0.9   | 1.97  | <5    | 5     | 78.18 | 8.43  | 3.00  | 0.01  | 0.26  |
| 3204777 | RC Chip                          | 21.8  | 12.0  | <0.01 | 1848  | 0.003 | 0.27  | <0.01 | 0.11  | 1.8   | 0.16  | 2.8   | 1.0   | 2.00  | <5    | 4     | 77.74 | 7.77  | 3.06  | 0.02  | 0.24  |
| 3204778 | RC Chip                          | 17.4  | 14.1  | <0.01 | 706   | 0.003 | 0.20  | <0.01 | 0.08  | 4.2   | <0.05 | 2.7   | 1.9   | 1.55  | <5    | 4     | 85.87 | 5.73  | 2.69  | 0.01  | 0.17  |
| 3204779 | RC Chip                          | 8.9   | 15.2  | <0.01 | 714   | 0.002 | 0.17  | <0.01 | 0.07  | 40.5  | 0.05  | 3.1   | 0.9   | 1.17  | <5    | 3     | 89.88 | 3.62  | 2.20  | 0.02  | 0.11  |
| 3204780 | Rock Pulp                        | 22.3  | 14.8  | 2.70  | 241   | 0.018 | 1.02  | 0.01  | 0.65  | 0.6   | 0.67  | 3.9   | 43.2  | 7.61  | <5    | <2    | 37.38 | 7.58  | 10.75 | 6.77  | 4.80  |
| 3204781 | RC Chip                          | 8.9   | 14.5  | <0.01 | 800   | 0.002 | 0.17  | <0.01 | 0.08  | 6.9   | <0.05 | 2.0   | 0.8   | 1.44  | <5    | 3     | 88.85 | 4.17  | 2.57  | 0.04  | 0.13  |
| 3204782 | RC Chip                          | 9.1   | 12.9  | <0.01 | 736   | 0.002 | 0.18  | <0.01 | 0.07  | 9.3   | 0.06  | 2.2   | 0.8   | 1.42  | <5    | 4     | 87.74 | 4.16  | 2.52  | 0.04  | 0.14  |
| 3204783 | RC Chip                          | 7.1   | 14.8  | <0.01 | 402   | 0.001 | 0.15  | <0.01 | 0.06  | 9.0   | <0.05 | 3.1   | 0.5   | 1.33  | <5    | 3     | 88.88 | 3.26  | 3.15  | 0.12  | 0.11  |
| 3204784 | RC Chip                          | 7.9   | 16.3  | 0.02  | 439   | 0.001 | 0.19  | <0.01 | 0.06  | 11.8  | <0.05 | 3.4   | <0.5  | 1.35  | <5    | 3     | 86.14 | 3.53  | 4.32  | 0.10  | 0.14  |
| 3204785 | RC Chip                          | 8.1   | 16.7  | 0.01  | 508   | 0.002 | 0.18  | <0.01 | 0.07  | 6.4   | 0.07  | 2.5   | 0.8   | 1.77  | <5    | 4     | 84.60 | 4.17  | 4.28  | 0.07  | 0.15  |
| 3204786 | RC Chip                          | 8.6   | 14.2  | <0.01 | 594   | 0.001 | 0.15  | <0.01 | 0.06  | 6.8   | <0.05 | 2.6   | 0.7   | 1.94  | <5    | 4     | 85.43 | 4.22  | 3.68  | 0.03  | 0.13  |
| 3204787 | Rock                             | 8.4   | 6.5   | 0.90  | 213   | 0.196 | 2.16  | 0.33  | 0.31  | 1.2   | <0.05 | 5.6   | <0.5  | <0.05 | 6     | <2    | 61.06 | 17.11 | 6.33  | 6.13  | 2.86  |



**BUREAU** MINERAL LABORATORIES  
**VERITAS** Canada

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**Project:** MacMillan Pass

**Report Date:** January 15, 2021

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# CERTIFICATE OF ANALYSIS

WHI20000502.1

| Method            | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725  | LF725 | TC000 | TC000 | TC005 | TC005 | TC006 | TC010 | TC010 |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Analyte           | K2O   | MnO   | TiO2  | P2O5  | Cr2O3 | Ba    | Cu    | Pb    | Zn    | LOI   | SUM_T  | V2O5  | TOT/C | TOT/S | C/ORG | C/GRA | CO2   | S/S-  | SO4   |
| Unit              | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %      | %     | %     | %     | %     | %     | %     | %     | %     |
| MDL               | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | -5.11 | 0.01   | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.08  | 0.02  | 0.15  |
| 3204758 RC Chip   | 1.34  | <0.01 | 0.33  | 0.06  | <0.01 | 0.46  | <0.01 | <0.01 | <0.01 | 2.06  | 98.86  | 0.03  | 0.69  | 0.52  | 0.67  | <0.02 | <0.08 | 0.37  | 0.47  |
| 3204759 RC Chip   | 1.70  | <0.01 | 0.43  | 0.04  | <0.01 | 0.52  | <0.01 | 0.02  | <0.01 | 3.70  | 99.00  | 0.04  | 2.16  | 0.10  | 2.10  | 0.04  | <0.08 | 0.02  | 0.24  |
| 3204760 Rock Pulp | 4.14  | 0.24  | 0.29  | 0.13  | <0.01 | 0.08  | 0.02  | 1.83  | 3.13  | 15.20 | 99.68  | <0.01 | 3.39  | 4.79  | 0.43  | <0.02 | 10.86 | 1.51  | 9.83  |
| 3204761 RC Chip   | 2.01  | <0.01 | 0.55  | <0.01 | <0.01 | 0.82  | <0.01 | <0.01 | <0.01 | 2.68  | 99.96  | 0.06  | 1.09  | 0.08  | 1.03  | 0.04  | <0.08 | 0.03  | 0.16  |
| 3204762 RC Chip   | 1.03  | <0.01 | 0.30  | 0.01  | <0.01 | 0.51  | <0.01 | 0.01  | <0.01 | 1.54  | 99.28  | 0.03  | 0.46  | 0.13  | 0.44  | <0.02 | <0.08 | 0.06  | 0.22  |
| 3204763 RC Chip   | 2.38  | <0.01 | 0.66  | 0.01  | 0.01  | 0.95  | <0.01 | <0.01 | <0.01 | 3.46  | 100.03 | 0.06  | 1.58  | 0.15  | 1.47  | 0.11  | <0.08 | 0.09  | 0.20  |
| 3204764 RC Chip   | 1.81  | <0.01 | 0.50  | 0.02  | <0.01 | 0.76  | <0.01 | <0.01 | <0.01 | 3.42  | 99.49  | 0.05  | 1.90  | 0.35  | 1.76  | 0.13  | <0.08 | 0.19  | 0.49  |
| 3204765 RC Chip   | 0.85  | 0.01  | 0.23  | 0.01  | <0.01 | 0.44  | <0.01 | <0.01 | <0.01 | 2.30  | 99.50  | 0.02  | 1.18  | 0.74  | 0.99  | 0.19  | <0.08 | 0.50  | 0.69  |
| 3204766 RC Chip   | 1.22  | <0.01 | 0.36  | 0.02  | <0.01 | 0.55  | <0.01 | <0.01 | <0.01 | 3.34  | 99.43  | 0.03  | 1.50  | 1.76  | 1.34  | 0.15  | <0.08 | 0.96  | 2.41  |
| 3204767 RC Chip   | 0.80  | 0.01  | 0.22  | 0.01  | <0.01 | 0.40  | <0.01 | <0.01 | <0.01 | 1.84  | 98.75  | 0.02  | 0.74  | 0.94  | 0.65  | 0.07  | <0.08 | 0.58  | 1.08  |
| 3204768 RC Chip   | 1.11  | 0.01  | 0.30  | <0.01 | <0.01 | 0.52  | <0.01 | 0.01  | <0.01 | 2.20  | 100.33 | 0.03  | 0.87  | 0.99  | 0.79  | 0.07  | <0.08 | 0.65  | 1.00  |
| 3204769 RC Chip   | 1.45  | 0.01  | 0.36  | 0.02  | <0.01 | 0.64  | <0.01 | <0.01 | <0.01 | 3.24  | 99.34  | 0.04  | 1.81  | 0.78  | 1.72  | 0.08  | <0.08 | 0.49  | 0.86  |
| 3204770 RC Chip   | 1.36  | <0.01 | 0.34  | 0.01  | <0.01 | 0.61  | <0.01 | 0.02  | <0.01 | 2.90  | 99.64  | 0.04  | 1.37  | 0.99  | 1.25  | 0.11  | <0.08 | 0.74  | 0.77  |
| 3204771 RC Chip   | 1.92  | <0.01 | 0.47  | 0.02  | <0.01 | 0.87  | <0.01 | 0.03  | <0.01 | 5.45  | 99.51  | 0.06  | 4.00  | 0.22  | 3.28  | 0.71  | <0.08 | 0.12  | 0.30  |
| 3204772 RC Chip   | 1.74  | <0.01 | 0.46  | 0.02  | <0.01 | 0.86  | <0.01 | 0.07  | <0.01 | 4.44  | 99.91  | 0.07  | 3.16  | 0.20  | 2.55  | 0.60  | <0.08 | 0.06  | 0.41  |
| 3204773 RC Chip   | 1.59  | 0.01  | 0.39  | 0.02  | <0.01 | 0.74  | <0.01 | 0.04  | <0.01 | 4.36  | 98.51  | 0.08  | 2.83  | 0.78  | 2.47  | 0.36  | <0.08 | 0.47  | 0.94  |
| 3204774 RC Chip   | 1.59  | 0.01  | 0.38  | 0.02  | <0.01 | 0.90  | <0.01 | 0.02  | <0.01 | 4.72  | 99.35  | 0.06  | 2.51  | 1.63  | 2.29  | 0.20  | <0.08 | 1.10  | 1.57  |
| 3204775 RC Chip   | 1.90  | 0.01  | 0.44  | 0.02  | <0.01 | 0.95  | <0.01 | 0.03  | <0.01 | 5.31  | 99.69  | 0.08  | 2.79  | 2.05  | 2.55  | 0.22  | <0.08 | 1.23  | 2.45  |
| 3204776 RC Chip   | 1.85  | 0.02  | 0.45  | 0.02  | <0.01 | 0.95  | <0.01 | 0.03  | <0.01 | 5.34  | 98.75  | 0.08  | 2.75  | 2.14  | 2.60  | 0.13  | <0.08 | 1.36  | 2.36  |
| 3204777 RC Chip   | 1.64  | 0.01  | 0.43  | 0.03  | <0.01 | 1.03  | <0.01 | 0.04  | <0.01 | 5.12  | 97.34  | 0.07  | 2.42  | 2.22  | 2.30  | 0.11  | <0.08 | 1.56  | 1.98  |
| 3204778 RC Chip   | 1.17  | 0.01  | 0.35  | 0.03  | <0.01 | 0.71  | <0.01 | 0.05  | <0.01 | 2.91  | 99.86  | 0.04  | 1.00  | 1.72  | 0.89  | 0.10  | <0.08 | 1.00  | 2.15  |
| 3204779 RC Chip   | 0.78  | 0.01  | 0.20  | 0.05  | <0.01 | 0.43  | <0.01 | 0.06  | <0.01 | 2.00  | 99.48  | 0.02  | 0.72  | 1.25  | 0.62  | 0.09  | <0.08 | 0.81  | 1.32  |
| 3204780 Rock Pulp | 3.53  | 0.27  | 0.23  | 0.12  | <0.01 | 0.10  | 0.04  | 3.55  | 4.95  | 16.31 | 98.06  | <0.01 | 3.36  | 7.98  | 0.55  | <0.02 | 10.33 | 2.52  | 16.37 |
| 3204781 RC Chip   | 0.90  | 0.02  | 0.22  | 0.04  | <0.01 | 0.50  | <0.01 | 0.03  | <0.01 | 2.30  | 99.88  | 0.02  | 0.78  | 1.52  | 0.68  | 0.09  | <0.08 | 1.04  | 1.46  |
| 3204782 RC Chip   | 0.91  | 0.01  | 0.22  | 0.03  | <0.01 | 0.48  | <0.01 | 0.03  | <0.01 | 2.32  | 98.74  | 0.02  | 0.78  | 1.51  | 0.70  | 0.07  | <0.08 | 0.98  | 1.60  |
| 3204783 RC Chip   | 0.69  | 0.04  | 0.17  | 0.09  | <0.01 | 0.38  | <0.01 | 0.02  | <0.01 | 2.39  | 99.37  | 0.02  | 0.89  | 1.45  | 0.73  | 0.08  | 0.27  | 0.94  | 1.54  |
| 3204784 RC Chip   | 0.75  | 0.07  | 0.18  | 0.07  | <0.01 | 0.41  | <0.01 | 0.01  | 0.01  | 2.98  | 98.81  | 0.02  | 0.97  | 1.44  | 0.64  | 0.07  | 0.93  | 1.03  | 1.23  |
| 3204785 RC Chip   | 0.91  | 0.05  | 0.23  | 0.06  | <0.01 | 0.47  | <0.01 | 0.01  | 0.01  | 3.24  | 98.36  | 0.03  | 1.05  | 2.02  | 0.79  | 0.11  | 0.55  | 1.37  | 1.94  |
| 3204786 RC Chip   | 0.93  | 0.02  | 0.22  | 0.03  | <0.01 | 0.46  | <0.01 | 0.02  | <0.01 | 3.22  | 98.51  | 0.02  | 1.14  | 2.16  | 0.98  | 0.12  | 0.19  | 1.46  | 2.11  |
| 3204787 Rock      | 1.53  | 0.13  | 0.54  | 0.15  | <0.01 | 0.07  | <0.01 | <0.01 | <0.01 | 0.93  | 100.14 | 0.02  | 0.04  | <0.02 | <0.02 | <0.02 | 0.10  | <0.02 | <0.15 |



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**Project:**

MacMillan Pass

**Report Date:**

January 15, 2021

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**Part:**

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## QUALITY CONTROL REPORT

WHI20000502.1

|                     | Method<br>Analyte<br>Unit<br>MDL | WGHT | AQ270 | AQ270   | AQ270 | AQ270 | AQ270 | AQ270  | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 |
|---------------------|----------------------------------|------|-------|---------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                     |                                  | Wgt  | Mo    | Cu      | Pb    | Zn    | Ag    | Ni     | Co    | Mn    | Fe    | As    | U     | Th    | Sr    | Cd    | Sb    | Bi    | V     | Ca    |
|                     |                                  | kg   | ppm   | ppm     | ppm   | ppm   | ppm   | ppm    | ppm   | ppm   | %     | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |
|                     |                                  | 0.01 | 0.5   | 0.5     | 0.5   | 5     | 0.5   | 0.5    | 0.5   | 5     | 0.01  | 5     | 0.5   | 0.5   | 5     | 0.5   | 0.5   | 0.5   | 10    | 0.01  |
| 3204771             | RC Chip                          | 2.05 | 17.0  | 22.4    | 264.9 | 31    | 1.1   | 3.5    | 0.5   | 21    | 0.32  | <5    | 0.8   | 6.1   | 8     | <0.5  | 3.8   | <0.5  | 18    | <0.01 |
| Pulp Duplicates     |                                  |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204759             | RC Chip                          | 1.68 | 21.3  | 12.3    | 247.9 | 100   | 2.3   | 2.3    | <0.5  | 18    | 0.31  | 9     | 0.6   | 3.9   | 10    | <0.5  | 6.3   | <0.5  | 27    | <0.01 |
| REP 3204759         | QC                               |      | 23.3  | 13.4    | 247.2 | 109   | 2.2   | 2.3    | <0.5  | 18    | 0.31  | 9     | 0.6   | 3.9   | 10    | <0.5  | 6.6   | <0.5  | 28    | <0.01 |
| 3204761             | RC Chip                          | 2.85 | 4.6   | 12.1    | 70.5  | <5    | 1.1   | 1.7    | <0.5  | 28    | 0.69  | <5    | <0.5  | 6.0   | 7     | <0.5  | 3.2   | <0.5  | 14    | <0.01 |
| REP 3204761         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204762             | RC Chip                          | 3.21 | 12.2  | 10.9    | 92.8  | 18    | 1.0   | 2.5    | <0.5  | 25    | 0.83  | <5    | <0.5  | 2.8   | 8     | <0.5  | 3.0   | <0.5  | 11    | <0.01 |
| REP 3204762         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204764             | RC Chip                          | 2.03 | 8.5   | 15.7    | 64.8  | 22    | 1.0   | 4.5    | 0.7   | 21    | 0.67  | <5    | <0.5  | 5.9   | 7     | <0.5  | 2.5   | <0.5  | 13    | <0.01 |
| REP 3204764         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204773             | RC Chip                          | 2.26 | 12.6  | 13.1    | 397.1 | 15    | 1.0   | 13.0   | 1.7   | 31    | 0.87  | 6     | 0.6   | 4.8   | 5     | <0.5  | 4.4   | <0.5  | 25    | <0.01 |
| REP 3204773         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204778             | RC Chip                          | 2.89 | 5.8   | 57.0    | 466.4 | 25    | 0.7   | 30.6   | 7.0   | 73    | 1.80  | 24    | 0.8   | 4.8   | 10    | <0.5  | 6.5   | <0.5  | 15    | <0.01 |
| REP 3204778         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204781             | RC Chip                          | 3.25 | 4.9   | 39.6    | 282.2 | 65    | 0.6   | 36.0   | 6.7   | 61    | 1.69  | 16    | <0.5  | 2.4   | 7     | 1.0   | 4.4   | <0.5  | <10   | 0.02  |
| REP 3204781         | QC                               |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| Reference Materials |                                  |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD COO2            | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD COO2            | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GGC-09          | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GGC-10          | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS311-1         | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS314-1         | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS910-4         | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS133B(D)    | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS605        | Standard                         |      | 4.8   | 48305.3 | 854.6 | 2094  | 968.0 | 1544.0 | 96.0  | 88    | 3.56  | 1663  | 0.9   | 2.6   | 47    | 15.1  | 278.4 | 18.5  | <10   | 0.16  |
| STD OREAS72B        | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS927-AR     | Standard                         |      | 0.8   | 10723.8 | 211.8 | 691   | 4.3   | 27.4   | 28.0  | 1026  | 8.02  | 14    | 1.6   | 11.6  | 13    | 1.1   | 1.2   | 61.7  | 32    | 0.29  |
| STD RTS-3A          | Standard                         |      |       |         |       |       |       |        |       |       |       |       |       |       |       |       |       |       |       |       |



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**Project:**

MacMillan Pass

**Report Date:**

January 15, 2021

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## QUALITY CONTROL REPORT

WHI20000502.1

|                     | Method<br>Analyte<br>Unit<br>MDL | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | LF725 | LF725 | LF725 | LF725 | LF725 |
|---------------------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                     |                                  | La    | Cr    | Mg    | Ba    | Ti    | Al    | Na    | K     | W     | Hg    | Sc    | Ti    | S     | Ga    | Se    | SiO2  | Al2O3 | Fe2O3 | CaO   | MgO   |
|                     |                                  | ppm   | ppm   | %     | ppm   | %     | %     | %     | %     | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | %     | %     | %     | %     | %     |
|                     |                                  | 0.5   | 0.5   | 0.01  | 5     | 0.001 | 0.01  | 0.01  | 0.01  | 0.5   | 0.05  | 0.5   | 0.5   | 0.05  | 5     | 2     | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  |
| 3204771             | RC Chip                          | 24.1  | 8.9   | <0.01 | 1440  | 0.004 | 0.21  | <0.01 | 0.11  | 0.7   | 0.18  | 2.8   | 0.6   | 0.17  | <5    | 5     | 81.04 | 8.53  | 0.66  | 0.01  | 0.29  |
| Pulp Duplicates     |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204759             | RC Chip                          | 19.6  | 8.1   | <0.01 | 829   | 0.003 | 0.19  | <0.01 | 0.10  | 0.5   | 0.22  | 2.2   | <0.5  | 0.08  | <5    | <2    | 83.94 | 7.65  | 0.63  | 0.01  | 0.20  |
| REP 3204759         | QC                               | 19.5  | 7.5   | <0.01 | 770   | 0.003 | 0.19  | <0.01 | 0.09  | <0.5  | 0.18  | 2.2   | <0.5  | 0.08  | <5    | <2    |       |       |       |       |       |
| 3204761             | RC Chip                          | 25.3  | 7.1   | <0.01 | 1167  | 0.003 | 0.27  | <0.01 | 0.14  | <0.5  | 0.19  | 1.7   | <0.5  | 0.07  | <5    | 8     | 83.16 | 9.01  | 1.24  | 0.01  | 0.26  |
| REP 3204761         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 83.25 | 9.02  | 1.22  | 0.01  | 0.26  |
| 3204762             | RC Chip                          | 13.4  | 6.8   | <0.01 | 1505  | 0.003 | 0.17  | <0.01 | 0.10  | 0.5   | 0.13  | 1.5   | <0.5  | 0.13  | <5    | 6     | 89.66 | 4.68  | 1.28  | 0.01  | 0.13  |
| REP 3204762         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 89.86 | 4.68  | 1.28  | <0.01 | 0.13  |
| 3204764             | RC Chip                          | 20.3  | 6.8   | <0.01 | 1132  | 0.003 | 0.23  | <0.01 | 0.11  | <0.5  | 0.15  | 1.3   | <0.5  | 0.31  | <5    | 7     | 83.19 | 8.20  | 1.18  | 0.01  | 0.23  |
| REP 3204764         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204773             | RC Chip                          | 19.0  | 9.2   | <0.01 | 944   | 0.003 | 0.22  | <0.01 | 0.10  | <0.5  | 0.08  | 2.6   | 0.7   | 0.72  | <5    | 4     | 82.48 | 7.13  | 1.36  | <0.01 | 0.22  |
| REP 3204773         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204778             | RC Chip                          | 17.4  | 14.1  | <0.01 | 706   | 0.003 | 0.20  | <0.01 | 0.08  | 4.2   | <0.05 | 2.7   | 1.9   | 1.55  | <5    | 4     | 85.87 | 5.73  | 2.69  | 0.01  | 0.17  |
| REP 3204778         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3204781             | RC Chip                          | 8.9   | 14.5  | <0.01 | 800   | 0.002 | 0.17  | <0.01 | 0.08  | 6.9   | <0.05 | 2.0   | 0.8   | 1.44  | <5    | 3     | 88.85 | 4.17  | 2.57  | 0.04  | 0.13  |
| REP 3204781         | QC                               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Reference Materials |                                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD COO2            | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD COO2            | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GGC-09          | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GGC-10          | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS311-1         | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS314-1         | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD GS910-4         | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| STD OREAS133B(D)    | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 33.34 | 6.83  | 11.47 | 5.26  | 3.73  |
| STD OREAS605        | Standard                         | 8.0   | 28.7  | 0.03  | 244   | 0.011 | 0.72  | 0.03  | 0.15  | 7.0   | 1.57  | 2.4   | 15.5  | 7.51  | 6     | 76    |       |       |       |       |       |
| STD OREAS72B        | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 51.10 | 8.93  | 9.86  | 3.98  | 16.08 |
| STD OREAS927-AR     | Standard                         | 27.0  | 41.0  | 1.88  | 44    | 0.081 | 3.19  | <0.01 | 0.25  | 4.8   | 0.08  | 5.6   | <0.5  | 1.60  | 8     | 16    |       |       |       |       |       |
| STD RTS-3A          | Standard                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |



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## QUALITY CONTROL REPORT

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|                     | Method<br>Analyte<br>Unit<br>MDL | LF725    | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | LF725 | TC000 | TC000 | TC005 | TC005 | TC006 | TC010                                                            | TC010 |
|---------------------|----------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------------------------------------------------------|-------|
|                     |                                  | K2O      | MnO   | TiO2  | P2O5  | Cr2O3 | Ba    | Cu    | Pb    | Zn    | LOI   | SUM_T | V2O5  | TOT/C | TOT/S | C/ORG | C/GRA | CO2   | S/S-                                                             | SO4   |
|                     |                                  | %        | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %                                                                | %     |
|                     |                                  | 0.01     | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | 0.01  | -5.11 | 0.01  | 0.01  | 0.02  | 0.02  | 0.02  | 0.02  | 0.08                                                             | 0.02  |
| 3204771             | RC Chip                          | 1.92     | <0.01 | 0.47  | 0.02  | <0.01 | 0.87  | <0.01 | 0.03  | <0.01 | 5.45  | 99.51 | 0.06  | 4.00  | 0.22  | 3.28  | 0.71  | <0.08 | 0.12                                                             | 0.30  |
| Pulp Duplicates     |                                  |          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204759             | RC Chip                          | 1.70     | <0.01 | 0.43  | 0.04  | <0.01 | 0.52  | <0.01 | 0.02  | <0.01 | 3.70  | 99.00 | 0.04  | 2.16  | 0.10  | 2.10  | 0.04  | <0.08 | 0.02                                                             | 0.24  |
| REP 3204759         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204761             | RC Chip                          | 2.01     | <0.01 | 0.55  | <0.01 | <0.01 | 0.82  | <0.01 | <0.01 | <0.01 | 2.68  | 99.96 | 0.06  | 1.09  | 0.08  | 1.03  | 0.04  | <0.08 | 0.03                                                             | 0.16  |
| REP 3204761         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204762             | RC Chip                          | 1.03     | <0.01 | 0.30  | 0.01  | <0.01 | 0.51  | <0.01 | 0.01  | <0.01 | 1.54  | 99.28 | 0.03  | 0.46  | 0.13  | 0.44  | <0.02 | <0.08 | 0.06                                                             | 0.22  |
| REP 3204762         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204764             | RC Chip                          | 1.81     | <0.01 | 0.50  | 0.02  | <0.01 | 0.76  | <0.01 | <0.01 | <0.01 | 3.42  | 99.49 | 0.05  | 1.90  | 0.35  | 1.76  | 0.13  | <0.08 | 0.19                                                             | 0.49  |
| REP 3204764         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204773             | RC Chip                          | 1.59     | 0.01  | 0.39  | 0.02  | <0.01 | 0.74  | <0.01 | 0.04  | <0.01 | 4.36  | 98.51 | 0.08  | 2.83  | 0.78  | 2.47  | 0.36  | <0.08 | 0.47                                                             | 0.94  |
| REP 3204773         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204778             | RC Chip                          | 1.17     | 0.01  | 0.35  | 0.03  | <0.01 | 0.71  | <0.01 | 0.05  | <0.01 | 2.91  | 99.86 | 0.04  | 1.00  | 1.72  | 0.89  | 0.10  | <0.08 | 1.00                                                             | 2.15  |
| REP 3204778         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| 3204781             | RC Chip                          | 0.90     | 0.02  | 0.22  | 0.04  | <0.01 | 0.50  | <0.01 | 0.03  | <0.01 | 2.30  | 99.88 | 0.02  | 0.78  | 1.52  | 0.68  | 0.09  | <0.08 | 1.04                                                             | 1.46  |
| REP 3204781         |                                  | QC       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| Reference Materials |                                  |          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| STD COO2            |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 3.58                                                             |       |
| STD COO2            |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 3.60                                                             |       |
| STD GGC-09          |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2.23                                                             |       |
| STD GGC-10          |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 4.69                                                             |       |
| STD GS311-1         |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 0.99 2.41                                                        |       |
| STD GS314-1         |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1.36 29.38                                                       |       |
| STD GS910-4         |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 2.75 8.37                                                        |       |
| STD OREAS133B(D)    |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 3.43 0.16 0.21 0.10 <0.01 0.08 0.03 5.06 11.32 13.03 97.42 <0.01 |       |
| STD OREAS605        |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| STD OREAS72B        |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 1.33 0.13 0.35 0.06 0.14 0.03 0.02 <0.01 <0.01 5.22 98.56 0.01   |       |
| STD OREAS927-AR     |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                                                                  |       |
| STD RTS-3A          |                                  | Standard |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       | 6.69                                                             |       |



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## QUALITY CONTROL REPORT

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|                           |            | WGHT | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270  | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 |
|---------------------------|------------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                           |            | Wgt  | Mo    | Cu    | Pb    | Zn    | Ag    | Ni    | Co    | Mn    | Fe     | As    | U     | Th    | Sr    | Cd    | Sb    | Bi    | V     | Ca    |
|                           |            | kg   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %      | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | ppm   | %     |
|                           |            | 0.01 | 0.5   | 0.5   | 0.5   | 5     | 0.5   | 0.5   | 0.5   | 5     | 0.01   | 5     | 0.5   | 0.5   | 5     | 0.5   | 0.5   | 0.5   | 10    | 0.01  |
| STD SY-4(D)               | Standard   |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD OREAS605 Expected     |            |      | 4.75  | 49800 | 856   | 2170  | 984   | 1568  | 96    | 83.44 | 3.6707 | 1674  | 0.9   |       | 49    | 13.6  | 290   | 19    | 7.8   | 0.182 |
| STD OREAS927-AR Expected  |            |      | 1.06  | 10715 | 203   | 726   | 4.9   | 30.9  | 29.4  | 1110  | 8.15   | 13.5  | 1.7   | 12.5  | 13.1  | 1.1   | 1.3   | 66    | 34    | 0.3   |
| STD SY-4(D) Expected      |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD OREAS72B Expected     |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD OREAS133B(D) Expected |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD RTS-3A Expected       |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD GGC-10 Expected       |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD GGC-09 Expected       |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD GS311-1 Expected      |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD GS910-4 Expected      |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD GS314-1 Expected      |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| STD COO2 Expected         |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| BLK                       | Blank      |      | <0.5  | <0.5  | <0.5  | <5    | <0.5  | <0.5  | <0.5  | <5    | <0.01  | <5    | <0.5  | <0.5  | <5    | <0.5  | <0.5  | <0.5  | <10   | <0.01 |
| SI BLK                    | Blank      |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| BLK                       | Blank      |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| BLK                       | Blank      |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| BLK                       | Blank      |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| BLK                       | Blank      |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| Prep Wash                 |            |      |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |
| ROCK-WHI                  | Prep Blank |      | 0.7   | 2.5   | 1.6   | 24    | <0.5  | 0.6   | 3.2   | 419   | 1.73   | <5    | <0.5  | 2.3   | 21    | <0.5  | <0.5  | <0.5  | 22    | 0.60  |
| ROCK-WHI                  | Prep Blank |      | 0.6   | 2.6   | 1.3   | 22    | <0.5  | 0.6   | 3.0   | 345   | 1.70   | <5    | <0.5  | 2.3   | 20    | <0.5  | <0.5  | <0.5  | 23    | 0.60  |



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## QUALITY CONTROL REPORT

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|                           |            | AQ270 | AQ270 | AQ270  | AQ270 | AQ270  | AQ270 | AQ270  | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | AQ270 | LF725 | LF725 | LF725 | LF725 | LF725 |        |
|---------------------------|------------|-------|-------|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                           |            | La    | Cr    | Mg     | Ba    | Ti     | Al    | Na     | K     | W     | Hg    | Sc    | Tl    | S     | Ga    | Se    | SiO2  | Al2O3 | Fe2O3 | CaO   | MgO    |
|                           |            | ppm   | ppm   | %      | ppm   | %      | %     | %      | %     | ppm   | ppm   | ppm   | ppm   | %     | ppm   | ppm   | %     | %     | %     | %     | %      |
|                           |            | 0.5   | 0.5   | 0.01   | 5     | 0.001  | 0.01  | 0.01   | 0.01  | 0.5   | 0.05  | 0.5   | 0.5   | 0.05  | 5     | 2     | 0.01  | 0.01  | 0.01  | 0.01  | 0.01   |
| STD SY-4(D)               | Standard   |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       | 49.94 | 20.85 | 6.22  | 7.96  | 0.54   |
| STD OREAS605 Expected     |            | 7.5   | 28.8  | 0.0289 | 222   | 0.0103 | 0.73  | 0.0328 | 0.134 | 7.1   | 1.7   | 1.3   | 15.5  | 7.86  | 6.7   | 77    |       |       |       |       |        |
| STD OREAS927-AR Expected  |            | 26.9  | 41.7  | 1.94   | 51.4  | 0.085  | 3.25  | 0.011  | 0.27  | 4.9   | 0.12  | 4.74  | 1.77  |       | 9.09  | 15.5  |       |       |       |       |        |
| STD SY-4(D) Expected      |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       | 49.9  | 20.69 | 6.21  | 8.05  | 0.54   |
| STD OREAS72B Expected     |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       | 51.17 | 8.97  | 9.724 | 3.96  | 15.933 |
| STD OREAS133B(D) Expected |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       | 33.83 | 6.91  | 11.67 | 5.4   | 3.73   |
| STD RTS-3A Expected       |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD GGC-10 Expected       |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD GGC-09 Expected       |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD GS311-1 Expected      |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD GS910-4 Expected      |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD GS314-1 Expected      |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| STD COO2 Expected         |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| BLK                       | Blank      | <0.5  | 0.6   | <0.01  | <5    | <0.001 | <0.01 | <0.01  | <0.01 | <0.5  | <0.05 | 0.7   | <0.5  | <0.05 | <5    | <2    |       |       |       |       |        |
| SI BLK                    | Blank      |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       | 98.57 | 0.32  | 0.02  | 0.01  | 0.02   |
| BLK                       | Blank      |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| BLK                       | Blank      |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| BLK                       | Blank      |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| BLK                       | Blank      |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| Prep Wash                 |            |       |       |        |       |        |       |        |       |       |       |       |       |       |       |       |       |       |       |       |        |
| ROCK-WHI                  | Prep Blank | 7.4   | 5.1   | 0.44   | 60    | 0.094  | 0.95  | 0.14   | 0.11  | <0.5  | <0.05 | 4.4   | <0.5  | <0.05 | <5    | <2    | 71.44 | 14.03 | 3.01  | 2.26  | 0.82   |
| ROCK-WHI                  | Prep Blank | 6.6   | 4.0   | 0.39   | 62    | 0.099  | 0.92  | 0.14   | 0.12  | <0.5  | <0.05 | 3.9   | <0.5  | <0.05 | <5    | <2    | 71.50 | 14.07 | 2.94  | 2.30  | 0.81   |



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## QUALITY CONTROL REPORT

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|                           |            | LF725<br>K2O<br>% | LF725<br>MnO<br>% | LF725<br>TiO2<br>% | LF725<br>P2O5<br>% | LF725<br>Cr2O3<br>% | LF725<br>Ba<br>% | LF725<br>Cu<br>% | LF725<br>Pb<br>% | LF725<br>Zn<br>% | LF725<br>LOI<br>% | LF725<br>SUM_T<br>% | LF725<br>V2O5<br>% | TC000<br>TOT/C<br>% | TC000<br>TOT/S<br>% | TC005<br>C/ORG<br>% | TC005<br>C/GRA<br>% | TC006<br>CO2<br>% | TC010<br>S/S-<br>% | TC010<br>SO4<br>% |  |  |
|---------------------------|------------|-------------------|-------------------|--------------------|--------------------|---------------------|------------------|------------------|------------------|------------------|-------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|-------------------|--------------------|-------------------|--|--|
|                           |            | 0.01              | 0.01              | 0.01               | 0.01               | 0.01                | 0.01             | 0.01             | 0.01             | 0.01             | -5.11             | 0.01                | 0.01               | 0.02                | 0.02                | 0.02                | 0.02                | 0.08              | 0.02               | 0.15              |  |  |
| STD SY-4(D)               | Standard   | 1.66              | 0.11              | 0.30               | 0.14               | <0.01               | 0.04             | <0.01            | <0.01            | 0.01             | 4.56              | 99.46               | <0.01              |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD OREAS605 Expected     |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD OREAS927-AR Expected  |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD SY-4(D) Expected      |            | 1.66              | 0.108             | 0.287              | 0.131              | 0.0345              |                  |                  |                  |                  |                   | 4.56                |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD OREAS72B Expected     |            | 1.313             | 0.13              | 0.355              | 0.061              | 0.142               | 0.0335           | 0.0193           |                  |                  |                   | 5.12                |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD OREAS133B(D) Expected |            |                   |                   |                    |                    |                     |                  | 0.08             | 0.032            | 5.06             | 11.35             |                     |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| STD RTS-3A Expected       |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   | 7                  |                   |  |  |
| STD GGC-10 Expected       |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     | 4.79              |                    |                   |  |  |
| STD GGC-09 Expected       |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     | 2.41              |                    |                   |  |  |
| STD GS311-1 Expected      |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    | 1.02                | 2.35                |                     |                     |                   |                    |                   |  |  |
| STD GS910-4 Expected      |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    | 2.65                | 8.27                |                     |                     |                   |                    |                   |  |  |
| STD GS314-1 Expected      |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    | 1.41                | 29.11               |                     |                     |                   |                    |                   |  |  |
| STD COO2 Expected         |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   | 3.43               |                   |  |  |
| BLK                       | Blank      |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| SI BLK                    | Blank      | <0.01             | <0.01             | 0.01               | <0.01              | <0.01               | 0.02             | <0.01            | <0.01            | <0.01            | 0.00              | 98.94               | <0.01              |                     |                     |                     |                     |                   |                    |                   |  |  |
| BLK                       | Blank      |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   | <0.02              |                   |  |  |
| BLK                       | Blank      |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     | <0.02               |                     | <0.02             |                    |                   |  |  |
| BLK                       | Blank      |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     | <0.02               | <0.02               |                   |                    |                   |  |  |
| BLK                       | Blank      |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   | <0.08              |                   |  |  |
| Prep Wash                 |            |                   |                   |                    |                    |                     |                  |                  |                  |                  |                   |                     |                    |                     |                     |                     |                     |                   |                    |                   |  |  |
| ROCK-WHI                  | Prep Blank | 1.95              | 0.07              | 0.32               | 0.09               | <0.01               | 0.09             | <0.01            | <0.01            | <0.01            | 0.82              | 99.40               | <0.01              | 0.05                | <0.02               | 0.05                | <0.02               | <0.08             | <0.02              | <0.15             |  |  |
| ROCK-WHI                  | Prep Blank | 2.07              | 0.08              | 0.33               | 0.08               | <0.01               | 0.09             | <0.01            | <0.01            | <0.01            | 0.80              | 99.51               | <0.01              | 0.05                | <0.02               | <0.02               | <0.02               | 0.15              | <0.02              | <0.15             |  |  |