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ALUMINA

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg T = Total

| # | Number | Al ₂ O ₃ | Be* | CaO | Cr ₂ O ₃ | Fe ₂ O ₃ | K ₂ O | MgO | MnO* | Na ₂ O | P* | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Units |
|------------------------|----------------|--------------------------------|------|-------|--------------------------------|--------------------------------|------------------|--------|------|-------------------|-----------------------|-------------------------------|------------------|------------------|--------|-------------|
| AVAILABLE INDIVIDUALLY | | | | | | | | | | | | | | | | |
| 2 | CERAM AN27 | 99.76 | . | 0.03 | . | 0.02 | <0.01 | <0.01 | . | 0.08 | . | . | 0.08 | <0.01 | . | 25 or 100 g |
| 2 | CERAM AN26 | 99.76 | . | 0.03 | . | 0.03 | <0.01 | <0.01 | . | 0.02 | . | . | 0.12 | <0.01 | (0.08) | 25 or 100 g |
| 2 | CERAM AN25 | 99.39 | . | 0.03 | . | 0.03 | 0.01 | <0.01 | . | 0.53 | . | <0.01 | <0.01 | <0.01 | (0.34) | 25 or 100 g |
| 1 | VS SH12/3 | 73.6 | . | 18.8 | 0.46 | 0.66T | . | 2.15 | . | . | . | . | 0.76 | . | . | 100 g |
| 1 | NCS DC62107 | 64.92 | . | 1.34 | . | 6.26 | 0.22 | 0.47 | . | 0.06 | SO ₂ :0.29 | . | 8.30 | 2.81 | 14.39 | 20 g |
| 1 | SRM 699 * | . | 2.81 | 0.036 | . | 0.013T | (0.005) | 0.0006 | 5 | 0.59 | 2 ³ | . | 0.0120 | (0.001) | 0.69 | 60 g |
| 1 | DSZU 123.45-03 | . | . | . | 2.7* | 0.02 | V2O5: 3.7* | . | 2.3 | 0.33 | . | 4.0* | 0.022 | 0.0046 | . | 50 g |

AVAILABLE ONLY AS SET 1-5

| | | | | | | | | | | | | | | | | |
|---|------------------|---|---|---|---|-------|---|---|---|------|---|---|-------|---|---|-------------------|
| 1 | DSZU 123.46-03-1 | . | . | . | . | 0.022 | . | . | . | 0.20 | . | . | 0.020 | . | . | 30 g SET 1-5 only |
| 1 | DSZU 123.46-03-2 | . | . | . | . | 0.022 | . | . | . | 0.33 | . | . | 0.021 | . | . | 30 g SET 1-5 only |
| 1 | DSZU 123.46-03-3 | . | . | . | . | 0.037 | . | . | . | 0.44 | . | . | 0.037 | . | . | 30 g SET 1-5 only |
| 1 | DSZU 123.46-03-4 | . | . | . | . | 0.055 | . | . | . | 0.47 | . | . | 0.054 | . | . | 30 g SET 1-5 only |
| 1 | DSZU 123.46-03-5 | . | . | . | . | 0.090 | . | . | . | 0.72 | . | . | 0.077 | . | . | 30 g SET 1-5 only |

* SRM 699 also contains Cr₂O₃: 0.0002, Ga₂O₃: 0.010, Li₂O: 0.002, V₂O₅: 0.0005, and ZnO: 0.013CRM ALUMINA SET available in SET/3 only trace informational Cl, NiO, SO₃ 50 g units

| Number | B ₂ O ₃ | CaO | CuO | Fe ₂ O ₃ | Ga ₂ O ₃ | K ₂ O | MgO | Na ₂ O | SiO ₂ | SrO | TiO ₂ | ZnO | ZrO ₂ | LOI |
|-----------|-------------------------------|--------|-----------|--------------------------------|--------------------------------|------------------|-----------|-------------------|------------------|-----------|------------------|-----------|------------------|-------|
| JCRM R034 | (<0.0006) | 0.0002 | (<0.0003) | (0.0003) | 0.0021 | 0.0020 | (<0.0001) | 0.0018 | 0.0045 | (<0.0001) | (<0.0004) | (<0.0002) | (<0.0002) | 0.188 |
| JCRM R035 | (<0.0006) | 0.0188 | 0.0018 | 0.0151 | 0.0074 | 0.0005 | 0.0013 | 0.222 | 0.0116 | 0.0007 | 0.0029 | 0.0012 | 0.0009 | 0.156 |
| JCRM R036 | 0.0533 | 0.0242 | (<0.0003) | 0.0139 | 0.0076 | (0.0002) | 0.0006 | 0.0316 | 0.0569 | 0.0002 | 0.0032 | 0.0007 | 0.0004 | 0.072 |

CRM ALUMINOUS SET available in SET/3 only 100 g units

| Number | Type | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | ZrO ₂ +HfO ₂ | LOI |
|-----------|-------------|--------------------------------|-------|--------------------------------|------------------|-------|-------------------|-------------------------------|------------------|------------------|------------------------------------|------|
| JCRM R303 | Bauxite | 88.49 | 0.012 | 1.51 | . | 0.006 | . | 0.064 | 5.55 | 2.93 | 0.110 | . |
| JCRM R304 | Sillimanite | 55.94 | 0.427 | 0.585 | 0.329 | 0.451 | 0.273 | . | 35.90 | 1.33 | 0.105 | 4.26 |
| JCRM R041 | Mullite | 70.18 | 0.059 | 0.598 | 0.174 | 0.190 | 0.197 | 0.136 | 28.11 | 0.185 | 0.058 | . |

CRM ALUMINUM FLUORITE

analysis listed in mass %

100 g units

| Number | F | Al | Fe ₂ O ₃ | Na | P ₂ O ₅ | SiO ₂ | SO ₄ | LOI |
|-------------|-------|-------|--------------------------------|-------|-------------------------------|------------------|-----------------|--------|
| NCS DC91016 | 64.97 | 31.92 | 0.025 | 0.028 | 0.0275 | 0.196 | 0.076 | 1.25 |
| NCS DC91008 | 61.79 | 30.70 | 0.132 | 0.097 | 0.0253 | 0.104 | 0.585 | (4.61) |
| NCS DC91011 | 61.51 | 32.28 | 0.021 | 0.121 | 0.1317 | 0.429 | 0.627 | 0.754 |
| NCS DC91010 | 60.96 | 30.52 | 0.126 | 0.125 | 0.0265 | 0.251 | 0.748 | (5.48) |
| NCS DC91013 | 60.88 | 33.12 | 0.020 | 0.315 | 0.0013 | 0.017 | 0.098 | 0.467 |
| NCS DC91007 | 60.76 | 30.27 | 0.156 | 0.104 | 0.0295 | 0.146 | 0.654 | (6.00) |
| NCS DC91015 | 59.99 | 30.70 | 0.107 | 0.111 | 0.0247 | 0.301 | 0.702 | (5.61) |
| NCS DC91012 | 59.74 | 33.93 | 0.037 | 0.126 | 0.0027 | 0.016 | 0.136 | 0.547 |
| NCS DC91009 | 57.79 | 34.68 | 0.028 | 0.113 | 0.0008 | 0.015 | 0.093 | 0.662 |
| NCS DC91014 | 57.72 | 34.76 | 0.015 | 0.113 | 0.0007 | 0.014 | 0.104 | 0.640 |

CRM ANDALUSITE 100 g units

| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | SiO ₂ | TiO ₂ | LOI |
|---------|--------------------------------|--------|--------------------------------|------------------|------|-------------------|------------------|------------------|------|
| SARM 34 | 59.15 | (0.13) | 0.75 | 0.23 | 0.13 | 0.093 | 39.04 | 0.16 | 0.62 |

CRM ANDESITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | Si | SiO ₂ | Al | Al ₂ O ₃ | CO ₂ | CaO | Fe | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | |
|-------------|-------|------------------|------|--------------------------------|-----------------|------|------|--------|--------------------------------|----------------------------------|------------------|------------------|------|------|-------------------|-------------------------------|------------------|------|------|
| JA-1 | 29.90 | 63.97 | 8.06 | 15.22 | . | 5.70 | 4.95 | 3.98 | 2.59 | 7.07 | +0.72 | -0.30 | 0.77 | 1.57 | 0.157 | 3.84 | 0.165 | 0.85 | . |
| JA-1a | . | 63.66 | . | 15.40 | . | 5.74 | . | 3.67 | . | 7.17 | . | . | 0.78 | 1.55 | 0.157 | 3.90 | 0.165 | 0.87 | . |
| GBW 07110 | . | 63.06 | . | 16.1 | 1.03 | 2.47 | . | 0.19 | 4.51 | . | +1.79 | . | 5.17 | 0.84 | 0.089 | 3.06 | 0.36 | 0.80 | . |
| JA-3 | 29.11 | 62.27 | 8.23 | 15.56 | . | 6.24 | 4.62 | 4.83 | 1.15 | 6.60 | +0.20 | -0.11 | 1.41 | 3.72 | 0.104 | 3.19 | 0.116 | 0.70 | . |
| GBW 07104 | . | 60.62 | . | 16.17 | 3.47 | 5.20 | . | 2.39 | . | 4.90 | +(1.5) | . | 1.89 | 1.72 | . | 3.86 | . | . | 4.44 |
| US AGV-2 | 27.7 | 59.3 | 8.95 | 16.91 | . | 5.20 | 4.68 | . | . | 6.69 | . | . | 2.88 | 1.79 | . | 4.19 | 0.48 | 1.05 | . |
| USZ 48-2009 | . | 59.20 | . | 16.72 | . | 5.58 | . | (1.66) | . | 5.43 | . | . | 2.42 | 3.52 | 0.081 | 4.46 | 0.264 | 0.71 | 1.39 |
| JA-2 | 26.37 | 56.42 | 8.16 | 15.41 | . | 6.29 | 4.34 | 3.69 | 2.16 | 6.21 | +1.12 | -1.25 | 1.81 | 7.60 | 0.108 | 3.11 | 0.146 | 0.66 | . |

continued analysis listed in mg/kg except * which is ppb and % which is mass %

| Number | Ag | As | Au* | B | Ba | Be | Bi | Ca% | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu |
|-------------|--------|--------|--------|------|-------|--------|--------|------|--------|------|------|--------|-------|--------|--------|--------|--------|--------|
| JA-1 | . | 2.78 | 0.16 | 21.0 | 311 | 0.50 | . | 4.07 | 0.11 | 13.3 | 43.0 | 12.3 | 7.83 | 0.62 | 43.0 | 4.55 | 3.04 | 1.20 |
| JA-1a | . | . | . | . | (322) | . | . | . | . | . | . | (12.9) | (4.1) | . | (41.8) | . | . | . |
| GBW 07110 | 0.17 | 5.96 | . | 10.8 | 1053 | 3.64 | 0.09 | . | 0.61 | 117 | 160 | 7.9 | 7.7 | 7.16 | 9.1 | 5.32 | 2.93 | 1.96 |
| JA-3 | 0.084 | . | . | 24.8 | 323 | 0.80 | . | 4.46 | . | 22.8 | . | 21.1 | 66.2 | 2.08 | 43.4 | 3.01 | 1.57 | 0.82 |
| GBW 07104 | 0.071 | 2.1 | (0.95) | 4.7 | 1020 | 1.1 | 0.081 | . | 0.061 | 40 | (46) | 13.2 | 32 | 2.3 | 55 | 1.85 | 0.85 | 1.02 |
| US AGV-2 | . | . | . | . | 1140 | 2.3 | . | 3.72 | . | 68 | . | 16 | 17 | (1.16) | 53 | 3.6 | (1.79) | (1.54) |
| USZ 48-2009 | (0.08) | (3.64) | . | . | 672 | (2.01) | (0.12) | . | (0.06) | 55.2 | . | 19.2 | 95.9 | 1.09 | 41.2 | (2.55) | (1.18) | 1.44 |
| JA-2 | . | . | 0.26 | 20.7 | 321 | 2.05 | . | 4.50 | . | 32.7 | . | 29.5 | 436 | 4.63 | 29.7 | 2.80 | 1.48 | 0.93 |

| Number | F | Ga | Gd | Ge | Hf | Hg | Ho | I | In | K% | La | Li | Lu | Mg% | Mn% | Mo | Na% | Nb |
|-------------|-------|------|--------|------|--------|---------|--------|--------|-------|------|------|--------|--------|------|--------|--------|------|------|
| JA-1 | 161 | 16.7 | 4.36 | 1.33 | 2.42 | . | 0.95 | . | . | 0.64 | 5.24 | 10.8 | 0.47 | 0.95 | 0.122 | 1.59 | 2.85 | 1.85 |
| JA-1a | . | . | . | . | . | . | . | . | . | . | . | (11.6) | . | . | . | (1.2) | . | . |
| GBW 07110 | 1120 | 19.8 | 6.54 | 1.11 | 7.5 | 0.014 | 1.10 | 0.07 | 0.11 | . | 62.5 | 17.5 | 0.49 | . | . | 0.95 | . | 20.8 |
| JA-3 | . | 16.3 | 2.96 | . | 3.42 | . | 0.51 | . | . | 1.17 | 9.33 | 14.5 | 0.32 | 2.24 | 0.081 | 1.89 | 2.37 | 3.41 |
| GBW 07104 | 280 | 18.1 | 2.7 | 0.93 | 2.9 | 0.012 | 0.34 | (0.14) | 0.037 | . | 22 | 18.3 | 0.12 | . | 0.0604 | 0.54 | . | 6.8 |
| US AGV-2 | (440) | 20 | (4.69) | . | (5.08) | . | (0.71) | . | . | 2.39 | 38 | (11) | (0.25) | 1.08 | 0.0770 | . | 3.11 | 15 |
| USZ 48-2009 | . | 21.1 | (3.93) | . | 3.80 | (0.004) | (0.46) | . | . | . | 26.2 | (13.2) | (0.15) | . | . | (0.60) | . | 3.23 |
| JA-2 | . | 16.9 | 3.06 | . | 2.86 | . | 0.50 | . | . | 1.50 | 15.8 | 27.3 | 0.27 | 4.58 | 0.084 | 0.60 | 2.31 | 9.47 |

| Number | Nd | Ni | P% | Pb | Pr | Rb | S | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Ti% |
|-------------|------|-------|--------|------|--------|------|------|--------|------|--------|-------|--------|-------|--------|--------|---------|------|--------|
| JA-1 | 10.9 | . | 0.072 | 6.55 | 1.71 | 12.3 | 21.6 | 0.22 | 28.5 | . | 3.52 | . | 263 | 0.13 | 0.75 | . | 0.82 | 0.51 |
| JA-1a | . | (2.3) | . | . | . | . | . | . | . | . | . | . | (268) | . | . | . | . | . |
| GBW 07110 | 47.2 | 12.6 | . | 97.7 | 13.2 | 183 | 230 | 1.34 | 7.52 | 0.03 | 8.63 | 3.12 | 318 | 1.42 | 0.99 | (0.007) | 16.7 | . |
| JA-3 | 12.3 | 32.2 | 0.051 | 7.70 | 2.40 | 36.7 | . | . | 22.0 | . | 3.05 | . | 287 | 0.27 | 0.52 | . | 3.25 | 0.42 |
| GBW 07104 | 19 | 17 | 0.1030 | 11.3 | 4.9 | 38 | 192 | 0.12 | 9.5 | (0.04) | 3.4 | 0.79 | 790 | 0.40 | 0.41 | 0.017 | 2.6 | 0.3090 |
| US AGV-2 | 30 | 19 | 0.21 | 13 | 8.3 | 68.6 | . | (0.6) | 13 | . | (5.7) | (2.3) | 658 | (0.89) | (0.64) | . | 6.1 | 0.63 |
| USZ 48-2009 | 27.2 | 61.2 | . | 18.7 | (6.77) | 49.7 | . | (0.27) | 11.8 | . | 5.16 | (0.86) | 1116 | (0.25) | 0.49 | . | 6.46 | . |
| JA-2 | 13.9 | 130 | 0.064 | 19.2 | 3.84 | 72.9 | . | . | 19.6 | . | 3.11 | 1.68 | 248 | 0.80 | 0.44 | . | 5.03 | 0.40 |

| Number | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Units |
|-------------|--------|--------|------|-------|--------|------|------|------|--------|-------|
| JA-1 | . | 0.47 | 0.34 | 105 | . | 30.6 | 3.03 | 90.9 | 88.3 | 20 g |
| JA-1a | . | . | . | (107) | . | . | . | (91) | (94.9) | 100 g |
| GBW 07110 | 1.02 | 0.50 | 3.04 | 64.3 | 1.62 | 28.0 | 3.15 | 164 | 335 | 50 g |
| JA-3 | . | . | 1.18 | 169 | . | 21.2 | 2.16 | 67.7 | 118 | 20 g |
| GBW 07104 | 0.16 | 0.15 | 0.90 | 94 | (0.45) | 9.3 | 0.89 | 71 | 99 | 70 g |
| US AGV-2 | (0.27) | (0.26) | 1.88 | 120 | . | 20 | 1.6 | 86 | 230 | 25 g |
| USZ 48-2009 | (0.22) | (0.17) | 1.96 | 123 | (1.70) | 11.8 | 1.00 | 71.5 | 141 | 100 g |
| JA-2 | 0.32 | 0.28 | 2.21 | 126 | . | 18.3 | 1.62 | 64.7 | 116 | 20 g |

CRM ANHYDRITE

analysis listed in mass %

50 g units

| Number | Al ₂ O ₃ | CO ₂ | CaO | Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | SO ₃ | SiO ₂ | Sr | TiO ₂ |
|--------|--------------------------------|-----------------|------|--------------------------------|------------------|------------------|------|---------|-------------------|-----------------|------------------|------|------------------|
| GUW AN | (0.023) | 0.65 | 40.7 | 0.014 | (0.5) | 0.013 | 0.34 | (0.002) | 0.032 | 57.6 | (0.22) | 0.14 | (0.003) |

continued analysis listed in mg/kg

| Number | B | Ba | Cl | Cr | Cs | Cu | Ga | Li | Mo | Rb | Sb | Ta | Th | V | Zn | Zr |
|--------|-----|------|-------|------|-------|----|-----|----|-----|-----|-------|-------|-------|----|-----|----|
| GUW AN | 100 | 14.8 | 0.033 | 0.90 | 0.037 | 4 | 4.3 | 9 | 1.2 | 4.7 | 0.044 | 0.007 | 0.048 | 18 | 7.9 | 13 |

CRM ANORTHOSITE

analysis listed in mass %

40 g units

| Number | SiO ₂ | Al ₂ O ₃ | Ba | CaO | CO ₂ | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | H ₂ O+ | T.H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ |
|------------|------------------|--------------------------------|--------|-------|-----------------|------|--------------------------------|----------------------------------|------------------|-------------------|--------------------|------------------|------|-------|-------------------|-------------------------------|--------|------------------|
| VS M011 | 53.46 | 27.42 | 0.0319 | 10.95 | 0.0 | 1.09 | 0.53 | 1.74 | 0.088 | 0.33 | 0.42 | 0.65 | 0.49 | 0.037 | 4.39 | 0.041 | 0.0100 | 0.18 |
| VS 2120-81 | 51.77 | 22.78 | 0.051 | 10.06 | 0.36 | 4.66 | 6.26 | . | 0.40 | . | . | 0.76 | 2.10 | 0.076 | 4.04 | 0.140 | 0.069 | 1.87 |
| VS M010 | 51.65 | 23.91 | 0.0294 | 10.18 | 0.14 | 4.40 | 1.45 | 6.34 | 0.095 | 0.26 | 0.36 | 0.50 | 2.24 | 0.073 | 3.99 | 0.13 | 0.0460 | 0.83 |

continued

analysis listed in mg/kg except % which is mass %

| Number | B | Be | Co | Cr | Cs | Cu | F | Ga | La | Li | Mo | Nb | Ni | Pb | Rb | Sc | Sn | Sr | V% | Y | Yb | Zn | Zr |
|------------|-----|-----|-----|----|------|----|-----|----|----|-----|-----|-----|----|-----|-----|----|-----|-----|--------|----|-----|----|----|
| VS M011 | 4.5 | 0.8 | 9.6 | 12 | 0.73 | 26 | 420 | 21 | 20 | 7.5 | 1.2 | 2.6 | 14 | 6.8 | 2.7 | 5 | 5.1 | 802 | 0.0024 | 8 | 1.1 | 50 | 42 |
| VS 2120-81 | . | 0.9 | 23 | 36 | . | 31 | . | 17 | . | . | . | . | 10 | 7 | . | 23 | . | . | 0.013 | . | . | 83 | 72 |
| VS M010 | 8.7 | 1.1 | 27 | 23 | 0.55 | 44 | 380 | 26 | 24 | 7.1 | 2.0 | 3.9 | 32 | 8.0 | 5.5 | 11 | 5.0 | 477 | 0.0109 | 17 | 2.0 | 96 | 58 |

CRM ANTIMONY ORE

analysis listed in mass

200 g units

| Number | Al | As | C | Ca | Cu | Fe | H ₂ O | K | Mg | Na | Pb | S | Sb | Si | LOI |
|----------|-------|------|-------|-------|---------|-------|------------------|-------|-------|-------|--------|-------|------|--------|-------|
| CAN CD-1 | (5.5) | 0.66 | (0.2) | (1.4) | (<0.01) | (2.8) | (0.2) | (1.8) | (0.6) | (0.1) | (0.02) | (3.1) | 3.57 | (32.9) | (4.0) |

CRM ANTIMONY ORE

analysis listed in mass %

analysis in mg/kg * Sb calculated from certified results for 4ACID, ICP, and XRF

| Number | Sb | Pb | S | Se | Zn | Ag | As | Au | Bi | Cd | Co | Cu | Ga | Li | Nb | Ni | Sn | Units |
|-------------|---------|-------|------|-------|-------|-----|------|-------|--------|-----|-----|------|-----|------|-----|-----|-----|-------|
| GSb-3 * | 53.69 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-2 | 31.0838 | . | . | . | . | . | . | 23.64 | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-11 * | 21.10 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-10 * | 11.66 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-6 * | 9.88 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-9 * | 6.50 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-4 * | 3.43 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| NCS DC70013 | 1.81 | 0.012 | 1.02 | 0.018 | 0.037 | 7.3 | 25.3 | . | (0.24) | 2.6 | 2.2 | 51.3 | 9.1 | 22.8 | 5.4 | 3.2 | 3.0 | 50 g |
| GSb-7 * | 1.75 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-8 * | 1.63 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-5 * | 0.18 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |
| GSb-1 | 0.1636 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 10 g |

CRM ARAGONITE/CALCITE

100 g units

| Number | Al ₂ O ₃ | CO ₂ | CaO | F | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | SrO | LOI |
|--------|--------------------------------|-----------------|------|------|--------------------------------|------------------|-------|-------------------|-------------------------------|-------|------------------|------|-------|
| UNS AK | 0.11 | 43.0 | 54.9 | 0.20 | 0.130 | 0.037 | 0.110 | 0.047 | 0.029 | 0.046 | 0.64 | 0.28 | 43.27 |

CRM ASCHARITE ORE

| Number | B ₂ O ₃ | CaO | T.Fe | FeO | MgO | P | S | SiO ₂ | Ins.Res. | Units |
|-------------|-------------------------------|------|-------|-------|-------|-------|-------|------------------|----------|-------|
| NCS DC16005 | 5.65 | 0.15 | 52.98 | 26.13 | 11.64 | 0.016 | 1.242 | 4.51 | 4.72 | 100 g |

CRM BARITE ORE

70 g units

| Number | BaO | BaSO ₄ | CaF ₂ | Cu | T.Fe ₂ O ₃ | Pb | Salt | SO ₃ | Sr | Zn |
|-------------|-------|-------------------|------------------|-----------|----------------------------------|------|--------|-----------------|-------|-----------|
| NCS DC86002 | 65.40 | 98.47 | . | (0.00029) | . | . | (0.11) | 34.37 | 0.10 | (0.00060) |
| NCS DC86004 | 57.36 | 86.14 | . | 0.00421 | . | . | (0.13) | 31.44 | 1.22 | (0.00056) |
| NCS DC86005 | 44.80 | 66.93 | . | 0.0129 | . | . | (0.21) | 24.50 | 1.12 | 0.00269 |
| NCS DC86003 | 28.36 | 41.46 | 14.03 | 0.00067 | . | . | (0.37) | 14.99 | 0.054 | 0.00124 |
| NCS DC86001 | 28.34 | 42.41 | . | 0.0109 | 49.37 | . | (0.28) | 15.94 | 0.39 | 0.00223 |
| NCS DC86007 | 27.01 | 40.54 | . | 0.00102 | . | . | (0.21) | 13.95 | 0.059 | 0.00364 |
| NCS DC86006 | 13.00 | 18.87 | . | 0.14 | 20.96 | 0.41 | 0.93 | 51.33 | 0.058 | 3.76 |

BAUXITE

= class, 1=CRM and 2=RM BCS: 100g CERAM: 25 or 100g CETEM: 90-120g GBAP: 10g NCS: 50-100g SRM 600: 90g other SRM: 60g

| # | Number | Al ₂ O ₃ | A.Al ₂ O ₃ | CaO | Cr ₂ O ₃ | Fe | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | R.SiO ₂ | TiO ₂ | V ₂ O ₅ | ZrO ₂ | LOI |
|---|----------------|--------------------------------|----------------------------------|---------|--------------------------------|-----------|--------------------------------|------------------|--------|-------------------|-------------------------------|------------------|--------------------|------------------|-------------------------------|------------------|-------|
| 1 | BCS 394/1 | 88.88 | . | 0.0173 | . | . | 1.372 | . | 0.0047 | . | 0.0574 | 6.47 | . | 2.969 | . | . | . |
| 1 | NCS HC28815 | 88.55 | . | 0.15 | . | . | 1.75 | 0.11 | 0.073 | 0.017 | 0.23 | 4.88 | . | 3.69 | . | . | . |
| 1 | JCRM R301 | 87.5 | . | 0.03 | . | . | 1.40 | 0.04 | 0.02 | 0.03 | 0.07 | 7.24 | . | 2.90 | . | 0.13* | 0.35 |
| 1 | NCS DC61105 | 85.07 | . | 0.24 | . | . | 1.18 | 0.44 | 0.21 | 0.080 | . | 8.17 | . | 3.76 | . | . | 0.29 |
| 1 | NCS HC28814 | 83.07 | . | 0.22 | . | . | 2.71 | 0.17 | 0.088 | 0.022 | 0.18 | 9.69 | . | 3.64 | . | . | 0.15 |
| 1 | NCS DC91017 | 71.14 | . | 0.75 | . | . | 2.01 | 0.477 | 0.090 | 0.022 | 0.221 | 3.16 | . | 3.04 | . | . | . |
| 1 | NCS HC28813 | 70.28 | . | 0.37 | . | . | 6.64 | 0.20 | 0.18 | 0.051 | 0.25 | 14.20 | . | 2.85 | . | . | 4.57 |
| 1 | NCS DC91018 | 64.53 | . | 0.26 | . | . | 6.06 | 0.22 | 0.246 | 0.030 | 0.185 | 8.02 | . | 2.59 | . | . | . |
| 1 | NCS HC28812 | 60.41 | . | 0.51 | . | . | 9.69 | 0.22 | 0.26 | 0.070 | 0.30 | 17.82 | . | 2.22 | . | . | 7.96 |
| 1 | CETEM BXGO-2 | 60.3 | 57.20 | (0.016) | (0.006) | . | 3.26 | 0.024 | (0.03) | (0.02) | 0.040 | 2.13 | 1.74 | 0.27 | 0.011 | 0.017 | 29.1 |
| 1 | DSZU 123.38-03 | 58.9 | . | 0.14 | 0.043 | FeO:0.062 | 1.62 | . | 0.026 | . | 0.085 | 5.73 | . | 2.69 | 0.054 | . | . |
| 1 | DSZU 123.62-13 | 57.4 | . | 0.12 | 0.035 | . | 0.88 | . | 0.075 | . | 0.073 | 8.73 | . | 2.51 | 0.044 | . | . |
| 1 | CETEM BXPA-4 | 57.3 | 52.7 | (0.01) | 0.007 | . | 6.9 | (0.009) | (0.03) | (0.02) | 0.027 | 4.65 | 3.7 | 1.31 | 0.018 | 0.16 | 29.7 |
| 1 | NCS DC91019 | 57.15 | . | 0.089 | . | . | 16.11 | 1.00 | 0.235 | 0.31 | 0.077 | 6.31 | . | 2.65 | . | . | . |
| 1 | CETEM BXBA-3 | 56.5 | 54.00 | (0.012) | (0.0008) | . | 8.41 | (0.005) | (0.02) | (0.009) | 0.156 | 2.91 | 1.08 | 0.96 | 0.017 | 0.018 | 27.2 |
| 1 | CETEM BXPA-2 | 55.4 | 50.6 | (0.01) | 0.013 | . | 9.2 | trace | (0.03) | (0.01) | 0.016 | 4.91 | 4.2 | 1.35 | 0.035 | 0.073 | 29.03 |
| 1 | SRM 696 | 54.5 | . | 0.018 | 0.047 | . | 8.70 | 0.009 | 0.012 | (0.007) | 0.050 | 3.79 | . | 2.64 | 0.072 | 0.14 | 29.9 |
| 1 | IPT 131 | 54.1 | . | . | . | . | 11.5 | 0.022 | . | . | 0.15 | 0.78 | . | 1.77 | 0.042 | 0.35 | 30.0 |
| 1 | CETEM BXPA-3 | 53.7 | 49.8 | (0.01) | 0.016 | . | 11.6 | (0.011) | (0.03) | (0.02) | 0.042 | 4.19 | 3.4 | 1.92 | 0.029 | 0.21 | 28.2 |
| 1 | BCS 395 | 52.4 | . | 0.05 | (0.07) | . | 16.3 | (0.02) | 0.02 | (0.02) | . | 1.24 | . | 1.93 | . | . | 27.8 |
| 1 | CETEM BXPA-1 | 52.8 | 49.0 | . | . | . | 12.8 | . | . | . | (0.018) | (4.93) | 3.8 | 1.42 | 0.058 | (0.066) | 27.5 |
| 1 | GBAP-15 | 50.93 | . | 0.02 | 0.050 | . | 18.18 | 0.019 | 0.055 | 0.026 | 0.039 | 6.62 | . | 4.416 | 0.099 | 0.110 | 19.41 |
| 1 | CETEM BXMG-5 | 50.5 | 39.7 | (0.02) | (0.004) | . | 9.2 | 0.54 | (0.04) | (0.03) | 0.111 | 10.7 | 7.8 | 1.28 | 0.030 | 0.25 | 26.7 |
| 1 | CETEM BXMG-2 | 50.4 | 45.5 | (0.01) | 0.028 | . | 13.7 | 0.013 | (0.04) | (0.01) | 0.209 | 6.36 | 1.88 | 1.64 | 0.035 | 0.042 | 27.5 |
| 1 | CETEM BXSP-1 | 50.1 | 40.0 | (0.03) | 0.003 | . | 6.7 | 0.53 | (0.06) | (0.02) | 0.203 | 14.7 | 7.8 | 1.24 | 0.016 | 0.15 | 26.1 |
| 1 | CETEM BXBA-4 | 49.7 | 43.70 | (0.014) | (0.0010) | . | 12.78 | (0.007) | (0.02) | (0.02) | 0.195 | 8.45 | 4.50 | 1.55 | 0.023 | 0.028 | 23.3 |
| 1 | SRM 69b | 48.8 | . | 0.13 | 0.011 | . | 7.14 | 0.068 | 0.085 | (0.025) | 0.118 | 13.43 | . | 1.90 | 0.028 | 0.29 | 27.2 |
| 1 | SRM 698 | 48.2 | . | 0.62 | 0.080 | . | 19.6 | 0.010 | 0.058 | . | 0.37 | 0.69 | . | 2.38 | 0.064 | 0.061 | 27.3 |
| 1 | CETEM BXMG-6 | 46.8 | 41.80 | (0.03) | 0.030 | . | 19.4 | 0.018 | (0.04) | (0.025) | 0.229 | 4.41 | 1.06 | 2.22 | 0.081 | 0.020 | 23.7 |
| 1 | NCS HC28811 | 46.52 | . | 0.69 | . | . | 14.01 | 0.25 | 0.37 | 0.10 | 0.35 | 22.96 | . | 1.36 | . | . | 12.75 |
| 1 | SRM 697 | 45.8 | . | 0.71 | 0.100 | . | 20.0 | 0.062 | 0.18 | . | 0.97 | 6.81 | . | 2.52 | 0.063 | 0.065 | 22.1 |
| 1 | DSZU 123.61-13 | 42.8 | . | 0.13 | 0.22 | . | 27.2 | . | 0.046 | . | 0.086 | 3.36 | . | 2.15 | 0.071 | . | . |
| 1 | GBAP-16 | 42.60 | . | 0.11 | 0.047 | . | 16.52 | 0.126 | 0.146 | 0.057 | 0.034 | 21.56 | . | 3.587 | 0.081 | 0.107 | 14.94 |
| 1 | SRM 600 | 40.0 | . | 0.22 | 0.024 | . | 17.0 | 0.23 | 0.05 | 0.022 | 0.039 | 20.3 | . | 1.31 | 0.060 | 0.060 | 20.5 |
| 1 | GBAP-13 | 36.92 | . | 0.02 | 0.011 | . | 7.487 | 0.1004 | 0.0159 | 0.018 | 0.031 | 34.6 | . | 0.7516 | 0.024 | . | 19.92 |
| 1 | GBAP-14 | 35.07 | . | 0.03 | 0.122 | . | 40.67 | 0.073 | 0.042 | 0.024 | 0.042 | 6.74 | . | 2.502 | 0.177 | 0.062 | 14.32 |

| # | Number | Al ₂ O ₃ | A.Al ₂ O ₃ | CaO | Cr ₂ O ₃ | Fe | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | R.SiO ₂ | TiO ₂ | V ₂ O ₅ | ZrO ₂ | LOI |
|---|--------|--------------------------------|----------------------------------|-----|--------------------------------|----|--------------------------------|------------------|-----|-------------------|-------------------------------|------------------|--------------------|------------------|-------------------------------|------------------|-----|
|---|--------|--------------------------------|----------------------------------|-----|--------------------------------|----|--------------------------------|------------------|-----|-------------------|-------------------------------|------------------|--------------------|------------------|-------------------------------|------------------|-----|

A.Al₂O₃: Available AluminaR.SiO₂: Reactive Silica* Includes HfO₂

| Number | BaO | MnO | MnO ₂ | SO ₃ | ZnO |
|----------------|---------|----------|------------------|-----------------|--|
| BCS 394/1 | . | . | . | . | . |
| NCS HC28815 | . | . | . | . | C: 0.018 |
| JCRM R301 | . | . | . | . | . |
| NCS DC61105 | . | . | . | . | . |
| NCS HC28814 | . | 0.011 | . | . | C: 0.050 |
| NCS DC91017 | . | 0.036 | . | S:0.031 | 0.0018 Ga ₂ O ₃ : 0.0114 |
| NCS HC28813 | . | 0.053 | . | . | C: 0.099 |
| NCS DC91018 | . | 0.012 | . | S:0.040 | 0.0040 Ga ₂ O ₃ : 0.0106 |
| NCS HC28812 | . | 0.082 | . | . | C: 0.14 |
| CETEM BXGO-2 | . | . | 0.015 | 0.31 | (0.002) Org.C: 0.21 |
| DSZU 123.38-03 | . | 0.012 | . | S:0.032 | C: 0.12 CO ₂ : 0.15 Ga ₂ O ₃ : 0.012 50 g unit |
| DSZU 123.62-13 | . | 0.009 | . | S:0.030 | C: 0.10 CO ₂ : 0.09 Ga ₂ O ₃ : 0.013 100 g unit |
| CETEM BXPA-4 | . | . | 0.037 | (0.05) | (0.002) |
| NCS DC91019 | . | 0.021 | . | S:0.033 | 0.0036 Ga ₂ O ₃ : 0.008 |
| CETEM BXBA-3 | . | . | 0.022 | 0.228 | (0.004) Org.C: (0.16) |
| CETEM BXPA-2 | . | . | (0.0013) | (0.07) | (0.003) |
| SRM 696 | . | 0.004 | . | 0.150 | 0.0014 |
| IPT 131 | . | 0.31 | . | . | 0.013 |
| CETEM BXPA-3 | . | . | 0.045 | (0.09) | (0.003) |
| BCS 395 | . | . | . | . | . |
| CETEM BXPA-1 | . | (0.0017) | . | . | 0.004 |
| GBAP-15 | (0.005) | 0.014 | . | 0.055 | . |
| CETEM BXMG-5 | . | . | 0.34 | (0.05) | 0.012 |
| CETEM BXMG-2 | . | . | 0.016 | (0.15) | (0.004) |
| CETEM BXSP-1 | . | . | 0.070 | (0.07) | 0.009 |
| CETEM BXBA-4 | . | . | 0.035 | 0.23 | (0.006) Org.C: 0.28 |
| SRM 69b | . | 0.110 | . | 0.551 | 0.0035 |
| SRM 698 | . | 0.38 | . | 0.143 | 0.029 |
| CETEM BXMG-6 | . | . | 0.120 | 0.19 | (0.005) Org.C: 0.17 |
| NCS HC28811 | . | 0.13 | . | . | C: 0.20 |
| SRM 697 | . | 0.41 | . | 0.0770 | 0.037 |
| DSZU 123.61-13 | . | 0.023 | . | S:0.045 | C: 0.22 CO ₂ : 0.19 Ga ₂ O ₃ : 0.009 100 g unit |
| GBAP-16 | (0.011) | 0.022 | . | 0.068 | . |
| SRM 600 | . | 0.013 | . | 0.155 | 0.003 last of stock |
| GBAP-13 | <0.01 | 0.01 | . | 0.1032 | last of stock |
| GBAP-14 | (0.006) | 0.017 | . | 0.145 | . |

| Number | BaO | MnO | MnO ₂ | SO ₃ | ZnO |
|--------|-----|-----|------------------|-----------------|-----|
|--------|-----|-----|------------------|-----------------|-----|

CRM BAUXITE SET

shown in mass %, available in set/9 ONLY, 50 g units

| Number | Al ₂ O ₃ | Cr ₂ O ₃ | Fe ₂ O ₃ | SiO ₂ | TiO ₂ | |
|------------------|--------------------------------|--------------------------------|--------------------------------|------------------|------------------|----------------------------------|
| DSZU 123.40-03 3 | 59.6 | 0.014 | 2.91 | 4.25 | 0.81 | one final set remaining in stock |
| DSZU 123.40-03 9 | 59.2 | 0.05 | 1.46 | 5.46 | 3.51 | |
| DSZU 123.40-03 4 | 57.1 | 0.020 | 7.58 | 3.21 | 1.24 | |
| DSZU 123.40-03 1 | 53.0 | 0.021 | 13.9 | 2.86 | 1.29 | |
| DSZU 123.40-03 7 | 52.4 | 0.25 | 15.4 | 1.70 | 2.04 | |
| DSZU 123.40-03 8 | 49.4 | 0.21 | 16.8 | 4.38 | 2.24 | |
| DSZU 123.40-03 5 | 47.9 | 0.28 | 21.2 | 2.20 | 2.16 | |
| DSZU 123.40-03 6 | 43.6 | 0.26 | 24.9 | 4.31 | 2.67 | |
| DSZU 123.40-03 2 | 39.4 | 0.033 | 34.3 | 2.60 | 1.24 | |

RM BAUXITEAl₂O₃: Available Alumina

C.Org: Organic Carbon

BXT-04, BXT-06 500 g units

others 100 g

| Number | Al ₂ O ₃ | C.Org | CaO | Cr ₂ O ₃ | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SO ₃ | SiO ₂ | TiO ₂ | V ₂ O ₅ | ZnO | ZrO ₂ | A.Al ₂ O ₃ | LOI |
|------------|--------------------------------|---------|---------|--------------------------------|--------------------------------|------------------|--------|---------|-------------------|-------------------------------|-----------------|------------------|------------------|-------------------------------|---------|------------------|----------------------------------|-------|
| ALC-BXT-10 | 54 | (0.08) | (<0.01) | (0.03) | 12.4 | (<0.01) | . | (0.01) | . | (0.05) | . | 2.7 | 2.01 | (0.06) | . | (0.07) | . | 28.6 |
| ALC-BXT-09 | 53.4 | (0.2) | (0.01) | 0.037 | 14.5 | (0.01) | (0.03) | (0.04) | (0.01) | (0.07) | (0.06) | 7.57 | 2.98 | (0.06) | (0.002) | (0.12) | . | 20.8 |
| ALC-BXT-13 | 53.4 | 0.051 | (0.02) | 0.016 | 11.44 | (0.01) | (0.01) | (0.01) | (0.01) | (0.02) | (0.09) | 4.82 | 1.54 | (0.04) | (0.002) | (0.08) | 53.3 | 28.52 |
| ALC-BXT-08 | 51.5 | (0.082) | (0.02) | (0.049) | 9.6 | (0.018) | (0.03) | (0.021) | (0.02) | (0.26) | . | 3.2 | 9.5 | (0.17) | (0.006) | (0.089) | . | 25.6 |
| ALC-BXT-14 | 51.2 | 0.162 | (0.01) | (0.01) | 13.17 | (0.01) | (0.01) | (0.02) | (0.01) | (0.062) | (0.11) | 5.86 | 1.11 | (0.01) | (0.005) | 0.131 | 50.4 | 28.35 |
| ALC-BXT-06 | 48.7 | (0.14) | 0.122 | 0.130 | 18.8 | (0.011) | (0.06) | 0.27 | (0.03) | 0.61 | (0.15) | 0.79 | 2.65 | (0.12) | 0.025 | (0.065) | . | 27.2 |
| ALC-BXT-04 | 48.6 | (0.13) | (0.013) | (0.089) | 17.0 | (0.026) | (0.04) | 0.041 | (0.02) | 0.13 | (0.13) | 2.69 | 5.33 | (0.16) | (0.002) | (0.064) | . | 25.8 |

CRM BERYLLIUM ORE

analysis listed in mass %

| Number | BeO | Al ₂ O ₃ | CaO | F | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Units |
|-------------|-------|--------------------------------|-------|-------------|--------|----------------------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|------------------|------|-------|
| NCS DC86313 | 3.02 | 15.55 | 0.52 | 0.0088 (F-) | 0.15 | 0.47 | (0.63) | 3.28 | 0.083 | 0.020 | 3.63 | (0.018) | 71.97 | 0.010 | 0.86 | 70 g |
| NCS DC86302 | 0.365 | 14.86 | 0.584 | 0.041 | (0.18) | 0.593 | 0.59 | 3.89 | 0.069 | 0.036 | 4.67 | 0.013 | 73.99 | 0.016 | 0.73 | 70 g |
| NCS DC86301 | 0.060 | 14.86 | 0.582 | 0.019 | (0.18) | 0.513 | 0.60 | 4.10 | 0.071 | 0.030 | 4.79 | (0.012) | 73.97 | 0.015 | 0.68 | 70 g |

continued analysis listed in mg/kg

| Number | CeO ₂ | Dy ₂ O ₃ | Er ₂ O ₃ | Eu ₂ O ₃ | Gd ₂ O ₃ | Ho ₂ O ₃ | La ₂ O ₃ | Lu ₂ O ₃ | Mo | Nd ₂ O ₃ | Pr ₆ O ₁₁ | RE _x O _y * | Sc ₂ O ₃ | Sm ₂ O ₃ | Tb ₄ O ₇ | Tm ₂ O ₃ | W | Y ₂ O ₃ | Yb ₂ O ₃ |
|-------------|------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|------|--------------------------------|---------------------------------|----------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----|-------------------------------|--------------------------------|
| NCS DC86313 | 13.1 | 3.62 | 1.95 | 0.11 | 2.83 | 0.67 | 6.08 | 0.25 | 3.37 | 5.96 | 1.58 | 63.6 | 1.91 | 1.99 | 0.57 | 0.29 | . | 23.0 | 1.88 |
| NCS DC86302 | 14.8 | 4.6 | 2.2 | 0.15 | 3.8 | 0.87 | 7.7 | 0.36 | 1.2 | 7.6 | 2.0 | 78.6 | 3.1 | 2.7 | 0.80 | 0.36 | 5.5 | 28.9 | 2.5 |
| NCS DC86301 | 14.3 | 4.5 | 2.1 | 0.14 | 3.6 | 0.82 | 7.0 | 0.31 | 0.41 | 6.6 | 1.7 | 75.6 | 1.7 | 2.5 | 0.80 | 0.32 | 1.3 | 29.2 | 2.2 |

* RE_xO_y: Rare Earth Oxide**CRM BORATE ORE**

analysis listed in mass %

60 g units

| Number | Al ₂ O ₃ | B ₂ O ₃ | BaO | CaO | F | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | SO ₃ | SiO ₂ | SrO | TiO ₂ | LOI+H ₂ O |
|----------|--------------------------------|-------------------------------|--------|--------|-------|--------------------------------|------------------|-------|--------|-------------------|-----------------|------------------|--------|------------------|----------------------|
| SRM 1835 | 3.474 | 18.739 | 0.0497 | 21.622 | 0.348 | 1.141 | 1.261 | 3.411 | 0.0333 | 3.484 | 1.477 | 18.408 | 0.9418 | 0.1332 | 25.724 |

CRM BRUCITE

T = total

50 g units

| Number | Al ₂ O ₃ | CaO | CO ₂ | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ |
|-------------|--------------------------------|------|-----------------|----------------------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|
| NCS DC60129 | 0.053 | 2.51 | 8.08 | 0.49 | (25.24) | 0.0041 | 61.43 | 0.036 | 0.0066 | 0.12 | 2.69 |
| NCS DC60130 | 0.067 | 6.18 | 9.95 | 0.40 | (23.22) | 0.0066 | 56.21 | 0.033 | 0.013 | 0.12 | 4.47 |

RM CALCINED BONE

25 or 100 g

| Number | Al ₂ O ₃ | BaO | CaO | F | Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | SO ₃ | SrO | TiO ₂ | LOI |
|------------|--------------------------------|-------|------|------|--------------------------------|------------------|------------------|------|-------------------|-------------------------------|------------------|-----------------|-------|------------------|------|
| CERAM CCB1 | 0.05 | 0.031 | 53.4 | 0.13 | 0.04 | (0.12) | 0.011 | 1.14 | 0.52 | 40.5 | 1.28 | 0.114 | 0.049 | <0.01 | 2.60 |

CRM CLAY

analysis listed in mass %

| Number | Al | B | Ba | Ca | Ce | Co | Cr | Fe | K | Li | Mg | Mn | Na | P | Si | Sr |
|---------|-------|---|---------|--------|----------|-----------|---------|-------|-------|---------|--------|----------|--------|---------|-------|---------|
| SRM 97b | 20.76 | . | (0.018) | 0.0249 | . | (0.00038) | 0.0227 | 0.831 | 0.513 | 0.0550 | 0.113 | 0.0047 | 0.0492 | (0.02) | 19.81 | 0.0084 |
| SRM 98b | 14.30 | . | (0.07) | 0.0759 | . | (0.00163) | 0.0119 | 1.18 | 2.81 | 0.0215 | 0.358 | 0.0116 | 0.1496 | (0.03) | 26.65 | 0.0189 |
| SRM 679 | 11.01 | . | 0.0432 | 0.1628 | (0.0105) | (0.0026) | 0.01097 | 9.05 | 2.433 | 0.00717 | 0.7552 | (0.1730) | 0.1304 | (0.075) | 24.34 | 0.00734 |

continued analysis listed in mass %

analysis listed in mg/kg

| Number | Ti | Zn | Zr | LOI | Cs | Eu | Hf | Rb | Sb | Sc | Th | Units |
|---------|-------|----------|---------|--------|--------|--------|-------|-------|-------|--------|------|-------------|
| SRM 97b | 1.43 | (0.0087) | (0.05) | (13.3) | (3.4) | (0.84) | (13) | (33) | (2.2) | (22) | (36) | 60 g powder |
| SRM 98b | 0.809 | (0.0110) | (0.022) | (7.5) | (16.5) | (1.3) | (7.2) | (180) | (1.6) | (22) | (21) | 60 g powder |
| SRM 679 | 0.577 | (0.0150) | . | . | (9.6) | (1.9) | (4.6) | (190) | . | (22.5) | (14) | 75 g powder |

CLAYS and FIRECLAYS

= class, where 1 = CRM and 2 = RM

analysis listed in mass %

* CERAM AN41 lists Mn₃O₄ as MnO

** CERAM: 25 or 100g

| # | Number | SiO ₂ | Al ₂ O ₃ | CaO | Cl- | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SO ₃ | TiO ₂ | LOI | Units | Other |
|---|--------------|------------------|--------------------------------|-------|--------|--------------------------------|------------------|-------|-------|-------------------|-------------------------------|-----------------|------------------|-------|-------|---|
| 1 | NH 139 | 82.41 | 13.80 | 0.14 | . | 0.84 | 0.51 | 0.12 | . | 0.059 | . | . | 0.53 | . | 75 g | |
| 1 | NH 138 | 68.90 | 26.01 | 0.23 | . | 1.47 | 0.98 | 0.22 | . | 0.10 | . | . | 0.92 | . | 75 g | |
| 1 | NCS DC62108c | 67.74 | 13.79 | 1.62 | . | 5.17 | 2.40 | 1.82 | . | 1.50 | . | 0.08 | 0.71 | 4.54 | 20 g | |
| 1 | GBW 03103 | 66.64 | 13.28 | 3.23 | 0.011 | 4.64 | 2.50 | 1.84 | 0.088 | 1.81 | 0.106 | 0.027 | . | 5.10 | 60 g | CO ₂ : 1.66 |
| 1 | VS K11 | 62.2 | 16.8 | 1.2 | . | (6.3) | . | 2.01 | 0.064 | . | S:0.05 | 0.98 | . | . | 50 g | |
| 1 | NH 137 | 61.46 | 32.43 | 0.28 | . | 1.63 | 1.31 | 0.28 | . | 0.126 | . | . | 1.13 | . | 75 g | |
| 1 | GBW 03115 | 55.90 | 28.57 | 0.70 | . | 0.87 | 1.54 | 0.30 | . | 1.74 | . | . | 1.21 | 8.72 | 50 g | |
| 1 | GBW 03102a | 53.67 | 31.32 | 1.80 | 0.0029 | 0.33 | 1.15 | 0.083 | 0.020 | 2.55 | 0.053 | 0.023 | 0.030 | 8.81 | 50 g | CO ₂ : (0.051) |
| 1 | IPT 42 | 51.9 | 32.2 | 0.05 | . | 1.09 | 0.47 | 0.19 | . | 0.02 | 0.07 | . | 0.96 | 12.9 | 50 g | |
| 1 | IPT 32 | 51.8 | 28.5 | 0.17 | . | 3.46 | 0.80 | 0.39 | . | 0.16 | 0.13 | . | 1.49 | 12.6 | 50 g | |
| 1 | BCS 348 | 51.13 | 31.59 | 0.173 | . | 1.04 | 2.23 | 0.305 | . | 0.344 | 0.071 | . | 1.08 | 11.75 | 100 g | |
| 1 | GBW 03101a | 49.98 | 26.27 | 0.13 | 0.0041 | 10.55 | 0.79 | 0.46 | 0.052 | 0.060 | 0.14 | 0.49 | 0.70 | 10.62 | 50 g | CO ₂ : (0.041) |
| 2 | CERAM AN41 * | 48.5 | 36.4 | 0.09 | . | 0.62 | 1.59 | 0.35 | 0.01* | 0.10 | 0.14 | . | 0.03 | 12.3 | | ** BaO ² 0.02 SrO, ZnO: 0.01 |

CRM CLAY - SYNTHETIC MULLITE

60 g units

| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P | SiO ₂ | TiO ₂ |
|-------------|--------------------------------|------|--------------------------------|------------------|------|-------------------|-------|------------------|------------------|
| NCS HCl4809 | 72.39 | 0.19 | 0.93 | 0.24 | 0.42 | 0.16 | 0.043 | 21.81 | 3.64 |
| NCS HCl4808 | 57.47 | 0.15 | 0.46 | 1.69 | 0.14 | 0.46 | 0.022 | 37.41 | 1.45 |
| NCS HCl4807 | 43.62 | 0.23 | 1.14 | 1.62 | 0.21 | 0.46 | 0.062 | 51.43 | 0.65 |

COPPER ORE

= class, where 1=CRM and 2=RM analysis in mass % except * = mg/kg GBM: 250g IMN: 200g NCS: 50g OREAS: see below VS: 100g

| # | Number | Cu | Ag* | As | Ni | Pb | Tot.S | Zn | Au* | Bi* | Co* | Cd* | Fe | Hg* | Mo* | Sb* | SiO ₂ |
|---|-------------|---------|---------|----------|-----------|----------|---------|---------|--------|-------|-------|------|---------|---------|--------|------|------------------|
| 1 | OREAS 992 | 43.90 | (33.50) | . | (1.50) | (0.0470) | 36.97 | (17.8*) | (7.92) | . | (790) | . | . | . | (2.00) | . | 10 g units |
| 1 | GBM914-12 | 27.0618 | 61.5 | . | 0.0020 | 0.1256 | 29.74 | 0.824 | . | . | . | . | . | . | . | . | . |
| 1 | GBM315-15 | 25.0264 | 334.2 | . | 0.0842 | 0.7680 | 26.74 | 1.2523 | . | . | . | . | . | . | . | . | . |
| 1 | GBM313-16 | 24.2702 | 109.3 | . | 0.0153 | 0.0035 | 3.64 | 0.0043 | . | . | . | . | . | . | . | . | . |
| 1 | GBM316-12 | 23.8210 | 86.0 | . | 0.0009 | 0.0236 | 25.43 | 0.0480 | . | . | . | . | . | . | . | . | . |
| 1 | GBM310-15 | 23.7854 | 78.8 | . | 0.0293 | 0.3327 | 27.6 | 1.1931 | . | . | . | . | . | . | . | . | . |
| 1 | GBM913-14 | 22.7577 | 200.3 | . | 0.0053 | 0.0029 | 6.22 | 0.0107 | . | . | . | . | . | . | . | . | . |
| 1 | GBM314-15 | 21.2876 | 176.2 | . | 0.0037 | 0.0145 | 6.54 | 0.02 | . | . | . | . | . | . | . | . | . |
| 1 | OREAS 991 | 20.66 | 48.14 | (0.0170) | (0.00320) | (0.0123) | (30.77) | . | 47.04 | (<50) | (122) | . | (26.92) | . | (490) | . | 50 g units |
| 1 | GBM908-11 | 17.7033 | 11.4 | . | . | 0.0547 | 29.78 | 2.3604 | . | . | . | . | . | . | . | . | . |
| 1 | VS R34/1 | 17.21 | 81 | 0.35 | . | 0.17 | 38.6 | 2.45 | 4.7 | 60 | . | 32.9 | . | 97 | 680 | 1.92 | . |
| 1 | GBM905-14 | 17.3667 | . | . | 0.0531 | 0.0334 | . | 0.0074 | . | . | . | . | . | . | . | . | . |
| 1 | GBM314-16 | 16.0964 | 89.4 | . | 0.0661 | 0.0884 | 22.79 | 0.2898 | . | . | . | . | . | . | . | . | . |
| 1 | GBM913-13 | 12.1059 | 74.1 | . | 0.0084 | 0.0125 | 2.43 | 0.0386 | . | . | . | . | . | . | . | . | . |
| 1 | NCS DC29110 | 8.53 | 120 | 0.020 | . | 0.027 | (15.42) | 0.19 | . | . | . | 13.5 | . | (0.039) | . | 35.3 | . |
| 1 | GBM908-16 | 7.0180 | 22.5 | . | . | 0.0735 | 7.54 | . | . | . | . | . | . | . | . | . | . |
| 1 | GBM908-15 | 5.0027 | 13.7 | . | . | 0.4961 | 5.04 | . | . | . | . | . | . | . | . | . | . |
| 1 | NCS DC29109 | 3.84 | 59.9 | 0.046 | . | 0.024 | (8.58) | 0.083 | . | . | . | 5.68 | . | (0.043) | . | 71 | . |
| 1 | GBM905-11 | 3.1758 | . | . | 0.0038 | 0.0042 | . | 0.0084 | . | . | . | . | . | . | . | . | . |
| 1 | GBM911-16 | 2.4774 | 7.9 | . | 0.0229 | 0.0325 | 3.6 | 0.1210 | . | . | . | . | . | . | . | . | . |
| 1 | GBM915-16 | 2.2960 | 51.2 | . | 0.0197 | 0.9698 | 3.88 | 1.9551 | . | . | . | . | . | . | . | . | . |
| 1 | GBM915-9 | 2.2767 | 50.0 | 0.1265 | 0.0198 | 0.9502 | . | 1.9314 | . | . | 106 | . | . | . | . | . | . |
| 1 | GBM316-11 | 2.2288 | 21.7 | . | 0.0021 | 0.1065 | 18.11 | 1.0133 | . | . | . | . | . | . | . | . | . |
| 1 | GBM905-12 | 2.1853 | . | . | 0.0062 | 0.0033 | . | 0.0100 | . | . | . | . | . | . | . | . | . |
| 1 | GBM915-15 | 1.0954 | 11.9 | . | 0.7954 | 0.0066 | 1.29 | 0.0050 | . | . | . | . | . | . | . | . | . |
| 1 | GBM915-4 | 1.1835 | 25.7 | 0.0663 | 0.0118 | 0.4921 | . | 1.0035 | . | . | 69 | . | . | . | . | . | . |
| 1 | GBM311-14 | 1.7501 | 04.5 | . | 0.0045 | 0.0508 | 2.0 | 0.0872 | . | . | . | . | . | . | . | . | . |
| 1 | GBM311-10 | 1.7334 | 3.8 | 0.0040 | 0.0031 | 0.0505 | . | 0.0841 | . | . | 65 | . | . | . | . | . | . |
| 1 | VS R35 | 1.65 | 17.4 | 0.067 | . | 0.036 | 26.7 | 0.74 | 1.23 | . | . | . | . | . | . | . | 35.2 |
| 2 | IMN MR2 | 1.61 | 29 | 0.013 | . | 0.085 | . | 0.025 | . | . | . | . | 0.88 | . | . | . | . |
| 2 | IMN MR1 | 1.23 | 58 | 0.028 | . | 0.15 | . | 0.040 | . | . | . | . | 1.41 | . | . | . | . |
| 1 | GBM911-11 | 1.1499 | 10.2 | . | 0.0026 | 0.1722 | 2.9 | 0.1422 | . | . | . | . | . | . | . | . | . |
| 1 | GBM910-6 | 1.0084 | 3.6 | 0.0117 | 0.0044 | 0.0173 | . | 0.0907 | . | . | 131 | . | . | . | . | . | . |
| 1 | GBM910-16 | 1.0069 | 3.7 | . | 0.0048 | 0.0180 | 1.5 | 0.0943 | . | . | . | . | . | . | . | . | . |
| 1 | NCS DC29108 | 0.90 | 14.9 | 0.00766 | . | 0.0080 | (1.65) | 0.020 | . | . | . | . | (0.028) | . | 11.7 | . | . |
| 1 | NCS DC29107 | 0.29 | 6.1 | 0.00414 | . | 0.00345 | (0.68) | 0.010 | . | . | . | . | (0.15) | . | 23.4 | . | . |

CRM COPPER ORE

analysis listed in mass % except * which is mg/kg

| Number | Cu | As | Bi | Cd | F | Fe | MgO | Mn | Ni | Pb | S | Sb | Zn | Ag* | Au* | Units |
|-------------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|-------|------|-------|-------|------|-------|
| NCS DC28058 | 20.56 | 0.012 | . | <0.001 | 0.056 | 24.70 | 7.63 | 0.013 | 0.093 | 0.015 | 22.87 | . | 0.194 | 17.1 | 4.68 | 20 g |
| NCS DC28059 | 16.60 | 0.020 | . | <0.001 | 0.052 | 26.39 | 5.81 | 0.044 | 0.082 | 0.017 | 23.92 | . | 0.131 | 14.8 | 5.10 | 20 g |
| NCS DC28055 | 12.79 | 4.68 | 0.023 | 0.0067 | 0.028 | 3.22 | 0.18 | 0.110 | 0.017 | 0.037 | 1.54 | 0.25 | 0.64 | 85.9 | 0.04 | 50 g |
| NCS DC28057 | 10.71 | 0.034 | . | <0.001 | 0.036 | 29.34 | 4.01 | 0.084 | 0.072 | 0.019 | 25.05 | . | 0.052 | 12.0 | 6.16 | 20 g |
| NCS DC28056 | 8.46 | 2.14 | 0.19 | 0.0064 | 0.53 | 10.44 | 7.04 | 0.169 | 0.011 | 0.087 | 0.86 | 0.22 | 0.503 | 109.9 | 0.05 | 50 g |
| NCS DC28054 | 6.78 | 0.209 | 0.283 | 0.0021 | 1.15 | 15.39 | 12.51 | 0.124 | <0.005 | 0.106 | 0.082 | . | 0.456 | 126.1 | 0.05 | 50 g |

CRM CRYOLITE

analysis listed in mass %

| Number | Al | CaO | F | Fe ₂ O ₃ | Na | P ₂ O ₅ | SO ₄ ²⁻ | SiO ₂ | LOI | Units |
|-------------|-------|----------|-------|--------------------------------|-------|-------------------------------|-------------------------------|------------------|------|-------|
| NCS DC91001 | 17.34 | (0.606) | 55.45 | 0.053 | 21.75 | 0.0034 | 0.233 | 0.087 | 4.53 | 100 g |
| NCS DC91002 | 15.18 | (0.597) | 54.66 | 0.032 | 26.32 | 0.025 | 0.199 | 0.211 | 2.97 | 100 g |
| NCS DC91003 | 13.65 | (0.719) | 53.89 | 0.036 | 29.29 | 0.013 | 0.205 | 0.363 | 2.25 | 100 g |
| NCS DC91004 | 13.16 | (0.508) | 53.2 | 0.033 | 30.26 | 0.037 | 0.293 | 0.389 | 2.12 | 100 g |
| NCS DC91005 | 12.69 | (0.0062) | 52.14 | 0.0098 | 32.01 | 0.065 | 0.45 | 0.485 | 1.4 | 100 g |
| NCS DC91006 | 11.75 | 0.112 | 51.21 | 0.04 | 33.24 | 0.051 | 0.683 | 0.238 | 1.6 | 100 g |

CRM DIABASE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | | | | US: 25 g units | NCS: 70 g units | |
|---|--------------------------------|-----------------|-------|----------|------|--------------------------------|----------------------------------|-------------------|------------------|------|-------|-------------------|-------------------------------|----------|-----------------|------------------|------------------|-----------------|-----|
| Number | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | Fe ₂ O ₃ T | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SO ₃ | SiO ₂ | TiO ₂ | LOI | |
| US W-2a | 15.45 | . | 10.86 | (0.0205) | 8.34 | 1.53 | 10.83 | . | 0.626 | 6.37 | 0.167 | 2.20 | 0.14 | (0.0079) | . | 52.68 | 1.06 | . | |
| NCS DC71311 | 13.21 | (0.11) | 7.83 | (0.07) | 7.24 | . | (13.40) | (2.44) | 1.49 | 5.08 | . | 3.17 | 0.55 | . | 0.44 | 49.88 | 2.94 | 2.30 | |
| continued analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | | | |
| Number | Ag | As | B | Ba | Be | Bi | Cd | Ce | Cl% | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | |
| US W-2a | . | . | . | 170 | 1.5 | 0.39 | 0.39 | 78.1 | (0.04) | 37.5 | 111 | 1.7 | 82.6 | 5.5 | (2.6) | 3.5 | 21.2 | 7.2 | |
| NCS DC71311 | 0.33 | 5.1 | 17.0 | 614 | 1.5 | 0.39 | 0.39 | 78.1 | (0.04) | 37.5 | 111 | 1.7 | 82.6 | 5.5 | (2.6) | 3.5 | 21.2 | 7.2 | |
| Number | Ge | Hf | Hg | Ho | La | Li | Lu | Mn% | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Se | Sm |
| US W-2a | . | . | . | 1.2 | 38.1 | 20.8 | 0.34 | (0.16) | 1.4 | 25.3 | 42.8 | 56.8 | 33.0 | 10.6 | 47.4 | 2.3 | 27.1 | (0.19) | 8.6 |
| NCS DC71311 | 1.5 | 9.2 | 0.017 | 1.2 | 38.1 | 20.8 | 0.34 | (0.16) | 1.4 | 25.3 | 42.8 | 56.8 | 33.0 | 10.6 | 47.4 | 2.3 | 27.1 | (0.19) | 8.6 |
| Number | Sn | Sr | Ta | Tb | Th | Tm | U | V | W | Y | Yb | Zn | Zr | | | | | | |
| US W-2a | . | 190 | . | . | 4.9 | 0.36 | 1.2 | 268 | 1.4 | 24.5 | 2.2 | (160) | 359 | | | | | | |
| NCS DC71311 | 2.0 | 470 | 1.8 | 1.1 | 4.9 | 0.36 | 1.2 | 268 | 1.4 | 24.5 | 2.2 | (160) | 359 | | | | | | |

DIORITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | | | | T = Total | IAG: RM, ~35 g units | all others: CRM, 100 g units |
|------------------------------------|--------------------------------|--------|-----------------|------|--------|--------------------------------|-------------------|-------------------|------------------|--------|--------|-------------------|-------------------------------|------------------|------------------|--------|----------------|----------------------|------------------------------|
| Number | Al ₂ O ₃ | CaO | CO ₂ | Fe | FeO | Fe ₂ O ₃ | H ₂ O+ | H ₂ O- | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Type | | |
| CAN SY-4 | 20.69 | 8.05 | 3.5 | 4.2 | 2.86 | 6.21 | (1.0) | (0.15) | 1.66 | 0.54 | 0.108 | 7.10 | 0.131 | 49.9 | 0.287 | 4.56 | Diorite Gneiss | | |
| VS 6103-91 | 16.56 | 4.84 | (0.18) | . | 3.79 | 5.55 | (1.6) | (0.14) | 2.98 | 3.05 | 0.086 | 3.57 | 0.17 | 60.45 | 0.86 | 1.59 | Quartz | | |
| USZ 50-2009 | 15.97 | 6.99 | . | . | 4.82 | 8.10T | 0.35 | (0.11) | 1.55 | 3.81 | 0.12 | 3.33 | (0.39) | 57.75 | 1.34 | 0.51 | Diorite | | |
| IAG OU-4 | 14.83 | 4.48 | . | . | 4.52 | 5.82T | . | . | 2.70 | 2.30 | 0.14 | 3.61 | 0.173 | 63.34 | 0.77 | 1.72 | Microdiorite | | |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | | | |
| Number | B | Ba | Be | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | Gd | Hf | Ho | | | |
| CAN SY-4 | . | 340 | 2.6 | 122 | 2.8 | 12 | 1.5 | 7 | 18.2 | 14.2 | 2.00 | . | 335 | 14.0 | 10.6 | 4.3 | | | |
| VS 6103-91 | 46 | 720 | 2.4 | 46 | 17 | 58 | 2.9 | 39 | . | . | 1.3 | 710 | 18 | . | . | . | | | |
| USZ 50-2009 | . | 425 | . | 50.8 | 84.9 | 100 | (5.24) | 100 | (4.29) | (2.29) | (1.41) | . | 419.58 | (5.21) | (3.69) | (0.85) | | | |
| IAG OU-4 | . | 360.8 | 1.79 | 55.7 | 13.5 | 54.7 | 2.07 | 27.3 | 7.81 | 4.83 | 1.64 | . | 17.4 | 7.39 | 5.54 | 1.63 | | | |
| Number | La | Li | Lu | Mn | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Sm | Sn | Sr | | | | |
| CAN SY-4 | 58 | 37 | 2.1 | 819 | 13 | 57 | 9 | 10 | 15.0 | 55 | . | 1.1 | 12.7 | . | 1191 | | | | |
| VS 6103-91 | 27 | 30 | 0.30 | . | 12 | 24 | 33 | 24 | . | 83 | . | 15 | 4.8 | . | 410 | | | | |
| USZ 50-2009 | 24.40 | (13.9) | (0.30) | . | 6.92 | 30.48 | 40.94 | 8.97 | (6.45) | 48.5 | . | 20.46 | (5.61) | . | 454 | | | | |
| IAG OU-4 | 24.96 | 35.0 | 0.71 | . | 12.8 | 27.9 | 21.0 | 14.1 | 6.85 | 98.5 | 0.30 | 19.1 | 6.94 | 2.42 | 99.9 | | | | |
| Number | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | | | | | | | |
| CAN SY-4 | 0.9 | 2.6 | 1.4 | . | 2.3 | 0.8 | 8 | . | 119 | 14.8 | 93 | 517 | | | | | | | |
| VS 6103-91 | . | . | 6.8 | . | . | . | 96 | . | 21 | 2.1 | 71 | 173 | | | | | | | |
| USZ 50-2009 | (0.48) | (0.76) | 3.88 | . | (0.32) | (1.09) | 213 | 266 | 23.62 | 2.05 | 92.77 | 191 | | | | | | | |
| IAG OU-4 | 1.00 | 1.25 | 8.42 | 0.46 | 0.72 | 2.19 | 82.7 | . | 47.1 | 4.70 | 69.5 | 195.1 | | | | | | | |

DOLERITE WITH EXTENSIVE ANALYSIS

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

| # | Number | SiO ₂ | Al ₂ O ₃ | CaO | F | FeO | Fe ₂ O ₃ | Fe ₂ O ₃ T | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI | Units |
|---|--------------|------------------|--------------------------------|-------|----------|-------|--------------------------------|----------------------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|---------|------------------|--------|-------|
| 1 | SARM 50 | 51.56 | 15.28 | 10.80 | . | 8.49 | 11.0 | . | . | 0.61 | 7.57 | 0.17 | 2.30 | 0.15 | . | 0.86 | . | 100 g |
| 2 | IAG OU-2 | 51.095 | 13.801 | 8.994 | . | 8.404 | . | 13.253 | . | 0.990 | 5.585 | 0.170 | 2.480 | 0.300 | . | 2.425 | . | ~35 g |
| 2 | IAG OU-5 | 49.10 | 13.62 | 6.63 | . | 8.74 | 14.60 | . | . | 0.826 | 5.17 | 0.310 | 4.29 | 0.440 | . | 2.718 | 2.08 | ~35 g |
| 1 | VS 8671-2005 | 47.99 | 14.63 | 10.42 | (0.021) | 10.33 | . | 14.62 | (0.88) | 0.46 | 7.51 | 0.21 | 2.32 | 0.17 | (0.026) | 1.59 | (0.42) | 100 g |
| 1 | US DNC-1a | 47.15 | 18.34 | 11.49 | (0.0066) | 7.32 | 1.79 | 9.97 | . | 0.234 | 10.13 | 0.15 | 1.89 | 0.07 | . | 0.48 | . | 25 g |

continued analysis listed in mg/kg

| Number | Ag | As | Au | B | Ba | Be | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu |
|--------------|--------|--------|----------|-------|-------|------|--------|-------|------|-------|-------|--------|-------|------|------|------|
| SARM 50 | . | . | . | . | 220 | . | . | (30) | . | 40 | 357 | . | 84 | . | . | . |
| IAG OU-2 | . | . | . | . | 341.1 | 1.11 | . | 60.2 | . | 44.8 | 97.0 | 0.495 | 63.0 | 6.09 | 3.06 | 2.23 |
| IAG OU-5 | . | (2.45) | . | . | 309.2 | 1.31 | (0.20) | 44.17 | . | 38.60 | 38.40 | 0.555 | 27.32 | 9.04 | 5.49 | 2.35 |
| VS 8671-2005 | (0.05) | . | (0.0026) | (3.8) | 227 | 0.8 | . | 22 | . | 52 | 213 | (0.45) | 180 | 5.1 | 2.9 | 1.4 |
| US DNC-1a | . | (0.12) | . | (0.9) | 118 | (1) | . | . | (60) | 57 | 270 | . | 100 | (3) | . | 0.59 |

| Number | Ga | Gd | Ge | Hf | Ho | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb |
|--------------|-------|------|--------|------|--------|-------|-------|-------|------|-------|-------|-------|-------|------|-------|
| SARM 50 | . | . | . | . | . | . | . | . | . | (10) | . | (85) | 25 | . | 14 |
| IAG OU-2 | 23.05 | 7.26 | . | 5.29 | 1.21 | 27.71 | 12.79 | 0.372 | 3.05 | 17.25 | 33.35 | 51.77 | 13.12 | 7.92 | 25.44 |
| IAG OU-5 | 21.2 | 8.64 | (2.03) | 5.59 | 1.92 | 18.10 | 21.74 | 0.767 | . | 9.58 | 28.47 | 15.00 | 4.66 | 6.29 | 19.29 |
| VS 8671-2005 | 17 | 4.5 | 1.5 | 2.7 | (1) | 8 | 8.6 | 0.44 | 0.98 | 6 | 13.2 | 126 | (3) | 2.6 | 11 |
| US DNC-1a | (15) | (2) | . | . | (0.62) | 3.6 | 5.2 | . | . | (3) | 5.2 | 247 | (6.3) | . | (4.5) |

| Number | Sb | Sc | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|--------------|------|-------|------|-------|-------|---------|------|------|---------|-------|-------|-------|---------|-------|------|-------|-------|
| SARM 50 | . | . | . | . | 195 | . | . | (6) | . | . | . | 216 | . | 23 | . | 81 | 86 |
| IAG OU-2 | . | 28.21 | 8.70 | 17.73 | 403.7 | 1.20 | 1.11 | 3.02 | . | 0.427 | 0.63 | 339.3 | . | 30.93 | 2.52 | 113.0 | 200.5 |
| IAG OU-5 | 0.42 | 42.4 | 7.64 | 2.00 | 226.8 | (0.546) | 1.46 | 2.25 | (0.125) | 0.789 | 0.500 | 447.8 | (0.865) | 51.8 | 5.10 | 133.6 | 219.9 |
| VS 8671-2005 | . | 41 | 4 | 2.64 | 197 | 0.35 | 0.8 | 1.0 | . | 0.44 | 0.45 | 315 | (0.4) | 29 | 3.3 | 112 | 125 |
| US DNC-1a | 0.96 | 31 | . | . | 144 | . | . | . | . | . | . | 148 | . | 18 | 2 | 70 | 38 |

CRM DOLOMITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | CaO | MgO | Al ₂ O ₃ | CO ₂ | Cl | F | FeO | Fe ₂ O ₃ | H ₂ O | K ₂ O | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Units |
|-----------|-------|-------|--------------------------------|-----------------|-------|-------|------|--------------------------------|------------------|------------------|--------|-------------------|-------------------------------|------------------|------------------|-------|-------|
| UL DWA1 | 30.84 | 21.40 | (0.05) | . | . | . | 0.27 | 0.27 | . | 0.010 | (0.06) | 0.042 | (0.023) | (0.06) | (0.010) | 47.29 | 50 g |
| GBW 07114 | 30.02 | 21.8 | 0.10 | 46.77 | 0.012 | 0.014 | 0.15 | 0.04 | (0.34) | 0.038 | 0.010 | (0.03) | 0.006 | 0.62 | 0.015 | . | 50 g |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | As | B | Ba | Be | Bi | Br | Tot.C% | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd |
|-----------|------|-------|------|------|--------|------|------|---------|------|------|-------|-----|------|------|------|------|------|--------|------|
| UL DWA1 | . | (1.3) | . | 24 | . | . | . | . | . | 2.2 | (0.2) | (4) | . | (4) | 0.82 | 0.50 | 0.16 | . | 0.81 |
| GBW 07114 | 0.04 | 0.23 | 20.5 | 44.3 | (0.22) | 0.03 | 0.84 | (12.88) | 0.07 | 3.58 | 3.88 | 2.6 | 0.07 | 30.2 | 0.19 | 0.09 | 0.05 | (0.21) | 0.18 |

| Number | Ge | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | S% | Sb | |
|-----------|------|--------|---------|------|------|---------|------|------|-------|--------|--------|------|-----|--------|--------|--------|-------|------|---|
| UL DWA1 | . | (0.03) | . | 0.18 | . | . | 3.6 | . | 0.05 | . | . | 3 | . | (35) | 0.67 | . | . | . | . |
| GBW 07114 | 0.15 | (0.10) | (0.004) | 0.04 | 0.23 | (0.066) | 1.34 | 2.30 | 0.019 | (0.24) | (2.77) | 1.39 | 241 | (4.44) | (0.44) | (1.42) | 0.011 | 0.04 | |

| Number | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|-----------|-------|------|------|------|-----|--------|------|---------|------|---------|---------|------|------|------|--------|------|------|-----|
| UL DWA1 | 0.24 | . | 0.62 | . | 284 | . | 0.12 | . | 0.08 | . | 0.06 | 1.4 | 6.9 | . | 9.4 | 0.39 | 83 | . |
| GBW 07114 | 0.098 | 0.08 | 0.25 | 0.53 | 49 | (0.18) | 0.05 | (0.012) | 0.11 | (0.070) | (0.040) | 0.16 | 2.10 | 0.11 | (1.40) | 0.09 | 11.7 | 3.0 |

DOLOMITE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

| # | Number | CaO | MgO | SiO ₂ | Al ₂ O ₃ | Cr ₂ O ₃ | Fe ₂ O ₃ | K ₂ O | MnO | Na ₂ O | P | P ₂ O ₅ | PbO |
|---|--------------|-------|-------|------------------|--------------------------------|--------------------------------|--------------------------------|------------------|--------|-------------------|--------|-------------------------------|----------|
| 1 | NCS DC28009a | 45.90 | 6.65 | 2.56 | 0.47 | . | 0.235 | 0.272 | 0.0049 | 0.012 | 0.0033 | . | . |
| 1 | NCS DC28206 | 41.66 | 11.31 | 4.64 | 0.16 | . | 0.112 | . | 0.0050 | . | 0.0032 | . | . |
| 1 | NCS DC14020a | 37.59 | 15.38 | 0.25 | 0.11 | . | 0.459 | 0.019 | 0.020 | 0.015 | 0.0012 | . | . |
| 1 | NCS DC28203 | 34.74 | 17.16 | 1.45 | 0.286 | . | 0.404 | . | 0.012 | . | 0.016 | . | . |
| 1 | NCS DC28015a | 33.60 | 15.50 | 4.89 | 1.40 | . | 0.641 | 0.35 | 0.0085 | 0.019 | 0.011 | . | . |
| 1 | NCS DC14018b | 31.96 | 19.92 | 0.77 | 0.23 | . | 0.269 | 0.030 | 0.031 | 0.033 | 0.0023 | . | . |
| 1 | NCS DC11003a | 31.49 | 21.06 | 0.098 | 0.083 | . | 0.024 | 0.0030 | 0.0061 | 0.017 | 0.0016 | . | . |
| 1 | NCS DC28014a | 31.46 | 18.60 | 2.97 | 0.81 | . | 0.472 | 0.29 | 0.012 | 0.021 | 0.0061 | . | . |
| 1 | NCS DC28013a | 31.12 | 19.10 | 2.65 | 0.73 | . | 0.504 | 0.13 | 0.011 | 0.034 | 0.0034 | . | . |
| 1 | NCS DC28012a | 30.94 | 20.92 | 1.48 | 0.23 | . | 0.26 | 0.085 | 0.011 | 0.012 | 0.014 | . | . |
| 1 | NCS DC28208 | 30.80 | 20.79 | 0.99 | 0.23 | . | 0.32 | . | 0.019 | . | 0.0013 | . | . |
| 1 | NCS DC28202 | 30.79 | 20.73 | 2.12 | 0.203 | . | 0.275 | . | 0.026 | . | 0.0013 | . | . |
| 1 | NCS DC28201 | 30.62 | 20.53 | 6.75 | 0.048 | . | 0.085 | . | 0.0072 | . | 0.0012 | . | . |
| 1 | BCS 512 | 30.61 | 21.59 | 0.379 | 0.055 | (<0.001) | 0.030 | (<0.02) | 0.0036 | . | . | (<0.02) | (<0.001) |
| 1 | CGL 021 | 30.59 | 21.40 | 0.267 | 0.200 | . | 0.228 | 0.062 | 0.047 | (0.040) | . | 0.044 | . |
| 2 | DH 0915 | 30.59 | 21.21 | 0.035 | 0.019 | . | 0.191 | 0.007 | 0.050 | 0.026 | . | 0.008 | . |
| 1 | ECRM 782-1 | 30.34 | 21.29 | 0.266 | 0.104 | 0.0009 | 0.450 | 0.0260 | 0.081 | . | . | 0.0128 | 0.0029 |
| 1 | NCS DC28207 | 30.33 | 20.88 | 1.26 | 0.27 | . | 0.44 | . | 0.013 | . | 0.018 | . | . |

| Number | S | Sr | SrO | Ti | TiO ₂ | ZnO | LOI | Units |
|--------------|--------|----------|--------|--------|------------------|---------|---------|-----------------|
| NCS DC28009a | 0.021 | . | 0.020 | . | 0.024 | . | 43.48 | 50 g |
| NCS DC28206 | 0.0093 | . | 0.015 | . | 0.0056 | . | 41.70 | 50 g |
| NCS DC14020a | 0.046 | . | . | . | . | . | 45.88 | 50 g |
| NCS DC28203 | 0.028 | . | . | . | . | . | 45.58 | 50 g |
| NCS DC28015a | 0.013 | . | 0.0060 | . | 0.074 | . | 43.24 | 50 g |
| NCS DC14018b | 0.010 | 0.0081 | . | 0.011 | . | . | 46.24 | 70 g |
| NCS DC11003a | 0.011 | 0.021 | . | 0.0043 | . | . | 46.71 | 70 g |
| NCS DC28014a | 0.019 | . | 0.0058 | . | 0.041 | . | 44.94 | 50 g |
| NCS DC28013a | 0.007 | . | 0.0064 | . | 0.034 | . | 45.49 | 50 g |
| NCS DC28012a | 0.003 | . | 0.0070 | . | 0.0080 | . | 45.58 | 50 g |
| NCS DC28208 | 0.022 | . | . | . | . | . | 46.20 | 50 g |
| NCS DC28202 | 0.016 | . | . | . | . | . | 45.22 | 50 or 100 g |
| NCS DC28201 | 0.0019 | . | . | . | . | . | 41.00 | 50 g |
| BCS 512 | . | . | 0.024 | . | 0.0020 | (<0.01) | 46.80 | 100 g |
| CGL 021 | . | (0.0057) | . | . | (0.013) | . | (46.63) | 50 g C:(12.925) |
| DH 0915 | . | . | . | . | . | . | . | 100 g |
| ECRM 782-1 | . | . | . | . | 0.0042 | 0.0082 | 47.25 | 100 g |
| NCS DC28207 | 0.033 | . | . | . | . | . | 46.11 | 50 g |

RM DOLOMITE SUBSTITUTE

typical analysis

* DH 0710 also contains 0.015% CuO

100 g units

| Number | CaO | MgO | Al ₂ O ₃ | Cr ₂ O ₃ | Fe | Fe ₂ O ₃ | K ₂ O | Mn ₃ O ₄ | NiO | P ₂ O ₅ | PbO | S | SiO ₂ | SrO | TiO ₂ | V ₂ O ₅ | ZnO | ZrO ₂ |
|-----------|-------|-------|--------------------------------|--------------------------------|------|--------------------------------|------------------|--------------------------------|-------|-------------------------------|-------|-------|------------------|-------|------------------|-------------------------------|-------|------------------|
| DH 0710 * | 35.36 | 35.30 | 8.28 | 0.591 | 5.14 | . | 0.077 | 1.079 | 0.013 | 0.107 | 0.011 | 0.265 | 10.23 | 0.028 | 0.301 | 0.032 | 0.159 | 0.051 |
| DH 0711 | 32.46 | 28.57 | 9.49 | 0.84 | 8.81 | . | 0.092 | 1.745 | 0.020 | 0.262 | 0.015 | 0.314 | 12.07 | 0.029 | 0.370 | 0.056 | 0.183 | 0.068 |
| DH 0709 | 23.45 | 63.07 | 5.62 | 0.071 | 1.96 | . | 0.053 | 0.444 | 0.010 | 0.133 | 0.029 | 0.097 | 3.69 | 0.011 | 0.131 | 0.021 | 0.014 | 0.057 |

DUNITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % DH, SARM: 100 g US: 25 g VS 2112: 40 g VS 4233: 100 g

| # | Number | MgO | SiO ₂ | Si | Al ₂ O ₃ | Al | CO ₂ | Tot.C | CaO | Ca | Co | Cr | Cr ₂ O ₃ | T.Fe | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ |
|---|------------|-------|------------------|------|--------------------------------|------|-----------------|-------|------|------|--------|--------|--------------------------------|------|-------------|--------------------------------|----------------------------------|
| 1 | US DTS-2B | 49.4 | 39.4 | 18.4 | 0.45 | 0.24 | . | . | 0.12 | 0.09 | 0.0120 | 1.5500 | . | 5.43 | (4.27 FeII) | . | 7.76 |
| 1 | SARM 6 | 43.51 | 38.96 | . | (0.3) | . | . | . | 0.28 | . | . | . | 0.42 | . | 14.63 | 0.71 | . |
| 1 | VS 2112-81 | 42.40 | 35.07 | . | . | . | 0.46 | . | . | . | 0.0129 | . | . | . | . | . | 10.06 |
| 1 | VS 4233-88 | 41.86 | 39.58 | . | 0.97 | . | (1.61) | . | 1.52 | . | 0.012 | 0.41 | . | . | (5.54) | . | 8.91 |
| 2 | DH 1002 | 23.79 | 41.87 | . | 8.87 | . | 0.767 | 0.332 | 4.36 | . | . | . | 0.037 | 5.40 | 0.623 | . | . |

continued analysis listed in mass %

| Number | H ₂ O | K ₂ O | Mg | MnO | Mn ₃ O ₄ | Na | Na ₂ O | Ni | NiO | P ₂ O ₅ | S | TiO ₂ | V | LOI @ 900 °C |
|------------|------------------|------------------|------|-------|--------------------------------|--------|-------------------|--------|-------|-------------------------------|---------|------------------|---------|--------------|
| US DTS-2B | . | . | 29.8 | . | . | (0.02) | . | 0.3780 | . | . | . | . | 0.0022 | . |
| SARM 6 | . | (0.01) | . | 0.22 | . | . | (0.04) | . | . | . | . | (0.02) | . | . |
| VS 2112-81 | 11.35 | . | . | 0.176 | . | . | . | 0.133 | . | . | . | . | 0.00069 | . |
| VS 4233-88 | (+4.82 -0.4) | 0.010 | . | 0.13 | . | . | 0.035 | 0.22 | . | (0.01) | (0.041) | 0.018 | 0.0033 | 6.31 |
| DH 1002 | . | 4.80 | . | . | 0.061 | . | 0.068 | . | 0.022 | 0.922 | . | 0.929 | . | 5.95 |

continued analysis listed in mg/kg except % which is mass %

| Number | Ba | Cu | Ge | Li | Mn | Mo | Pb | Rb | Sb | Sc | Sn | Sr | Zn |
|------------|------|-----|-------|-----|-----|----|-----|-----|-------|-----|-----|----|----|
| US DTS-2B | (16) | (3) | (0.7) | . | 830 | . | (4) | (2) | (0.6) | (3) | . | . | 45 |
| SARM 6 | . | . | . | . | . | . | . | . | . | . | . | . | . |
| VS 2112-81 | . | 27 | . | . | 1.4 | . | . | . | . | . | 2.2 | . | 82 |
| VS 4233-88 | . | 33 | 1.1 | 2.0 | . | . | . | . | . | 9 | . | 18 | 30 |
| DH 1002 | . | . | . | . | . | . | . | . | . | . | . | . | . |

H₂O+: (4.82)

FELDSPAR

= class, where 1 = CRM and 2 = RM analysis listed in mass %

| # | Number | SiO ₂ | Al ₂ O ₃ | BaO | CaO | F | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | PbO | Rb ₂ O | SrO | TiO ₂ | LOI | Units |
|---|------------|------------------|--------------------------------|---------|--------|-------|--------------------------------|------------------|---------|-------------------|-------------------------------|---------|-------------------|---------|------------------|---------|-------|
| 1 | FLX CRM129 | 69.84 | 16.44 | 0.130 | 0.374 | . | (0.104) | 10.78 | . | 2.11 | 0.068 | . | . | (0.014) | (0.036) | (0.428) | 40 g |
| 1 | BCS 375/1 | 69.24 | 17.88 | . | 0.78 | . | 0.291 | 1.47 | 0.180 | 8.89 | 0.226 | . | . | . | 0.312 | 0.72 | 100 g |
| 1 | FLX CRM128 | 67.88 | 19.95 | (0.007) | 1.08 | . | 0.021 | 0.206 | . | 10.74 | (0.008) | . | . | 0.049 | (0.017) | (0.171) | 40 g |
| 1 | BCS 376/1 | 65.77 | 18.63 | 0.0210 | 0.421 | . | 0.085 | 11.59 | (0.03) | 3.00 | (0.02) | 0.0090 | . | . | (<0.01) | 0.203 | 100 g |
| 2 | DH X1602 | 66.93 | 17.16 | 0.323 | 0.032 | 0.047 | . | 14.19 | 0.001 | . | 0.087 | 0.012 | . | 0.036 | 0.038 | . | 100 g |
| 1 | GBW 03116 | 66.26 | 18.63 | . | 0.76 | . | 0.19 | 9.60 | 0.054 | 3.69 | . | . | . | . | 0.048 | 0.86 | 50 g |
| 1 | IPT 72 | 66.2 | 20.26 | . | 0.18 | . | 0.09 | 1.47 | (0.022) | 10.0 | 1.03 | . | . | . | 0.005 | 0.66 | 80 g |
| 1 | IPT 53 | 65.8 | 18.3 | . | 0.27 | . | 0.13 | 12.1 | 0.05 | 2.5 | 0.072 | . | . | . | 0.013 | 0.51 | 80 g |
| | Number | Si | Al | Ba | Ca | | Fe | K | | Na | P | Pb | Rb | Sr | | | Units |
| 1 | SRM 99b | (32.07) | 10.36 | 0.1409 | (1.18) | . | 0.02787 | 3.09 | . | 5.25 | (0.0044) | 0.00712 | 0.00726 | 0.0444 | . | . | 40 g |

CRM FELDSPAR WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | Li ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Rb ₂ O | TiO ₂ | LOI | Units |
|-----------|------------------|--------------------------------|-----------------|-------|------|--------------------------------|----------------------------------|------------------|------------------|-------------------|-------|--------|-------------------|-------------------------------|-------------------|------------------|-------|-------|
| GUV FK | 88.2 | 6.18 | . | 0.110 | . | 0.261 | . | . | 4.23 | . | 0.15 | 0.0037 | 0.25 | 0.077 | . | 0.058 | . | 50 g |
| UNS ZK | 74.38 | 14.19 | . | 0.43 | 0.73 | 0.88 | . | . | 4.06 | 0.06 | 0.067 | 0.025 | 4.50 | . | 0.094 | 0.039 | 0.54 | 100 g |
| JF-1 | 66.69 | 18.08 | . | 0.93 | . | 0.06 | 0.08 | +0.23 -0.13 | 9.99 | . | 0.006 | 0.001 | 3.37 | 0.01 | . | 0.005 | . | 100 g |
| JF-2 | 65.30 | 18.52 | . | 0.09 | . | 0.06 | 0.06 | +0.24 -0.18 | 12.94 | . | . | 0.001 | 2.39 | . | . | 0.005 | 20 or | 100 g |
| VS 811-89 | 60.67 | 18.20 | 0.20 | 0.51 | 4.8 | 7.20 | . | 4.0 | 3.43 | . | 2.22 | 0.042 | 2.31 | 0.19 | . | 0.94 | . | 100 g |
| SRM 70b | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 40 g |

analysis listed in mg/kg except % indicating mass %, * indicating ppb, and ! indicating scientific notation

| Number | Al% | As | B% | Ba% | Be | Ca% | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | F% | Fe% | Ga | Ge |
|-----------|------|-----|-------|---------|-----|--------|--------|------|-------|------|------|------|------|------|--------|------|------|-----|
| GUV FK | . | . | . | 0.0700 | . | . | . | . | . | 2.6 | 11 | . | . | . | . | . | 6 | . |
| UNS ZK | . | 4.8 | . | . | . | . | 5.7 | 7.0 | . | 38.7 | 12.2 | . | . | . | . | . | 33.3 | . |
| JF-1 | 9.57 | . | . | 0.1750 | . | 0.66 | 4.19 | 0.12 | 5.48 | 2.09 | 0.82 | 0.39 | 0.31 | 0.87 | . | 0.06 | 17.4 | . |
| JF-2 | 9.80 | . | . | 0.0298 | . | 0.06 | 0.84 | 0.68 | . | 1.06 | 0.78 | . | . | 0.59 | . | 0.04 | 17.9 | . |
| VS 811-89 | . | . | 0.008 | 0.09 | 3.0 | . | 0.007* | 21 | 96 | 6.3 | 41 | . | . | 0.06 | . | . | 22 | 1.7 |
| SRM 70b | 7.98 | . | . | 0.00282 | . | 0.1770 | . | . | (0.7) | . | . | . | . | . | (0.13) | . | . | . |

| Number | Hf | Ho | K% | La | Li% | Mg% | Mn% | Mo | Na% | Nb | Nd | Ni | P% | Pb | Pr | Ra! | Rb% | S% |
|-----------|------|------|-------|-------|----------|----------|---------|------|------|------|------|----|-------------|------|-------|----------|--------|----|
| GUV FK | . | . | . | . | 0.0008 | . | . | . | . | . | . | . | 0.004 | 18 | . | . | 0.0132 | . |
| UNS ZK | 1.4 | . | . | . | . | . | . | 21.0 | . | 33.5 | 29.4 | . | . | . | . | . | . | . |
| JF-1 | 1.18 | 0.11 | 8.29 | 2.80 | 0.000981 | 0.004 | 0.001 | 2.50 | 0.74 | 1.46 | . | . | 33.4 | 0.48 | . | . | 0.0266 | . |
| JF-2 | 0.19 | . | 10.74 | 0.63 | 0.000219 | . | 0.001 | 1.77 | 0.70 | 0.70 | . | . | 48.7 | . | . | . | 0.0218 | . |
| VS 811-89 | . | . | . | 0.006 | . | . | . | 2.0 | 14 | . | 59 | . | 20 | . | 3e-10 | 0.012 | 0.087 | . |
| SRM 70b | . | . | 6.33 | . | . | (0.0298) | 0.00630 | . | 2.36 | . | . | . | 0.0790 (57) | . | . | (0.0495) | . | . |

| Number | Sc | Si% | Sm | Sr% | Ta | Tb | Th | Ti% | Tl | U | V | Y | Yb | Zn% | Zr% |
|-----------|-------|--------|------|----------|-------|-------|------|----------|------|------|--------|------|------|-----------|----------|
| GUV FK | . | . | . | 0.0072 | . | . | . | . | . | . | . | . | . | 0.0014 | . |
| UNS ZK | 3.6 | . | 16.8 | . | 19.4 | . | 4.7 | . | . | . | . | 8.4 | . | 0.00194 | . |
| JF-1 | 0.23 | 31.17 | 0.41 | 0.0172 | 0.079 | 0.076 | 1.17 | 0.003 | 1.18 | 0.33 | 5.43 | 2.84 | 0.35 | 0.000441 | 0.00386 |
| JF-2 | 0.089 | 30.52 | 0.11 | 0.0200 | . | . | 0.31 | 0.003 | 1.10 | . | 4.86 | 2.67 | . | 0.000140 | 0.000673 |
| VS 811-89 | 19 | . | 3.2 | 0.017 | 1.3 | . | 11 | . | . | 2.5 | 0.016% | 32 | 3.4 | 0.012 | 0.021 |
| SRM 70b | . | (34.4) | . | (0.0027) | . | . | . | (0.0032) | . | . | (0.93) | . | . | (0.00077) | . |

CRM TRACE ELEMENTS IN FELDSPAR

analysis listed in mg/kg

| Number | Rb | Uncertainty | Sr | Uncertainty | ⁸⁷ Sr/ ⁸⁶ Sr | ⁸⁶ Sr/ ⁸⁸ Sr | Units |
|---------|--------|-------------|--------|-------------|------------------------------------|------------------------------------|-------|
| SRM 607 | 523.90 | 1.01 | 65.485 | 0.320 | 1.20039 | 0.1194 | 5 g |

CRM FLUORSPAR (FLUORITE)

analysis listed in mass % NCS DC62003a: 20g NCS DC14046-8,NCS DC282x, RH03: 50g other NCS, CMSI, GBW: 65g SRM: 120g all others: 100g

| Number | CaF ₂ | F | Al ₂ O ₃ | BaO | CaCO ₃ | CaO | Fe | Fe ₂ O ₃ | K ₂ O | Na ₂ O | P | S | SiO ₂ | Others |
|--------------|------------------|-------|--------------------------------|------|-------------------|-------|------|--------------------------------|------------------|-------------------|---------|-----------------------|------------------|---|
| SRM 180 | 98.80 | . | . | . | . | . | . | . | . | . | . | . | . | |
| SARM 15 | 97.84 | . | . | . | 0.95 | . | . | (0.23) | . | . | 0.007 | . | (0.26) | MgCO ₃ : 0.55 Mn: 0.0213 |
| SRM 79a | 97.39 | . | . | . | . | . | . | . | . | . | . | . | . | |
| SARM 14 | 97.32 | . | . | . | (0.3) | . | . | (0.06) | . | . | (0.079) | . | (0.57) | |
| BCS 392 | 97.2 | . | . | 0.37 | . | 0.52 | . | . | . | . | . | 0.12 | 0.67 | CO ₂ : 0.48 Pb: 0.18 |
| JK D | 97.07 | 47.24 | 0.04 | . | . | . | . | 0.20 | . | . | 0.035 | 0.004 | (1.5) | |
| NCS DC28088 | 96.87 | . | 0.14 | . | 0.14 | . | . | 0.173 | 0.036 | 0.019 | 0.015 | 0.092 | 1.76 | MgO: 0.015 Mn: 0.040 |
| VS 1823-80 | 95.83 | . | . | . | 0.20 | . | . | . | . | . | 0.024 | . | 2.92 | |
| GBW 07250 | 94.91 | . | . | . | (0.02) | . | . | 0.096 | 0.019 | 0.005 | 0.0025 | 0.029 | 4.72 | |
| NCS DC28228 | 94.81 | . | . | . | 0.99 | . | 0.26 | . | . | . | 0.076 | 0.107 | 2.76 | Mn: 0.010 |
| VS 1822-80 | 93.86 | . | . | . | 0.41 | . | . | . | . | . | 0.057 | 0.410 | 3.16 | |
| NCS DC14022a | 93.68 | . | . | . | 0.30 | 0.166 | . | . | 0.026 | 0.006 | 0.014 | 0.35 | 3.06 | |
| NCS DC14024a | 93.28 | . | . | . | 0.62 | 0.22 | . | . | 0.040 | 0.006 | 0.0014 | 0.009 | 5.44 | |
| VS 3383-86 | 91.84 | 0.53 | . | . | . | 0.612 | . | . | . | . | 0.063 | 0.095 | 5.03 | |
| GBW 07251 | 90.87 | . | . | . | (0.02) | . | . | 0.124 | 0.026 | 0.005 | 0.0031 | 0.090 | 8.35 | |
| NCS DC28230 | 90.72 | . | . | . | 0.87 | 0.25 | . | . | . | . | 0.063 | 0.084 | 7.68 | Mn: 0.012 |
| CGL 132 | 88.65 | . | . | . | (0.78) | . | . | . | . | . | (0.012) | (0.019) | 10.15 | |
| NCS DC28229 | 85.56 | . | . | . | 0.58 | 0.28 | . | . | . | . | 0.045 | 0.079 | 10.62 | Mn: 0.013 |
| IPT 95 | 85.4 | . | . | . | . | . | . | 0.36 | . | . | . | . | 8.3 | |
| GBW 07253 | 85.21 | . | . | . | (0.02) | . | . | 0.209 | 0.044 | 0.005 | 0.0013 | 0.045 | 14.15 | |
| VS SH13 | 84.7 | . | . | . | 0.51 | 0.353 | . | . | . | . | 0.012 | 0.103 | 13.0 | |
| RH03 (RM) | 84.6 | . | . | . | . | 0.35 | . | . | . | . | 0.0110 | 0.101 | 13.1 | last of stock |
| NCS DC28087 | 83.12 | 0.69 | . | . | 1.06 | . | . | 0.36 | 0.28 | 0.031 | 0.018 | 0.050 | 13.74 | MgO: 0.14 Mn: 0.0099 |
| NCS DC28227 | 78.75 | . | . | . | 0.33 | 0.28 | . | . | . | . | . | 0.028 | 19.36 | Mn: 0.012 |
| NCS DC28226 | 77.33 | . | . | . | 0.20 | 0.31 | . | . | . | . | . | 0.068 | 18.04 | Mn: 0.014 |
| JK C | 76.91 | 37.43 | 0.66 | 8.2 | . | . | . | 0.70 | . | . | 0.026 | 1.75 | 8.2 | Pb: 0.07 |
| NCS DC14048 | 76.79 | . | . | . | 0.34 | 0.4 | . | . | 0.081 | 0.007 | 0.0021 | 0.11 | 21.10 | |
| NCS DC28086 | 73.73 | 1.07 | . | . | 2.06 | . | . | 0.87 | 0.38 | 0.054 | 0.023 | 0.28 | 19.27 | MgO: 0.73 Mn: 0.027 |
| NCS DC14047 | 65.80 | . | . | . | 0.060 | 0.49 | . | . | 0.093 | 0.009 | 0.0027 | 0.26 | 31.04 | |
| NCS DC62003a | 60.98 | 3.69 | . | . | . | 1.17 | . | 2.35 | 1.44 | 0.52 | . | SO ₃ :0.12 | 26.20 | MgO: 0.18 TiO ₂ : 0.15 LOI: 1.38 |
| NCS DC28085 | 60.16 | 1.29 | . | . | 3.73 | . | . | 1.32 | 0.41 | 0.067 | 0.021 | 0.52 | 27.17 | MgO: 1.99 Mn: 0.034 |
| NCS DC28084 | 46.59 | 0.99 | . | . | 9.08 | . | . | 0.52 | 0.34 | 0.061 | 0.0071 | 0.071 | 28.89 | MgO: 5.51 Mn: 0.051 |
| VS 2665-83 | 38.00 | . | . | . | 6.80 | . | . | . | . | . | 0.036 | 0.32 | 25.57 | |
| CGL 135 | 35.60 | . | . | . | (0.68) | . | . | . | . | . | 0.037 | 0.41 | 47.67 | |
| VS 4182-87 | 32.75 | . | . | . | 1.70 | . | . | . | . | . | 0.114 | 0.038 | 47.52 | |
| VS 5132-89 | 32.69 | . | . | . | 11.75 | . | . | . | . | . | . | . | (27.68) | |
| VS 2666-83 | 32.02 | . | . | . | 0.70 | . | . | . | . | . | 0.055 | 1.24 | 47.73 | |
| VS 5133-89 | 4.17 | . | . | . | 1.10 | . | . | . | . | . | . | . | . | |

| Number | CaF ₂ | F | Al ₂ O ₃ | BaO | CaCO ₃ | CaO | Fe | Fe ₂ O ₃ | K ₂ O | Na ₂ O | P | S | SiO ₂ | Others |
|--------|------------------|---|--------------------------------|-----|-------------------|-----|----|--------------------------------|------------------|-------------------|---|---|------------------|--------|
|--------|------------------|---|--------------------------------|-----|-------------------|-----|----|--------------------------------|------------------|-------------------|---|---|------------------|--------|

FLUORSPAR (FLUORITE)

= class where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg IGS: 55 g all others: 100 g

| # | Number | Ca | F | Al ₂ O ₃ | BaO | CO ₂ | CuO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | SiO ₂ | SO ₄ | TiO ₂ | ZnO | LOI 900°C |
|---|-----------|-------|--------------|--------------------------------|------|-----------------|-------|--------------------------------|------------------|---------|-------|-------------------|------------------|-----------------|------------------|-------|-----------|
| 1 | IGS 39 | . | 46.69 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 2 | DH 2712 | 44.18 | 40.6 | 1.01 | . | 2.11 | 0.199 | 0.373 | 0.125 | 0.739 | 0.237 | . | 8.91 | 0.103 | 0.069 | 0.103 | 0.370 |
| 2 | DH 2709 | 39.98 | 38.10 | 0.310 | . | 0.027 | 0.052 | 15.72 | 0.029 | 0.017 | 0.077 | 0.030 | 3.93 | 0.027 | . | 0.004 | 0.929 |
| 1 | USZ HJ | 37.32 | 34.92 | 2.35 | . | . | . | 0.34 | 0.99 | . | . | . | 23.01 | . | 0.047 | . | . |
| 1 | UNS FM ** | 35.89 | 34.03 | (0.329) | 3.89 | (0.13) | . | 0.496 | 0.097 | (0.036) | . | (0.087) | 22.59 | . | 0.018 | . | . |

| Number | Bi* | Ce* | Cr* | Cr ₂ O ₃ % | Cu* | Eu* | La* | Mo* | Pb* | S | Sb* | Sc* | Sm* | Sr% | Y* |
|-----------|--------|------|-----|----------------------------------|------|-----------|------|-----------|------|------|-----|------|-------------------------|----------|-----|
| IGS 39 | . | . | . | . | . | . | . | . | . | . | . | . | . | (0.014) | . |
| DH 2712 | . | . | . | 0.106 | . | NiO:0.153 | . | PbO:0.102 | . | . | . | . | SnO ₂ :0.054 | . | . |
| DH 2709 | . | . | . | 0.004 | . | . | . | . | . | . | . | . | . | . | . |
| USZ HJ | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| UNS FM ** | (58.8) | 28.3 | 272 | . | 60.7 | 1.16 | 14.1 | 44.6 | 72.2 | 0.91 | 2.1 | 0.67 | 5.6 | (0.0580) | 154 |

** UNS FM also contains Co: 2.6*, Cs: 0.81*, Mn: 64*, U: 2.9*, Yb: 3* and trace informational values for 19 other elements

CRM GABBRO

analysis listed in mass %

40 g units

| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | H ₂ O+ | T.H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ |
|--------|------------------|--------------------------------|-----------------|-------|--------|------|--------------------------------|----------------------------------|------------------|-------------------|--------------------|------------------|------|------|-------------------|-------------------------------|--------|------------------|
| VS M08 | 51.98 | 16.39 | 0.43 | 9.02 | 0.0390 | 9.61 | 0.85 | 11.55 | 0.088 | 0.22 | 0.31 | 0.46 | 6.39 | 0.16 | 3.27 | 0.21 | 0.1700 | 1.15 |
| VS M07 | 40.79 | 17.60 | 0.03 | 14.62 | 0.1300 | 7.76 | 3.73 | 12.35 | 0.12 | 0.70 | 0.82 | 0.75 | 6.46 | 0.15 | 2.05 | 1.08 | 0.1800 | 3.39 |

continued

analysis listed in mg/kg except % which is mass %

VS M08: Gabbro

VS M07: Orthoclase Gabbro

| Number | B | Ba | Be | Co | Cr | Cs | Cu | Ga | La | Li | Mo | Nb | Ni | Pb | Rb | Sc | Sn | Sr | V | Y | Yb | Zn | Zr |
|--------|-----|------|-------|----|-----|-----|----|------|----|-----|-------|-----|----|-----|-----|------|-------|------|-----|----|-----|----|----|
| VS M08 | 7.5 | 272 | 0.8 | 48 | 126 | 1.1 | 40 | 18 | 26 | 5.5 | 3.2 | 3.7 | 18 | 7.3 | 4.0 | 31 | 2.7 | 477 | 199 | 18 | 2.0 | 84 | 48 |
| VS M07 | 4.5 | 7480 | (1.2) | 49 | 76 | 1.1 | 59 | (18) | 37 | 5.4 | (2.4) | 12 | 45 | 7.6 | 12 | (25) | (3.8) | 1745 | 270 | . | . | 65 | 53 |

CRM GABBRO WITH EXTENSIVE ANALYSIS

analysis listed in mass % except * which is mg/kg

CAN WMG-1A: 350 g

CGL: 100 or 250 g

GBW: 50 g

JGb-1: 20 g

others: 100 g

| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI |
|--------------|------------------|--------------------------------|-----------------|-------|----------|-------|--------------------------------|----------------------------------|------------------|------------------|------|----------|-------------------|-------------------------------|------------------|--------|
| VS 2118-81 | 52.04 | 16.94 | 0.37 | 7.36 | (0.0690) | 5.43 | 9.93 | . | 1.67 | 2.25 | 3.74 | 0.187 | 4.20 | 0.476 | 1.02 | . |
| USZ 51-2009 | 48.00 | 26.26 | . | 13.61 | (0.085) | 2.00 | . | 4.22 | (+0.61 -0.13) | 0.31 | 2.85 | 0.080 | 2.42 | 0.078 | 0.37 | 1.40 |
| VS 8670-2005 | 46.63 | 14.93 | . | 10.68 | 0.13 | 6.23 | . | 11.33 | (+0.93) | 3.09 | 6.81 | 0.167 | 2.72 | 1.03 | 1.72 | (0.77) |
| JGb-2 | 46.47 | 23.48 | . | 14.10 | . | 5.41 | 0.62 | 6.69 | -0.14 | 0.059 | 6.18 | 0.13 | 0.92 | 0.017 | 0.56 | . |
| JGb-1 * | 43.66 | 17.49 | . | 11.90 | 0.0133 | 9.43 | 4.79 | 15.06 | +1.28 -0.13 | 0.24 | 7.85 | 0.189 | 1.20 | 0.056 | 1.60 | . |
| CGL 013 | 43.15 | 22.57 | . | 14.99 | (0.099) | 4.57 | . | 10.99 | (+0.46 -0.21) | 0.11 | 4.51 | 0.10 | 1.41 | (0.038) | 0.94 | (1.03) |
| VS 2119-81 | 37.66 | 13.35 | 0.33 | 7.81 | 0.16 | 14.98 | 4.33 | 20.98 | 1.25 | 0.80 | 7.48 | 0.198 | 2.35 | 2.21 | 6.99 | . |
| VS 2117-81 | 37.62 | 13.67 | (0.16) | 15.75 | 0.0720 | 9.05 | 18.54 | . | (0.12) | 0.204 | 8.66 | 0.222 | 0.72 | 2.15 | 1.46 | . |
| GBW 07112 | 35.69 | 14.14 | 0.12 | 9.86 | 0.006 | 13.36 | 9.90 | . | 1.09 | 0.15 | 5.25 | 0.193 | 2.11 | 0.028 | 7.69 | . |
| | Si | Al | Ca | Fe | | | | | K | Mg | Mn | Na | P | Ti | | |
| JGb-1 * | 20.41 | 9.26 | . | 8.50 | . | 10.53 | 4.79 | 15.05 | +1.28 -0.13 | 0.20 | 4.73 | 0.146 | 0.89 | 0.024 | 0.96 | . |
| CAN WMG-1A | 18.27 | 4.75 | . | 10.06 | . | 12.71 | . | . | . | 0.1021 | 7.41 | (0.1141) | 0.1119 | 0.0731 | 0.419* | (4.31) |

* JGb-1 is certified for major elements and their oxides

continued

analysis listed in mg/kg except % which is mass %

| Number | Ag | As | B | Ba% | Be | Bi | Cd | Ce | Cl% | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd |
|--------------|--------|------|----------|---------|------|---------|---------|---------|-------|-------|-------|------|--------|--------|--------|---------|--------|---------|
| VS 2118-81 | . | . | . | 0.1300 | 2.9 | . | . | . | . | 24 | 21 | . | 100 | . | . | . | 24 | . |
| USZ 51-2009 | . | . | . | 0.0119 | . | . | . | 7.90 | . | 14.93 | 69.97 | . | 45.32 | . | . | . | 18.87 | . |
| VS 8670-2005 | (0.09) | . | (15) | 0.152 | 1.9 | . | . | 163 | . | 40 | 58 | 3.3 | 58 | 6.2 | 2.8 | 3.9 | 17 | 11.5 |
| JGb-2 | . | . | . | 0.00365 | . | . | . | 3.0 | . | 25.8 | 125 | 0.51 | 11.4 | . | . | 0.59 | 15.9 | . |
| JGb-1 * | 1.09 | 4.03 | 0.00643 | . | . | 0.087 | 8.17 | . | 60.1 | 57.8 | 0.26 | 85.7 | 1.56 | 1.04 | 0.62 | 17.9 | 1.61 | . |
| CGL 013 | . | . | 0.004994 | . | . | . | (3.43) | . | 35.21 | 35.72 | . | 608 | (0.79) | (0.44) | (0.37) | 17.94 | (0.8) | . |
| VS 2119-81 | . | . | . | 0.0440 | 0.82 | . | . | . | 69 | 56 | . | 69 | . | . | . | 13 | . | . |
| VS 2117-81 | . | . | . | 0.0110 | . | . | . | . | 65 | 14 | . | 3600 | . | . | . | 21 | . | . |
| GBW 07112 | 0.05 | . | 1.84 | 0.00862 | . | 0.04 | 0.09 | 4.2 | 0.006 | 93.0 | 14.5 | . | 28.3 | 1.11 | 0.47 | 0.74 | 23.7 | 1.31 |
| CAN WMG-1A | 3.03 | 5.99 | . | 0.0216 | . | (0.251) | (0.818) | (17.18) | . | 191 | 804 | . | 7120 | 2.291 | (1.34) | (0.733) | (12.4) | (2.351) |

| Number | Ge | Hf | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pd | Pb | Pr | Pt | Rb | S% |
|--------------|------|--------|--------|------|------|--------|--------|---------|-------|--------|--------|-------|-------|-------|---------|-------|--------|---------|
| VS 2118-81 | 1.1 | . | . | . | . | 46 | 13 | . | 2.0 | . | . | 14 | . | 20 | . | . | 42 | . |
| USZ 51-2009 | . | . | . | . | . | . | . | . | . | . | . | 23.94 | . | 6.00 | . | . | 6.58 | . |
| VS 8670-2005 | 1.3 | 5.3 | 1.1 | . | . | 82 | 12 | 0.3 | 1.4 | 8.4 | 89 | 47 | . | 15 | 20.7 | . | 80 | (0.015) |
| JGb-2 | . | 0.25 | . | . | . | 1.5 | . | 0.062 | 0.42 | 1.9 | 1.8 | 13.6 | . | 1.5 | . | . | 2.9 | . |
| JGb-1 * | 1.01 | 0.88 | 0.33 | . | . | 3.60 | 4.59 | 0.15 | 0.59 | 3.34 | 5.47 | 25.4 | . | 1.92 | 1.13 | . | 6.87 | 0.1910 |
| CGL 013 | . | (0.32) | (0.16) | . | . | (1.31) | (4.89) | (0.06) | (0.5) | (0.36) | (2.33) | 23.34 | . | 4.68 | (0.5) | . | (1.96) | . |
| VS 2119-81 | . | . | . | . | . | . | . | . | . | . | . | 63 | . | 11 | . | . | . | 0.082 |
| VS 2117-81 | 2.1 | . | . | . | . | 3.3 | . | . | 2.0 | . | . | 28 | . | 6 | . | . | . | 0.1240 |
| GBW 07112 | 1.06 | 0.65 | 0.20 | 0.08 | 0.12 | 1.71 | 1.94 | 0.06 | . | 9.3 | 4.10 | 69 | . | . | 0.84 | . | . | 0.37 |
| CAN WMG-1A | . | . | . | . | . | 8.47 | (44.7) | (0.196) | 2.49 | (5.26) | 9.41 | 2480 | 0.484 | (9.2) | (2.220) | 0.899 | (2.53) | 3.43 |

| Number | Sc | Se | Sm | Sn | Sr% | Ta | Tb | Te | Th | Tl | Tm | U | V | Y | Yb | Zn | Zr |
|--------------|-------|------|--------|--------|---------|---------|--------|--------|------|------|---------|--------|-------|-------|---------|-------|---------|
| VS 2118-81 | 24 | . | . | 5.5 | 0.0810 | . | . | . | . | . | . | . | 220 | 38 | 2.8 | 77 | 160 |
| USZ 51-2009 | 12.33 | . | . | 0.1196 | . | . | . | . | . | . | . | . | 85.28 | 5.14 | . | 59.87 | (33.49) |
| VS 8670-2005 | 26 | . | 17 | 3.2 | 0.224 | 0.5 | 1.5 | . | 8 | . | (0.35) | 1.8 | 250 | 30 | 2.5 | 120 | 219 |
| JGb-2 | 27 | . | 0.51 | . | 0.0438 | 0.29 | 0.15 | . | 0.19 | . | . | . | 174 | 4.5 | 0.39 | 48.5 | 11.6 |
| JGb-1 * | 35.8 | . | 1.49 | 0.48 | 0.0327 | 0.18 | 0.29 | . | 0.48 | . | 0.16 | 0.13 | 635 | 10.4 | 1.06 | 109 | 32.8 |
| CGL 013 | 39.66 | . | (0.72) | . | 0.0778 | . | (0.13) | . | . | . | (0.05) | . | 420 | 4.30 | (0.39) | 98.00 | (12) |
| VS 2119-81 | 17 | . | . | 4.4 | . | . | . | . | . | . | . | . | 120 | . | . | 120 | 100 |
| VS 2117-81 | 37 | . | . | 6.5 | 0.1040 | . | . | . | . | . | . | . | 960 | . | 2.6 | 136 | . |
| GBW 07112 | 22.5 | 0.26 | 1.22 | 0.89 | 0.0612 | . | 0.20 | 0.010 | . | 0.07 | 0.09 | . | 768 | 4.9 | 0.36 | 118 | 29 |
| CAN WMG-1A | 21.33 | 14.1 | 2.211 | (1.91) | 0.00390 | (0.355) | . | (1.19) | 1.07 | . | (0.192) | (0.65) | 158 | 12.67 | (1.220) | 112 | 35.7 |

CRM GOLD AND SILVER ORE

| Number | analysis listed in mass % except * which is mg/kg | | | | | | | | | | | | | | | | | | | For U, MM = /ICP and X = XRF | | D = Demotu/Specific Gravity | | 100 g units | |
|-------------|---|-------|--------------------------------|--------|------|--------------------------------|----------|--------------------------------|------------------|--------|--------|-------------------|-------------------------------|------|------------------|------------------|--------|-----|-------------------------------|------------------------------|------|-----------------------------|--|-------------|--|
| | Au* | Ag* | Al ₂ O ₃ | As | CaO | Cr ₂ O ₃ | Cu | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | U M | U X | U ₃ O ₈ | LOI | D | | | | |
| AMIS 0429 | 22.93 | . | . | . | 0.48 | (0.11) | . | 4.97 | 0.54 | . | (0.04) | . | . | 1.57 | 87.70 | . | 0.0722 | . | . | (1.87) | . | | | | |
| AMIS 0312 | 4.00 | (5.8) | 11.24 | . | 2.37 | (0.03) | 0.8104 | 6.55 | 3.74 | 0.69 | 0.060 | 1.55 | . | 2.58 | 68.18 | 0.24 | . | . | . | (3.30) | 2.84 | | | | |
| AMIS 0359 | 3.80 | . | 2.54 | 0.2334 | 1.82 | (0.048) | (0.0105) | 38.83 | 0.56 | 5.28 | 0.72 | (0.089) | . | 6.91 | 45.11 | 0.18 | . | . | . | (4.15) | 3.39 | | | | |
| AMIS 0360 * | 2.94 | . | 5.94 | 0.7951 | 5.74 | (0.11) | 0.0577 | 18.04 | 0.95 | 3.47 | 0.39 | 0.29 | . | 6.46 | 48.05 | 0.30 | . | . | . | (12.88) | 3.05 | | | | |
| AMIS 0430 | 2.68 | . | 2.80 | . | 0.19 | 0.12 | . | 2.03 | 0.32 | (0.11) | 0.030 | (0.06) | . | 0.33 | 92.3 | (0.14) | 0.0113 | . | . | (1.66) | 2.71 | | | | |
| AMIS 0221 | 1.14 | . | 11.03 | . | 4.13 | . | (0.0050) | 12.58 | 2.93 | 2.56 | . | . | . | 1.84 | 56.40 | 0.28 | . | . | . | . | 2.88 | | | | |

* AMIS 0360 also contains Ni:(0.0358) and Zn:(0.1786)

CRM GOLD AND SILVER ORE

analysis listed in mg/kg (ppm) * and mass percent %

| Number | Ag* | Au* | As% | S% | Sb% | Units |
|--------------|--------|--------|-------|-------|---------|--------------|
| NCS DC28104 | 62.2 | 63.4 | . | . | . | 250 g |
| USZ 29-2000 | 6.05 | 42.26 | . | . | . | 100 or 200 g |
| VS 5938-91 | 6.5 | 36 | 8.45 | 28.73 | 0.021 | 100 g |
| VS 5937-91 | 6.4 | 33 | 7.78 | 25.83 | 0.019 | 100 g |
| VS 2739-83 | 5.7 | 34 | 8.0 | 26.0 | 0.020 | 100 g |
| NCS DC28107 | 20.4 | 20.0 | . | . | . | 250 g |
| NCS DC29103 | 18.0 | 20.0 | . | . | . | 500 g |
| CAN MA-1b | (4) | 17.0 | . | . | . | 200 g |
| VS 5936-91 | 3.5 | 20 | 4.72 | 15.26 | 0.012 | 100 g |
| VS 5935-91 | 23 | 13 | . | 15.10 | 0.044 | 100 g |
| NCS DC28106 | 11.0 | 11.0 | . | . | . | 500 g |
| USZ 39-2005 | 49.33 | 10.92 | . | . | . | 250 g |
| VS 5934-91 | 1.8 | 8.9 | 2.11 | 6.77 | 0.0057 | 100 g |
| CAN MA-3a | (2.4) | 8.56 | . | . | . | 200 g |
| USZ 40-2005 | 27.06 | 7.38 | . | . | . | 100 or 250 g |
| USZ 30-2000 | 1.18 | 5.92 | . | . | . | 250 g |
| NCS DC28105 | 5.8 | 5.0 | . | . | . | 500 g |
| VS 5933-91 | 1.1 | 4.6 | 1.08 | 3.35 | 0.0039 | 100 g |
| NCS DC29102 | 37.4 | 4.30 | . | . | . | 500 g |
| VS 8815-2006 | 0.75 | 4.25 | 1.000 | 3.27 | 0.00260 | 100 g |
| USZ 31-2000 | 1.07 | 3.28 | . | . | . | 250 g |
| CAN MA-2c | (0.51) | 3.02 | . | . | . | 400 g |
| VS 5932-91 | 0.9 | 3.0 | 0.54 | 1.77 | 0.0021 | 100 g |
| NCS DC28102 | 2.2 | 2.5 | . | . | . | 500 g |
| VS 8816-2006 | 0.360 | 2.13 | 0.500 | 1.64 | 0.00135 | 100 g |
| NCS DC28103 | 3.1 | 1.8 | . | . | . | 500 g |
| NCS DC28101 | 4.2 | 1.7 | . | . | . | 500 g |
| USZ 21-98 | . | 1.06 | . | . | . | 250 g |
| VS 2740-83 | 0.31 | 0.9 | 0.17 | 0.38 | 0.0019 | 100 g |
| NCS DC29101 | . | 0.64 | . | . | . | 500 g |
| VS 5940-91 | 0.9 | 0.55 | 0.063 | 0.34 | 0.0075 | 100 g |
| VS 5939-91 | 0.7 | 0.37 | . | 0.24 | 0.0025 | 100 g |
| KZ 63-86 | . | 0.023 | . | . | . | 100 g |
| KZ 64-86 | . | 0.0076 | . | . | . | 100 g |
| KZ 65-86 | . | 0.0067 | . | . | . | 100 g |
| NCS DC90006 | 732 | . | . | . | . | 50 g |
| NCS DC90005 | 559 | . | . | . | . | 50 g |
| NCS DC90004 | 446 | . | . | . | . | 50 g |
| NCS DC90003 | 298 | . | . | . | . | 50 g |
| NCS DC29106 | 199 | . | . | . | . | 50 g |
| NCS DC29105 | 138.1 | . | . | . | . | 50 g |
| NCS DC90002 | 112 | . | . | . | . | 50 g |
| NCS DC29104 | 50.3 | . | . | . | . | 50 g |
| NCS DC90001 | 46.9 | . | . | . | . | 50 g |

CRM GOLD AND SILVER ORE - minesite carbon material

data listed in mg/kg (ppm) 10 g units

| Number | Au | Ag | |
|----------|------|-------|-----------------|
| GLC302-3 | 7467 | 1248 | (last of stock) |
| GLC615-7 | 6815 | 4835 | |
| GLC615-6 | 4442 | 1373 | |
| GLC615-5 | 3629 | 757 | |
| GLC917-2 | 2460 | 175 | |
| GLC917-1 | 2361 | 154 | |
| GLC616-2 | 2311 | 1050 | |
| GLC915-1 | 2077 | 416 | |
| GLC314-1 | 2031 | 947 | (last of stock) |
| GLC315-3 | 1791 | 548 | |
| GLC915-3 | 1472 | 114 | |
| GLC316-2 | 1211 | 527 | |
| GLC916-2 | 1174 | 209 | |
| GLC616-1 | 1330 | 601 | |
| GLC315-4 | 974 | 360 | |
| GBC916-1 | 933 | 265 | |
| GLC915-2 | 829 | 27 | |
| GBC917-4 | 811 | 229 | |
| GLC315-2 | 790 | 530 | |
| GBC917-2 | 770 | 219 | |
| GBC917-1 | 713 | 207 | |
| GBC917-3 | 628 | 195 | |
| GBC913-2 | 508 | 214 | |
| GBC911-3 | 470 | 596 | (last of stock) |
| GBC615-2 | 467 | (57) | |
| GBC916-2 | 465 | 102 | |
| GBC616-2 | 454 | 233 | |
| GBC12 | 448 | . | |
| GBC315-2 | 350 | (70) | |
| GBC316-2 | 319 | 508 | |
| GBC316-1 | 318 | 191 | |
| GBC314-4 | 306 | (181) | |
| GBC912-2 | 301 | 528 | |
| GBC902-3 | 285 | 83 | last of stock |
| GBC916-3 | 218 | 493 | |
| GBC316-4 | 109 | 74 | |
| GBC314-2 | 96 | (72) | |
| GBC915-3 | 76 | 58 | |
| GBC314-1 | 51 | 38 | last of stock |
| GBC316-3 | 21 | 21 | |
| GBC616-1 | 12 | 46 | |
| GBC915-2 | 6 | 21 | |
| Number | Au | Ag | |

CRM GOLD AND SILVER ORE - CONTINUED ON THE NEXT PAGES

| analysis listed in mass % except * which is mg/kg | | | | | | | | | | | | | | OREAS samples list multiple methods, more information upon request |
|---|---------|---------|-------------|--------------|-----------|--------|--------------------------------|-----------|---------|-----------------|------------|-----------|---------|--|
| Number | Au* | Ag* | As | Ba | Cu | Fe | Fe ₂ O ₃ | Pb | S | SO ₃ | Sb | Zn | LOI | |
| CAN DS-1 | 32.59 | 0.47 | 0.6960 | 0.0221 | 0.00271 | (3.0) | . | 0.00138 | (2.609) | . | (0.0107) | 0.0206 | (13) | |
| USZ 38-2005 | 31.28 | . | . | 0.02 | 0.43 | . | 14.71 | . | . | . | . | 0.006529 | 2.59 | |
| KZ 3594-86 | 12.1 | 107 | 0.18 | 10.7 | 4.16 | . | . | 0.34 | . | . | . | 2.25 | . | |
| OREAS 12a | 11.79 | (3) | (0.6795) | (0.0646) | (0.0262) | . | (20.9) | (0.0015) | (5.34) | . | (0.00152) | (0.0129) | (8.91) | |
| OREAS 62d | 10.50 | 8.37 | (0.0028) | (0.0210) | (0.0042) | . | (2.88) | (0.0015) | (0.47) | (1.49) | (0.00019) | (0.0029) | (11.24) | |
| USZ 20-98 | 10.05 | 3.05 | . | . | . | . | 1.92 | . | . | . | . | . | 0.95 | |
| KZ 3597-86 | 8.8 | . | 3.96 | . | . | . | . | . | . | . | . | . | . | |
| KZ 16-2004 | 8.57 | 1.35 | . | . | 0.02 | . | . | . | . | . | . | . | . | |
| KZ 62-86 | 5.7 | 2.3 | . | . | . | . | . | . | . | . | . | . | . | |
| OREAS 19a | 5.49 | (1.5) | (0.3410) | (0.0469) | (0.0163) | . | (15.9) | (0.00105) | (2.54) | . | (0.00075) | (0.0128) | (4.70) | |
| KZ 61-86 | 4.4 | 14.7 | 0.32 | . | 0.00044 | . | . | . | . | . | 0.076 | . | . | |
| OREAS 61e 4 | 4.43 | 5.27 | (0.00173) | (0.0272) | (0.0060) | (2.66) | . | (0.00133) | 0.790 | . | (<0.0005) | (0.0051) | (7.74) | |
| OREAS 61e A | 4.51 | 5.37 | (0.00159) | (0.00344) | (0.0058) | (2.37) | . | (0.00120) | (0.824) | . | (<0.0002) | (0.00469) | . | |
| OREAS 61e F | . | . | . | (0.0277) | . | (2.56) | . | . | (0.760) | . | . | . | . | |
| KZ 3593-86 | 3.2 | 20.9 | 0.08 | 6.8 | 0.99 | . | . | 0.27 | . | . | . | 4.63 | . | |
| OREAS 17c | 3.04 | (0.5) | (0.2055) | (0.0398) | (0.0130) | . | (14.1) | (0.00105) | (1.59) | . | (0.00045) | (0.0139) | (2.72) | |
| OREAS 23a | 3 | 0.1 | 0.0037 | 0.1092 | 0.00421 | . | . | 0.00213 | . | . | 0.000045 | 0.0069 | . | |
| OREAS 7Ca | 2.54 | . | (0.1917) | (0.0683) | . | . | (4.06) | . | . | (0.04) | (0.0161) | (0.0030) | . | |
| UNS AuM | 2.5 | . | 0.08765 | BaO:0.066 | 0.00359 | . | 5.55 | . | . | . | . | . | . | |
| OREAS 60C | 2.47 | . | . | (0.0355) | . | (3.13) | . | . | (0.830) | . | . | . | (7.38) | |
| OREAS 60C 4 | . | 4.87 | (0.00204) | (0.0342) | (0.0073) | (3.24) | . | (0.00187) | 0.860 | . | (<0.0005) | (0.0090) | . | |
| OREAS 60C A | 2.45 | 4.81 | (0.00189) | (0.00400) | (0.0073) | (2.97) | . | (0.00187) | (0.908) | . | (<0.0002) | (0.0085) | . | |
| KZ 3595-86 | 2.1 | 36.7 | 0.12 | 2.40 | 2.15 | . | . | 0.13 | . | . | . | 0.81 | . | |
| OREAS 16a | 1.81 | (0.5) | (0.0625) | (0.0365) | (0.0084) | . | (13.9) | (0.0006) | (1.24) | . | (0.0001) | (0.0136) | (1.22) | |
| OREAS 15d | 1.559 | (0.5) | (0.2445) | (0.0252) | (0.0068) | . | (12.17) | (0.0012) | (0.62) | . | (0.00023) | (0.0107) | (1.28) | |
| KZ 15-2004 | 1.48 | 17.4 | . | . | 0.02 | . | . | 0.18 | . | . | . | 0.055 | . | |
| OREAS 66a | 1.237 | 18.9 | (0.0282) | (0.08085) | 0.0121 | . | (6.745) | (0.0260) | (1.075) | . | (0.0064) | (0.0091) | (4.16) | |
| USZ 41-2006 | 0.91 | . | . | 0.0249 | 0.75 | . | . | 0.0027 | . | 3.87 | . | 0.0136 | 5.43 | |
| CAN CH-4 | 0.88 | 2.1 | 0.00088 | (0.0425) | 0.20 | 5.42 | . | . | 0.63 | . | 0.77 | 0.020 | (0.9) | |
| USZ 34-2002 | 0.79 | 1.7 | 0.12 | . | 0.001484 | 2.18T | . | 0.002 | . | . | 0.14 | 0.0025 | 2.84 | |
| US DCPM-1 | 0.73 | . | 0.0180 | . | . | . | 1.92 | . | . | . | 0.0014 | . | . | |
| USZ 35-2002 | 0.57 | 1.25 | . | . | . | . | . | . | . | . | . | . | . | |
| KZ 17-2004 | 0.49 | 1.78 | . | . | 1.59 | 3.91 | . | . | 1.73 | . | . | . | . | |
| OREAS 15f | 0.334 | (<0.5) | (0.0127) | (0.0328) | (0.0061) | . | (12) | (0.0005) | (0.24) | . | (0.00004) | (0.0113) | (0.44) | |
| KZ 6585-93 | 0.28 | 11.6 | 0.075 | . | 0.064 | . | . | 0.12 | . | . | . | 0.60 | . | |
| CAN GTS-2a | 0.272 | (0.64) | 0.0124 | 0.0186 | 0.00886 | 7.56 | . | . | 0.348 | . | (0.000133) | 0.0208 | (9.87) | |
| OREAS H5 | 0.047 | . | . | . | . | . | . | . | . | . | . | . | . | |
| OREAS H5 A | 0.057 | 1.92 | 0.0000008 | (0.0052) | 0.0099 | 0.813 | . | 0.00361 | (0.017) | . | (0.000485) | 0.000658 | . | |
| OREAS H5 N | (0.053) | . | (0.0000014) | (0.0173) | . | (1.24) | . | . | . | . | (0.000510) | (0.00460) | . | |
| OREAS 24b | <0.003 | . | (0.00100) | BaO:0.0819 | . | . | 6.35 | . | 0.190 | . | . | (0.0113) | 2.46 | |
| OREAS 24b 4 | . | (0.127) | (0.000835) | 0.0716 | 0.00380 | 4.39 | . | 0.00231 | 0.198 | . | 0.000100 | 0.0105 | . | |
| OREAS 24b A | (0.002) | (0.058) | 0.000796 | 0.0146 | 0.00364 | 3.93 | . | 0.000923 | 0.200 | . | (0.000048) | 0.0093 | . | |
| OREAS 24b F | . | (2.17) | (0.000974) | 0.0739 | (0.00351) | 4.45 | . | (0.00229) | 0.203 | . | (0.000133) | (0.0103) | . | |
| OREAS 25a | <0.002 | . | . | BaO:(0.0151) | . | . | 9.77 | . | 0.044 | . | . | (0.00467) | 11.70 | |
| OREAS 25a 4 | . | (0.168) | (0.000994) | 0.0147 | 0.00339 | 6.60 | . | 0.00252 | 0.051 | . | 0.000067 | 0.00444 | . | |
| OREAS 25a A | (0.001) | (0.035) | (0.000284) | 0.0056 | 0.00249 | 5.99 | . | 0.00210 | (0.050) | . | (0.000018) | 0.00301 | . | |
| OREAS 25a F | . | (0.570) | (0.000983) | 0.0151 | (0.00391) | 6.72 | . | (0.00244) | (0.046) | . | (0.000102) | 0.00468 | . | |
| OREAS 24c | <0.001 | <0.2 | <0.00002 | 0.0269 | 0.00486 | 7.62 | . | 0.000290 | (<0.01) | . | <0.00001 | 0.0108 | . | |
| OREAS 22d | <0.001 | <0.1 | <0.0001 | 0.000617 | 0.000923 | 0.468 | . | 0.000072 | (<0.01) | . | 0.000021 | 0.000670 | . | |

| Number | Au* | Ag* | As | Ba | Cu | Fe | Fe ₂ O ₃ | Pb | S | SO ₃ | Sb | Zn | LOI |
|--------|-----|-----|----|----|----|----|--------------------------------|----|---|-----------------|----|----|-----|
|--------|-----|-----|----|----|----|----|--------------------------------|----|---|-----------------|----|----|-----|

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

| analysis listed in mass % except * which is mg/kg | | | | | | | | | | | | | | | | | | OREAS samples list multiple methods, more information upon request | |
|---|--------|--------------------------------|---------|---------|---------|---------|------------------|---------|---------|---------|---------|---------|-------------------|---------|-------------------------------|---------|------------------|--|------------------|
| Number | Al | Al ₂ O ₃ | C | Ca | CaO | K | K ₂ O | Mg | MgO | Mn | MnO | Na | Na ₂ O | P | P ₂ O ₅ | Si | SiO ₂ | Ti | TiO ₂ |
| CAN DS-1 | 4.48 | . | (3.126) | (6.248) | . | (1.1) | . | 2.76 | . | 0.0437 | . | . | . | 0.0340 | . | (25.68) | . | . | . |
| USZ 38-2005 | . | 2.03 | . | . | 0.56 | . | 0.64 | . | 1.01 | . | 0.03 | . | 0.17 | . | 0.05 | . | 77.37 | . | 0.15 |
| KZ 3594-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 12a | . | (9.3) | (1.51) | . | (7.95) | . | (0.64) | . | (4.22) | . | (0.78) | . | (0.89) | . | (0.63) | . | (43.0) | . | (0.56) |
| OREAS 62d | . | (6.75) | (2.61) | . | (12.27) | . | (1.97) | . | (0.95) | . | (0.08) | . | (0.36) | . | (0.102) | . | (62.48) | . | (0.29) |
| USZ 20-98 | . | 1.70 | . | . | 0.77 | . | 0.37 | . | . | . | 0.025 | . | 0.07 | . | 0.037 | . | 92.57 | . | 0.08 |
| KZ 3597-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 16-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 62-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 19a | . | (11.9) | (0.81) | . | (8.29) | . | (0.68) | . | (5.94) | . | (0.45) | . | (1.96) | . | (0.47) | . | (47.4) | . | (1.17) |
| KZ 61-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 61e 4 | (4.50) | . | . | (4.93) | . | (2.00) | . | (0.818) | . | (0.061) | . | (0.656) | . | (0.051) | . | . | . | (0.220) | . |
| OREAS 61e A | (1.25) | . | . | (4.61) | . | (0.203) | . | (0.723) | . | (0.059) | . | (0.064) | . | (0.048) | . | . | . | (0.042) | . |
| OREAS 61e F | (4.45) | . | (1.61) | (4.88) | . | (1.99) | . | (0.820) | . | (0.062) | . | (0.705) | . | (0.048) | . | (31.90) | . | (0.231) | . |
| KZ 3593-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 17c | . | (12.8) | (0.56) | . | (8.40) | . | (0.71) | . | (6.63) | . | (0.33) | . | (2.40) | . | (0.41) | . | (49.1) | . | (1.41) |
| OREAS 23a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 7Ca | . | (15.2) | . | . | (<0.01) | . | (4.23) | . | (0.72) | . | (<0.01) | . | (<0.05) | . | (0.08) | . | (71.1) | . | (0.68) |
| UNS AuM | . | 14.06 | . | . | 4.09 | . | 1.92 | . | 1.81 | . | 0.082 | . | 3.08 | . | . | . | 66.15 | . | 0.39 |
| OREAS 60C | (5.45) | . | (1.27) | (3.92) | . | (2.33) | . | (0.962) | . | (0.077) | . | (0.972) | . | (0.063) | . | (30.92) | . | (0.288) | . |
| OREAS 60C 4 | (5.45) | . | . | (4.00) | . | (2.31) | . | (0.957) | . | (0.072) | . | (0.892) | . | (0.065) | . | . | . | (0.274) | . |
| OREAS 60C A | (1.71) | . | . | (3.73) | . | (0.271) | . | (0.873) | . | (0.070) | . | (0.089) | . | (0.062) | . | . | . | (0.063) | . |
| KZ 3595-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 16a | . | (13.15) | (0.28) | . | (8.09) | . | (0.817) | . | (6.79) | . | (0.26) | . | (2.81) | . | (0.4) | . | (49.88) | . | (1.67) |
| OREAS 15d | . | (13.25) | (0.20) | . | (7.95) | . | (0.743) | . | (6.47) | . | (0.188) | . | (2.74) | . | (0.326) | . | (52.86) | . | (1.61) |
| KZ 15-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 66a | . | (8.49) | (0.03) | . | (2.32) | . | (0.355) | . | (1.82) | . | (0.04) | . | (0.85) | . | (0.1635) | . | (73.6) | . | (0.83) |
| USZ 41-2006 | . | 14.58 | . | . | 3.14 | . | 2.81 | . | 5.52 | . | 0.12 | . | 2.36 | . | 0.27 | . | 52.09 | . | 0.93 |
| CAN CH-4 | 7.73 | . | 0.12 | 1.96 | . | 1.81 | . | 1.43 | . | 0.043 | . | 3.26 | . | 0.061 | . | . | 63.10 | 0.31 | . |
| USZ 34-2002 | . | 4.79 | . | . | 2.53 | . | 1.48 | . | 0.37 | . | 0.017 | . | 0.055 | . | 0.125 | . | 84.70 | . | 0.17 |
| US DGPM-1 | . | 9.56 | . | . | (0.22) | . | 2.74 | . | (0.56) | . | . | . | . | . | . | . | 79.82 | . | . |
| USZ 35-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 17-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 15f | . | (14.2) | (0.16) | . | (8.59) | . | (0.82) | . | (7.13) | . | (0.18) | . | (3.02) | . | (0.336) | . | (51.0) | . | (1.78) |
| KZ 6585-93 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| CAN GTS-2a | 6.96 | . | 2.011 | 4.01 | . | 2.021 | . | 2.412 | . | 0.1510 | . | 0.617 | . | 0.0892 | . | 23.65 | . | (0.5*) | . |
| OREAS H5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS H5 A | (2.31) | . | . | (0.014) | . | (0.059) | . | (0.073) | . | 0.007 | . | (0.135) | . | 0.010 | . | . | . | (0.040) | . |
| OREAS H5 N | . | . | . | . | . | (0.500) | . | . | . | . | . | (0.215) | . | . | . | . | . | . | . |
| OREAS 24b | . | 15.15 | 0.189 | . | 1.47 | . | 3.39 | . | 2.75 | . | 0.059 | . | 1.15 | . | 0.161 | . | 66.0 | . | 0.798 |
| OREAS 24b 4 | 8.02 | . | . | 1.08 | . | 2.81 | . | 1.65 | . | 0.044 | . | 0.846 | . | 0.069 | . | . | . | 0.468 | . |
| OREAS 24b A | 3.15 | . | . | 0.461 | . | 1.17 | . | 1.36 | . | 0.035 | . | 0.108 | . | (0.062) | . | . | . | 0.198 | . |
| OREAS 24b F | 7.81 | . | . | 1.06 | . | 2.74 | . | 1.62 | . | 0.046 | . | 0.824 | . | (0.073) | . | 31.12 | . | 0.481 | . |
| OREAS 25a | . | 18.24 | 1.56 | . | 0.438 | . | 0.599 | . | (0.579) | . | 0.063 | . | 0.191 | . | 0.117 | . | 56.7 | . | 1.93 |
| OREAS 25a 4 | 8.87 | . | . | 0.309 | . | 0.482 | . | 0.327 | . | 0.047 | . | 0.134 | . | 0.048 | . | . | . | 0.977 | . |
| OREAS 25a A | 5.85 | . | . | 0.150 | . | 0.131 | . | (0.193) | . | 0.042 | . | (0.040) | . | 0.037 | . | . | . | (0.036) | . |
| OREAS 25a F | 9.25 | . | . | 0.302 | . | 0.493 | . | 0.324 | . | 0.049 | . | (0.126) | . | 0.049 | . | 25.85 | . | 1.14 | . |
| OREAS 24c | 7.45 | . | . | 5.86 | . | 0.735 | . | 3.93 | . | 0.108 | . | 2.42 | . | 0.156 | . | . | . | 1.06 | . |
| OREAS 22d | 0.132 | . | . | (0.010) | . | (0.008) | . | (0.009) | . | 0.011 | . | (0.009) | . | (0.001) | . | . | . | 0.021 | . |

| Number | Al | Al ₂ O ₃ | C | Ca | CaO | K | K ₂ O | Mg | MgO | Mn | MnO | Na | Na ₂ O | P | P ₂ O ₅ | Si | SiO ₂ | Ti | TiO ₂ |
|--------|----|--------------------------------|---|----|-----|---|------------------|----|-----|----|-----|----|-------------------|---|-------------------------------|----|------------------|----|------------------|
|--------|----|--------------------------------|---|----|-----|---|------------------|----|-----|----|-----|----|-------------------|---|-------------------------------|----|------------------|----|------------------|

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

| analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | | OREAS samples list multiple methods, more information upon request | | | | | | | | | | | | | | | | | |
|---|--------|---------|------------|---------|--------|--------|--------|--------------------------------|--------|--------|--------|---------|--------|--------|---------|--------|---------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Number | B | Be | Bi | Cd | Ce | Co | Cr | Cr ₂ O ₃ | Cs | Dy | Er | Eu | Ga | Gd | Ge | Hf | Hg | | | | | | | | | | | | | | | | | | |
| CAN DS-1 | . | (0.819) | (0.1) | (0.98) | (40) | 9.5 | (59) | . | (7) | . | . | (1) | (10) | . | . | (4) | 82 | | | | | | | | | | | | | | | | | | |
| USZ 38-2005 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| KZ 3594-86 | . | . | . | 75 | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 12a | . | (0.8) | (0.3) | . | (21.7) | (31) | . | . | (4) | (4) | (2.0) | (1.1) | (13.3) | (4.4) | . | (1) | . | | | | | | | | | | | | | | | | | | |
| OREAS 62d | . | (0.5) | . | . | (16.2) | (6.0) | . | . | (5.2) | (1.2) | (0.7) | (0.5) | (7.1) | (1.4) | . | (1.0) | . | | | | | | | | | | | | | | | | | | |
| USZ 20-98 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| KZ 3597-86 | 1.08% | . | . | . | . | 0.17% | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| KZ 16-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| KZ 62-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 19a | . | (1.0) | (0.2) | . | (29.6) | (40.5) | . | . | (2) | (4) | (2.1) | (1.5) | (17) | (4.8) | . | (2.5) | . | | | | | | | | | | | | | | | | | | |
| KZ 61-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 61e 4 | . | (0.89) | (<2) | (<0.5) | . | (9.29) | (24.4) | . | . | . | . | . | (10.0) | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 61e A | (<10) | (0.58) | (<2) | (1.15) | . | (8.83) | (21.6) | . | . | . | . | . | (<10) | . | . | . | (0.70) | | | | | | | | | | | | | | | | | | |
| OREAS 61e F | . | . | . | . | (18.7) | . | (<70) | . | (5.58) | (1.48) | (0.89) | (0.58) | (9.75) | (1.74) | . | (1.5) | . | | | | | | | | | | | | | | | | | | |
| KZ 3593-86 | . | . | . | 162.8 | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 17c | . | (1.0) | (0.1) | . | (32.7) | (44) | . | . | (2) | (5) | (2.3) | (1.6) | (18.5) | (5) | . | (3) | . | | | | | | | | | | | | | | | | | | |
| OREAS 23a | . | . | 0.15 | 0.15 | . | 14.8 | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 7Ca | . | . | . | . | (90) | . | (502) | . | (10) | . | . | (1.4) | . | . | . | (4.4) | . | | | | | | | | | | | | | | | | | | |
| UNS AuM | . | . | . | . | . | . | 47 | . | . | . | . | . | 12.9 | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 60C | . | . | . | . | (24.8) | . | (<70) | . | (6.36) | (1.93) | (1.13) | (0.73) | (12.0) | (2.25) | . | (2.00) | . | | | | | | | | | | | | | | | | | | |
| OREAS 60C 4 | . | (0.92) | (<2) | (0.39) | . | (10.8) | (24.3) | . | . | . | . | . | (10.0) | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 60C A | (10.0) | (0.60) | (<2) | (1.33) | . | (10.9) | (24.0) | . | . | . | . | . | (10.0) | . | . | . | (0.65) | | | | | | | | | | | | | | | | | | |
| KZ 3595-86 | . | . | . | 52.3 | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 16a | . | (0.7) | . | . | (36.4) | (44) | . | . | (1.6) | (4.6) | (2.20) | (1.72) | (18.1) | (5.2) | . | (3.6) | . | | | | | | | | | | | | | | | | | | |
| OREAS 15d | . | (0.9) | (0.4) | . | (34.1) | (43) | . | . | (0.8) | (4.3) | (2.1) | (1.6) | (17.9) | (4.9) | . | (3.2) | . | | | | | | | | | | | | | | | | | | |
| KZ 15-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 66a | . | (0.6) | (10.2) | (1) | (33.6) | (18) | . | . | (0.5) | (2.15) | (1.23) | (0.98) | (17.4) | (2.9) | . | (1.9) | . | | | | | | | | | | | | | | | | | | |
| USZ 41-2006 | . | . | . | . | 24.3 | 99.3 | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| CAN CH-4 | . | . | . | 1.14 | . | 26 | 114 | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| USZ 34-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| US DGPM-1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| USZ 35-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| KZ 17-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 15f | . | (1.3) | . | . | (38.8) | (47) | . | . | (1.1) | (5.18) | (2.48) | (1.98) | (18.8) | (5.9) | . | (4.5) | . | | | | | | | | | | | | | | | | | | |
| KZ 6585-93 | . | . | . | 96 | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| CAN GTS-2a | . | . | . | (0.58) | . | 22.1 | (270) | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS H5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS H5 A | (23.0) | (<1) | 5.44 | 1.28 | . | 3.68 | 31.1 | . | . | . | . | . | (11.4) | . | (<0.1) | . | (0.14) | | | | | | | | | | | | | | | | | | |
| OREAS H5 N | . | . | Br: (4.99) | . | (76) | (4.64) | (108) | . | (1.94) | . | . | (0.93) | . | . | (57) | . | (<1) | | | | | | | | | | | | | | | | | | |
| OREAS 24b | . | . | . | . | . | (28.3) | . | 201 | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 24b 4 | . | 2.92 | 0.68 | (0.049) | 84 | 16.9 | 118 | . | 10.7 | (4.47) | (2.54) | (1.36) | 20.1 | (6.02) | (0.83) | 3.90 | . | | | | | | | | | | | | | | | | | | |
| OREAS 24b A | (6.23) | (1.65) | 0.73 | (0.046) | (61) | 15.7 | 106 | . | 9.15 | (2.65) | (1.21) | (0.66) | 10.8 | (3.96) | (0.26) | (0.52) | . | | | | | | | | | | | | | | | | | | |
| OREAS 24b F | (69) | 2.95 | (1.03) | . | 86 | 16.9 | 142 | . | 10.5 | 5.83 | 3.41 | 1.39 | 20.2 | 6.27 | (1.64) | 6.15 | . | | | | | | | | | | | | | | | | | | |
| OREAS 25a | . | . | . | . | . | (10.0) | . | (167) | . | . | . | . | . | . | . | . | . | | | | | | | | | | | | | | | | | | |
| OREAS 25a 4 | . | 1.02 | 0.35 | (0.041) | 48.9 | 8.20 | 115 | . | 6.46 | (2.67) | (1.50) | (0.64) | 25.9 | (2.91) | (0.22) | 4.53 | . | | | | | | | | | | | | | | | | | | |
| OREAS 25a A | (5.92) | (0.65) | 0.30 | (0.041) | 33.1 | 5.72 | 73 | . | 4.45 | (1.15) | (0.50) | (0.43) | 20.6 | (1.74) | (0.13) | (0.47) | (0.053) | | | | | | | | | | | | | | | | | | |
| OREAS 25a F | (39.2) | (0.94) | (0.40) | . | 51 | 8.05 | 125 | . | 6.36 | 4.31 | 2.76 | 0.80 | 25.4 | 3.79 | (2.02) | 11.1 | . | | | | | | | | | | | | | | | | | | |
| OREAS 24c | . | 1.05 | <0.1 | <0.1 | (40.2) | 42.7 | 193 | . | (0.80) | (4.82) | (2.35) | (1.94) | (20.7) | (5.95) | (0.43) | 3.75 | . | | | | | | | | | | | | | | | | | | |
| OREAS 22d | . | (0.066) | <0.1 | <0.1 | (2.43) | 0.85 | (11.9) | . | (0.10) | (0.15) | (<0.1) | (<0.05) | (0.26) | (0.20) | (0.065) | 0.22 | . | | | | | | | | | | | | | | | | | | |
| Number | B | Be | Bi | Cd | Ce | Co | Cr | Cr ₂ O ₃ | Cs | Dy | Er | Eu | Ga | Gd | Ge | Hf | Hg | | | | | | | | | | | | | | | | | | |

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS AND ON TO THE NEXT PAGE

| analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | OREAS samples list multiple methods, more information upon request | |
|---|---------|--------------|--------|--------|---------|--------|--------|--------|--------|----------|--------|----------|--------|----------|--------|--|--------|
| Number | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pd | Pr | Pt | Rb | Re | Sc | Se | Sm |
| CAN DS-1 | . | (0.5) | (20) | (20) | . | . | . | . | 48.7 | . | . | . | . | . | . | . | . |
| USZ 38-2005 | . | . | . | . | . | 0.11% | . | . | 28.27 | . | . | . | . | . | . | . | . |
| KZ 3594-86 | . | 9.7 | . | . | . | . | . | . | . | . | . | . | . | . | . | 50.9 | . |
| OREAS 12a | (0.73) | (0.05) | (17.7) | (19.5) | (0.28) | (5.5) | (3.25) | (19.5) | (71.5) | . | (4.56) | . | (20.5) | . | (20) | . | (4.18) |
| OREAS 62d | (0.24) | (0.02) | (7.6) | (39) | (0.1) | (6.7) | (1.2) | (7.8) | (7.0) | . | (1.9) | . | (72) | . | (7.0) | . | (1.7) |
| USZ 20-98 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 3597-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 16-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 62-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 19a | (0.8) | (0.05) | (17.7) | (13.0) | (0.27) | (4.0) | (10) | (19.8) | (106) | . | (4.78) | . | (19.5) | . | (20) | . | (4.68) |
| KZ 61-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 61e 4 | . | . | (10.0) | (50) | . | (5.67) | . | . | (8.37) | . | . | (0.004) | . | . | (10.0) | . | . |
| OREAS 61e A | . | . | (15.0) | . | . | (5.67) | . | . | (9.14) | . | . | . | . | . | (6.00) | (0.60) | . |
| OREAS 61e F | (0.33) | . | (8.95) | . | (0.14) | . | (1.80) | (9.75) | . | . | (2.33) | . | (91) | . | . | . | (2.03) |
| KZ 3593-86 | . | 5.5 | . | . | . | . | . | . | . | . | . | . | . | . | . | 20 | . |
| OREAS 17c | (0.82) | (0.05) | (18.1) | (10.3) | (0.26) | (4.3) | (13) | (19.7) | (136) | . | (4.84) | . | (21.5) | . | (20.5) | . | (4.83) |
| OREAS 23a | . | . | . | . | . | 9.6 | . | . | 40.5 | . | . | . | . | . | . | . | . |
| OREAS 7Ca | . | . | (50) | . | . | . | . | . | . | . | . | . | (168) | . | (14) | . | (10) |
| UNS AuM | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 60C | (0.43) | . | (12.0) | . | (0.17) | . | (2.35) | (12.8) | . | (<0.005) | (3.06) | (0.004) | (103) | . | . | . | (2.67) |
| OREAS 60C 4 | . | . | (10.0) | (45.0) | . | (6.70) | . | . | (9.71) | . | . | . | . | . | (12.6) | . | . |
| OREAS 60C A | . | . | (13.3) | . | . | (6.78) | . | . | (10.6) | . | . | . | . | . | (8.00) | (0.75) | . |
| KZ 3595-86 | . | 2.5 | . | . | . | . | . | . | . | . | . | . | . | . | . | 58.2 | . |
| OREAS 16a | (0.86) | (0.05) | (19.3) | (8.0) | (0.25) | (3.2) | (18.8) | (20.6) | (157) | . | (5.19) | . | (26.1) | . | (18.3) | . | (5.2) |
| OREAS 15d | (0.81) | (0.06) | (16.9) | (8.3) | (0.23) | (2) | (17.8) | (18.2) | (147) | . | (4.29) | . | (21.1) | . | (21) | . | (4.7) |
| KZ 15-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 66a | (0.4) | (0.48) | (17.6) | (14.8) | (0.21) | (5.5) | (6.8) | (16.0) | (59) | . | (4) | . | (8) | . | (9) | . | (3.35) |
| USZ 41-2006 | . | . | . | . | . | 51.8 | . | . | 25.4 | . | . | . | . | . | . | . | . |
| CAN CH-4 | . | . | . | . | . | . | . | . | 51 | . | . | . | . | . | . | 2.1 | . |
| USZ 34-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| US DGPM-1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 35-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 17-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 15F | (0.91) | (0.06) | (17.9) | (8.8) | (0.24) | (4.5) | (20.8) | (21.6) | (157) | . | (4.82) | . | (22.4) | . | (18.5) | . | (5.28) |
| KZ 6585-93 | . | . | . | . | . | . | . | . | 77.1 | . | . | . | . | . | . | . | . |
| CAN GTS-2a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS H5 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS H5 A | . | . | (27.5) | (2.00) | . | 7.22 | (0.75) | . | 11.9 | . | . | . | . | . | (2.50) | (1.86) | . |
| OREAS H5 N | . | Ir: (<0.005) | (52) | . | (0.69) | (13.7) | . | (32.4) | (28.1) | . | . | . | (58) | . | (9.11) | (12.4) | (5.28) |
| OREAS 24b | . | . | . | . | . | . | . | . | (59) | <0.001 | . | <0.001 | . | . | . | . | . |
| OREAS 24b 4 | (0.80) | (0.077) | 42.4 | 52 | (0.32) | 4.03 | 14.6 | (36.2) | 60 | . | (9.86) | . | 164 | (0.002) | 15.3 | (0.66) | (7.06) |
| OREAS 24b A | (0.46) | (0.048) | (29.2) | 45.6 | (0.20) | 3.86 | (0.31) | (24.6) | 57 | (<0.01) | (6.87) | (0.001) | 114 | (<0.001) | 9.51 | (0.42) | (4.68) |
| OREAS 24b F | 1.17 | . | 44.0 | 52 | 0.49 | (4.91) | 16.0 | 38.7 | 61 | . | 10.2 | . | 161 | (<0.1) | 14.1 | . | 7.17 |
| OREAS 25a | . | . | . | . | . | . | . | . | (31.2) | <0.001 | . | <0.001 | . | . | . | . | . |
| OREAS 25a 4 | (0.46) | (0.091) | 21.8 | 36.7 | (0.23) | 2.55 | 22.4 | (17.0) | 45.8 | . | (4.71) | . | 61 | . | 13.7 | (2.86) | (3.41) |
| OREAS 25a A | (0.20) | (0.081) | (13.0) | (23.7) | (0.057) | (1.36) | (0.52) | (11.7) | 26.9 | (<0.01) | (3.35) | (0.004) | (31.4) | (<0.05) | 8.64 | (0.87) | (2.26) |
| OREAS 25a F | 0.92 | . | 23.3 | (35.1) | 0.45 | (2.99) | 26.5 | 20.0 | (55) | . | 5.33 | . | 60 | (<0.1) | 13.5 | . | 3.90 |
| OREAS 24c | (0.90) | (0.056) | (19.7) | 8.32 | (0.27) | 2.49 | 23.8 | (20.7) | 138 | (<0.005) | (5.28) | (<0.005) | 21.9 | (<0.002) | 21.6 | (1.00) | (5.55) |
| OREAS 22d | (<0.05) | (<0.005) | (1.20) | 14.2 | (0.013) | 2.36 | 0.88 | (1.03) | 4.38 | (<0.005) | (0.32) | (<0.005) | 0.54 | (<0.002) | (0.20) | (<1) | (0.22) |
| Number | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pd | Pr | Pt | Rb | Re | Sc | Se | Sm |

CRM GOLD AND SILVER ORE - CONTINUED FROM THE PREVIOUS PAGES

| analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | OREAS samples list multiple methods, more information upon request | | | |
|---|--------|--------|---------|---------|---------|--------|---------|---------|--------|--------|--------|--------|--|---|-------------------------------|--|
| Number | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | W | Y | Yb | Zr | Units | Other | |
| CAN DS-1 | . | . | . | . | . | . | 20 | . | . | . | . | . | . | 400 g | | |
| USZ 38-2005 | . | 88.71 | . | . | . | . | . | . | . | 0.01% | . | . | . | 250 g | | |
| KZ 3594-86 | . | . | . | . | 210.4 | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 12a | (1) | (136) | (0.3) | (0.64) | (0.4) | (4.4) | . | . | (1.85) | (6.5) | (20.2) | (1.88) | (40.5) | 60 g | | |
| OREAS 62d | . | (217) | . | (0.2) | (3.5) | (1.5) | . | . | (0.4) | (6.7) | (6.5) | (0.7) | (34) | 60 g | | |
| USZ 20-98 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g | last of stock | |
| KZ 3597-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| KZ 16-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| KZ 62-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 19a | (1) | (279) | (0.65) | (0.7) | (0.2) | (3.7) | . | . | (1.3) | (3.5) | (19.9) | (1.75) | (99) | 60 g | | |
| KZ 61-86 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 61e 4 | . | (245) | . | . | . | (<20) | (<10) | . | (<10) | (<10) | . | . | . | Au/Pd/Pt FA, others 4-acid | | |
| OREAS 61e A | . | (113) | . | . | (2.21) | (<20) | (<10) | . | (<10) | (<10) | . | . | . | 60 or 500g, Aqua Regia | | |
| OREAS 61e F | (<1) | (245) | (0.10) | (0.27) | . | (2.31) | (0.85) | (0.14) | (0.61) | (3) | (8.70) | (0.83) | (54) | Borate Fusion, C/S combust | | |
| KZ 3593-86 | . | . | . | . | 33.3 | . | . | . | . | . | . | . | . | 100 g | last of stock | |
| OREAS 17c | (1) | (333) | (0.85) | (0.76) | . | (3.5) | . | . | (1.05) | (3.8) | (20.5) | (1.8) | (123) | 60 g | | |
| OREAS 23a | 3.1 | . | . | . | . | 20.9 | . | . | 6.2 | 3.7 | . | . | . | 10 g or 60 g, GRANITE | | |
| OREAS 7Ca | . | . | . | . | . | (16) | . | . | . | (18) | . | (2.8) | . | chips 500g Br:(5ppm) H ₂ O:(3.44+) | | |
| UNS AuM | . | 187.7 | . | . | . | . | . | . | . | . | 14.2 | . | 81 | 200 g | | |
| OREAS 60C | (<1) | (284) | (0.10) | (0.33) | . | (3.04) | (0.95) | (0.17) | (0.79) | (3.00) | (11.1) | (1.07) | (70) | 60/500g Au Pd Pt Flame V:(0.0120%) | | |
| OREAS 60C 4 | . | (282) | . | . | . | (<20) | (<10) | . | (<10) | (<10) | . | . | . | Four acid digestion V:(0.0104%) | | |
| OREAS 60C A | . | (122) | . | . | (2.11) | (<20) | (<10) | . | (<10) | (<10) | . | . | . | Aqua regia V:(0.0069%) | | |
| KZ 3595-86 | . | . | . | . | 72.6 | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 16a | (3) | (369) | (1.1) | (0.8) | . | (3.2) | . | . | (0.9) | (1) | (22.8) | (1.82) | (161) | 60 g | | |
| OREAS 15d | (1) | (357) | (1) | (0.75) | (0.3) | (2.9) | . | . | (0.8) | (1.5) | (20.2) | (1.73) | (120) | 60 g | | |
| KZ 15-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 66a | (3.50) | (488) | (0.4) | (0.40) | (9.6) | (4.1) | . | . | (1.4) | (10.5) | (10.3) | (1.3) | (75) | 60 g | | |
| USZ 41-2006 | . | 259 | . | . | . | . | . | . | . | . | . | . | 78.3 | 100 or 250 g | | |
| CAN CH-4 | . | (209) | . | . | . | . | . | . | . | . | . | . | . | 200 g | | |
| USZ 34-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g | | |
| US DCPM-1 | . | . | . | . | . | . | . | . | . | (76) | . | . | . | 200 g | H ₂ O: 0.10- | |
| USZ 35-2002 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g | | |
| KZ 17-2004 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| OREAS 15f | (2) | (382) | (1.1) | (0.88) | . | (3.05) | . | . | (0.9) | (0.5) | (23.2) | (1.9) | (166) | 60 g | | |
| KZ 6585-93 | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g | | |
| CAN GTS-2a | . | 92.8 | . | . | . | 1.244 | . | . | . | . | . | . | . | 350 g | | |
| OREAS H5 | . | . | . | . | . | . | . | . | . | . | . | . | . | 60 g | fire assay | |
| OREAS H5 A (<10) | . | (6.89) | (<10) | . | (2.37) | (19.1) | (0.71) | . | . | (<5) | (5.00) | . | (47.8) | Aqua regia V: 0.00350% | | |
| OREAS H5 N (<100) | . | . | (2.83) | (0.72) | . | (29.0) | . | . | (7.60) | (8.35) | . | (4.33) | (2085) | Neutron activation analysis | | |
| OREAS 24b | . | (134) | . | . | . | . | . | . | . | . | . | . | . | 10 g 60 g or 1 kg | Cl:(<10ppm) | |
| OREAS 24b 4 | 4.25 | 124 | 1.23 | (0.87) | . | 16.4 | 0.86 | (0.31) | 3.06 | 3.64 | 19.9 | (2.17) | 134 | " 4 acid digestion, GRANODIORITE | | |
| OREAS 24b A | 2.26 | (29.0) | . | (0.54) | . | 14.3 | 0.66 | (0.17) | 1.74 | (1.19) | 12.3 | (1.15) | 24.5 | " aqua regia | | |
| OREAS 24b F | 4.65 | 125 | 1.32 | 0.98 | . | 16.5 | 0.91 | 0.50 | 3.31 | 4.13 | 32.5 | 3.24 | 213 | " fusion ICP-OES/MS | | |
| OREAS 25a | . | (56) | . | . | . | . | . | . | . | . | . | . | . | (135) | 10 g 60 g or 1 kg Cl:(<10ppm) | |
| OREAS 25a 4 | 4.06 | 48.5 | 1.60 | (0.41) | (0.10) | 15.8 | 0.35 | (0.3) | 2.94 | 2.10 | 12.3 | (1.48) | (159) | " 4 acid digestion, SOIL | | |
| OREAS 25a A | 2.70 | 17.3 | (0.099) | (0.24) | . | 10.7 | 0.20 | (0.062) | 1.49 | . | 4.56 | (0.41) | (19.0) | " aqua regia | | |
| OREAS 25a F | 4.83 | 49.4 | 1.99 | 0.66 | . | 16.4 | (0.30) | 0.43 | 3.51 | 2.89 | 25.1 | 2.89 | 398 | " fusion ICP-OES/MS | | |
| OREAS 24c | 1.51 | 442 | 1.48 | (0.90) | (<0.05) | 3.08 | (0.064) | (0.31) | 0.76 | 0.53 | 22.3 | (1.88) | 143 | 10 g 60 g or 1 kg Basalt V: 161 | | |
| OREAS 22d | 0.61 | (1.14) | (0.036) | (<0.05) | (<0.05) | 0.67 | (<0.02) | (<0.05) | 0.18 | 0.21 | 0.69 | (<0.1) | 7.02 | 10 g V: 2.63 last then 22e | | |

| Number | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | W | Y | Yb | Zr | Units | Other |
|--------|----|----|----|----|----|----|----|----|---|---|---|----|----|-------|-------|
|--------|----|----|----|----|----|----|----|----|---|---|---|----|----|-------|-------|

GRANITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | IAG: RM | | all others: CRM | |
|---------------------------|------------------|--------------------------------|-----------------|------|----------|-------|--------------------------------|----------------------------------|------------------|------------------|--------|-------|-------------------|-------------------------------|------------------|-----------------|--|
| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | |
| JG-2 | 76.83 | 12.47 | . | 0.70 | (0.0972) | 0.57 | 0.33 | 0.97 | +0.33 -0.12 | 4.71 | 0.037 | 0.016 | 3.54 | 0.002 | 0.044 | . | |
| VS 3333-85 | 74.76 | 10.64 | (0.1) | 0.32 | 0.062 | 1.61 | 4.50 | . | (0.30) | 4.64 | 0.10 | 0.120 | 4.24 | 0.024 | 0.26 | . | |
| IAG OU-3 | 74.09 | 11.10 | 1.913 | 0.2 | 0.1100 | 3.255 | . | 3.8341 | . | 4.55 | . | 0.090 | 3.678 | . | 0.224 | 1.815 | |
| GUW GM | 73.42 | 13.55 | 0.28 | 1.07 | 0.067 | 1.13 | 2.01 | . | 0.35 | 4.76 | 0.37 | 0.043 | 3.78 | 0.062 | 2.12 | . | |
| GBW 07103 | 72.83 | 13.40 | (0.15) | 1.55 | 0.235 | 1.02 | . | 2.14 | +0.60 | 5.01 | 0.42 | . | 3.13 | . | . | (0.70) | |
| USZ 47-2008 | 72.37 | 14.07 | . | 1.15 | . | 1.81 | 2.44 | . | . | 4.68 | 0.38 | 0.06 | 3.63 | 0.13 | 0.30 | 0.64 | |
| USZ 28-99 | 71.61 | 16.13 | . | 0.39 | 1.25 | 0.29 | . | 0.51 | -(0.05) | 3.52 | (0.29) | 0.13 | 5.25 | 0.028 | (0.03) | 1.14 | |
| SARM 48 | 67.11 | 11.24 | . | 8.90 | . | (0.2) | 0.58 | . | . | 4.26 | 0.18 | 0.02 | 3.22 | (0.09) | 0.10 | . | |
| NCS DC73376 | 66.27 | 16.33 | 0.35 | 2.66 | 0.0670 | (1.6) | . | 3.12 | (1.0) | 2.60 | 1.63 | . | 5.3 | . | . | 1.28 | |

| continued analysis listed in mg/kg except % which is mass % and * which is ng/g | | | | | | | | | | | | | | | | | | |
|---|---------|------|--------|--------|-------|-------|--------|------|---------|-------|-------|------|-------|-------|--------------------|-------|-------|--|
| Number | Ag | Al% | As | B | Ba | Be | Bi | Ca% | Cd | Ce | Cl | Co | Cr | Cs | Cs ₂ O% | Cu | Dy | |
| JG-2 | (0.019) | 6.60 | (0.68) | (1.78) | 81.0 | 3.26 | (0.64) | 0.50 | (0.004) | 48.3 | . | 3.62 | 6.37 | 6.79 | . | 0.49 | 10.5 | |
| VS 3333-85 | (0.06) | . | (4) | 11 | 90 | 5 | . | . | . | 90 | . | 1.3 | 3.1 | 4.5 | . | 12 | (10) | |
| IAG OU-3 | . | . | 3.3793 | . | 28 | 10.94 | . | . | 0.38 | 196.3 | . | . | 18.61 | 0.66 | . | 3.3 | 18.87 | |
| GUW GM | (0.09) | . | 4.1 | 11 | 340 | (4.8) | . | . | . | 65 | . | 3.7 | 11 | 8.1 | . | 13 | (5.4) | |
| GBW 07103 | 0.033 | . | 2.1 | 24 | 343 | 12.4 | 0.53 | . | 0.029 | 108 | 127 | 3.4 | 3.6 | 38.4 | . | 3.2 | 10.2 | |
| USZ 47-2008 | . | . | 2.28 | . | 350 | 8.63 | 1.03 | . | . | 64.38 | . | 2.71 | 182 | 17.02 | . | 7.36 | 4.42 | |
| USZ 28-99 | . | . | (3) | . | . | . | . | . | . | (25) | . | . | (130) | . | 0.012 | 8 | . | |
| SARM 48 | . | . | . | . | (290) | . | . | . | . | (850) | . | . | 23 | . | . | (10) | . | |
| NCS DC73376 | 0.03 | . | (0.25) | 15 | 1140 | 1.7 | 0.096 | . | (0.06) | 48 | (120) | 7.8 | 24 | 2.6 | . | (3.1) | 1.52 | |

| Number | Er | Eu | Fe% | Ga | Gd | Ge | Hf | Hg | Ho | In | K% | La | Li | Li ₂ O% | Lu | Mg% | Mn% |
|-------------|-------|-------|------|-------|--------|--------|--------|----------|-------|--------|------|-------|------|--------------------|-------|------|--------|
| JG-2 | 6.04 | 0.10 | 0.68 | 18.6 | 8.01 | (1.70) | 4.73 | (0.0033) | 1.67 | . | 3.91 | 19.9 | 42.2 | . | 1.22 | 0.02 | 0.012 |
| VS 3333-85 | (6) | 0.4 | . | 27 | . | 2.2 | 12 | . | . | . | . | 45 | 52 | . | 0.9 | . | . |
| IAG OU-3 | 11.44 | 1.152 | . | 32.1 | 18.073 | 1.5 | 22.631 | . | 4.011 | . | . | 94.64 | 1.41 | . | 1.628 | . | . |
| GUW GM | (2.2) | 0.60 | . | 15 | (5.2) | (1.6) | 5.1 | (0.0033) | (1.0) | . | . | 41 | 50 | . | 0.40 | . | . |
| GBW 07103 | 6.5 | 0.85 | . | 19 | 9.3 | 2.0 | 6.3 | 0.0041 | 2.05 | . | . | 54 | 131 | . | 1.15 | . | 0.0463 |
| USZ 47-2008 | 2.37 | 0.58 | . | 22.80 | 4.95 | 1.50 | 4.75 | . | 0.85 | . | . | 29.59 | 124 | . | 0.35 | . | . |
| USZ 28-99 | . | . | . | . | . | . | . | . | . | . | . | (15) | . | 0.37 | . | . | . |
| SARM 48 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| NCS DC73376 | 0.76 | 1.0 | . | 18.2 | 2.4 | 0.93 | 3.3 | 0.0035 | 0.27 | (0.03) | . | 25 | 24.7 | . | 0.11 | . | 0.0430 |

| Number | Mo | Na% | Nb | Nd | Ni | P% | Pb | Pr | Rb | Rb ₂ O% | S | Sb | Sc | Se | Si% | Sm | Sn | Sr |
|-------------|--------|------|-------|-------|--------|--------|-------|-------|-----|--------------------|-------|---------|------|--------|-------|-------|-------|------|
| JG-2 | 0.37 | 2.63 | 14.7 | 26.4 | (4.35) | 0.001 | 31.5 | 6.20 | 301 | . | (7.0) | (0.057) | 2.42 | . | 35.91 | 7.78 | 3.00 | 17.9 |
| VS 3333-85 | 1.7 | . | 17 | 50 | 6 | . | 10 | . | 140 | . | (160) | (0.5) | 4.6 | . | . | 10 | 5 | 8 |
| IAG OU-3 | 1.975 | . | 80.2 | 87 | . | . | 36 | 22.7 | 171 | . | . | 0.3 | . | . | . | 18.71 | 11.45 | 11.2 |
| GUW GM | 1.1 | . | 18 | 30 | 6.8 | . | 30 | (7.2) | 260 | . | . | (0.51) | 4.8 | . | . | 4.9 | 4.4 | 133 |
| GBW 07103 | 3.5 | . | 40 | 47 | 2.3 | 0.0405 | 31 | 12.7 | 466 | . | 380 | 0.21 | 6.1 | (0.04) | . | 9.7 | 12.5 | 106 |
| USZ 47-2008 | 3.06 | . | 15.22 | 27.10 | 5.76 | . | 24.81 | 7.27 | 275 | . | . | 0.19 | 4.36 | . | . | 5.54 | 13.30 | 111 |
| USZ 28-99 | . | . | 71 | . | 10 | . | 64 | . | . | 0.24 | . | . | (7) | . | . | . | . | . |
| SARM 48 | (5) | . | 202 | . | . | . | 135 | . | . | . | . | . | . | . | . | . | . | 29 |
| NCS DC73376 | (0.27) | . | 4.5 | 21 | 13 | 0.0570 | 7.6 | 5.8 | 57 | . | (50) | 0.063 | 5.0 | 0.019 | . | 3.3 | 0.8 | 690 |

| Number | Ta | Tb | Te | Th | Ti% | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Units |
|-------------|--------|-------|-------|--------|--------|--------|-------|--------|-------|-------|-------|------|--------|-------|-------|
| JG-2 | 2.76 | 1.62 | . | 1.62 | 0.026 | 1.55 | 1.16 | 11.3 | 3.78 | 23.0 | 86.5 | 6.85 | 13.6 | 97.6 | 20 g |
| VS 3333-85 | 1.1 | 0.4 | . | 80 | . | . | . | 1.8 | 6 | (1.1) | 60 | 7 | 140 | 470 | 100 g |
| IAG OU-3 | 5.748 | 3.081 | . | 22.845 | . | 0.735 | 1.731 | 5.5396 | . | . | 113.1 | 11.3 | 149.22 | 942 | ~35 g |
| GUW GM | 1.7 | 0.7 | . | 36 | . | . | . | 6.4 | 11 | 1.6 | 26 | 3.1 | 34 | 149 | 50 g |
| GBW 07103 | 7.2 | 1.65 | 0.021 | 54 | 0.1720 | 1.93 | 1.06 | 18.8 | 24 | 8.4 | 62 | 7.4 | 28 | 167 | 70 g |
| USZ 47-2008 | 2.56 | 0.79 | . | 19.35 | . | 1.72 | 0.37 | 5.44 | 14.03 | 0.56 | 25.19 | 2.36 | 54.59 | 169 | 100 g |
| USZ 28-99 | 54 | . | . | . | . | . | . | . | . | . | . | . | 0.086% | 46 | 100 g |
| SARM 48 | . | . | . | 113 | . | . | . | . | (8) | . | 436 | . | 53 | 300 | 100 g |
| NCS DC73376 | (0.34) | 0.29 | . | 1.9 | 0.1800 | (0.20) | 0.11 | (0.4) | 45 | 0.38 | 7.3 | 0.69 | 47 | (100) | 70 g |

last of stock

CRM GRANODIORITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | Al | CO ₂ | CaO | Fe | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Si | TiO ₂ |
|------------|------------------|--------------------------------|------|-----------------|------|------|------|--------------------------------|----------------------------------|------------------|------------------|------|-------|-------------------|-------------------------------|-------|------------------|
| JG-1a | 72.30 | 14.30 | 7.57 | . | 2.13 | 1.40 | 1.36 | 0.51 | 2.00 | +0.59 -0.12 | 3.96 | 0.69 | 0.057 | 3.39 | 0.083 | 33.80 | 0.25 |
| JG-1 | 72.30 | 14.24 | 7.54 | . | 2.20 | 1.52 | 1.61 | 0.38 | 2.18 | +0.54 -0.07 | 3.98 | 0.74 | 0.063 | 3.38 | 0.099 | 33.80 | 0.26 |
| JG-3 | 67.29 | 15.48 | 8.19 | . | 3.69 | 2.58 | 1.83 | 1.62 | 3.69 | +0.67 -0.17 | 2.64 | 1.79 | 0.071 | 3.96 | 0.122 | 31.45 | 0.48 |
| US GSP-2 | 66.6 | 14.9 | 7.88 | . | 2.10 | 3.43 | . | . | 4.90 | . | 5.38 | 0.96 | . | 2.78 | 0.29 | 31.1 | 0.66 |
| VS 2125-81 | 64.08 | 15.35 | . | 0.14 | 3.93 | . | 2.87 | 5.23 | . | . | 3.98 | 1.87 | 0.160 | 3.25 | 0.228 | . | 0.517 |
| GBW 07111 | 59.68 | 16.56 | . | 0.15 | 4.72 | . | 3.08 | 2.64 | . | 0.88 | 3.50 | 2.81 | 0.094 | 4.05 | 0.34 | . | 0.77 |

continued analysis listed in mg/kg except % which is mass % and * which is ppb

| Number | Ag | As | Au* | B | Ba% | Be | Bi | Br | C% | Ca% | Cd | Ce | Cl% | Co | Cr | Cs | Cu |
|------------|---------|--------|------|--------|--------|--------|--------|---------|-------------|------|---------|------|----------|------|------|-------|------|
| JG-1a | (0.023) | (0.43) | 0.21 | 3.95 | 0.0470 | 3.16 | (0.43) | . | (0.0295) | 1.52 | (0.026) | 45.0 | (0.0065) | 5.90 | 17.6 | 10.6 | 1.67 |
| JG-1 | 0.034 | 0.33 | 0.11 | 6.87 | 0.0466 | 3.15 | 0.50 | (0.068) | (0.0216) | 1.57 | 0.040 | 45.8 | 0.00581 | 4.06 | 53.2 | 10.1 | 2.52 |
| JG-3 | (0.029) | (0.37) | 0.17 | (2.15) | 0.0466 | (1.60) | (0.05) | . | (0.0120) | 2.64 | (0.054) | 40.3 | (0.0156) | 11.7 | 22.4 | 1.78 | 6.81 |
| US GSP-2 | . | . | . | . | 0.1340 | (1.5) | . | . | . | 1.50 | . | 410 | . | 7.3 | 20 | (1.2) | 43 |
| VS 2125-81 | . | . | . | 27 | 0.14 | 3.7 | . | . | . | . | . | . | . | 13 | 37 | . | 57 |
| GBW 07111 | 0.066 | 0.4 | . | 3.92 | 0.1900 | 2.11 | 0.05 | (0.34) | (0.057 Org) | . | 0.08 | 112 | 0.023 | 15.6 | 37.6 | 0.97 | 8.8 |

| Number | Dy | Er | Eu | F% | Ga | Gd | Ge | Hf | Hg* | Ho | I* | In | Ir* | K% | La | Li | Lu |
|------------|-------|-------|------|----------|------|------|--------|------|-------|-------|---------|---------|----------|------|------|------|--------|
| JG-1a | 4.44 | 2.57 | 0.70 | 0.0439 | 16.5 | 4.08 | (1.5) | 3.59 | (4.1) | 0.82 | . | (0.025) | . | 3.29 | 21.3 | 79.5 | 0.44 |
| JG-1 | 4.14 | 2.16 | 0.73 | 0.0498 | 17.8 | 4.28 | 1.44 | 3.56 | 16.5 | 0.81 | (0.012) | (0.044) | . | 3.30 | 22.4 | 86.6 | 0.39 |
| JG-3 | 2.59 | 1.52 | 0.90 | (0.0317) | 17.1 | 2.92 | (1.06) | 4.29 | (2.4) | 0.38 | . | . | (0.0016) | 2.19 | 20.6 | 20.9 | 0.26 |
| US GSP-2 | (6.1) | (2.2) | 2.3 | (0.3000) | 22 | (12) | . | (14) | . | (1.0) | . | . | . | 4.48 | 180 | (36) | (0.23) |
| VS 2125-81 | . | . | . | . | 22 | . | 1.8 | . | . | . | . | . | . | . | 20 | . | . |
| GBW 07111 | 3.20 | 1.57 | 1.91 | 0.084 | 20.8 | 5.09 | 1.00 | 5.2 | 35 | 0.60 | (78) | 0.08 | . | 60.5 | 16.2 | 0.24 | |

| Number | Mg% | Mn% | Mo | Na% | Nb | Nd | Ni | P% | Pb% | Pd* | Pr | Rb% | S% | Sb | Sc | Se | Sm |
|------------|------|--------|-------|------|------|------|------|-------|---------|--------|------|---------|----------|---------|------|--------|------|
| JG-1a | 0.42 | 0.044 | 0.45 | 2.51 | 11.4 | 20.4 | 6.91 | 0.036 | 0.00264 | (<0.2) | 5.63 | 0.0178 | (0.0011) | (0.048) | 6.21 | . | 4.53 |
| JG-1 | 0.45 | 0.049 | 1.75 | 2.51 | 12.4 | 19.3 | 7.47 | 0.043 | 0.00254 | (<0.2) | 4.83 | 0.0182 | 0.00109 | 0.13 | 6.53 | 0.0030 | 4.62 |
| JG-3 | 1.08 | 0.055 | 0.45 | 2.94 | 5.88 | 17.2 | 14.3 | 0.053 | 0.00117 | (<0.2) | 4.70 | 0.00673 | (0.0055) | (0.08) | 8.76 | . | 3.39 |
| US GSP-2 | 0.58 | 0.0320 | (2.1) | 2.06 | 27 | 200 | 17 | 0.13 | 0.0042 | . | (51) | 0.0245 | . | . | 6.3 | . | 27 |
| VS 2125-81 | . | . | 3.22 | 8.8 | . | 15 | . | . | 0.016 | . | . | 0.016 | 0.019 | 13 | . | . | . |
| GBW 07111 | . | . | 0.47 | 10.6 | 48.1 | 24.4 | . | . | 0.00198 | . | 13.2 | 0.00701 | 0.011 | 0.06 | 10.3 | 0.03 | 7.74 |

GRAPHITE

analysis listed in mass % Graph = Graphitic, T = Total CDN: RM, all others: CRM CDN: 10 g GGC: 10 g NCS: 50 g USZ: 100 g

| Number | Al ₂ O ₃ | C.Graph | T.C | CO ₂ | CaO | Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | Ni | P ₂ O ₅ | Rb | S | SiO ₂ | TiO ₂ | Zn | Zr | LOI |
|-------------|--------------------------------|---------|-------|-----------------|--------|--------------------------------|-------------------|------------------|-------|--------|-------------------|-------|-------------------------------|-------|-------|------------------|------------------|---------------|-----------|--------|
| NCS DC60121 | 5.60 | 76.50 | . | 0.28 | 0.74 | 1.48T | 1.98 | 0.99 | 0.50 | 0.022 | 0.23 | . | 0.16 | . | 0.14 | 10.34 | 0.55 | Volatile:2.72 | Ash:20.78 | . |
| GGC-02 | . | 27.04 | 28.25 | . | . | . | . | . | . | . | . | . | . | . | 0.04 | . | . | . | . | . |
| GGC-01 | . | 24.97 | 26.68 | . | . | . | . | . | . | . | . | . | . | . | 0.04 | . | . | . | . | . |
| GGC-03 | . | 16.29 | 17.61 | . | . | . | . | . | . | . | . | . | . | . | 0.04 | . | . | . | . | . |
| USZ 32-2000 | 9.33 | (12.0) | 14.43 | 4.10 | 7.05 | 3.48 | . | 2.54 | 1.94 | 0.03 | 0.47 | 0.007 | . | 0.014 | . | 52.20 | 0.57 | 0.018 | 0.012 | 22.21 |
| USZ 33-2000 | 8.46 | (11.34) | 13.38 | 2.45 | . | 3.61 | . | 2.09 | . | 0.07 | 0.51 | . | . | . | . | 52.84 | 0.49 | . | . | 17.0 |
| NCS DC60120 | 13.03 | 9.91 | 0.67 | 5.34 | 6.99T | 2.80 | 2.17 | 5.35 | 0.054 | 1.56 | . | 0.14 | . | 2.59 | 49.34 | 0.64 | . | . | . | |
| GGC-05 | . | 8.60 | 9.20 | . | . | . | . | . | . | . | . | . | . | . | 0.05 | . | . | . | . | last |
| GGC-06 | . | 7.68 | 8.16 | . | . | . | . | . | . | . | . | . | . | . | 0.05 | . | . | . | . | last |
| GGC-10 | . | 4.79 | 5.22 | . | . | . | . | . | . | . | . | . | . | . | 4.40 | . | . | . | . | . |
| CDN GR-1 | (8.6) | 3.12 | . | . | (6.3) | (4.2) | . | (3.0) | (2.4) | (<0.1) | (0.3) | . | . | . | (1.0) | (65.3) | (0.4) | . | . | (6.8) |
| NCS DC60119 | 12.93 | 2.91 | 3.60 | 9.37 | 6.73T | 2.60 | 2.54 | 6.10 | 0.084 | 1.60 | . | 0.13 | . | 1.18 | 49.84 | 0.57 | . | . | . | |
| GGC-09 | . | 2.41 | 2.95 | . | . | . | . | . | . | . | . | . | . | . | 4.59 | . | . | . | . | . |
| CDN GR-3 | (9.3) | 2.39 | . | . | (6.2) | (4.3) | . | (3.1) | (2.5) | (<0.1) | (0.4) | . | . | . | (1.0) | (66.2) | (0.4) | . | . | (4.9) |
| CDN GR-2 | (7.9) | 1.93 | . | . | (11.6) | (3.3) | . | (2.9) | (1.9) | (<0.1) | (0.2) | . | . | . | (1.0) | (57.5) | (0.3) | . | . | (10.9) |
| CDN GR-4 | (12.9) | 1.01 | . | . | (6.6) | (6.3) | . | (2.3) | (2.4) | (0.2) | (1.8) | . | . | . | (1.0) | (61.8) | (0.5) | . | . | (2.7) |
| GGC-08 | . | 0.39 | 1.03 | . | . | . | . | . | . | . | . | . | . | . | 1.57 | . | . | . | . | . |
| GGC-07 | . | 0.13 | 0.56 | . | . | . | . | . | . | . | . | . | . | . | 0.51 | . | . | . | . | . |

| CRM | GRAPHITE ORE | | | | | | | | | | | | analysis listed in mass % | | 50 g units | |
|-------------|--------------------------------|-------|-------|--------------------------------|------------------|------|-------|-------------------|-------------------------------|------|------------------|------------------|---------------------------|--|------------|--|
| Number | Al ₂ O ₃ | Ash | CaO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | Volatiles | | | |
| NCS DC28120 | 10.93 | 95.62 | 11.81 | 5.34 | 2.39 | 8.79 | 0.048 | 1.50 | 0.083 | 1.06 | 52.73 | 0.39 | 2.22 | | | |
| NCS DC28121 | 10.72 | 90.65 | 11.12 | 5.00 | 2.32 | 8.43 | 0.047 | 1.38 | 0.083 | 0.99 | 50.28 | 0.36 | 2.48 | | | |
| NCS DC28119 | 8.13 | 29.00 | 0.23 | 2.09 | 1.33 | 0.55 | 0.032 | 0.28 | 0.087 | 0.02 | 15.66 | 0.44 | 2.88 | | | |
| NCS DC28118 | 1.92 | 11.45 | 0.91 | 1.98 | 0.19 | 1.00 | 0.021 | 0.088 | 0.007 | 0.49 | 5.00 | 0.085 | 1.87 | | | |
| NCS DC28117 | 0.63 | 3.47 | 0.19 | 0.46 | 0.17 | 0.18 | 0.005 | 0.009 | 0.004 | 0.17 | 1.76 | 0.014 | 1.33 | | | |

| CRM | GRAPHITE - SYNTHETIC | | | | | | | | | | | | | | | analysis listed in mg/kg | | 50 g units | |
|-----------|----------------------|--------|-----|-------|--------|------|------|-----|------|-------|-----|--------|-----------------|------|-----|--------------------------|--|------------|--|
| Number | Al | As | Ca | Cl | Co | Cr | Cu | Fe | K | Mg | Mn | Mo | NO ₃ | Na | Ni | Pb | | | |
| CIBA KD-2 | 35 | (0.05) | 98 | (4.1) | (0.10) | 1.3 | 1.0 | 180 | (41) | (21) | 23 | (0.22) | (0.5) | (20) | 3.9 | (1.6) | | | |
| CIBA LD-4 | 33 | (0.06) | 126 | (3.3) | (0.11) | 3.4 | 1.3 | 149 | (25) | (7.5) | 3.5 | (0.62) | (0.5) | (13) | 5.5 | (1.1) | | | |
| CIBA KD-3 | 15 | (0.04) | 62 | (4.4) | (0.07) | 0.69 | 0.81 | 111 | (39) | (22) | 13 | (0.44) | (0.5) | (17) | 4.2 | (0.90) | | | |
| CIBA KD-6 | 8.4 | (0.04) | 79 | (3.3) | (0.03) | 0.44 | 0.62 | 37 | (17) | . | 4.3 | (0.39) | (0.5) | (7) | 2.0 | (1.2) | | | |
| CIBA PD-7 | 5.5 | (0.03) | 22 | (6.4) | (0.03) | 2.2 | 0.51 | 59 | (17) | . | 1.1 | (0.25) | (0.5) | (2) | 1.1 | (1.0) | | | |

continued

| Number | S | SO ₄ | Sb | Si | Sn | Sr | Ta | Ti | V | W | Zn | Zr |
|-----------|------|-----------------|--------|-------|--------|-------|---------|------|-------|---------|-------|-------|
| CIBA KD-2 | (44) | (88) | (0.05) | (145) | (<0.2) | (2.8) | (0.005) | (46) | (3.6) | (<0.08) | (4.4) | (3.7) |
| CIBA LD-4 | (68) | (98) | (0.03) | (404) | . | (2.7) | (0.011) | (49) | (4.3) | (<0.06) | (2.9) | (8.6) |
| CIBA KD-3 | (43) | (85) | (0.02) | (147) | . | (1.9) | (0.006) | (38) | (3.8) | (<0.08) | (1.2) | (4.5) |
| CIBA KD-6 | (44) | (73) | (0.03) | (66) | . | (1.9) | (0.006) | (51) | (4.9) | (0.03) | (1.7) | (6.0) |
| CIBA PD-7 | (23) | (25) | (0.02) | (50) | . | (1.3) | (0.005) | (29) | (2.0) | (0.03) | (0.9) | (4.5) |

last of stock
last of stock

| CRM | GREISEN | | | | | | | | | | | | | | analysis listed in mass% | | T = Total | | CGL: 17025, 100 g units | | GUW: 50 g units | |
|----------------|------------------|--------------------------------|-------|--------|--------------------------------|------|------------------|-------|-------|-------------------|------|-------------------------------|----------|--------|--------------------------|--------|-----------|------|-------------------------|--|-----------------|--|
| Number | SiO ₂ | Al ₂ O ₃ | CaO | F | Fe ₂ O ₃ | FeO | K ₂ O | MgO | MnO | Na ₂ O | Li | P ₂ O ₅ | Rb | Sn | TiO ₂ | Zn | Zr | LOI | | | | |
| CGL 022 | 80.93 | 10.26 | 0.836 | (1.48) | 3.25T | . | (1.47) | 0.044 | 0.102 | (0.038) | . | 0.018 | (0.0463) | 0.1884 | 0.086 | 0.0273 | 0.0148 | 1.46 | | | | |
| GUW GNA | 71.47 | 14.7 | 0.62 | 3.32 | 5.92 | 3.81 | 2.63 | 0.168 | 0.034 | 0.08 | 0.49 | . | 0.202 | 0.19 | 0.022 | 0.0078 | 0.0070 | . | | | | |

continued

| Number | As | Ba | Bi | Cr | Cs | Cu | Dy | Ga | Mo | Nb | Sr | Ta | Th | U |
|----------------|------|--------|--------|-----|--------|-----|--------|------|-----|------|------|--------|------|--------|
| CGL 022 | 63.6 | (25.6) | (29.6) | 271 | (29.7) | 563 | (14.1) | 26.1 | . | 28.4 | 16.6 | (4.01) | 32.9 | (6.12) |
| GUW GNA | 7 | 51 | 220 | . | 45 | . | 3 | . | 100 | . | . | 29 | . | 22 |

also 19 more informational elements

| CRM | GYPSUM ROCK | | | | | | | | | | | | | | | analysis listed in mass % | | 100 g units | |
|--------------|-----------------|------|--------------------------------|-----------------|----------------------------------|--------------------|--------------------|------------------|------|-------------------|-------------------------------|------------------|------|--------|----------|---------------------------|--|-------------|--|
| Number | SO ₃ | CaO | Al ₂ O ₃ | CO ₂ | Fe ₂ O ₃ * | H ₂ O+G | H ₂ O+C | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | SrO | %Total | L.O.I.** | | | | |
| DOMTAR GYP A | 46.2 | 32.9 | 0.10 | 0.47 | 0.05 | 19.4 | . | 0.021 | 0.18 | 0.009 | 0.011 | 0.45 | 0.11 | 99.90 | 20.06 | | | | |
| DOMTAR GYP D | 36.7 | 28.2 | 2.03 | 3.6 | 1.08 | 16.39 | 0.37 | 0.54 | 1.73 | 0.07 | 0.025 | 8.7 | 0.18 | 99.62 | 20.82 | | | | |

* Total iron calculated as Fe₂O₃H₂O+C Water from clay between 450-550°C.

** Loss on ignition at 1000°C

H₂O+G Water from CaSO₄ 2H₂O and some CaSO₄ 1/2H₂O between 80-300°C.

continued

| Number | As | Ba | Br | Cd | Ce | Cl | Co | Cr | Cs | Eu | Hf | La |
|--------------|------|------|-------|------|--------|-----|-------|-----|--------|-------|------|------|
| DOMTAR GYP A | 0.19 | (28) | (0.5) | 0.51 | (0.70) | 12 | (0.2) | (2) | (0.15) | 0.060 | 0.26 | 0.24 |
| DOMTAR GYP D | 3 | 106 | 1.3 | . | 9 | 234 | 2.4 | 9 | 1.3 | 0.17 | 0.6 | 5 |

continued

| Number | Lu | Mn | Rb | Sb | Sc | Sm | Ta | Th | Ti | U | V | Yb | Zn | Zr |
|--------------|---------|-----|-------|------|------|-------|------|-------|------|------|----|-------|----|-----|
| DOMTAR GYP A | (0.006) | 19 | (0.8) | 0.04 | 0.09 | 0.041 | . | (0.1) | (78) | 0.10 | . | 0.020 | 7 | (9) |
| DOMTAR GYP D | 0.067 | 200 | 25 | 0.28 | 2 | 0.83 | 0.15 | 1.3 | 473 | 0.65 | 17 | 0.44 | 16 | 29 |

CRM GYPSUM ROCK

analysis listed in mass %

| Number | SO ₃ | CaO | Al ₂ O ₃ | CO ₂ | Cl- | Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | Na ₂ O | SiO ₂ | SrO | TiO ₂ | LOI | Units |
|----------------|-----------------|-------|--------------------------------|-----------------|--------|--------------------------------|------------------|------------------|------|-------------------|------------------|---------|------------------|-------|-------|
| GBW 03109a | 51.91 | 39.24 | 0.34 | (4.02) | 0.033 | 0.16 | 0.39 | 0.094 | 1.74 | 0.065 | 1.68 | (0.27) | 0.016 | 4.55 | 50 g |
| GBW 03111a | 40.72 | 32.30 | 0.14 | (5.44) | 0.0032 | 0.11 | 17.95 | 0.026 | 2.47 | 0.014 | 0.63 | (0.096) | 0.010 | 23.60 | 50 g |
| NCS DC62106c * | 38.66 | 29.83 | 1.85 | . | . | 0.58 | . | 0.35 | 1.61 | 0.09 | 5.45 | . | 0.09 | 21.11 | 20 g |

* NCS DC62106c also contains 0.21% adhered water and 17.09% crystallized water.

RM GYPSUM BYPRODUCT

analysis listed in mass % based on a dry (40°C) sample

100 g units

| Number | SO ₃ | CaO | Al ₂ O ₃ | CO ₂ | Cr ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | SrO | TiO ₂ | V ₂ O ₅ | %Total | LOI* |
|--------------|-----------------|------|--------------------------------|-----------------|--------------------------------|----------------------------------|-------------------|------------------|-------|-------------------|-------------------------------|------------------|-------|------------------|-------------------------------|--------|-------|
| DOMTAR FGD-1 | 46.4 | 32.7 | 0.023 | 0.02 | 0.0002 | 0.014 | 20.70 | 0.007 | 0.007 | 0.005 | 0.03 | 0.13 | 0.012 | . | 0.0003 | 100.05 | 21.04 |
| DOMTAR FGD-2 | 45.6 | 32.8 | 0.033 | 0.62 | 0.0015 | 0.043 | 20.38 | 0.01 | 0.019 | 0.02 | 0.05 | 0.21 | 0.024 | . | 0.0009 | 98.81 | 21.33 |
| DOMTAR TIG-1 | 43.4 | 32.3 | 0.57 | 1.41 | 0.036 | 0.26 | 20.3 | 0.008 | 0.12 | 0.036 | 0.04 | 0.11 | 0.42 | 0.82 | 0.10 | 99.93 | 22.03 |

H₂O+ combined water at 250°C * Loss on ignition at 1000°C (1 hr)

continued

analysis listed in mg/kg

| Number | As | Ce | Cl | Co | Cr | Dy | Eu | F | Hf | La | Mn | Sb |
|--------------|------|-----|-------|------|------|------|------|-----|------|------|-----|-------|
| DOMTAR FGD-1 | 0.10 | 0.5 | (100) | 0.02 | 1.2 | . | 0.02 | 95 | . | 0.35 | 2.0 | 0.03 |
| DOMTAR FGD-2 | 0.48 | 1.7 | (115) | 0.07 | 10.2 | 0.48 | 0.09 | 320 | 0.06 | 2.18 | 2.5 | 0.024 |
| DOMTAR TIG-1 | 0.22 | 6 | 400 | 0.26 | 246 | 0.42 | 0.08 | 230 | 3.0 | 2.7 | 36 | 0.05 |

| Number | Sc | Se | Sm | Ta | Tb | Th | Ti | U | V | Yb | Zn | Zr |
|--------------|-------|-----|------|-----|------|------|------|------|-----|------|------|------|
| DOMTAR FGD-1 | 0.023 | 0.8 | 0.07 | . | . | 0.03 | 75 | . | 1.5 | . | 1.7 | . |
| DOMTAR FGD-2 | 0.166 | 3.0 | 0.52 | . | 0.07 | 0.38 | 75 | 1.10 | 5.1 | 0.27 | 2.3 | (10) |
| DOMTAR TIG-1 | 17.1 | . | 0.65 | 3.1 | (2) | 2.14 | 6154 | 2.5 | 560 | 0.31 | (32) | (80) |

CRM HORNBLENDITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | Al ₂ O ₃ | CO ₂ | CaO | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | Mn | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | Ti | TiO ₂ | LOI |
|-------------|--------------------------------|-----------------|-------|--------|----------------------------------|-------------------|------------------|-------|--------|-------|-------------------|-------------------------------|----------|------------------|--------|------------------|------|
| VS 2113-81 | 14.24 | . | 11.04 | 9.72 | 18.26 | . | 0.382 | 12.70 | . | 0.144 | 2.14 | . | . | 37.95 | . | 1.91 | . |
| NCS DC73377 | 13.76 | (0.16) | 9.6 | 10.8 | 14.8 | (1.7) | 0.48 | 7.2 | 0.1600 | . | 2.07 | . | (0.0060) | 49.62 | 0.5510 | . | 1.06 |
| JH-1 | 5.66 | . | 15.02 | (8.09) | 10.27 | . | 0.53 | 16.73 | . | 0.19 | 0.71 | 0.099 | . | 48.18 | . | 0.67 | . |

continued analysis listed in mg/kg except * which is ng/g

| Number | Ag | As | B | Ba | Be | Bi | Cd | Ce | Cl | Co | Cr | Cs | Cu% | Dy | Er | Eu | F | Ga | Gd |
|-------------|--------|----|----|-----|------|--------|--------|------|-------|------|-----|------|---------|-----|-----|------|-----|------|-----|
| VS 2113-81 | . | . | . | 99 | . | . | . | . | . | 74 | 15 | . | 0.074 | . | . | . | . | 25 | . |
| NCS DC73377 | (0.05) | 26 | 12 | 62 | 0.34 | (0.06) | (0.14) | 7.7 | (116) | 52 | 137 | 1.8 | 0.0084 | 3.5 | 2.3 | 0.91 | 200 | 17.2 | 2.8 |
| JH-1 | . | . | . | 106 | . | . | . | 17.6 | . | 51.5 | 616 | 0.87 | 0.00086 | 2.5 | 1.2 | 0.86 | . | 7.9 | . |

| Number | Ge | Hf | Hg* | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | Sb | Sc |
|-------------|------|-----|-----|------|--------|-----|------|------|------|-----|------|------|-----|-----|------|------|------|------|
| VS 2113-81 | . | . | . | . | . | . | . | . | 1.3 | . | . | 57 | . | 4.9 | . | . | . | 58 |
| NCS DC73377 | 1.46 | 1.5 | 3.3 | 0.85 | (0.06) | 2.9 | 11.2 | 0.39 | 0.15 | 2.7 | 6.5 | 117 | 360 | (8) | 1.25 | 29 | 0.63 | 43 |
| JH-1 | . | 1.4 | . | 0.53 | . | 7.9 | . | 0.17 | 0.77 | 4.2 | 11.6 | 58.2 | . | 2.6 | . | 14.4 | . | 77.6 |

| Number | Se | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Units |
|-------------|-------|-----|-------|-----|--------|------|-------|--------|------|--------|-----|------|------|-----|------|------|-------|
| VS 2113-81 | . | . | 2.9 | . | . | . | . | . | . | . | 39 | . | . | 1.5 | 1370 | 21 | 40 g |
| NCS DC73377 | 0.083 | 2.1 | (0.8) | 142 | (0.18) | 0.57 | (0.4) | (0.11) | 0.37 | (0.14) | 296 | 0.34 | 20 | 2.4 | 100 | (57) | 70 g |
| JH-1 | . | 3.1 | . | 153 | 0.23 | 0.52 | 1.4 | . | . | 0.58 | 228 | . | 13.7 | 1.2 | 61.8 | 48.3 | 100 g |

AMPHIBOLITE

IRON PELLETS (supplied in homogeneous powder form)

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

| # | Number | Fe | Fe(met) | FeO | Al | Al ₂ O ₃ | Ca | CaO | Mg | MgO | Mn | MnO | Na | Na ₂ O | P | S | Si | SiO ₂ | Ti | TiO ₂ |
|---|--------------|-------|---------|--------|------|--------------------------------|------|-------|------|-------|-------|-------|-------|-------------------|--------|---------|------|------------------|-------|------------------|
| 1 | SRM 691 | 90.8 | 84.6 | . | . | 1.22 | . | 0.63 | . | 0.52 | . | 0.043 | . | 0.186 | 0.006 | 0.008 | . | 3.7 | . | 0.27 |
| 1 | VS R10/3 | 90.9 | 82.5 | . | . | 0.30 | . | 0.182 | . | 0.32 | . | . | . | 0.073 | 0.0102 | 0.0013 | . | 4.04 | . | . |
| 1 | NCS DC28240a | 66.18 | . | 0.78 | . | 0.43 | . | 0.51 | . | 0.79 | . | 0.040 | . | . | 0.010 | 0.0066 | . | 3.81 | . | 0.048 |
| 2 | BS 105 | 65.95 | . | . | 0.10 | . | 0.50 | . | 0.19 | . | 0.09 | . | 0.017 | . | 0.008 | (0.001) | 2.14 | . | 0.008 | . |
| 1 | VS R29 | 64.95 | . | 0.48 | . | 0.38 | . | 0.45 | . | 0.149 | . | . | . | . | 0.0123 | 0.0118 | . | 6.13 | . | . |
| 1 | NCS DC28240b | 64.58 | . | 0.78 | . | 0.80 | . | 0.73 | . | 1.33 | . | 0.057 | . | . | 0.014 | 0.0080 | . | 4.79 | . | 0.136 |
| 1 | NCS DC28239b | 63.78 | . | 0.77 | . | 0.98 | . | 0.85 | . | 1.59 | . | 0.065 | . | . | 0.016 | 0.0086 | . | 5.29 | . | 0.18 |
| 1 | NCS DC28020a | 63.07 | . | (0.04) | . | 1.47 | . | 1.34 | . | 0.96 | . | 0.303 | . | 0.103 | 0.028 | 0.0084 | . | 5.22 | . | 0.258 |
| 1 | VS R28 | 63.01 | . | 1.16 | . | 0.37 | . | 4.09 | . | 0.194 | . | . | . | . | 0.0121 | 0.087 | . | 5.11 | . | . |
| 1 | NCS DC14004b | 62.79 | . | 0.72 | . | 1.32 | . | 1.16 | . | 1.58 | 0.130 | . | . | 0.112 | 0.016 | 0.012 | . | 5.31 | . | 0.113 |
| 1 | NCS DC28239a | 62.14 | . | 0.77 | . | 1.36 | . | 1.09 | . | 2.13 | . | 0.082 | . | . | 0.020 | 0.010 | . | 6.32 | . | 0.267 |
| 1 | NCS DC28020b | 61.81 | . | (0.18) | . | 1.48 | . | 1.30 | . | 1.00 | . | 0.310 | . | 0.099 | 0.032 | 0.0055 | . | 6.88 | . | 0.251 |
| 1 | NCS DC11025 | 61.37 | . | (1.92) | . | 1.35 | . | 1.04 | . | 0.80 | . | 0.120 | . | 0.105 | 0.093 | 0.021 | . | 6.59 | . | 1.61 |
| 1 | NCS DC28020 | 60.77 | . | 0.97 | . | 1.25 | . | 1.08 | . | 1.99 | 0.110 | . | . | . | 0.021 | 0.019 | . | 8.25 | 0.063 | . |
| 1 | NCS DC28020c | 60.46 | . | 0.33 | . | 0.76 | . | 0.75 | . | 5.15 | . | 0.130 | . | 0.036 | 0.013 | 0.029 | . | 6.12 | . | 0.154 |
| 1 | VS R3/2 | 58.72 | . | 2.53 | . | 2.50 | . | 4.47 | . | 2.48 | . | 0.232 | . | . | 0.0027 | 0.005 | . | 3.74 | . | 2.49 |
| 1 | VS R23/1 | 58.7 | . | . | . | . | . | 4.45 | . | . | . | . | . | . | . | . | . | 3.75 | . | . |
| 1 | NCS DC28021a | 57.88 | . | 6.53 | . | 2.54 | . | 3.15 | . | 3.11 | . | 0.126 | . | 0.105 | 0.016 | 0.115 | . | 7.92 | . | 0.207 |

| Number | As* | C | Cd* | Co | Cr | Cu | K | K ₂ O | Mo* | N* | Ni | Pb* | Sn | V | V ₂ O ₅ | Zn | Units |
|--------------|------|-------|------|----------|--------|--------|--------|------------------|-------|------|-------|-------|-----------|----------|-------------------------------|----------|-------|
| SRM 691 | (14) | 0.12T | (<5) | 0.030 | (0.03) | 0.032 | (0.06) | . | (<20) | (50) | (0.3) | (<20) | (<0.0010) | (0.0135) | . | (0.0040) | 100 g |
| VS R10/3 | . | 2.18 | . | . | . | 0.0025 | . | 0.037 | . | . | . | 1.4 | . | . | . | 0.0019 | 100 g |
| NCS DC28240a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| BS 105 | 13 | . | . | (0.0004) | 0.013 | 0.001 | 0.014 | . | . | . | 0.004 | (3) | (0.001) | 0.003 | . | (0.001) | 100 g |
| VS R29 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g |
| NCS DC28240b | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| NCS DC28239b | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| NCS DC28020a | . | . | . | . | . | 0.0089 | . | 0.078 | . | . | . | . | . | . | . | 0.012 | 50 g |
| VS R28 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 100 g |
| NCS DC14004b | . | . | . | . | . | 0.071 | . | 0.250 | . | . | . | . | . | . | . | 0.042 | 50 g |
| NCS DC28239a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| NCS DC28020b | . | . | . | . | . | 0.0089 | . | 0.066 | . | . | . | . | . | 0.155 | . | 0.012 | 50 g |
| NCS DC11025 | . | . | . | . | . | . | . | 0.111 | . | . | . | . | . | . | . | 0.012 | 70 g |
| NCS DC28020 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | last | . | 100 g |
| NCS DC28020c | . | . | . | . | . | 0.010 | . | 0.081 | . | . | . | . | . | . | . | 0.012 | 50 g |
| VS R3/2 | . | . | . | 0.020 | . | . | . | . | . | . | . | . | . | . | . | 0.56 | 100 g |
| VS R23/1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 150 g |
| NCS DC28021a | 12 | . | . | . | . | 0.018 | . | 0.265 | . | . | . | 47 | . | . | . | 0.039 | 50 g |

CRM IRON SULPHIDE CONCENTRATE

analysis listed in mass %

25 g units

| Number | Al | Ca | Co | Cr | Cu | Fe | K | Mg | Mn | Na | Ni | P | Pb | S | SiO ₂ | Ti | Zn |
|-----------|--------|--------|-------|--------|-------|-------|--------|--------|--------|--------|-------|--------|--------|-------|------------------|--------|--------|
| CAN TPO-1 | (3.51) | (2.17) | 0.021 | (0.03) | 0.118 | 34.85 | (0.56) | (1.66) | (0.08) | (0.85) | 0.617 | (0.03) | (0.02) | 18.03 | 25.52 | (0.35) | (0.02) |

CRM IRON ORE, chart 4 of 9 # = class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

Table with columns: #, Number, Fe, FeO, Al, Al2O3, Ca, CaO, K, K2O, Mg, MgO, Mn, MnO, Na, Na2O, P, P2O5, S, Si, SiO2, Ti, TiO2. Rows include various sample IDs like GIOP-56, USZ 27-99, NCS DC15005, etc.

Table with columns: #, Number, As, Ba, C, CO2, Cl, Co, Cr, Cr2O2, Cu, Ni, Pb, V, V2O5, Zn, Zr, LOI, Units, Other. Rows include various sample IDs like GIOP-56, USZ 27-99, NCS DC15005, etc.

CRM IRON ORE, chart 8 of 9

= class, where 1 = CRM and 2 = RM analysis listed in mass % except * which is mg/kg

Table with 20 columns: #, Number, Fe, FeO, Al, Al2O3, Ca, CaO, K, K2O, Mg, MgO, Mn, MnO, Na, Na2O, P, S, Si, SiO2, Ti, TiO2. Rows include sample IDs like IRSID 612-1, NCS DC18020, GIOP-131, etc.

Header row for the second table: #, Number, Fe, FeO, Al, Al2O3, Ca, CaO, K, K2O, Mg, MgO, Mn, MnO, Na, Na2O, P, S, Si, SiO2, Ti, TiO2

Table with 20 columns: Number, As, Ba, CO2, Cl, Co, Cr, Cr2O3, Cu, Ni, NiO, Pb, V, V2O5, Zn, ZnO, Zr, LOI, Units, Other. Rows include sample IDs and associated trace element concentrations.

RM LEAD BASILICATE

| analysis listed in mass % | | | | | | | | | | 25 or 100 g units |
|---------------------------|--------------------------------|------|--------------------------------|------------------|-------|-------------------|-------|------------------|------------------|-------------------|
| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | PbO | SiO ₂ | TiO ₂ | LOI |
| CERAM AN28 | 2.46 | 0.05 | 0.018 | 0.05 | <0.01 | 0.05 | 64.33 | 32.76 | <0.01 | 0.15 |

CRM LEAD ORE TAILINGS WITH EXTENSIVE ANALYSIS

| analysis listed mass % | | | | | | | | | | | | | * BCS 362 lists AQUA REGIA results where indicated | | | | GBW: 50 g units | | BCS: 100 g units | |
|------------------------|--------------------------------|-------|---------|------|--------------------------------|------------------|-------|------|--------------------------------|-------------------|-------|------|--|------------------|-------|------------------|-----------------|------|------------------|--|
| Number | Al ₂ O ₃ | CaO | Cu | F | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Mn ₃ O ₄ | Na ₂ O | Pb | PbO | S | SiO ₂ | SrO | TiO ₂ | Zn | ZnO | LOI | |
| GBW 07235 | 12.88 | 19.51 | 0.20 | 0.27 | 4.37 | 1.42 | 1.62 | 1.40 | . | 1.61 | 4.17 | . | 0.86 | 43.63 | . | 0.53 | 0.062 | . | . | |
| GBW 07236 | 8.95 | 34.56 | 0.035 | 0.23 | 3.79 | 0.82 | 2.06 | 1.53 | . | 0.066 | 0.61 | . | 0.38 | 30.51 | . | 0.44 | 0.092 | . | . | |
| BCS 362 * | 0.667 | 44.21 | 0.0056* | . | 0.483 | 0.14 | 0.068 | . | 0.829 | 0.084 | 2.30* | 2.63 | 1.48 | 9.03 | 0.034 | 0.047 | 2.03* | 2.59 | 32.81 | |

continued analysis listed in mg/kg

| Number | Ag | As | Bi | Cd | Ce | Cr | Cs | Dy | Eu | Er | Ga | Gd | Ge | Ho | In | La | Li | Lu |
|-----------|------|------|------|------|------|------|-------|-----|------|-----|------|-----|------|------|------|------|------|------|
| GBW 07235 | 14.7 | 85.1 | 15.6 | 3.2 | 78.3 | (29) | (6) | 3.0 | 1.2 | 1.5 | 16.7 | 3.7 | 0.90 | 0.61 | 0.12 | 40.5 | (19) | 0.24 |
| GBW 07236 | 5.6 | 43.2 | 12.5 | 2.6 | 66.8 | (41) | (2.3) | 3.1 | 0.82 | 1.6 | 11.7 | 3.6 | 0.93 | 0.65 | 0.09 | 31.2 | (18) | 0.25 |
| BCS 362 * | . | 30* | . | 200* | . | 11* | . | . | . | . | . | . | . | . | . | . | . | . |

| Number | Mo | Nd | Ni | Pr | Rb | Sb | Sc | Se | Sm | Sn | Tb | Te | Th | Tl | Tm | W | Y | Yb | pH |
|-----------|-----|------|------|-----|------|------|-----|------|-----|-----|------|-----|------|------|------|------|------|-----|---------------|
| GBW 07235 | 1.6 | 28.2 | 27.7 | 8.1 | (55) | 39.3 | 7.5 | 1.7 | 5.1 | 3.0 | 0.58 | 3.9 | 10.2 | 0.43 | 0.23 | 17.6 | 15.4 | 1.5 | . |
| GBW 07236 | 1.3 | 23.4 | 34.5 | 6.2 | (74) | 12.0 | 8.1 | 0.81 | 4.6 | 2.9 | 0.60 | 1.2 | 10.5 | 1.0 | 0.26 | 30.6 | 16.2 | 1.7 | last of stock |
| BCS 362 * | . | . | 12* | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 8.14* |

CRM LEAD ORE

| analysis listed in mass % | | | | | | | | | | | 100 g units |
|---------------------------|------|---------|-------|-------|------|------|---------|------|-------|-------|-------------|
| Number | Pb | Ag | Cd | Cu | Fe | Ba | Re | S | Zn | Zr | |
| KZ 2890-84 | 61.0 | 0.01267 | 0.016 | 4.99 | . | . | 0.00214 | . | 1.85 | . | |
| KZ 6586-93 | 3.5 | 0.0019 | . | 0.013 | 2.03 | 0.38 | . | 0.55 | 0.045 | 0.019 | |
| KZ 5177-90 | 1.84 | 0.00181 | . | . | . | 10.3 | . | 2.96 | . | . | |

CRM LEAD ORE

| analysis listed in mass % | | | | | | | | | | | | | | 25 g units | |
|---------------------------|-------|--------------------------------|-------|-------|-------|--------|------|------|------|-------|-------|-------|--------|------------------|------|
| Number | Ag | Al ₂ O ₃ | As | Bi | CaO | Cd | Cu | Fe | MgO | Mn | Pb | S | Sb | SiO ₂ | Zn |
| NCS DC28116 | 0.022 | 2.56 | 0.068 | 0.085 | 17.16 | 0.0097 | 0.85 | 6.78 | 1.28 | 0.029 | 15.09 | 19.26 | 0.0084 | 7.92 | 1.44 |

CRM LIMESTONE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

50 g units

| Number | CaO | MgO | CO ₂ | SiO ₂ | LOI | Al ₂ O ₃ | Org.C | FeO | T.Fe ₂ O ₃ | H ₂ O ⁻ | H ₂ O ⁺ | K ₂ O | MnO | Na ₂ O | P ₂ O ₅ | SO ₃ | Ti% | TiO ₂ |
|-------------|-------|-------|-----------------|------------------|-------|--------------------------------|--------|------|----------------------------------|-------------------------------|-------------------------------|------------------|-------|-------------------|-------------------------------|-----------------|--------|------------------|
| NCS DC70301 | 47.89 | 6.76 | 44.39 | 0.55 | 43.92 | 0.17 | (0.03) | 0.15 | 0.193 | (0.20) | 0.37 | 0.043 | 0.009 | 0.022 | 0.008 | 0.017 | 0.0066 | 0.011 |
| NCS DC70302 | 41.95 | 11.62 | 44.89 | 0.72 | 44.75 | 0.22 | (0.03) | 0.16 | 0.205 | (0.20) | 0.31 | 0.052 | 0.009 | 0.029 | 0.014 | 0.013 | 0.0132 | 0.022 |
| NCS DC70308 | 38.08 | 14.96 | 45.62 | 1.17 | 44.61 | 0.18 | (0.04) | 0.05 | 0.448 | (0.17) | 0.42 | 0.026 | 0.027 | 0.030 | 0.009 | 0.041 | 0.0054 | 0.009 |
| NCS DC70305 | 30.93 | 20.14 | 45.58 | 1.15 | 45.73 | 0.29 | (0.07) | 0.07 | 0.17 | (0.07) | 0.39 | 0.16 | 0.012 | 0.036 | 0.035 | 0.33 | 0.0078 | 0.013 |

analysis listed in mg/kg except % which is mass %

| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | Gd |
|-------------|---------|------|-------|-------|------|-------|-------|------|-----|-----|------|-----|------|-----|------|------|-------|-----|------|------|
| NCS DC70301 | 0.020 | 0.50 | (1.9) | 9.7 | 0.08 | 0.015 | (0.2) | 0.10 | 1.4 | 34 | 0.45 | 4.8 | 0.07 | 2.2 | 0.12 | 0.09 | 0.037 | 76 | 0.3 | 0.13 |
| NCS DC70302 | 0.021 | 0.29 | (2.2) | 11.6 | 0.12 | 0.020 | (0.3) | 0.09 | 1.9 | 34 | 0.5 | 5.6 | 0.09 | 2.2 | 0.15 | 0.12 | 0.052 | 91 | 0.33 | 0.16 |
| NCS DC70308 | 0.035 | 5.5 | (2.3) | 10.6 | 0.15 | 0.012 | 0.9 | 0.39 | 1.5 | 123 | 0.5 | 9.7 | 0.10 | 2.9 | 0.20 | 0.15 | 0.049 | 179 | 0.4 | 0.19 |
| NCS DC70305 | (0.016) | 0.96 | (6.4) | 0.52% | 0.08 | 0.025 | 6.1 | 0.02 | 2.5 | 343 | 0.52 | 3.4 | 0.13 | 2.8 | 0.17 | 0.10 | 0.14 | 459 | 0.31 | 0.22 |

| Number | Ge | Hf | Hg | Ho | I | In | La | Li | Lu | Mn | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | Sb |
|-------------|------|------|-------|-------|-------|--------|-----|-----|-------|-----|------|------|------|-----|-----|-----|------|-----|------|
| NCS DC70301 | 0.11 | 1.4 | 0.004 | 0.034 | (0.5) | (0.03) | 0.9 | 2.9 | 0.019 | 70 | 0.35 | 0.3 | 0.66 | 5.8 | 35 | 2.9 | 0.22 | 1.2 | 0.08 |
| NCS DC70302 | 0.12 | 2.1 | 0.015 | 0.034 | (0.3) | (0.02) | 1.2 | 3.1 | 0.022 | 70 | 0.26 | 0.46 | 0.86 | 4.3 | 62 | 3.9 | 0.24 | 1.6 | 0.09 |
| NCS DC70308 | 0.11 | 3.1 | 0.031 | 0.046 | (0.2) | (0.02) | 0.9 | 3.0 | 0.035 | 209 | 0.80 | 0.4 | 0.89 | 5.6 | 40 | 7.8 | 0.21 | 1.1 | 0.59 |
| NCS DC70305 | 0.12 | 0.13 | 0.006 | 0.034 | (0.2) | (0.02) | 1.3 | 3.1 | 0.015 | 93 | 0.19 | 0.4 | 1.10 | 2.9 | 155 | 2.9 | 0.28 | 2.6 | 0.06 |

| Number | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W% | Y | Yb | Zn | Zr% |
|-------------|------|-------|------|-------|-----|--------|-------|-------|------|-------|-------|------|-----|------|-----|------|------|---------|
| NCS DC70301 | 0.40 | 0.014 | 0.15 | (0.7) | 227 | (0.06) | 0.022 | 0.008 | 0.25 | 0.022 | 0.018 | 0.59 | 4.8 | 0.17 | 1.2 | 0.11 | 8.1 | 0.00537 |
| NCS DC70302 | 0.5 | 0.015 | 0.19 | (0.6) | 191 | 0.05 | 0.031 | 0.008 | 0.25 | 0.023 | 0.020 | 0.39 | 5.0 | 0.18 | 1.4 | 0.13 | 9.5 | 0.00768 |
| NCS DC70308 | 0.5 | 0.10 | 0.21 | (0.9) | 85 | 0.030 | 0.035 | 0.016 | 0.29 | 0.02 | 0.030 | 1.13 | 7.5 | 0.13 | 1.8 | 0.19 | 35.7 | 0.0113 |
| NCS DC70305 | 0.4 | 0.013 | 0.26 | (0.7) | 158 | 0.06 | 0.032 | 0.008 | 0.45 | 0.04 | 0.017 | 0.70 | 5.1 | 0.17 | 1.1 | 0.10 | 3.6 | 0.00049 |

CRM LIMESTONE

| Number | Al | Ca | Fe | Mg | Mn | P | S | Si | Ti | Units |
|-------------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| IRSID 702-1 | 0.21 | 21.48 | 0.440 | 12.37 | 0.098 | 0.024 | 0.027 | 1.04 | 0.013 | 100 g |

CRM LITHIUM ORE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | 17025 | | 100 g units | |
|------------------------------------|--------------------------------|---------|----------------------------------|------------------|-------------------|---------|---------|-------------------|-------------------------------|---------|------------------|------------------|---------|--------|-------|-------------|--|
| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ T | K ₂ O | Li ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | Zn | LOI | Units | | |
| CGL 128 | 13.66 | 0.746 | 0.663 | 6.28 | 0.578 | 0.033 | 0.603 | (0.603) | (0.029) | (0.223) | 73.40 | (0.053) | 0.0594 | (2.14) | 100 g | | |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | |
| Number | As | Ba | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | | | |
| CGL 128 | 61.75 | 83.51 | 185 | (3.64) | (46.93) | (0.401) | (105) | (67.38) | 186 | (1.37) | (1.18) | (0.091) | (29.69) | (1.22) | | | |
| Number | Hf | Ho | Ind | La | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | | | |
| CGL 128 | (5.64) | (0.313) | (0.303) | (28.92) | (0.421) | (7.26) | (77.63) | (8.64) | (1.76) | 558 | (3.41) | (2135) | (20.50) | (9.62) | | | |
| Number | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | W | Y | Yb | Zr | | | |
| CGL 128 | (2.26) | (11.43) | 24.54 | (9.74) | (0.208) | (1.12) | (24.20) | (14.65) | (0.240) | 45.28 | 107 | (12.33) | (2.19) | 69.94 | | | |

CRM LITHIUM ORE

| analysis listed in mass % | | | | | | | | | | | | | | | | | |
|---|----------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------|----------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|-------------------------------|-------------------|------------------|------------------|--------|
| Number | Li ₂ O | Al ₂ O ₃ | CaO | Cs ₂ O | F- | FeO | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Rb ₂ O | SiO ₂ | TiO ₂ | LOI |
| NCS DC86314 | 3.89 | 24.53 | 0.063 | 0.30 | 5.08 | (0.043) | 0.30 | (2.77+) | 7.75 | 0.027 | 0.40 | 1.08 | 0.13 | 1.24 | 53.92 | 0.029 | (5.34) |
| NCS DC86304 | 2.29 | 19.12 | 0.076 | 0.177 | 3.12 | (0.020) | 0.301 | 2.29- | 4.80 | 0.036 | 0.252 | 2.33 | 0.237 | 0.735 | 64.64 | 0.028 | 4.06 |
| NCS DC86303 | 0.460 | 14.76 | 0.335 | 0.037 | 0.667 | (0.062) | 0.394 | 1.06- | 3.17 | 0.054 | 0.070 | 4.19 | 0.173 | 0.145 | 74.37 | 0.018 | 1.48 |
| continued analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | |
| Number | BeO% | CeO ₂ | Dy ₂ O ₃ | Er ₂ O ₃ | Eu ₂ O ₃ | Gd ₂ O ₃ | Ho ₂ O ₃ | La ₂ O ₃ | Lu ₂ O ₃ | Nb ₂ O ₅ | Nd ₂ O ₃ | Pr ₆ O ₁₁ | | | | | |
| NCS DC86314 | 0.0164 | (1.88) | 0.50 | 0.24 | 0.10 | 0.56 | 0.094 | 1.16 | 0.036 | 81 | 1.66 | 0.46 | | | | | |
| NCS DC86304 | 0.026 | 2.6 | 0.64 | 0.26 | 0.13 | 0.75 | (0.13) | (2.1) | 0.034 | 61.1 | 2.8 | 0.63 | | | | | |
| NCS DC86303 | 0.018 | 9.0 | 2.5 | 1.2 | (0.14) | 2.1 | 0.45 | 5.1 | 0.18 | 27.0 | 5.0 | 1.3 | | | | | |
| Number | RE _x O _y * | Sc ₂ O ₃ | Sm ₂ O ₃ | Sn | Ta ₂ O ₅ % | Tb ₄ O ₇ | Tm ₂ O ₃ | W | Y ₂ O ₃ | Yb ₂ O ₃ | Units | | | | | | |
| NCS DC86314 | 10.7 | 0.31 | 0.52 | 152 | . | 0.10 | 0.038 | 79.0 | 3.06 | 0.22 | 70 g | | | | | | |
| NCS DC86304 | 15.2 | 0.44 | 0.64 | 97.1 | 0.012 | 0.13 | 0.040 | 43.7 | 3.4 | 0.23 | 70 g | | | | | | |
| NCS DC86303 | 47.0 | 0.98 | 1.6 | (36) | 0.00494 | 0.43 | 0.18 | 8.9 | 16.9 | 1.3 | 70 g | | | | | | |

* RE_xO_y : Rare Earth Oxide
X Y

CRM LITHIUM ORE

45 g units

| Number | Li ₂ O% |
|---------|--------------------|
| SRM 181 | 6.39 |
| SRM 182 | 4.34 |
| SRM 183 | 4.12 |

CRM LUJAVRITE

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | CaO | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | TiO ₂ | Ba | Be | Co | Cr | Cu | Ga | Ge |
|------------|------------------|--------------------------------|---------|-------|--------------------------------|------------------|--------|--------|-------------------|------------------|--------|---------|---------|---------|---------|--------|---------|
| VS 2124-81 | 56.13 | 16.96 | 1.25 | 1.14 | 5.52 | 6.23 | 0.74 | 0.254 | 9.26 | 0.92 | 0.080 | 0.00139 | 0.00063 | 0.00125 | 0.00111 | 0.0063 | 0.00013 |
| continued | | | | | | | | | | | | | | | | | |
| Number | La | Li | Mo | Nb | Ni | Pb | Rb | Sn | Sr | V | Y | Yb | Zn | Units | | | |
| VS 2124-81 | 0.040 | 0.0037 | 0.00028 | 0.034 | 0.00078 | 0.0020 | 0.0250 | 0.0014 | 0.080 | 0.0086 | 0.0081 | 0.00057 | 0.012 | 40 g | | | |

CRM LOW BORON MAGNESITE

| Number | Al | B | Ca | Cr | Fe | K | Mg | Mn | Na | P | Si | Ti | Units |
|------------|-------|--------|-------|----------|------|----------|---------|-------|----------|--------|-------|--------|-------|
| ECRM 779-1 | 0.105 | 0.0116 | 1.691 | (0.0030) | 3.73 | (0.0020) | (54.57) | 0.503 | (0.0058) | 0.0267 | 0.182 | 0.0081 | 100 g |

CRM MAGNESITE

| analysis listed in mass % | | | | | | | | | | | | 100 g units | | | | | | | | analysis listed in mg/kg | | | | | | | |
|---------------------------|-------|--------------------------------|------|--------------------------------|-------|------------------|-------|-------------------|-------------------------------|------------------|------------------|-------------|------|----|-------|------|-----|----|------|--------------------------|--|--|--|--|--|--|--|
| Number | MgO | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | FeO | K ₂ O | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | Ba | Ce | Co | Cr | Cu | Ni | Sr | Zn | | | | | | | | |
| SARM 43 | 44.11 | (0.06) | 0.89 | 0.26 | (0.1) | (0.04) | (0.1) | (0.05) | (0.02) | 5.99 | (0.01) | (25) | (20) | 4 | (195) | (15) | 252 | 8 | (10) | | | | | | | | |

MAGNESITE

| # = class, where 1 = CRM and 2 = RM | | analysis listed in mass % | | | | | | | | | | CERAM: 25 or 100g | NCS: 50g | NH: 75g | others: 100g | | |
|-------------------------------------|--------------|---------------------------|--------------------------------|-------------------------------|-------|--------------------------------|--------------------------------|------------------|-------|--------------------------------|-------------------|-------------------------------|----------|------------------|-------------------------|------------------|-------|
| # | Number | MgO | Al ₂ O ₃ | B ₂ O ₃ | CaO | Cr ₂ O ₃ | Fe ₂ O ₃ | K ₂ O | MnO | Mn ₂ O ₃ | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | SrO | TiO ₂ | LOI |
| 1 | BCS 389/1 | 97.89 | 0.104 | . | 0.880 | . | 0.607 | . | 0.100 | . | . | 0.0295 | . | 0.274 | . | 0.0052 | . |
| 1 | BCS 319/1 | 95.38 | 0.109 | . | 3.00 | 0.0035 | 0.291 | . | 0.108 | . | . | . | . | 1.093 | . | 0.0070 | . |
| 2 | CERAM AN37 | 94.00 | . | 0.09 | 1.46 | 0.005 | 1.80 | <0.01 | . | 0.12 | <0.05 | 0.02 | . | 1.39 | . | 0.03 | . |
| 2 | CERAM AN36 | 93.30 | . | 0.09 | 0.94 | 0.004 | 4.66 | <0.01 | . | 0.11 | <0.05 | 0.008 | . | 0.48 | . | 0.01 | . |
| 1 | ECRM 778-1 | 81.02 | 0.56 | . | 1.23 | 0.15 | 0.96 | . | 0.014 | . | . | (0.009) | . | 1.05 | . | (0.013) | . |
| 1 | NCS DC28090 | 46.40 | 0.10 | . | 0.53 | . | 0.65 | 0.0050 | 0.016 | . | 0.017 | 0.013 | 0.0027 | 0.32 | 0.005 | 0.0060 | 51.58 |
| 1 | USZ 37-2003 | 45.80 | 0.04 | . | 1.69 | . | 0.05 | 0.011 | . | . | . | . | . | 0.25 | CO ₂ : 48.31 | 51.35 | . |
| 1 | UNS MK | 45.22 | 0.414 | . | 0.581 | . | . | 0.013 | 0.160 | . | 0.024 | 0.055 | . | 0.593 | CO ₂ : 2 | 0.019 | . |
| 1 | NCS DC28089 | 43.45 | 1.14 | . | 1.52 | . | 1.74 | 0.037 | 0.095 | . | 0.018 | 0.036 | 0.015 | 4.13 | 0.0013 | 0.041 | 47.35 |
| 1 | NCS DC28089a | 43.44 | 1.46 | . | 1.26 | . | 1.66 | 0.044 | 0.083 | . | 0.020 | 0.037 | 0.015 | 4.95 | 0.0014 | 0.048 | 46.57 |
| 2 | CERAM AN43 | . | . | 0.005 | . | . | . | (0.06) | . | . | . | . | . | . | . | . | . |
| 2 | CERAM AN45 | . | . | 0.222 | . | . | . | . | . | . | . | . | . | . | . | . | . |

RM MAGNESITE

| typical analysis listed in mass % | | | | | | | | | | | | | | | | 100 g units | |
|-----------------------------------|-------|--------------------------------|--------|-----------------|-------|--------------------------------|--------------------------------|------------------|--------------------------------|-------------------|-------------------------------|-------|-----------------|------------------|------------------|----------------------------|--|
| Number | MgO | Al ₂ O ₃ | C tot. | CO ₂ | CaO | Cr ₂ O ₃ | Fe ₂ O ₃ | K ₂ O | Mn ₃ O ₄ | Na ₂ O | P ₂ O ₅ | S | SO ₃ | SiO ₂ | TiO ₂ | -H ₂ O at 900°C | |
| DH 4209 | 98.03 | 0.098 | 0.031 | 0.132 | 0.866 | 0.016 | 0.515 | . | 0.107 | . | 0.027 | . | 0.012 | 0.222 | 0.007 | . | |
| DH 4203 | 76.81 | 1.27 | 0.396 | 0.104 | 1.29 | 0.119 | 2.75 | 0.019 | 0.090 | 0.375 | 0.059 | . | 0.070 | 15.94 | 0.054 | 1.01 | |
| DH 4208 | 47.83 | 41.66 | 0.353 | 0.580 | 2.06 | 0.040 | 1.49 | 0.037 | 0.070 | . | 0.077 | 0.007 | . | 5.09 | 0.066 | 0.894 | |

continued

| Number | V ₂ O ₅ | ZnO | ZrO ₂ |
|---------|-------------------------------|-------|------------------|
| DH 4209 | 0.003 | 0.003 | . |
| DH 4203 | . | . | . |
| DH 4208 | 0.001 | 0.006 | 0.091 |

CRM MANGANESE NODULE

analysis listed in mass % except * which is mg/kg T = Total * AMIS lists Mn by XRF and M/ICP

| Number | MnO | MnO ₂ | Al ₂ O ₃ | COrg | CO ₂ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Density | Units |
|------------|--------|------------------|--------------------------------|------|-----------------|------|--------------------------------|------------------|--------|-------------------|-------------------------------|------------------|------------------|--------|---------|--------------|
| US NOD-P-1 | 37.6 | . | 4.8 | . | . | 3.1 | 8.3T | 1.2 | 3.3 | 2.2 | 0.46 | 13.9 | 0.5 | . | . | 25 g |
| AMIS 0104* | 35.31* | 35.49* | 2.20 | . | . | 1.34 | 20.78 | 0.26 | (0.35) | (0.10) | (P: 192*) | 18.30 | 0.27 | (3.28) | 4.32 | 100 g or 1kg |
| VS 5374-90 | 35.09T | 41.7 | 5.68 | 0.18 | 0.43 | 2.82 | 9.28T | 1.27 | 3.40 | 2.94 | 0.68 | 16.60 | 0.74 | 15.3 | . | 50 g |
| JMn-1 | 33.09 | . | 4.30 | . | . | 2.91 | 14.40T | 0.94 | 3.12 | 2.80 | 0.54 | 14.11 | 1.06 | . | . | 100 g |
| VS 5375-90 | 25.16T | 31.1 | 5.46 | 0.22 | 0.60 | 3.01 | 24.87T | 0.83 | 2.24 | 2.40 | 0.80 | 14.50 | 1.91 | 13.8 | . | 50 g |
| US NOD-A-1 | 23.9 | . | 3.87 | . | . | 15.4 | 15.6T | 0.6 | 4.76 | 1.0 | 1.40 | 3.81 | 0.53 | . | . | 25 g |
| VS 5376-90 | 19.85T | 24.2 | 6.71 | . | 0.50 | 5.13 | 22.13T | 1.18 | 2.29 | 2.24 | 1.61 | 22.30 | 1.56 | 11.4 | . | 100 g |

| Number | As | Au* | B* | Ba | Be* | Bi* | C* | Cd* | Ce | Cl | Co | Cr | Cr ₂ O ₃ | Cs* | Cu | Dy* |
|------------|----------|-----------|-------|--------|-------|--------|-------|--------|-----------|-----|--------|-----------|--------------------------------|--------|----------|--------|
| US NOD-P-1 | . | . | . | 0.3350 | . | . | . | . | (0.0290) | . | 0.2240 | . | . | . | 1.1500 | (27) |
| AMIS 0104 | (0.0116) | . | . | 2.86 | (2.1) | (0.61) | . | (0.78) | (0.02994) | . | 0.0240 | (0.01802) | (0.03) | (0.19) | (0.0192) | (10.6) |
| VS 5374-90 | 0.006 | 0.005 | . | 0.18 | . | . | . | 17 | 0.020 | 0.7 | 0.220 | 0.0018 | . | . | 1.01 | . |
| JMn-1 | 0.00754 | (0.00095) | (138) | 0.1714 | (7.8) | (4.3) | (905) | (15.5) | 0.0277 | . | 0.1732 | 0.00266 | . | 0.60 | 1.1132 | (28.3) |
| VS 5375-90 | 0.017 | 0.010 | . | 0.17 | . | . | . | 5 | 0.09 | 0.9 | 0.47 | 0.0019 | . | . | 0.22 | . |
| US NOD-A-1 | . | . | . | 0.1670 | . | . | . | . | (0.0730) | . | 0.3110 | . | . | . | 0.1100 | (23) |
| VS 5376-90 | 0.014 | . | . | 0.16 | 19 | . | . | . | 0.10 | . | 0.27 | 0.0067 | . | . | 0.13 | . |

| Number | Er* | Eu* | Ga* | Gd* | Ge* | H ₂ O+ | Hf* | Ho* | In* | La | Li | Lu* | Mo | Nb | Nd | Ni |
|------------|-------|-------|--------|--------|-------|-------------------|-------|-------|--------|-----------|-----------|--------|-----------|-----------|-----------|-----------|
| US NOD-P-1 | (12) | (7.5) | . | (28) | . | . | . | . | . | (0.0104) | . | (1.8) | 0.0760 | . | (0.0120) | 1.3400 |
| AMIS 0104 | (5.7) | (4.3) | (35.8) | (12.1) | (1.7) | . | (3.0) | (2.0) | (0.05) | (0.00444) | (0.00183) | (0.66) | (0.00047) | (0.00055) | (0.00557) | (0.00421) |
| VS 5374-90 | . | . | . | . | . | . | . | . | . | 0.009 | 0.014 | . | 0.052 | 0.0020 | 0.008 | 1.37 |
| JMn-1 | 14.6 | 7.6 | (37.1) | (29.8) | . | (7.90) | (6.2) | (5.8) | . | 0.0122 | (0.00717) | 2.1 | 0.0318 | (0.00276) | 0.0137 | 1.2632 |
| VS 5375-90 | . | . | . | . | . | . | . | . | . | 0.014 | 0.004 | . | 0.033 | 0.009 | 0.014 | 0.422 |
| US NOD-A-1 | (12) | (5) | . | (26) | . | . | . | . | . | (0.0120) | . | (2.2) | 0.0448 | . | (0.0094) | 0.6360 |
| VS 5376-90 | . | . | . | . | . | . | . | . | . | 0.012 | 0.0019 | . | 0.035 | 0.006 | 0.010 | 0.34 |

| Number | Li | Lu* | Mo | Nb | Nd | Ni | Pb | Pd* | Pr* | Pt* | Rb* | S | Sb* | Sc |
|------------|-----------|--------|-----------|-----------|-----------|-----------|-----------|-------|--------|---------|-------|----------|-------|--------|
| US NOD-P-1 | . | (1.8) | 0.0760 | . | (0.0120) | 1.3400 | 0.0560 | . | . | . | . | . | . | . |
| AMIS 0104 | (0.00183) | (0.66) | (0.00047) | (0.00055) | (0.00557) | (0.00421) | (0.00507) | . | (12.6) | . | (5.3) | (0.32) | (9.7) | (4.6) |
| VS 5374-90 | 0.014 | . | 0.052 | 0.0020 | 0.008 | 1.37 | 0.040 | . | . | 0.10 | 21 | 0.10 | . | 11 |
| JMn-1 | (0.00717) | 2.1 | 0.0318 | (0.00276) | 0.0137 | 1.2632 | 0.0430 | . | (31.4) | (0.110) | 10.9 | (0.0940) | 37.5 | (13.0) |
| VS 5375-90 | 0.004 | . | 0.033 | 0.009 | 0.014 | 0.422 | 0.098 | 0.003 | . | 0.21 | 10 | 0.16 | . | 13 |
| US NOD-A-1 | . | (2.2) | 0.0448 | . | (0.0094) | 0.6360 | 0.0846 | . | . | . | . | . | . | . |
| VS 5376-90 | 0.0019 | . | 0.035 | 0.006 | 0.010 | 0.34 | 0.105 | . | . | . | 19 | 0.16 | . | 19 |

| Number | Sm | Sn* | Sr | Ta* | Tb* | Th* | Tl | Tm* | U* | V | W* | Y | Yb* | Zn | Zr |
|------------|-----------|-------|----------|--------|-------|-------|---------|--------|--------|----------|--------|-----------|-------|--------|-----------|
| US NOD-P-1 | (0.0030) | . | 0.0680 | . | . | . | . | . | 0.0570 | . | . | . | (1.3) | 0.1600 | . |
| AMIS 0104 | (0.00128) | (2.0) | (0.0309) | (0.21) | (1.8) | (9.5) | (0.42*) | (0.78) | (8.1) | (0.0108) | (3.5) | (0.00412) | (4.9) | 0.0142 | (0.01341) |
| VS 5374-90 | 0.0022 | . | 0.064 | . | 17 | . | . | 4 | 0.043 | . | 0.011 | 13 | 0.12 | 0.032 | . |
| JMn-1 | 0.00302 | (4.4) | 0.0792 | (0.64) | 4.8 | 11.7 | . | 2.1 | 5.0 | 0.0424 | (45.3) | 0.0111 | 13.8 | 0.1068 | 0.0344 |
| VS 5375-90 | 0.003 | . | 0.11 | . | . | 38 | . | . | 8 | 0.048 | . | 0.014 | 14 | 0.058 | 0.060 |
| US NOD-A-1 | (0.0021) | . | 0.1750 | . | . | . | . | . | 0.0770 | . | . | . | (14) | 0.0590 | . |
| VS 5376-90 | 0.0027 | . | 0.11 | . | . | 28 | 0.010% | . | 6 | 0.054 | . | 0.016 | 6 | 0.060 | 0.055 |

CRM MANGANESE NODULE

analysis in mass %

| Number | SiO ₂ | Co | Cu | T.Fe | T.Mn | Ni | Units |
|---------|------------------|------|------|-------|-------|------|---------------------|
| NM 2388 | 16.07 | 0.14 | 0.49 | 14.94 | 21.28 | 0.71 | 100 g last of stock |

CRM MARIPOLITE

analysis listed in mass %

40 g units

| Number | Al ₂ O ₃ | CO ₂ | CaO | FeO | Fe ₂ O ₃ | K ₂ O | MnO | Na ₂ O | Nb | Rb | SiO ₂ | TiO ₂ |
|------------|--------------------------------|-----------------|------|------|--------------------------------|------------------|-------|-------------------|-------|-------|------------------|------------------|
| VS 2122-81 | 21.96 | 0.72 | 1.20 | 0.88 | 2.05 | 4.30 | 0.085 | 10.79 | 0.034 | 0.030 | 56.29 | 0.045 |

continued

analysis listed in mg/kg

| Number | Ba | Be | Cr | Cu | Ga | Ge | La | Li | Mo | Ni | Pb | Sn | Sr | V | Y | Yb | Zn | Zr |
|------------|-----|----|-----|----|----|-----|-----|-----|-----|-----|----|----|-----|----|----|----|----|----|
| VS 2122-81 | 170 | 86 | 9.8 | 21 | 80 | 1.4 | 130 | 4.3 | 5.2 | 6.5 | 25 | 15 | 120 | 13 | 64 | 5 | 69 | 70 |

CRM MERCURY ORE

analysis listed in mass %

100 g units

| Number | Hg | Al ₂ O ₃ | CaO | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | SiO ₂ | TiO ₂ | Co | Cr | Cu | Ni | Sr | V | LOI |
|-------------|--------|--------------------------------|-------|------|--------------------------------|------------------|------|------|-------------------|------------------|------------------|--------|------|--------|------|--------|--------|-------|
| USZ 43-2006 | 0.0689 | 0.53 | 17.39 | 0.49 | 4.66 | 0.03 | 9.93 | 0.29 | 0.07 | 41.01 | 0.018 | 0.0047 | 0.21 | 0.0007 | 0.10 | 0.0382 | 0.0038 | 25.28 |

**MICROSAMPLES**

The USGS Microanalytical Reference Materials (MRMs) are designed for use in the quantitative analysis of geologic samples using direct solid sampling techniques such as Laser Ablation ICP-MS. Recommended and informational total element concentrations were obtained through international round robin analysis using both bulk and microanalytical data.

Samples are distributed in polished epoxy mounts and ready for immediate use. These MRMs are supplied as individual samples or as sets contained within a plastic holder. Accessories are also available which integrate the USGS MRM holder with standard sample chamber mounts for CETAC® and New Wave® laser ablation systems.

MOUNTED MICROANALYTICAL REFERENCE MATERIALS

| Number | Material Type | Form | Comments | Mount Color |
|---------------|------------------------|-------------|------------------|-------------|
| US MM BCR-2G | Basalt Glass | Epoxy Mount | Melted BCR-2 | Colorless |
| US MM BHVO-2G | Basalt Glass | Epoxy Mount | Melted BHVO-2 | Magenta |
| US MM BIR-1G | Basalt Glass | Epoxy Mount | Melted BIR-1 | Yellow |
| US MM NKT-1G | Nephelinite Glass | Epoxy Mount | Melted NKT-1 | Magenta |
| US MM TB-1G | Basalt Glass | Epoxy Mount | Melted TB-1 | Orange |
| US MM GSC-1G | Synthetic Basalt Glass | Epoxy Mount | Traces ~ 3 ppm | Light Blue |
| US MM GSD-1G | Synthetic Basalt Glass | Epoxy Mount | Traces ~ 30 ppm | Medium Blue |
| US MM GSE-1G | Synthetic Basalt Glass | Epoxy Mount | Traces ~ 300 ppm | Dark Blue |

PRESSED POWDER MICROANALYTICAL REFERENCE MATERIALS

| Number | Material Type | Form | Comments |
|--------------|-----------------------------|----------------|----------------------|
| US MP MASS-1 | Synthetic Polymetal Sulfide | Pressed Pellet | Pellet in 19 mm ring |
| US MP MACS-3 | Synthetic Calcium Carbonate | Pressed Pellet | Pellet alone |

MICROANALYTICAL ACCESSORIES FOR LASER ABLATION

| Number | Description | Comments |
|----------------|--|--|
| US MA SH-V1 | Sample Holder | Plastic, will hold 4 RM plugs |
| US MA CM-V1 | Cetac system sample mount | Mount for sample holder to fit Cetac |
| US MA NWM-V1 | New Wave system sample mount | Mount for sample holder to fit New Wave chambers |
| US MA RM KIT-1 | Contains 1 each of GSD-1G, BCR-2G, BHVO-2G, BIR-1G, and sample holder (SH-V-1) | |



US MA SH-V1



US MA CM-V1



US MA NWM-V1



US MA RM KIT-1

RM MOLOCHITE

analysis listed in mass %

25 or 100 g units

| Number | Al ₂ O ₃ | BaO | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Mn ₃ O ₄ | Na ₂ O | P ₂ O ₅ | SiO ₂ | SrO | TiO ₂ | ZrO ₂ |
|------------|--------------------------------|------|------|--------------------------------|------------------|------|--------------------------------|-------------------|-------------------------------|------------------|------|------------------|------------------|
| CERAM AN40 | 37.9 | 0.03 | 0.14 | 0.85 | 1.52 | 0.24 | 0.01 | 0.12 | 0.11 | 58.8 | 0.02 | 0.06 | 0.016 |

CRM MOLYBDENUM ORE AND CONCENTRATE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

50 g units

| Number | Mo | Al ₂ O ₃ | Ba | CaO | F | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | S | SiO ₂ | TiO ₂ | W | WO ₃ | Zn | Zr |
|------------|-------|--------------------------------|------|-------|------|--------------------------------|------------------|------|------|-------------------|------|------------------|------------------|------|-----------------|----------|-------|
| GBW 07238 | 1.51 | 3.46 | . | 31.44 | 4.08 | 21.34 | 0.046 | 0.86 | 1.40 | 0.075 | 1.64 | 34.10 | 0.13 | 0.36 | . | 0.000655 | . |
| GBW 07239 | 0.11 | 7.27 | . | 23.03 | 1.33 | 14.66 | 0.82 | 1.83 | 1.49 | 0.77 | 0.48 | 46.67 | 0.36 | 0.10 | . | 0.012 | . |
| KZ 7025-93 | 0.067 | . | 0.27 | . | . | . | . | . | . | . | . | . | . | . | 0.04 | . | 0.013 |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | As | Be | Bi | Cd | Ce | Cr | Cu | Dy | Eu | Er | Ga | Gd | Ge | Ho | In | La | Li | Lu |
|------------|------|-----|----|-----|------|------|------|--------|-----|------|-----|------|-----|------|------|-----|------|-------|------|
| GBW 07238 | 0.09 | 1.6 | . | 2.2 | 0.12 | 20.8 | (24) | 93.6 | 1.8 | 0.59 | 1.0 | 25.1 | 1.9 | 19.0 | 0.36 | 2.9 | 7.1 | (3.2) | 0.16 |
| GBW 07239 | 0.12 | 1.0 | . | 1.0 | 0.09 | 60.3 | (35) | 48.6 | 5.8 | 1.5 | 3.2 | 23.1 | 5.8 | 12.4 | 1.2 | 1.3 | 37.4 | (13) | 0.41 |
| KZ 7025-93 | 0.8 | . | 19 | 51 | . | . | . | 0.077% | . | . | . | . | . | . | . | . | . | . | . |

| Number | Nb | Nd | Ni | Pb | Pr | Re | Sb | Sc | Se | Sm | Sn | Tb | Te | Th | Tl | Tm | Y | Yb |
|------------|----|------|------|------|-----|--------|------|-----|------|-----|------|------|------|-----|------|------|------|-----|
| GBW 07238 | . | 11.3 | 17.8 | 18.7 | 3.0 | (0.35) | 1.2 | 3.4 | 2.1 | 2.1 | 86.7 | 0.34 | 0.40 | 2.3 | 0.06 | 0.14 | 11.4 | 1.0 |
| GBW 07239 | . | 29.8 | 20.9 | 26.1 | 7.4 | (0.12) | 0.26 | 8.4 | 0.27 | 6.4 | 33.2 | 0.98 | 0.14 | 9.7 | 0.21 | 0.44 | 34.2 | 2.8 |
| KZ 7025-93 | 13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

CRM MOLYBDENUM ORE AND CONCENTRATE

% = mass % * = mg/kg

Insol = Insoluble Residue

| Number | Mo% | Ag* | As* | Bi* | Cu% | Fe% | Insol% | Na% | P% | Pb% | Re% | S% | Sb* | SiO ₂ % | W* | Zn% | Units |
|-------------|---------|------|-------|------|---------|--------|--------|-------|---------|----------|---------|---------|------|--------------------|------|---------|-------|
| SRM 423 | 58.61 | (29) | . | (60) | 0.0640 | 1.708 | 7.69 | (0.2) | . | 0.0433 | (0.004) | (0.063) | (24) | . | . | (0.017) | 60 g |
| CGL 202 | 51.5 | . | (278) | . | (1.34) | (1.44) | . | . | (0.014) | (0.0160) | (0.05) | (35.66) | . | (4.50) | . | . | 100 g |
| NCS DC93010 | 40.83 | . | 160 | . | 0.26 | . | . | . | 0.013 | 0.46 | . | . | . | 22.07 | . | . | 50 g |
| GMO-04 | 0.7949 | 1.93 | 4.52 | 95 | 0.0240 | . | . | . | . | 0.0046 | . | . | 8.9 | . | . | 0.0128 | 250 g |
| GMO-03 | 0.5329 | 1.47 | 3.50 | 72 | 0.0191 | . | . | . | . | 0.0037 | . | . | 6.8 | . | . | 0.0122 | 250 g |
| GMO-12 | 0.4797 | 1.04 | 3.5 | 50.0 | 0.01425 | . | . | . | . | 0.00346 | . | 0.39 | 4.41 | . | 1.2 | 0.0104 | 250 g |
| GMO-11 | 0.2937 | 0.89 | 3.3 | 40.2 | 0.01155 | . | . | . | . | 0.00319 | . | 0.26 | 3.40 | . | 0.8 | 0.0101 | 250 g |
| GMO-10 | 0.0953 | 0.55 | 2.6 | 15.3 | 0.00698 | . | . | . | . | 0.00262 | . | 0.13 | 1.36 | . | 0.6 | 0.0096 | 250 g |
| GMO-07 | 0.00447 | 6.10 | 74.00 | 0.3 | 0.0014 | . | . | . | . | 0.0011 | . | . | 0.1 | . | last | 0.0011 | 250 g |
| GMO-05 | 0.00277 | 0.88 | 12.71 | 11 | 0.0639 | . | . | . | . | 0.0013 | . | . | 0.5 | . | . | 0.0087 | 250 g |

RM MOLYBDENUM CONCENTRATE

analysis listed in mass %

100 g units

| Number | Mo | Al ₂ O ₃ | Tot.C | CaO | Cr ₂ O ₃ | CuO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | S | SiO ₂ | SrO | TiO ₂ | V ₂ O ₅ | ZnO |
|---------|-------|--------------------------------|-------|-------|--------------------------------|-------|--------------------------------|------------------|-------|-------|-------------------|-------|------------------|-------|------------------|-------------------------------|-------|
| DH 4707 | 61.08 | 0.702 | 0.040 | 1.61 | 0.004 | 0.504 | 1.80 | 0.182 | 0.117 | 0.008 | 0.045 | 0.069 | 4.38 | . | 0.040 | . | 0.064 |
| DH 4708 | 59.97 | 0.959 | 0.054 | 0.99 | 0.38 | 0.402 | 1.96 | 0.188 | 0.109 | 0.009 | 0.042 | 0.124 | 5.53 | 0.009 | 0.048 | 0.010 | 0.018 |
| DH 4706 | 57.55 | 1.178 | 0.016 | 0.644 | . | 0.106 | 3.83 | 0.407 | 0.207 | 0.036 | 1.009 | 0.050 | 7.52 | . | 0.092 | . | . |

CRM MULTI-METAL ORE

| analysis listed in mass % | | | | | | | | | | | | | 50 g units | |
|---------------------------|--------------------------------|------|-----|-------|------|------------------|------|-------|-------------------|------|------|------------------|------------|--|
| Number | Al ₂ O ₃ | As | CaO | Cu | Fe | K ₂ O | MgO | Mn | Na ₂ O | Pb | S | SiO ₂ | Zn | |
| NCS DC73510 | (2.5) | 0.15 | 6.5 | 0.096 | 19.6 | 0.78 | 0.59 | 0.066 | (0.03) | 5.13 | 29.0 | 14.1 | 13.9 | |

continued analysis listed in mg/kg except

| Number | Ag | Bi | Cd | Ga | Ge | Hg | In | Mo | Sb | Tl | W |
|-------------|-----|-----|-----|----|----|-----|-------|-------|-----|-------|-------|
| NCS DC73510 | 148 | (5) | 400 | 62 | 25 | 114 | (7.5) | (1.9) | 260 | (0.3) | (1.9) |

CRM MULTI-METAL ORE

analysis in mass % except g/T for grams per ton and * for mg/kg

| Number | Ag | Al ₂ O ₃ | As | Bi | Cd | Cu | Fe | Hg* | Pb | S | Sb | SiO ₂ | Sn | Zn | LOI | Units |
|-------------|----------|--------------------------------|--------|-------|-------|-------|----------|---------|--------------|---------|---------|------------------|-------|-------|---------|-------|
| NCS DC29114 | 0.03679 | (1.42) | 0.138 | . | 0.066 | 0.071 | (11.48T) | (270) | 22.96 | (15.92) | 0.044 | (20.20) | . | 16.22 | (12.14) | 50 g |
| NCS DC29112 | 0.0362 | (7.83) | 0.082 | . | . | 0.10 | (11.61T) | (0.233) | 2.93 | (8.17) | 0.011 | (59.40) | . | 0.51 | (10.49) | 50 g |
| NCS DC29113 | 0.0103 | (3.97) | 0.040 | . | . | 0.075 | (8.65T) | (0.074) | 2.19 | (6.02) | 0.00383 | (31.99) | . | 1.54 | (13.40) | 50 g |
| NCS DC35008 | 19.8 g/T | . | 0.084 | . | . | 0.037 | 22.62 | . | 2.07 | . | 0.013 | . | 0.125 | 0.51 | . | 60 g |
| NCS DC29115 | 0.000530 | (3.25) | 0.0095 | . | 0.119 | 0.021 | (3.93T) | (84.8) | 1.25 | (16.30) | 0.00205 | (41.23) | . | 30.19 | (9.52) | 50 g |
| NCS DC29111 | 0.00129 | (9.96) | 0.0090 | . | 0.019 | 0.020 | (2.62T) | (12.6) | 0.48 | (3.13) | 0.00090 | (69.88) | . | 4.94 | (3.70) | 50 g |
| NCS DC35009 | . | 6.70 | 2.17 | 0.120 | . | 1.09 | . | . | 0.095 | . | . | 4.99 | 0.930 | 1.49 | . | 60 g |

T = Total Fe as Fe₂O₃

CRM MULTI-METAL ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % CAN PTC-1b shows classical and instrumental values for Cu and Ni # SiO₂* RTS-5: 100 g others: 200 g

| Number | Al | As | Ca | Cu | Fe | Mg | Mo | Ni | Pb | S | Si | Sn | W | Zn | LOI |
|------------|----------|----------|---------|-------------|-------|--------|-------------|---------------|---------|-------|--------|----------|----------|--------|---------|
| CAN RTS-5 | 6.25 | 0.1286 | 3.86 | 0.0647 | 11.9 | 3.31 | (0.0001338) | 0.1104 | 0.00663 | 1.924 | 19.20 | . | . | 0.0105 | (9.90) |
| CAN MP-2a | 5.99 | (0.558) | 3.22 | 0.0459 | 5.00 | 0.0923 | 0.1586 | (0.00098) | 0.277 | 0.716 | 31.2 | 0.0537 | 0.338 | 0.566 | (4) |
| CAN SU-1b | 4.30 | 0.000249 | 2.21 | 1.185 | 25.54 | 1.790 | (0.0004) | 1.953 | 0.0058 | 14.14 | 15.23 | . | . | 0.0235 | (8) |
| CAN PTC-1b | (0.7518) | 0.0222 | (0.571) | 7.919,7.97# | 36.78 | 0.441 | (0.0011) | 11.256,11.29# | 0.0795 | 29.95 | 2.468 | (0.0120) | . | 0.2083 | (13.44) |
| CAN MP-1b | 2.30 | 2.47 | 3.069 | 8.19 | 0.024 | 0.0285 | . | . | 2.091 | 13.79 | 16.79* | 1.61 | (0.1100) | 16.67 | . |
| CAN RTS-5 | 6.25 | 0.1286 | 3.86 | 0.0647 | 11.9 | 3.31 | (0.0001338) | 0.1104 | 0.00663 | 1.924 | 19.20 | . | . | 0.0105 | (9.90) |

continued analysis listed in mg/kg except % for mass %

| Number | Ag | Au | Ba | Be | Bi | C% | Cd | Ce | Co | Cr | Cs | Dy | Er | Eu | Ga | Gd | Ge |
|------------|------|--------|--------|-------|--------|---------|------|--------|------|-------|-------|-------|--------|-------|--------|------|-----|
| CAN RTS-5 | 1.50 | 0.408 | 252 | (0.7) | (2.05) | (1.617) | . | (17.0) | 76.9 | 261 | (1.0) | (2) | (2) | (0.6) | (14) | . | . |
| CAN MP-2a | 4.82 | (0.06) | 12.3 | 1.25 | 989 | (0.04) | 14.5 | 357 | 5.50 | 150 | 5.78 | 32.5 | (22.8) | (0.1) | (26.2) | 24.8 | (8) |
| CAN SU-1b | 6.39 | (0.2) | (350) | (0.4) | (2.73) | (0.04) | (3) | (35) | 672 | (320) | (0.3) | (1.4) | (0.7) | (0.7) | (10) | (2) | . |
| CAN PTC-1b | 53.1 | 1.99 | (61.5) | . | . | . | (38) | . | 3253 | (40) | . | . | . | . | . | . | . |
| CAN MP-1b | 470 | . | . | . | 954 | (0.028) | 527 | . | (4) | . | . | . | . | (1) | . | . | . |

| Number | H ₂ O% | Hf | Ho | In | Ir | K% | La | Li | Lu | Mn% | Na% | Nb | Nd | P% | Pd | Pr | Pt |
|------------|-------------------|------|--------|---------|--------|---------|-------|--------|----------|----------|--------|-----|-------|----------|--------|------|-------|
| CAN RTS-5 | (1.4) | . | . | . | . | 0.850 | (9.7) | (16.9) | (0.3) | 0.1092 | 1.285 | (4) | (8) | 0.0369 | (0.14) | . | (0.2) |
| CAN MP-2a | . | 9.40 | (7.04) | (12.09) | . | (1.226) | 157 | 81 | 4.36 | 0.1018 | (0.03) | 97 | 117.9 | (0.0090) | . | 38.5 | . |
| CAN SU-1b | . | . | (0.3) | . | . | (0.6) | (17) | . | (0.09) | 0.0703 | (1.6) | (3) | (15) | (0.06) | 0.791 | . | 0.491 |
| CAN PTC-1b | 0.81 | . | . | (0.2) | (0.15) | . | . | . | (0.0193) | (0.17) | . | . | . | . | 9.46 | . | 6.47 |
| CAN MP-1b | . | (6) | . | (565) | . | (0.2) | . | . | (4) | (0.0480) | . | . | . | (0.02) | . | . | . |

| Number | Rb | Rh | Sb | Sc | Se | Sm | Sr | Ta | Tb | Te | Th | Ti | Tl | Tm | U | V | Y | Yb | Zr |
|------------|--------|-------|---------------------------|-------|--------|------|-------|------|------|--------|--------|-------|--------|------|-------|--------|--------|-------|-------|
| CAN RTS-5 | (30.5) | . | SO ₄ : (1.23%) | . | (8.03) | . | 130.6 | . | . | . | (2.25) | 3132 | . | . | . | (61.2) | (10.1) | . | . |
| CAN MP-2a | 229 | . | (7.84) | 4.87 | . | 26.7 | 12.3 | . | . | . | 61.3 | 268 | (3.16) | 4.10 | 37 | . | (229) | 28.8 | 134 |
| CAN SU-1b | (13) | . | (0.2) | (9) | (20.7) | (3) | (280) | 11.6 | 4.82 | (5.75) | . | . | (0.3) | . | (0.2) | (82.5) | (7) | (0.6) | . |
| CAN PTC-1b | . | (0.5) | (6) | (120) | . | (30) | . | . | (30) | . | . | (696) | . | . | . | (20) | (3) | . | . |
| CAN MP-1b | . | . | (54.0) | (3) | . | . | . | . | (5) | . | (50) | . | . | . | (20) | . | . | . | (150) |

CRM NICKEL ORE

analysis listed in mass % except * which is mg/kg

GBM: CRM, 250 g

IGS, NCS: CRM, 50 g

JSM: RM, 50 g units

| Number | Ni | Cd | Co | Cr | Cu | Fe | Mn | Pb | S | Zn | Ag* | Al ₂ O ₃ | CaO | MgO | P | SiO ₂ | Ti |
|-------------|---------|-----------|-------|-------|--------|-------|-------|--------|-------|--------|------|--------------------------------|-------|-------|----------|------------------|-------|
| GBM909-15 | 11.5901 | . | . | . | 1.3120 | . | . | 0.2120 | 26.7 | 2.6608 | 13.5 | . | . | . | . | . | . |
| NCS DC28072 | 5.71 | 0.047 | 0.042 | 0.015 | 0.270 | 23.73 | 0.037 | 0.040 | 2.51 | 4.65 | . | 3.91 | 6.47 | 1.14 | 1.61 | 21.10 | 0.15 |
| NCS DC28079 | 3.98 | 0.028 | 0.041 | 0.364 | 0.169 | 20.74 | 0.147 | 0.030 | 1.41 | 2.85 | . | 3.55 | 4.54 | 8.67 | 1.08 | 27.48 | 0.098 |
| GBM911-14 | 3.2361 | . | . | . | 0.2856 | . | . | 0.0091 | 10.5 | 0.0180 | 1.7 | . | . | . | . | . | . |
| GBM310-12 | 2.9934 | . | . | . | 0.9062 | . | . | 0.0030 | 26.4 | 0.0102 | 14.4 | . | . | . | . | . | . |
| GBM312-16 | 2.7983 | . | . | . | 0.3082 | . | . | 0.0059 | 9.8 | 0.0142 | 1.8 | . | . | . | . | . | . |
| GBM910-13 | 2.6969 | . | . | . | 0.2306 | . | . | 0.0034 | 8.2 | 0.0152 | 1.9 | . | . | . | . | . | . |
| GBM911-15 | 2.2856 | . | . | . | 0.5003 | . | . | 0.0253 | 8.1 | 0.0288 | 2.9 | . | . | . | . | . | . |
| JSM 0800-1 | 2.27 | . | 0.053 | 0.70 | . | 14.2 | . | . | . | . | . | 0.98 | 0.030 | 26.2 | . | 35.7 | . |
| NCS DC28078 | 2.18 | (<0.0015) | 0.055 | 0.76 | 0.0058 | 14.89 | 0.254 | 0.0020 | 0.034 | 0.079 | . | 1.59 | 0.46 | 21.28 | 0.029 | 39.20 | 0.027 |
| GBM310-11 | 2.1342 | . | . | . | 1.1695 | . | . | 0.0041 | 18.0 | 0.0142 | 3.5 | . | . | . | . | . | . |
| JSM 0800-2 | 2.07 | . | 0.036 | 0.57 | . | 11.5 | . | . | . | . | . | 1.27 | 0.37 | 23.3 | . | 45.4 | . |
| GBM915-11 | 2.0568 | . | . | . | 1.4092 | . | . | 0.0183 | 6.95 | 0.3387 | 4.3 | . | . | . | . | . | . |
| GBM915-12 | 2.0155 | . | . | . | 0.9137 | . | . | 0.0051 | 6.35 | 0.0573 | 2.5 | . | . | . | . | . | . |
| GBM307-13 | 1.9995 | . | . | . | 0.1251 | . | . | 0.0045 | 6.78 | 0.0117 | . | . | . | . | . | . | . |
| NCS DC28077 | 1.97 | (<0.0015) | 0.060 | 0.823 | 0.0016 | 14.84 | 0.263 | 0.0015 | 0.016 | 0.021 | . | 1.03 | 0.14 | 25.49 | 0.0043 | 36.00 | 0.017 |
| IGS 21 | 1.97 | . | 0.069 | . | 0.798 | 23.40 | . | . | . | . | . | . | . | . | . | . | . |
| JSM 0800-3 | 1.90 | . | 0.072 | 0.84 | . | 15.0 | . | . | . | . | . | 0.84 | 0.034 | 26.1 | . | 34.9 | . |
| GBM907-12 | 1.8948 | . | . | . | 0.0837 | . | . | 0.0068 | 2.89 | 0.0274 | . | . | . | . | . | . | . |
| NCS DC28076 | 1.86 | (<0.0015) | 0.065 | 0.92 | 0.0017 | 15.20 | 0.282 | 0.0016 | 0.016 | 0.021 | . | 1.04 | 0.10 | 25.70 | (<0.007) | 34.70 | 0.015 |
| NCS DC28075 | 1.70 | (<0.0015) | 0.043 | 0.80 | 0.0025 | 14.92 | 0.294 | 0.0013 | 0.014 | 0.019 | . | 2.00 | 0.385 | 21.05 | 0.0043 | 38.77 | 0.039 |
| GBM907-15 | 1.6470 | . | . | . | 0.0290 | . | . | 0.0361 | 2.84 | 0.1396 | . | . | . | . | . | . | . |
| GBM915-14 | 1.3070 | . | . | . | 1.7404 | . | . | 0.0095 | 2.08 | 0.0067 | 18.5 | . | . | . | . | . | . |
| NCS DC28080 | 1.30 | (<0.0025) | 0.033 | 1.38 | 0.0071 | 34.55 | 0.192 | 0.0019 | 0.180 | 0.022 | . | 6.53 | 0.070 | 10.54 | 0.020 | 15.48 | 0.092 |
| GBM316-16 | 1.2733 | . | . | . | 0.0050 | . | . | 0.0012 | 0.10 | 0.0243 | 1.2 | . | . | . | . | . | . |
| GBM316-15 | 1.2308 | . | . | . | 0.0056 | . | . | 0.0022 | 0.10 | 0.0257 | 1.0 | . | . | . | . | . | . |
| NCS DC28073 | 1.17 | (<0.0015) | 0.042 | 0.95 | 0.0049 | 18.57 | 0.327 | 0.0024 | 0.024 | 0.019 | . | 2.90 | 0.82 | 20.75 | (<0.007) | 37.41 | 0.024 |
| GBM907-16 | 1.1511 | . | . | . | 0.0163 | . | . | 0.0105 | 0.79 | 0.0674 | . | . | . | . | . | . | . |
| NCS DC28074 | 0.892 | (<0.0020) | 0.014 | 1.84 | 0.012 | 46.99 | 0.149 | 0.0023 | 0.288 | 0.023 | . | 10.29 | 0.033 | 0.51 | 0.030 | 2.52 | 0.145 |
| GBM305-16 | 0.6503 | . | . | . | 0.0381 | . | . | 0.0026 | . | 0.0092 | . | . | . | . | . | . | . |

| Number | Ni | Cd | Co | Cr | Cu | Fe | Mn | Pb | S | Zn | Ag* | Al ₂ O ₃ | CaO | MgO | P | SiO ₂ | Ti |
|--------|----|----|----|----|----|----|----|----|---|----|-----|--------------------------------|-----|-----|---|------------------|----|
|--------|----|----|----|----|----|----|----|----|---|----|-----|--------------------------------|-----|-----|---|------------------|----|

CRM NICKEL ORE

certified analysis listed in mg/kg except % which is mass %

| Number | Ag | Au | Cu% | Ir | Ni% | Os | Pd | Pt | Rh | Ru | Units |
|------------|------|------|-----|------|-----|------|------|-----|------|------|-------|
| VS 1702-86 | 23.4 | 0.84 | (3) | 0.11 | 5.4 | 0.06 | 30.0 | 8.6 | 0.98 | 0.34 | 200 g |

CRM NICKEL SULPHIDE ORE

analysis listed as mass % except ** for ppb

* indicates certified as element instead of oxide

much more detail on certificates 10 g units

| Number | Ni | Co | Fe | S | Al ₂ O ₃ | As | Ca | Cr | Cu | K | MgO | Mn | Na | P | SiO ₂ | Ti | Au** | Pd** | Pt** |
|-----------|-------|--------|-------|-------|--------------------------------|---------|-------|--------|--------|-------|--------|--------|-------|--------|------------------|--------|------|------|-------------|
| OREAS 78 | 25.79 | 23.74 | . | 28.61 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OREAS 77b | 11.24 | 0.1604 | 29.21 | 22.29 | 1.86* | . | 3.11 | 0.0341 | 0.3163 | 0.344 | 2.67* | 0.068 | 0.406 | . | 9.24* | 0.065 | . | . | LOI: (2.36) |
| OREAS 77a | 10.71 | 0.1675 | 34.0 | 26.83 | 1.48 | 0.0162 | . | 0.0840 | 0.4400 | . | 7.27 | . | . | . | 13.3 | . | 61 | 566 | 1088 |
| OREAS 76b | 7.78 | 0.1103 | 21.76 | 15.18 | 2.58* | . | 3.115 | 0.0663 | . | 0.474 | 5.80* | 0.079 | 0.510 | 0.0139 | 13.74* | 0.103 | . | . | . |
| OREAS 76a | 7.40 | 0.1215 | 24.6 | 18.0 | 1.78 | 0.0117 | . | 0.1283 | 0.2974 | . | 16.5 | . | . | . | 21.7 | . | 41 | 403 | 701 |
| OREAS 75b | 5.38 | 0.0788 | 17.17 | 10.79 | 2.79* | . | 3.03 | 0.0942 | 0.1483 | 0.410 | 8.75* | 0.097 | . | 0.0187 | 15.67* | 0.139 | . | . | . |
| OREAS 75a | 5.25 | 0.0894 | 19.1 | 12.5 | 1.99 | 0.0080 | . | 0.1552 | 0.2005 | . | 22.3 | . | . | . | 27.3 | . | 34 | 280 | 353 |
| OREAS 74b | 3.39 | 0.0502 | 12.40 | 6.57 | 3.55* | . | 3.09 | 0.0981 | 0.0947 | 0.691 | 9.23* | . | 0.692 | 0.0195 | 19.36* | 0.1555 | . | . | . |
| OREAS 74a | 3.24 | 0.0581 | 13.7 | 7.48 | 2.21 | 0.00496 | . | 0.1780 | 0.1240 | . | 27.9 | . | . | . | 32.4 | . | 21 | 172 | 223 |
| OREAS 14p | 2.09 | . | . | . | . | . | . | . | 0.997 | . | . | . | . | . | . | . | 51 | 150 | 99 |
| OREAS 73b | 1.50 | 0.0246 | 8.63 | 2.90 | 3.77* | . | 3.15 | 0.1172 | 0.0430 | 0.586 | 11.80* | 0.115 | 0.736 | 0.024 | 20.89* | 0.191 | . | . | . |
| OREAS 72b | 0.709 | 0.0126 | 6.80 | 1.44 | 4.75* | . | 2.83 | 0.0971 | 0.0193 | 1.09 | 9.61* | 0.1004 | 0.958 | 0.0267 | 23.92* | 0.213 | . | . | . |
| OREAS 70b | 0.223 | . | 5.51 | 0.286 | 3.81* | . | 3.07 | 0.1243 | . | 0.585 | 13.54* | 0.115 | . | 0.024 | 22.42* | 0.178 | . | . | . |

RM NIOBIUM ORE

analysis listed in mass %

100g units

| Number | Nb ₂ O ₅ | Al ₂ O ₃ | BaO | CO ₂ | CaO | CeO ₂ | F | Fe | K ₂ O | La ₂ O ₃ | MgO | MnO | Na ₂ O | Nd ₂ O ₃ | P ₂ O ₅ |
|----------|--------------------------------|--------------------------------|-------|-----------------|-------|------------------|------|------|------------------|--------------------------------|-------|-------|-------------------|--------------------------------|-------------------------------|
| FQZ 1807 | 61.95 | 0.382 | 0.192 | 0.056 | 13.18 | 0.567 | 4.12 | 2.29 | 0.320 | 0.150 | 0.150 | 0.310 | 5.42 | 0.209 | 0.112 |
| DH X1803 | 60.62 | 0.291 | 0.201 | 0.097 | 13.02 | 0.556 | 3.65 | 3.50 | 0.233 | 0.153 | 0.136 | 0.325 | 5.28 | 0.207 | 0.102 |
| FQZ 1808 | 56.71 | 0.614 | 0.277 | 0.139 | 11.67 | 0.588 | 4.02 | 5.41 | 0.463 | 0.185 | 0.177 | 0.383 | 4.73 | 0.214 | 0.134 |
| DH X1802 | 0.200 | 2.67 | 0.162 | 30.16 | 26.96 | 0.098 | . | 5.72 | 1.41 | 0.041 | 13.51 | 0.827 | 0.109 | 0.049 | 3.92 |
| DH X1806 | 0.095 | 0.945 | 0.046 | 36.82 | 27.77 | 0.086 | . | 5.44 | 0.525 | 0.040 | 16.16 | 1.12 | 0.061 | 0.038 | 1.75 |

continued

| Number | S | SiO ₂ | SrO | Ta ₂ O ₅ | ThO ₂ | TiO ₂ | U ₃ O ₈ | V ₂ O ₅ | Y ₂ O ₃ | ZnO | ZrO ₂ | -H ₂ O 900°C |
|----------|-------|------------------|-------|--------------------------------|------------------|------------------|-------------------------------|-------------------------------|-------------------------------|-------|------------------|-------------------------|
| FQZ 1807 | 0.052 | 2.28 | 1.18 | 0.276 | 0.734 | 3.86 | 0.190 | 0.056 | 0.098 | 0.005 | 0.868 | 0.611 |
| DH X1803 | 0.051 | 1.91 | 1.20 | 0.273 | 0.770 | 4.26 | 0.202 | 0.073 | 0.085 | 0.001 | 0.847 | . |
| FQZ 1808 | 0.056 | 3.52 | 1.31 | 0.265 | 0.802 | 3.92 | 0.153 | 0.075 | 0.074 | 0.003 | 0.837 | 0.668 |
| DH X1802 | 0.616 | 8.91 | 0.116 | 0.002 | 0.010 | 0.237 | 0.002 | 0.027 | 0.016 | 0.039 | 0.074 | . |
| DH X1806 | 0.798 | 3.38 | 0.274 | (0.001) | 0.010 | 0.089 | (0.002) | (0.009) | (0.009) | 0.013 | 0.027 | . |

CRM NIOBIUM ORE

certified analysis

analysis listed in mass %

informational values

200 g units

| Number | Nb | Al | Ca | Fe | K | Mg | Mn | Na | P | Pb | S | Si | Sr | Zn | LOI |
|-----------|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| CAN OKA-1 | 0.37 | 0.9 | 31.3 | 2.8 | 0.3 | 1.3 | 1.1 | 0.2 | 1.1 | 1.1 | 0.6 | 2.4 | 1.0 | 0.05 | 31.9 |

CRM NOBLE METAL ORE

analysis listed in mg/kg except % which is mass %

| Number | Ag | Au | Cu% | Fe% | Ir | Ni | Pd | Pt | Rh | Ru | S | Units | Notes |
|------------|-------|---------|-------|-------|--------|-------|-------|-------|--------|--------|--------|--------|----------------------------|
| CAN PTM-1a | (135) | 3.30 | . | . | (0.35) | . | 10.01 | 7.31 | (0.92) | (0.7) | . | 400 g | |
| CAN WPR-1a | 1.02 | (0.05) | 0.299 | 11.34 | (0.02) | 0.439 | 0.614 | 0.452 | . | . | 1.768 | 400 g | more data under Peridotite |
| SARM 66 | . | 0.66 | . | . | 7.1 | . | 51.1 | 91.2 | 17.5 | 26.5 | . | 500 g | last of stock |
| SARM 72 | . | 0.13 | . | . | (0.28) | . | 4.24 | 3.97 | 0.83 | 1.18 | . | 2.5 kg | last of stock |
| SARM 75 | . | (0.053) | . | . | . | 0.23 | 0.61 | 0.32 | . | . | (0.39) | 3 kg | last of stock |
| SARM 107 | . | 0.046 | . | . | (0.14) | . | 0.926 | 1.99 | 0.320 | 0.626 | . | 3 kg | |
| SARM 81 | . | (0.034) | . | . | (0.18) | . | 1.46 | 2.50 | 0.490 | (0.76) | . | 3 kg | last of stock |
| CAN PTA-1 | . | . | . | . | . | . | . | 3.05 | . | . | . | 400 g | |

CRM OBSIDIAN

| Number | analysis listed in mass % | | | | | | | | | | | analysis listed in mg/kg | | | | | | | |
|---------|--------------------------------|-------|------|--------------------------------|------------------|--------|-------|-------------------|-------------------------------|------------------|------------------|--------------------------|-----|------|-------|------|------|------|------|
| | Al ₂ O ₃ | CaO | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | Cu | Ni | Pb | Rb | Sr | Th | Ti | U |
| SRM 278 | 14.15 | 0.983 | 1.36 | 2.04 | 4.16 | (0.23) | 0.052 | 4.84 | 0.036 | 73.05 | 0.245 | 5.9 | 3.6 | 16.4 | 127.5 | 63.5 | 12.4 | 0.54 | 4.58 |

RM OLIVINE WITH EXTENSIVE ANALYSIS

| Number | * provisional analysis, listed in mass % | | | | | | | | | | | | | | 100 g units | |
|-------------|--|------------------|-------|----------------------------------|-------|-------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|-------|-------------|--|
| | Al ₂ O ₃ | SiO ₂ | FeO | T.Fe ₂ O ₃ | CaO | H ₂ O- | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | | |
| IAG MUH-1 * | 1.341 | 40.375 | 3.49 | 8.59 | 1.213 | 0.689 | 9.31 | 0.011 | 38.26 | 0.119 | 0.096 | 0.009 | 0.035 | 9.40 | | |
| Number | * provisional analysis continued, listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | |
| | As | Ba | Be | Ce | Co | Cs | Cr% | Cu | Dy | Er | Eu | Ga | Gd | Hf | Ho | |
| IAG MUH-1 * | 3.819 | 4.98 | 0.012 | 0.212 | 106.2 | 0.098 | 0.2666 | 19.0 | 0.155 | 0.109 | 0.026 | 1.40 | 0.106 | 0.038 | 0.035 | |
| Number | La | Li | Lu | Nb | Nd | Ni% | Pb | Pr | Rb | Sb | Sc | Sm | Sn | Sr | | |
| | IAG MUH-1 * | 0.136 | 1.62 | 0.019 | 0.062 | 0.18 | 0.2091 | 0.422 | 0.035 | 0.27 | 0.134 | 9.0 | 0.068 | 0.06 | 8.6 | |
| Number | Ta | Tb | Th | Tm | U | V | Y | Yb | Zn | Zr | | | | | | |
| | IAG MUH-1 * | 0.008 | 0.021 | 0.016 | 0.017 | 0.016 | 38.1 | 0.94 | 0.12 | 44.5 | 1.7 | | | | | |

RM OLIVINE

| Number | typical analysis listed in mass % | | | | | | | | | | | | | | 100 g units | |
|---------|-----------------------------------|------------------|------|--------------------------------|-------|-----------------|-------|--------------------------------|--------------------------------|------------------|--------------------------------|-------|-------------------------------|------------------|----------------------------|--|
| | MgO | SiO ₂ | Fe | Al ₂ O ₃ | C tot | CO ₂ | CaO | Co ₃ O ₄ | Cr ₂ O ₃ | K ₂ O | Mn ₃ O ₄ | NiO | P ₂ O ₅ | TiO ₂ | -H ₂ O at 900°C | |
| DH 4912 | 49.18 | 41.6 | 5.07 | 0.432 | 0.054 | 0.046 | 0.081 | 0.016 | 0.383 | 0.014 | 0.103 | 0.354 | . | 0.002 | 1.25 | |
| DH 4911 | 47.37 | 42.63 | 5.52 | 0.95 | . | . | 0.491 | 0.019 | 0.425 | 0.024 | 0.118 | 0.340 | <0.01 | 0.013 | . | |

CRM OOZE

| Number | Type | analysis listed in mass % | | | | | | | | | | | | | | | | |
|------------|-------------------|---------------------------|--------------------------------|--------|-----------------|-------|---------|--------|--------|----------------------------------|------------------|------|-------|-------------------|-------------------------------|------------------|------|-----|
| | | SiO ₂ | Al ₂ O ₃ | Ba | CO ₂ | CaO | Ce | Cr | FeO | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | |
| VS 5370-90 | Calcareous | 11.90 | 3.60 | 0.010 | 32.20 | 39.23 | . | 0.0034 | 0.17 | 2.44 | 0.51 | 3.44 | 0.218 | 1.86 | 0.23 | 0.30 | 36.6 | |
| VS 5371-90 | Siliceous | 59.60 | 8.96 | 0.15 | 2.70 | 6.40 | 0.033 | 0.0080 | 1.2 | 5.05 | 1.39 | 3.16 | 0.37 | 4.52 | 0.12 | 0.59 | 9.6 | |
| continued | | analysis listed in mass % | | | | | | | | | | | | | | | | |
| Number | As | B | Org.C | Cu | Ni | S | Sn | Sr | V | Zn | Zr | | | | | | | |
| VS 5370-90 | . | . | . | 0.0030 | 0.0038 | 0.19 | 0.021 | 0.12 | 0.0057 | 0.010 | 0.008 | | | | | | | |
| VS 5371-90 | 0.0020 | 0.007 | 0.34 | 0.014 | 0.010 | 0.17 | 0.00032 | 0.034 | 0.0085 | 0.0090 | 0.010 | | | | | | | |
| continued | | analysis listed in mg/kg | | | | | | | | | | | | | | | | |
| Number | Au | Be | Co | Cs | Ga | La | Li | Mo | Nb | Nd | Pb | Rb | Sc | Sm | Th | U | Y | Yb |
| VS 5370-90 | . | 1.0 | 12 | . | 5 | 7 | 13 | 4 | . | . | 11 | 11 | 6 | . | 3 | . | 9 | . |
| VS 5371-90 | 0.004 | 1.6 | 30 | 3.0 | 11 | 15 | 18 | 2.8 | 10 | 13 | 24 | 46 | 17 | 2.5 | 5 | 1.5 | 16 | 2.2 |

PEGMATITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | | | | IAG: RM, ~35 g units | NCS: CRM, 70 g units |
|---|--------------------------------|-----------------|---------|--------|--------|--------------------------------|-------------------|------------------|--------|--------|-------|-------------------|-------------------------------|-----------------|------------------|------------------|----------------------|----------------------|
| Number | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | Mn | MnO | Na ₂ O | P ₂ O ₅ | SO ₃ | SiO ₂ | TiO ₂ | LOI | |
| NCS DC71313 | 13.19 | (0.05) | (0.1) | (0.03) | (0.04) | (0.24T) | (1.02) | 6.22 | 0.13 | (0.01) | . | 1.60 | 0.18 | 0.07 | 76.40 | 0.61 | 1.27 | |
| IAG OU-9 | 12.35 | . | 0.29 | . | . | 0.74 | . | 1.36 | . | . | 0.11 | 4.17 | 0.03 | . | 79.5 | 0.057 | 0.78 | |
| continued analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | | |
| Number | Ag | As | B | Ba | Be | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | |
| NCS DC71313 | (0.09) | 3.1 | (1.9) | (728) | 1.3 | (0.07) | 0.15 | (5) | (1.5) | 4.8 | 1.8 | 4.2 | 0.20 | 0.12 | (0.16) | 13.5 | 0.22 | |
| IAG OU-9 | . | . | . | 8.75 | . | . | . | 7.24 | . | . | 403.3 | . | 1.70 | 0.30 | 0.05 | 56.6 | 2.53 | |
| Number | Ge | Hf | Hg | Ho | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Se | |
| NCS DC71313 | 1.5 | (0.8) | (0.008) | (0.04) | (3.3) | 14.4 | 0.03 | (0.29) | 14.6 | 1.5 | (1.6) | 34.6 | 0.48 | 155 | 0.64 | (2.85) | (0.015) | |
| IAG OU-9 | 4.95 | . | . | 0.15 | 2.03 | 694.6 | 0.04 | . | 155.3 | 5.07 | . | . | 1.24 | 2501 | 7.67 | 2.77 | . | |
| Number | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | | | |
| NCS DC71313 | (0.24) | 3.5 | 45.5 | 1.3 | (0.04) | 0.66 | . | (0.02) | (0.75) | 44.5 | 3.2 | 1.6 | 0.21 | 20.3 | 22.6 | | | |
| IAG OU-9 | 3.15 | . | . | 124.7 | 0.46 | 5.08 | 13.8 | 0.05 | 4.37 | . | 6.1 | 8.14 | . | 28.15 | . | | | |

CRM PERIDOTITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | | | | |
|---------------------------|----------|--------------------------------|------------|----------|----------|-------------------|-----------------|---------|-------------------------------|-----------|--------------------------------|----------------------------------|----------|-------------------|-------------------|---------|------------------|
| Number | Al | Al ₂ O ₃ | C | Ca | CaO | Co | CO ₂ | Cr | Cu | Fe | Fe ₂ O ₃ | T.Fe ₂ O ₃ | FeO | H ₂ O- | H ₂ O+ | K | K ₂ O |
| VS 2111-81 | . | 1.84 | . | . | 1.26 | 0.0159 | 0.69 | 0.320 | 0.0140 | . | . | 11.58 | 8.83 | . | . | . | 0.044 |
| JP-1 | 0.35 | 0.66 | (0.0764) | 0.39 | 0.55 | 0.0116 | . | 0.2807 | 0.000672 | 5.85 | 1.98 | 8.37 | 5.99 | 0.44 | 2.39 | 0.002 | 0.003 |
| CAN WPR-1a | 2.621 | . | (0.15) | 2.528 | . | 0.0213 | . | (0.322) | 0.299 | 11.34 | . | . | . | . | . | 0.156 | . |
| Number | Mg | MgO | Mn | MnO | Na | Na ₂ O | Ni | P | P ₂ O ₅ | S | Si | SiO ₂ | Ti | TiO ₂ | V | Zn | LOI |
| VS 2111-81 | . | 37.12 | . | 0.183 | . | 0.105 | 0.160 | . | . | 0.030 | . | 45.54 | . | 0.107 | 0.0039 | 0.0137 | . |
| JP-1 | 26.9 | 44.60 | 0.094 | 0.121 | 0.02 | 0.021 | 0.2460 | . | (0.002) | (0.00269) | 19.81 | 42.38 | . | (0.006) | 0.00276 | 0.00418 | . |
| CAN WPR-1a | (15.22) | . | 0.138 | . | (0.050) | . | 0.439 | 0.0303 | . | 1.768 | 17.62 | . | 0.3527 | . | 0.0135 | 0.0160 | (8.42) |
| analysis listed in mg/kg | | | | | | | | | | | | | | | | | |
| Number | Ag | As | Au | B | Ba | Be | Bi | Cd | Ce | Cl | Cs | Dy | Er | Eu | F | Ga | Gd |
| VS 2111-81 | . | . | . | . | 66 | . | . | . | . | . | . | . | . | . | . | 5.9 | . |
| JP-1 | (1.5) | 0.34 | (0.00023) | (1.4) | (19.5) | . | . | (0.011) | (0.19) | (97) | (0.15) | (0.022) | (0.016) | (0.004) | (14) | (0.7) | (0.015) |
| CAN WPR-1a | 1.02 | 9.3 | (0.05) | . | 70.6 | (0.2) | 0.122 | 0.598 | 9.69 | . | 2.38 | 1.624 | 0.886 | 0.497 | . | 7.04 | 1.76 |
| Number | Ge | Hf | Hg | Ho | In | Ir | La | Li | Lu | Mo | Nb | Nd | Os | Pb | Pd | Pr | |
| VS 2111-81 | 1.6 | . | . | . | . | . | . | . | . | 1.3 | . | . | . | 6.7 | . | . | |
| JP-1 | (0.49) | 0.2 | (0.0053) | (0.018) | . | (2) | 0.084 | (1.79) | (0.0044) | (0.087) | 1.48 | (0.072) | (0.0079) | (0.12) | (0.0013) | (0.02) | |
| CAN WPR-1a | (0.3) | 1.142 | (0.05) | 0.322 | (0.0899) | (0.2) | 4.04 | 25.6 | 0.121 | (0.9) | (3.88) | 6.26 | . | 7.92 | 0.614 | 1.362 | |
| Number | Pt | Rb | Re | Ru | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | |
| VS 2111-81 | . | . | . | . | . | 11.3 | . | . | 3.2 | . | . | . | . | . | . | . | |
| JP-1 | (0.0049) | (0.8) | (0.000015) | (0.0065) | (0.034) | 7.24 | . | 0.019 | (0.05) | (3.32) | (0.02) | (0.003) | . | 0.19 | (0.003) | . | |
| CAN WPR-1a | 0.452 | 7.06 | . | . | 3.13 | 17.3 | (7.7) | 1.617 | (1.16) | 19.5 | (0.242) | 0.269 | (0.958) | (0.64) | (0.0752) | 0.126 | |
| Number | U | W | Y | Yb | Zr | Units | | | | | | | | | | | |
| VS 2111-81 | . | . | . | 1.5 | 21 | 40 g | | | | | | | | | | | |
| JP-1 | 0.036 | (0.85) | 1.54 | 0.022 | 5.92 | 20 g | | | | | | | | | | | |
| CAN WPR-1a | . | . | 8.39 | 0.79 | (41.8) | 400 g | | | | | | | | | | | |

CRM PHOSPHATE ROCK

| * CaO+SrO | ** AFPC Method | (s) = soluble analysis listed in mass % | | | | | | | | | | | | | | | | GPO: 10 g units | SRM: 90 g units | others: 100 g units |
|-----------|-------------------------------|---|--------------------------------|-----------------|--------|--------------------------------|---------------------------------|------------------|---------|---------|-------------------|--------|-----------------|------------------|---------|------------------|-------|-----------------|-----------------|---------------------|
| Number | P ₂ O ₅ | CaO | Al ₂ O ₃ | CO ₂ | F | Fe ₂ O ₃ | TFe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | S | SO ₃ | SiO ₂ | SrO | TiO ₂ | LOI | | | |
| SARM 32 | 39.96 | 54.44 | (0.05) | 1.61 | 2.49 | 0.14 | . | . | 0.50 | (0.026) | . | . | . | (0.4) | 0.52 | . | . | | | |
| GBW 07210 | 36.89 | 51.32* | 0.58 | 2.15 | 3.54 | . | 1.04 | 0.17 | 0.43 | 0.024 | 0.33 | . | . | 3.26 | 0.077 | 0.037 | . | | | |
| IPT 18B | 35.7 | 52.6 | 0.35 | . | 1.33 | 0.21 | . | 0.23 | 1.65(s) | . | 0.14(s) | . | . | 1.15 | 0.48(s) | . | . | | | |
| SRM 120c | 33.34** | 48.02** | 1.30 | 3.27** | 3.82** | 1.08 | . | 0.147 | 0.32** | 0.027 | 0.52 | (0.37) | . | 5.5** | (0.1) | 0.103 | . | | | |
| BCR 032 | 32.98 | 51.76 | 0.55 | 5.10 | 4.04 | 0.231 | . | . | 0.403 | . | . | . | 1.84 | 2.09 | . | . | . | | | |
| SRM 694 | 30.2 | 43.6 | 1.8 | . | 3.2 | 0.79 | . | 0.51 | 0.33 | 0.0116 | 0.86 | . | . | 11.2 | . | (0.11) | . | | | |
| GPO-01 | 28.66 | 40.08 | 6.92 | . | . | 3.412 | . | 0.10 | 0.83 | 0.093 | 0.307 | . | 1.318 | 4.381 | . | 0.37 | 12.45 | | | |
| USZ 14-94 | 26.38 | 38.85 | 0.85 | 5.84 | . | . | 0.63 | 0.092 | 2.26 | . | . | . | . | 20.57 | . | . | 6.43 | | | |
| GPO-15 | 25.22 | 45.12 | 0.74 | . | . | 0.803 | . | 0.25 | 2.90 | 0.010 | 1.039 | . | 2.426 | 7.77 | . | 0.05 | 12.32 | | | |
| GPO-14 | 24.52 | 44.77 | 0.78 | . | . | 0.819 | . | 0.26 | 3.07 | 0.047 | 0.979 | . | 2.284 | 8.13 | . | 0.05 | 12.96 | | | |
| GBW 07211 | 20.86 | 40.71* | 2.58 | 18.46 | 2.05 | . | 1.08 | 0.28 | 8.19 | 0.015 | 0.059 | 0.79 | . | 3.61 | 0.16 | 0.14 | . | | | |
| GPO-16 | 17.76 | 42.08 | 0.80 | . | . | 0.693 | . | 0.22 | 6.38 | 0.011 | 0.704 | . | 1.692 | 6.97 | . | 0.05 | 21.69 | | | |
| GPO-18 | 15.09 | 19.53 | 7.80 | . | . | 1.323 | . | 1.10 | 0.68 | 0.067 | 0.125 | . | 0.169 | 50.02 | . | 0.32 | 3.09 | | | |
| USZ HF | 13.81 | 33.80 | . | . | . | . | 0.37 | 0.077 | 8.30 | . | 0.12 | . | . | 28.04 | . | . | . | | | |
| GPO-17 | 13.55 | 39.14 | 1.83 | . | . | 1.287 | . | 0.61 | 5.82 | 0.014 | 0.563 | . | 1.369 | 11.62 | . | 0.09 | 23.47 | | | |
| GPO-11 | 9.72 | 13.46 | 9.39 | . | . | 5.002 | . | 3.02 | 0.71 | 0.040 | 1.224 | . | 0.461 | 50.934 | . | 0.20 | 5.22 | | | |
| GBW 07212 | 6.06 | 19.42* | 4.06 | 16.41 | 0.51 | . | 3.08 | 2.63 | 7.12 | 0.026 | 0.14 | . | . | 38.80 | 0.055 | 0.48 | . | | | |
| GPO-13 | 4.94 | 6.84 | 10.02 | . | . | 5.391 | . | 3.75 | 0.68 | 0.030 | 1.454 | . | 0.239 | 62.622 | . | 0.16 | 3.43 | | | |

continued

analysis listed in mass %

analysis listed in mg/kg

| Number | BaO | CdO | U | U ₃ O ₈ | V ₂ O ₃ | V ₂ O ₅ | As | B | Cd | Cl | Co | Cr | Cu | Hg | I | Mn | Ni | Ti | V | Zn |
|-----------|-------|-------|-----------|-------------------------------|-------------------------------|-------------------------------|-----|------|------|-------|------|-----|------|--------|----|------|------|-----|-----|---------------|
| SARM 32 | . | . | . | . | . | . | . | . | . | (640) | . | . | . | . | . | . | . | . | . | . |
| GBW 07210 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 52 | . | . | . | . | . |
| IPT 18B | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SRM 120c | . | . | . | 0.0135 | 0.016 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| BCR 032 | . | . | . | . | . | . | 9.5 | 22.6 | 20.8 | . | 0.59 | 257 | 33.7 | 0.0551 | . | 18.8 | 34.6 | 171 | 153 | 253 |
| SRM 694 | . | 0.015 | 0.01414 | . | . | 0.31 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-01 | 0.05 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 14-94 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-15 | 0.015 | . | (0.00568) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-14 | 0.015 | . | (0.00566) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GBW 07211 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 59 | . | . | . | . | . |
| GPO-16 | 0.017 | . | (0.00465) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-18 | 0.060 | . | (0.00168) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ HF | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-17 | 0.017 | . | (0.00324) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GPO-11 | 0.02 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | last of stock |
| GBW 07212 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | last of stock |
| GPO-13 | 0.01 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | last of stock |

CRM PLAGIOGNEISS WITH EXTENSIVE ANALYSIS

analysis listed in mass %

100 g units

| Number | Al ₂ O ₃ | Ba | CO ₂ | CaO | Cr | F | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | Zr | LOI |
|--------------|--------------------------------|-------|-----------------|------|--------|--------|------|----------------------------------|-------------------|------------------|------|-------|-------------------|-------------------------------|------------------|------------------|--------|------|
| VS 8871-2007 | 15.90 | 0.091 | (0.13) | 2.85 | 0.0182 | 0.0573 | 4.14 | 6.06 | (1.1) | 3.56 | 2.59 | 0.069 | 2.25 | 0.080 | 64.92 | 0.70 | 0.0234 | 0.76 |

analysis listed in mg/kg

| Number | Ag | As | B | Be | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Ge | Hf | Ho | La | Li | Lu | Mo |
|--------------|--------|-------|-------|------|--------|-----|------|-----|------|----|-----|-----|-----|------|-----|-------|-----|------|----|----|------|-----|
| VS 8871-2007 | (0.09) | (2.0) | (100) | 0.97 | (0.10) | 104 | 19.7 | 182 | 0.32 | 31 | 3.3 | 2.1 | 1.8 | 18.5 | 4.7 | (1.1) | 6.2 | 0.69 | 53 | 21 | 0.31 | 1.7 |

| Number | Nb | Nd | Ni | Pb | Pr | Rb | S | Sb | Sc | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn |
|--------------|------|------|----|------|------|----|------|--------|------|-----|-------|-----|------|-----|------|------|------|-----|----|-------|------|------|----|
| VS 8871-2007 | 10.0 | 43.8 | 60 | 14.2 | 11.5 | 55 | (74) | (0.05) | 14.3 | 6.9 | (0.6) | 364 | 0.40 | 0.6 | 11.3 | 0.31 | 0.33 | 0.8 | 98 | (0.3) | 17.8 | 2.02 | 81 |

CRM PROPHILITE

analysis listed in mass %

50 g units

| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SO ₃ | SiO ₂ | TiO ₂ | LOI |
|-------------|--------------------------------|-------|--------------------------------|----------------------------------|-------------------|------------------|-------|--------|-------------------|-------------------------------|-----------------|------------------|------------------|------|
| JCRM R802 | 32.3 | 0.04 | 0.23 | . | . | 0.07 | <0.01 | . | 0.09 | 0.05 | . | 60.7 | 0.19 | 6.0 |
| NCS DC60127 | 23.58 | 0.17 | . | 1.94 | 4.15 | 0.38 | 0.087 | 0.0037 | 0.34 | 0.20 | 0.61 | 66.84 | 0.70 | 5.48 |
| NCS DC60128 | 22.20 | 0.066 | . | 0.22 | 5.57 | 0.028 | 0.041 | 0.0040 | 0.043 | 0.11 | 0.17 | 70.34 | 0.18 | 6.34 |

CRM PYROXENITE

analysis listed in mass % 100 g units

| Number | Al ₂ O ₃ | CaO | Cr ₂ O ₃ | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | SiO ₂ | TiO ₂ |
|--------|--------------------------------|------|--------------------------------|-------|--------------------------------|------------------|-------|------|-------------------|------------------|------------------|
| SARM 5 | 4.18 | 2.66 | 3.50 | 10.59 | 0.87 | 0.09 | 25.33 | 0.22 | 0.37 | 51.10 | 0.20 |

CRM QUARTZ

analysis listed in mass %

T = Total

SRM: 5 g US: 25 g

| Number | SiO ₂ | Al ₂ O ₃ | CaO | FeO | Fe ₂ O ₃ | Fe ₂ O ₃ T | K ₂ O | MgO | Mn | Na ₂ O | P ₂ O ₅ | TiO ₂ | Respirable Crystalline Phase |
|------------------------|------------------|--------------------------------|------|------|--------------------------------|----------------------------------|------------------|------|----|-------------------|-------------------------------|------------------|------------------------------|
| US QLO-1A SRM 1878b | 65.6 | 16.2 | 3.17 | 2.97 | 1.02 | 4.35 | 3.60 | 1.00 | . | 4.20 | 0.25 | 0.62 | 96.56 +/- 0.40% |

continued analysis, for SUS only, listed in mg/kg

| Number | Ag | As | B | Ba | Br | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ge | La | Li | Lu |
|-----------|-------|-------|----|------|-------|----|-----|-----|-----|-----|----|-----|-----|------|-----|-------|----|----|------|
| US QLO-1A | 0.064 | (3.5) | 36 | 1370 | (2.1) | 54 | 220 | 7.2 | 3.2 | 1.8 | 29 | 3.8 | 2.3 | 1.43 | 280 | (1.3) | 27 | 25 | 0.37 |

| Number | Mo | Nb | Nd | Pb | Rb | S | Sm | Sn | Sr | Ta | Tb | Th | Tm | U | V | W | Y | Yb | Zn | Zr |
|-----------|-----|----|------|----|----|------|-----|-----|-----|------|------|-----|------|-----|----|------|----|-----|----|-----|
| US QLO-1A | 2.6 | 10 | (26) | 20 | 74 | (30) | 4.9 | 2.3 | 340 | 0.82 | 0.71 | 4.5 | 0.37 | 1.9 | 54 | 0.58 | 24 | 2.3 | 61 | 185 |

| CRM | | RARE EARTH ORE | | | | | | | | | | | | | | | | | |
|-----------|----------------------------------|--|-----------------|--------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|------------------|----------------------------------|----------------------------------|-------------------|----------------------------------|--------|--------------------|------------------|---------------------------------|------------------|-------|
| | | analysis listed in mass % and mg/kg * RE _x O _y = total rare earth oxides | | | | | | | | | | | | | | | | | |
| Number | RE _x O _y % | CeO ₂ % | Dy* | Er* | Eu ₂ O ₃ % | Gd ₂ O ₃ % | Ho* | La ₂ O ₃ % | Lu* | Nd ₂ O ₃ % | Pr ₂ O ₃ % | Sc* | Sm ₂ O ₃ % | Tb* | ThO ₂ % | Tm* | Y ₂ O ₃ % | Yb* | |
| UNS TRV | 13.82 | 6.64 | (207.1) | (41.2) | 0.042 | (0.089) | (41.5) | (4.23) | (6.7) | (1.94) | (0.71) | (22.5) | 0.22 | (82.3) | (0.29) | (14.8) | (0.048) | (21.6) | |
| continued | | analysis listed in mass % T = total | | | | | | | | | | | | | | | | | |
| Number | Al ₂ O ₃ | BaO | CO ₂ | CaO | F | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | T.S | SO ₃ | SiO ₂ | SrO | TiO ₂ | LOI |
| UNS TRV | (0.52) | 17.02 | (16.5) | 13.54 | 1.57 | 3.61 | 8.34 | (1.24) | 0.15 | 2.27 | 1.15 | (0.07) | (0.12) | 6.05 | (13.58) | (2.47) | 5.92 | 0.079 | 17.16 |
| continued | | analysis listed in mg/kg | | | | | | | | | | | | | | | | | |
| Number | Ag | As | Be | Bi | Cd | Co | Cr | Cu | Li | Mo | Ni | Pb | V | Zn | Units | | | | |
| UNS TRV | (6.7) | (335) | (4.2) | (72.9) | (7.5) | (26.5) | (40.6) | (41.5) | (28.8) | 71.4 | (44.0) | (332.9) | (74.2) | 767.9 | 100 g | | | | |

| CRM | | RARE EARTH ORE | | | | | | | | | | | | | | | 100 g units | |
|-----------|-------|---------------------------|----------|---------|--------|------------------|----------|---------|---------|---------|--------|--------|-------|-----------|--------|--------|-------------|--|
| | | analysis listed in mass % | | | | | | | | | | | | | | | | |
| Number | Al | Ba | C | Ca | Fe | H ₂ O | K | Mg | Mn | Na | P | S | Si | Zr | LOI | | | |
| CAN REE-1 | 3.59 | 0.01001 | (0.0786) | 2.30 | (4.16) | (0.6) | 3.09 | (0.895) | (0.155) | 1.445 | 0.0261 | (0.03) | 31.36 | 1.91 | (2) | | | |
| CAN REE-2 | 0.761 | 5.02 | (9.06) | 13.68 | 12.14 | (0.4) | (0.0172) | 6.26 | 1.316 | (0.120) | 0.461 | 1.745 | 1.377 | (0.00322) | 31.38 | | | |
| CAN REE-3 | 4.372 | 0.00691 | (0.08) | 1.644 | 8.28 | (0.1) | 3.76 | 0.0594 | (0.313) | (2.328) | 0.0201 | (0.04) | 29.66 | 1.8660 | 0.346 | | | |
| continued | | analysis listed in mg/kg | | | | | | | | | | | | | | | | |
| Number | Ag | As | Be | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | | | |
| CAN REE-1 | . | 124 | (590) | (0.652) | . | 3960 | 1.58 | 277 | 1.07 | 79.7 | 847 | 701 | 23.5 | (64) | 433 | | | |
| CAN REE-2 | (1) | . | (3.31) | (2.00) | (1.11) | 9610 | 7.71 | (32.7) | (0.09) | (5.55) | 69.2 | 14.0 | 96.6 | (60) | (219) | | | |
| CAN REE-3 | (2) | . | 82.3 | (1.171) | (4.2) | 4540 | (0.92) | 82 | 1.118 | 16.3 | 330.3 | 187.2 | 20.85 | (80) | 346 | | | |
| Number | Ge | Hf | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | | | |
| CAN REE-1 | (3) | 479 | 208 | (0.2) | 1661 | (205) | (92.4) | (36.6) | 4050 | 1456 | 24.7 | 1137 | 435 | 1047 | (3.16) | | | |
| CAN REE-2 | (7) | (0.95) | 7.87 | (1.403) | 5130 | 9.61 | (0.92) | (154) | (1060) | 3660 | (13.1) | (40.8) | 1075 | 1.22 | (0.89) | | | |
| CAN REE-3 | . | 448 | 65.0 | (0.4) | 2121 | (60) | 21.53 | 59.7 | 1073 | 2083 | 10.83 | 534 | 550 | 887 | (0.2) | | | |
| Number | Sc | Sm | Sn | Sr | Ta | Tb | Th | Ti | Tl | Tm | U | V | W | Y | Yb | Zn | | |
| CAN REE-1 | (8) | 381 | 498 | 129 | (231) | 106.2 | 719 | (3840) | (1.85) | 106 | 137 | (9.9) | (10) | 5480 | 678 | (1870) | | |
| CAN REE-2 | 57.5 | 410 | 24.1 | 2300 | 1.17 | 20.3 | 737 | 1969 | (0.240) | 1.383 | 3.73 | (79) | 9.9 | 176 | (7.2) | (420) | | |
| CAN REE-3 | (3) | 398 | 121.1 | 133.7 | 60.7 | 55.2 | 135.5 | 3202 | (2.341) | 25.8 | (29.9) | (4) | (1) | 1.725 | 159.4 | 1499 | | |

CRM RHYOLITE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | SiO ₂ | Al | Al ₂ O ₃ | CO ₂ | CaO | Fe ₂ O ₃ | FeO | T.Fe ₂ O ₃ | H ₂ O | K | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Si | TiO ₂ | |
|------------|------------------|------|--------------------------------|-----------------|-------|--------------------------------|------|----------------------------------|------------------|-------|------------------|------|-------|-------------------|-------------------------------|--------|------------------|------|
| JR-2 | 75.69 | 6.73 | 12.72 | . | 0.50 | 0.27 | 0.44 | 0.77 | +1.19 | -0.22 | 3.69 | 4.45 | 0.04 | 0.112 | 3.99 | 0.012 | 35.38 | 0.07 |
| JR-1 | 75.45 | 6.79 | 12.83 | . | 0.67 | 0.35 | 0.49 | 0.89 | +1.16 | -0.20 | 3.66 | 4.41 | 0.12 | 0.099 | 4.02 | 0.021 | 35.27 | 0.11 |
| US RGM-2 * | 73.4 | 7.31 | 14.0 | . | 1.23 | . | . | 1.86 | . | . | 3.61 | 4.35 | 0.28 | . | 4.14 | (0.05) | 34.3 | 0.25 |
| GBW 07113 | 72.78 | . | 12.96 | 0.52 | 0.59 | 1.14 | 1.86 | . | 1.18 | . | . | 5.43 | 0.16 | 0.14 | 2.57 | 0.045 | . | 0.30 |
| JR-3 | 72.76 | . | 11.90 | . | 0.093 | 2.61 | 1.86 | 4.72 | . | . | . | 4.29 | 0.050 | 0.083 | 4.69 | 0.017 | . | 0.21 |

continued analysis listed in mg/kg except % which is mass % and * which is ppb

| Number | Ag | As | Au* | B | Ba | Be | Bi | C | Ca% | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er |
|------------|------|------|------|-----|------|-------|------|---------|------|-------|------|-------|------|------|------|------|-------|-------|
| JR-2 | . | 19.2 | 0.13 | 145 | 39.5 | 3.75 | 0.62 | . | 0.36 | 0.023 | 38.8 | . | 0.46 | 3.10 | 25.0 | 1.36 | 6.63 | 4.36 |
| JR-1 | . | 16.3 | 0.25 | 117 | 50.3 | 3.34 | 0.56 | 70.8 | 0.48 | 0.026 | 47.2 | 920 | 0.83 | 2.83 | 20.8 | 2.68 | 5.69 | 3.61 |
| US RGM-2 * | . | 3.3 | . | . | 842 | (2.5) | . | . | 0.88 | . | 48 | (536) | 2 | (4) | . | 9.8 | (3.3) | (2.2) |
| GBW 07113 | 0.08 | 0.66 | . | 3.5 | 506 | 4.09 | 0.60 | (0.15%) | . | 0.14 | 163 | . | 2.40 | 7.3 | 3.34 | 10.9 | 8.19 | 4.31 |
| JR-3 | . | . | . | . | 65.8 | 7.6 | . | . | . | . | 327 | . | 0.98 | 3.5 | 1.0 | 2.9 | . | . |

| Number | Eu | F% | Fe% | Ga | Gd | Ge | Hf | Hg* | Ho | In | La | Li | Lu | Mg% | Mn% | Mo | Na% | Nb | Nd |
|------------|-------|--------|------|------|------|------|-------|-----|------|------|------|------|------|------|----------|-------|------|------|------|
| JR-2 | 0.14 | 0.1109 | 0.54 | 17.9 | 5.83 | . | 5.14 | . | 1.39 | . | 16.3 | 79.2 | 0.88 | 0.02 | 0.087 | 3.35 | 2.96 | 18.7 | 20.4 |
| JR-1 | 0.30 | 0.0991 | 0.62 | 16.1 | 5.06 | 1.88 | 4.51 | . | 1.11 | . | 19.7 | 61.4 | 0.71 | 0.07 | 0.077 | 3.25 | 2.98 | 15.2 | 23.3 |
| US RGM-2 * | (0.7) | . | 1.30 | 16 | 3.6 | . | (6.0) | . | 0.8 | . | 25 | (58) | 0.4 | 0.17 | (0.0273) | (2.5) | 3.07 | (9) | 20 |
| GBW 07113 | 1.18 | 0.13 | . | 20.5 | 9.47 | 1.17 | 10.8 | 5 | 1.64 | 0.09 | 82.7 | 12.7 | 0.67 | . | . | 2.46 | . | 34.3 | 64.5 |
| JR-3 | 0.53 | . | . | 36.6 | . | . | 40.3 | . | . | . | 179 | . | 2.8 | . | . | 0.49 | . | 510 | 107 |

| Number | Ni | P% | Pb | Pr | Rb | S | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Th | Ti% | Tl |
|------------|------|--------|------|------|-----|--------|-------|------|------|------|------|------|------|-------|------|-------|-------|
| JR-2 | . | 0.005 | 21.5 | 4.75 | 303 | . | 1.51 | 5.59 | . | 5.63 | 3.51 | 8.11 | 2.29 | 1.10 | 31.4 | 0.04 | 1.85 |
| JR-1 | . | 0.009 | 19.3 | 5.58 | 257 | 13.3 | 1.19 | 5.07 | . | 6.03 | 2.86 | 29.1 | 1.86 | 1.01 | 26.7 | 0.066 | 1.56 |
| US RGM-2 * | (4) | (0.02) | 20 | (5) | 147 | . | (0.8) | 5 | . | 4 | (4) | 108 | (1) | (0.6) | 15 | 0.15 | (0.9) |
| GBW 07113 | 64.5 | . | 33.3 | 18.4 | 213 | 0.009% | 0.38 | 5.15 | 0.04 | 11.7 | 3.35 | 43.0 | 2.41 | 1.51 | 27.1 | . | 0.83 |
| JR-3 | . | . | 32.8 | 33.1 | 453 | . | . | 0.50 | . | 21.3 | 17.4 | 10.4 | 36.8 | 4.29 | 112 | . | . |

| Number | Tm | U | V | W | Y | Yb | Zn | Zr | Units |
|------------|------|------|------|------|------|------|------|------|-----------------------------|
| JR-2 | 0.74 | 10.9 | 3.00 | . | 51.1 | 5.33 | 27.8 | 96.3 | 20 g |
| JR-1 | 0.67 | 8.88 | 7.0 | 1.59 | 45.1 | 4.55 | 30.6 | 99.9 | 20 g |
| US RGM-2 * | . | 5.9 | . | (2) | 24 | . | 33 | 222 | 50 g * Provisional Analysis |
| GBW 07113 | 0.73 | 4.83 | 3.8 | 1.10 | 42.5 | 4.51 | 86.3 | 403 | 50 g |
| JR-3 | . | 21.1 | 4.2 | . | 166 | 20.3 | 209 | 1494 | 100 g |

RUTILE

= class, where 1 = CRM and 2 = RM analysis listed in mass %

| # | Number | TiO ₂ | Ti | Al ₂ O ₃ | CaO | Cr ₂ O ₃ | Fe ₂ O ₃ | Nb | Nb ₂ O ₅ | P ₂ O ₅ | SiO ₂ | V ₂ O ₅ | ZrO ₂ |
|---|----------------|------------------|-------|--------------------------------|-------|--------------------------------|--------------------------------|--------|--------------------------------|-------------------------------|------------------|-------------------------------|------------------|
| 1 | SRM 670 | 96.16 | . | . | . | 0.23 | 0.86 | . | . | . | 0.51 | 0.66 | 0.84 |
| 1 | DSZU 123.48-05 | 95.2 | . | 0.27 | . | . | 1.43 | . | . | 0.036 | 1.28 | . | 1.07 |
| 2 | DH 5805 | 93.35 | . | 0.500 | 0.035 | 0.117 | 3.53 | . | 0.532 | 0.147 | 0.297 | 0.243 | 0.198 |
| 1 | IGS 32 | . | 57.19 | . | . | . | . | (0.27) | . | . | . | . | . |

| Number | Tot.C | MgO | Mn ₃ O ₄ | S | SO ₃ | Units |
|----------------|-------|-------|--------------------------------|-------|-----------------|--------------------|
| SRM 670 | . | . | . | . | . | 90 g |
| DSZU 123.48-05 | . | . | . | . | 0.0100 | 20 g last of stock |
| DH 5805 | 0.23 | 0.032 | 0.124 | 0.027 | . | 100 g |
| IGS 32 | . | . | . | . | . | 45 g |

CRM SANDSTONE

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | F | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ |
|------------|------------------|--------------------------------|-----------------|--------|---------|--------|--------------------------------|------------------|--------|--------|-------------------|-------------------------------|------|------------------|
| VS 2888-84 | (66.14) | (11.49) | (3.05) | (3.78) | (0.039) | (3.16) | (4.17) | (1.82) | (1.49) | (0.16) | (2.98) | (0.12) | 0.60 | (0.48) |
| KZ 8077-94 | . | . | . | . | . | . | . | . | . | . | . | . | 0.33 | . |
| KZ 8076-94 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

continued

mg/kg

| Number | Cu | Pb | Zn | Ag | Re | Units |
|------------|-------|-------|-------|------|-------|-------|
| VS 2888-84 | 1.55 | 0.103 | 0.023 | 25.9 | 1.65 | 50 g |
| KZ 8077-94 | 0.11 | . | . | 10.2 | 0.14 | 100 g |
| KZ 8076-94 | 0.036 | . | . | 0.64 | 0.023 | 100 g |

SANDSTONE WITH EXTENSIVE ANALYSIS

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | C(org) | C(tot) | CO ₂ | CaO | F | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI |
|-----------|------------------|--------------------------------|--------|--------|-----------------|--------|----------|--------|----------------------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|--------|
| GBW 07106 | 90.36 | 3.52 | (0.05) | (0.10) | (0.19) | 0.30 | 0.0183 | 0.61 | 3.22 | 1.01 | 0.65 | 0.082 | . | 0.061 | . | . | 1.10 |
| UL PRI-1 | 68.60 | 10.84 | . | . | (2.62) | 2.49 | (0.0383) | (2.07) | 3.32 | . | 3.79 | 3.24 | 0.04 | 1.71 | 0.18 | 0.71 | 4.99 |
| IAG OU-8 | 54.120 | 6.548 | . | . | . | 16.711 | . | . | 1.304 | . | 2.967 | 1.879 | 0.138 | 0.677 | . | 0.244 | 15.301 |

continued

analysis listed in mg/kg except * which is ng/g

analysis listed in mg/kg except * which is ng/g

| Number | Ag | As | Au* | B | Ba | Be | Bi | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Ge | Hf |
|-----------|-------|-------|-------|------|-----|------|---------|-------|------|------|-----|--------|-------|-------|------|-------|------|------|------|--------|------|
| GBW 07106 | 0.062 | 9.1 | (1.8) | 34 | 143 | 0.97 | 0.18 | 0.060 | 48 | (44) | 6.4 | 20 | 1.8 | 19 | 4.1 | 2.0 | 1.02 | 5.3 | 4.5 | 1.16 | 6.6 |
| UL PRI-1 | . | (4.7) | . | (52) | 531 | 1.4 | (0.1) | . | 82 | . | 7.4 | 78 | (2.2) | (3.5) | 4.3 | (2.7) | 1.29 | (13) | 5.3 | (<5) | 10.7 |
| IAG OU-8 | . | . | . | . | 528 | 1.42 | (0.043) | . | 41.8 | . | . | (21.5) | 3.23 | 8.36 | 2.25 | 1.59 | 0.67 | 6.28 | 2.32 | (1.10) | 4.72 |

| Number | Hg | Ho | I | In | La | Li | Lu | Mn | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | S | Sb |
|-----------|-------|------|-------|---------|------|------|------|-----|-------|--------|------|------|-----|------|-------|------|-------|-------|
| GBW 07106 | 0.008 | 0.75 | (0.2) | (0.026) | 21 | 11.1 | 0.30 | 155 | 0.76 | 5.9 | 21 | 16.6 | 970 | 7.6 | 5.4 | 29 | 860 | 0.60 |
| UL PRI-1 | . | (1) | . | (<1) | 38 | . | 0.41 | . | (0.7) | 13 | 36 | 21 | . | (13) | (9.5) | 90 | (357) | (0.3) |
| IAG OU-8 | . | 0.51 | . | . | 13.8 | 10.3 | 0.26 | . | . | (4.46) | 12.4 | . | . | 9.64 | 3.12 | 64.6 | . | 0.22 |

| Number | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Ti | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Class | Units |
|-----------|--------|------|------|-----|-------|------|------|-------|------|------|-------|--------|------|------|-------|------|------|----|-------|-------|-------|
| GBW 07106 | 4.2 | 0.08 | 4.7 | 1.1 | 58 | 0.38 | 0.79 | 0.038 | 7.0 | 1580 | 0.36 | 0.32 | 2.1 | 33 | 1.2 | 21.5 | 1.9 | 20 | 214 | CRM | 70 g |
| UL PRI-1 | 9.7 | . | 6.6 | (2) | 88 | 1 | 0.85 | . | 11.3 | . | (0.2) | (0.39) | 2.5 | 65 | (2.2) | 25 | 2.8 | 47 | 386 | CRM | 50 g |
| IAG OU-8 | (3.63) | . | 2.42 | . | 264.4 | 0.32 | 0.36 | . | 9.5 | . | 1.01 | 0.24 | 0.74 | 29.8 | . | 16.0 | 1.66 | . | 182.7 | RM | ~35 g |

CRM SCHIST

analysis listed in mass %

UL: 50 g units

UNS, VS: 100 g units

US: 25 g units

| Number | SiO ₂ | Al ₂ O ₃ | BaO | CO ₂ | CaO | FeO | Fe ₂ O ₃ | Fe ₂ O ₃ T | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SrO | TiO ₂ | LOI |
|------------|------------------|--------------------------------|------|-----------------|------|--------|--------------------------------|----------------------------------|-------------------|------------------|--------|------|-------------------|-------------------------------|-------|------------------|------|
| US SDC-1 | 65.8 | 15.8 | . | . | 1.40 | 3.93 | 2.62 | 6.32 | . | 3.28 | 1.69 | . | 2.05 | 0.16 | . | 1.01 | . |
| VS 3191-85 | 63.40 | 16.71 | . | . | 0.09 | 4.65 | . | 7.6 | . | 3.56 | 2.52 | 0.13 | 0.08 | 0.030 | . | 1.01 | 4.54 |
| UNS MI | 62.19 | 14.54 | 0.10 | 2.13 | 1.96 | (6) | . | 6.41 | (12) | 2.15 | 3.28 | 0.25 | 3.33 | (10) | 0.016 | 0.71 | (16) |
| UL SBO1 | 55.16 | 18.24 | . | . | 1.76 | (5.61) | . | 7.15 | . | 3.55 | (1.97) | 0.18 | 0.66 | 0.17 | . | 0.94 | 9.67 |

continued

analysis listed in mg/kg

| Number | Ag | As | B | Ba | Be | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F |
|------------|---------|---------|---------|-----|---------|--------|-----|------|--------|--------|-------|--------|-------|-------|-------|-----|
| US SDC-1 | . | 0.22 | (13) | 630 | 3 | . | 93 | (32) | 18 | 64 | 4 | 30 | (6.7) | (4.1) | (1.7) | 600 |
| VS 3191-85 | . | . | 100 | 950 | 3.5 | . | 90 | . | 27 | 70 | (7) | 46 | . | . | . | . |
| UNS MI | (0.006) | (0.007) | (0.005) | . | (0.006) | 0.0100 | . | . | 0.0120 | 0.1073 | . | 0.0438 | . | . | . | . |
| UL SBO1 | . | (32) | . | 549 | (3.2) | . | 101 | . | 22 | 116 | (6.8) | 33 | (5.1) | (3.4) | 1.64 | . |

| Number | Ga | Gd | Ge | Hf | Hg | Ho | La | Li | Lu | Mn | Mo | Nb | Nd | Ni | Pb | Pr | Rb | S |
|------------|---------|-----|-----|-----|-------|-------|------|-------|----|---------|----|--------|--------|------|--------|------|-----|---|
| US SDC-1 | 21 | 7 | . | 8.3 | (0.2) | (1.5) | 42 | 34 | . | 880 | . | (21) | 40 | (38) | 25 | . | 127 | . |
| VS 3191-85 | (15) | . | (2) | . | . | . | (60) | (0.6) | . | (1.6) | 16 | . | 45 | . | 15 | . | 150 | . |
| UNS MI | (0.010) | . | . | . | . | . | . | . | . | (0.003) | . | 0.0372 | 0.0945 | . | 0.0539 | 3300 | . | |
| UL SBO1 | (23) | 6.2 | 5 | . | (1.3) | 48 | . | 0.49 | . | . | 17 | 42 | 60 | 27 | 11.1 | 163 | . | |

| Number | Sb | Sc | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|------------|------|----|-----|-----|-----|-------|-------|------|-------|--------|--------|---------|--------|---------|------|--------|-----|
| US SDC-1 | 0.54 | 17 | 8.2 | 3.0 | 180 | (1.2) | (1.2) | 12 | (0.7) | (0.65) | 3.1 | 102 | (0.80) | . | (4) | 103 | 290 |
| VS 3191-85 | . | 22 | (4) | 39 | . | . | (12) | . | . | (2) | 100 | . | 48 | 5 | 100 | 230 | . |
| UNS MI | . | . | . | . | . | . | . | . | . | . | 0.1052 | (0.003) | 0.0198 | (0.003) | 3000 | 0.1518 | . |
| UL SBO1 | . | 17 | 7.8 | . | 150 | 1.4 | 1 | 15.2 | . | (0.43) | 3.1 | 153 | . | 32 | 3.2 | 82 | 183 |

| RM | SEDIMENT | | | | | | | | | | | | analysis listed in mass % | | ~35 g units | |
|--------------------------|--------------------------------|-----------------|-------|--------------------------------|------------------|--------|---------|-------------------|-------------------------------|------------------|------------------|--------|---------------------------|-----------|-------------|-------|
| Number | Al ₂ O ₃ | CO ₂ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Type | | | |
| IAG OU-10 | 10.97 | . | 2.34 | 4.92 | 1.28 | 1.77 | 0.120 | 2.43 | 0.090 | 73.12 | 0.534 | (2.20) | Longmyndian | Greywacke | | |
| IAG UoK | 6.2 | 14.94 | 16.31 | 2.1 | 1.3 | 2.9 | 0.0644 | 1.058 | 0.13 | 53.24 | 0.423 | 16.03 | Loess | | | |
| analysis listed in mg/kg | | | | | | | | | | | | | | | | |
| Number | As | Ba | Be | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | |
| IAG OU-10 | . | 311 | (1.1) | . | (2.8) | (38.0) | 12.0 | 34.0 | 1.68 | 22.3 | 3.65 | 2.2 | 1.00 | 12.0 | 3.7 | |
| IAG UoK | 6.7 | 200.97 | 1.102 | 0.1 | . | 53 | 5.95 | 105.7 | 2.72 | 11.31 | 4.02 | 2.382 | 0.888 | 7.087 | 4.465 | |
| Number | Hf | Ho | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Sm | Sr |
| IAG OU-10 | 3.3 | 0.75 | 18.8 | (26.0) | 0.34 | (0.98) | 7.6 | 18.7 | (17.7) | 26.9 | 4.7 | 35.9 | . | 11.3 | (3.9) | 174 |
| IAG UoK | (9.10) | 0.80 | 25.54 | 21.90 | 0.37 | (1.40) | 8.61 | 24.32 | 42.71 | 11.34 | 6.24 | 51.2 | 0.580 | (5.93) | 5.01 | 278.5 |
| Number | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | | | | |
| IAG OU-10 | 0.56 | 0.61 | 5.0 | (0.23) | 0.34 | 1.09 | 77 | . | 20.5 | 2.2 | 54 | 123 | | | | |
| IAG UoK | (0.73) | 0.687 | 8.111 | 0.338 | 0.339 | 2.697 | (37.56) | (1.45) | 23.18 | 2.420 | 34.4 | . | | | | |

LAKE SEDIMENT - SEQUENTIAL EXTRACTION METHOD

| BCR 701, CRM 20g | Cd | Cr | Cu | Ni | Pb | Zn |
|------------------|--------|--------|--------|--------|--------|------|
| Step 1 | 7.34 | 2.26 | 49.3 | 15.4 | 3.18 | 205 |
| Step 2 | 3.77 | 45.7 | 124 | 26.6 | 126 | 114 |
| Step 3 | 0.27 | 143 | 55.2 | 15.3 | 9.3 | 45.7 |
| Concentration | (0.13) | (62.5) | (38.5) | (41.4) | (11.0) | (95) |

LAKE SEDIMENT WITH ACID EXTRACTION

analysis in mass % except * for mg/kg CRM, powder 20 g

| Number | Analysis | Al | As | Ba | Ca | Cd* | Co | Cr | Cu | Fe | K | La |
|---------|----------------|------|-----------|----------|------|---------|-----------|-----------|---------|------|---------|-----------|
| NIES 31 | whole material | 9.17 | (0.00139) | (0.0338) | 1.25 | (0.342) | (0.00181) | 0.00433 | 0.00531 | 5.38 | (0.991) | (0.00204) |
| NIES 31 | acid extract | . | . | . | . | (0.285) | . | (0.00337) | 0.00506 | . | . | . |

| Number | Analysis | Mg | Mn | Na | Ni | P | Pb | Sc | Sr | Ti | V | Zn |
|---------|----------------|---------|--------|-------|---------|--------|---------|-----------|----------|-------|--------|--------|
| NIES 31 | whole material | (0.836) | 0.0978 | 0.882 | 0.00253 | 0.0925 | 0.00251 | (0.00191) | (0.0125) | 0.442 | 0.0154 | 0.0121 |
| NIES 31 | acid extract | . | 0.0881 | . | 0.00222 | . | 0.00220 | . | . | . | 0.0133 | 0.0110 |

CRM LAKE SEDIMENT

analysis listed in mass %

| Number | Al ₂ O ₃ | C | CaO | Fe | FeO | Fe ₂ O ₃ | H ₂ O- | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | LOI | Other | | |
|---|--------------------------------|--------|--------|---------|-------|--------------------------------|-------------------|-------------------|------------------|-----------|-------|-------------------|-------------------------------|--------|------------------|------------------|-----------|--|-------|-----------|
| JLk-1 | 16.73 | . | 0.686 | . | 2.191 | 4.251 | 3.701 | 6.372 | 2.805 | 1.736 | 0.266 | 1.051 | 0.208 | 0.1052 | 57.16 | 0.668 | . | T.Fe ₂ O ₃ : 6.929 | | |
| VS 7176-95 | 14.22 | . | 7.09 | . | 3.50 | 5.39T | (0.22) | . | 1.51 | 3.12 | 0.12 | 3.11 | 0.139 | . | 62.46 | 0.76 | 1.78 | CO ₂ : (0.74) | | |
| VS 7126-94 | 13.57 | (2.24) | 1.85 | . | 1.60 | 7.02T | (2.15) | (4.5) | 2.21 | 2.00 | 0.40 | 1.96 | 0.345 | 0.165 | 61.07 | 0.69 | 8.34 | SO ₂ : (0.35) | | |
| NCS DC73372 | 13.28 | 1.9 | 5.0 | . | (1.4) | 4.8T | . | (4.7) | 1.98 | 1.52 | . | 1.28 | . | 0.0241 | 61.69 | . | C.Org:1.1 | CO ₂ :2.9 | | |
| AE SL 3 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | Ca: 11.1100 | | |
| BCR 280R | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | | |
| continued analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | | | | |
| Number | Ag | Al% | As | Au | B | Ba | Be | Bi | Br | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga |
| JLk-1 | . | . | 26.8 | . | . | 574 | . | . | . | . | 87.9 | 18.0 | 69.0 | 10.9 | 62.9 | 6.57 | 3.59 | 1.27 | 589 | . |
| VS 7176-95 | (0.04) | . | . | . | (12) | 530 | (1.3) | . | . | . | (41) | 17 | 158 | . | 18 | 31 | . | (1.4) | (380) | . |
| VS 7126-94 | (0.17) | . | 18 | (0.004) | 34 | 710 | 2.7 | . | . | . | 80 | 18 | 66 | 6 | 52 | (4.6) | (2.6) | 1.4 | 600 | 16 |
| NCS DC73372 | 0.076 | . | 8.4 | Cl:45 | 52 | 520 | 2.2 | 0.29 | 3.7 | 0.10 | 74 | 14 | 75 | 8.3 | 25 | 4.7 | 2.8 | 1.30 | 504 | 16.7 |
| AE SL 3 | . | 2.4500 | 3.2 | . | . | . | . | . | 5.6 | . | 45.5 | . | . | 1.38 | . | 2.22 | . | 0.66 | . | . |
| BCR 280R | 33.4 | . | . | . | . | . | . | . | 0.85 | . | 16.8 | 126 | . | 53 | 1.46 | 69 | 224 | . | . | . |
| Number | Gd | Ge | Hf | Hg | Ho | K% | La | Li | Lu | Mg% | Mn | Mo | Na | Nb | Nd | Ni | P | Pb | Pr | Rb |
| JLk-1 | 6.02 | . | 3.78 | . | 1.06 | . | 40.6 | . | 0.571 | . | . | . | . | 15.8 | 35.7 | 35.0 | . | 43.7 | 8.53 | 147 |
| VS 7176-95 | . | . | . | . | . | . | 19 | 8.5 | . | . | . | . | . | 10 | . | 31 | . | 14 | . | 39 |
| VS 7126-94 | (5.8) | 1.4 | 3.9 | (0.03) | (1) | . | 45 | 37 | 0.40 | . | . | 2.9 | 12 | 39 | 54 | . | 21 | (8) | . | 93 |
| NCS DC73372 | 5.4 | 1.32 | 6.6 | 0.032 | 1.03 | I:2.8ppm | 38 | 38 | 0.43 | N:0.1300% | 520 | 0.4 | . | 14.4 | 32 | 33 | 480 | 25 | 8.5 | 102 |
| AE SL 3 | . | . | 9.1 | . | . | 0.8740 | 22.5 | 0.3 | 2.7000 | . | . | . | 6690 | . | 21.5 | . | . | . | . | 38.8 |
| BCR 280R | . | . | 1.46 | . | . | . | . | . | . | . | . | . | . | . | 69 | . | . | . | . | . |
| Number | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Th | Ti | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Units (g) |
| JLk-1 | . | 15.9 | . | 7.87 | . | 67.5 | 1.57 | 1.23 | 19.5 | . | 1.17 | . | 3.83 | 117 | . | 40.0 | 3.99 | 152 | 137 | 20 |
| VS 7176-95 | . | 19 | . | 3.7 | 580 | . | . | . | . | . | . | . | . | 105 | . | 24 | 2.7 | 64 | 204 | 100 |
| VS 7126-94 | (0.95) | 13 | (0.97) | 7 | 3.2 | 266 | 0.84 | 0.9 | 12.7 | . | . | (0.42) | 12.0 | 110 | (4.3) | 30 | 2.9 | 96 | 156 | 100 |
| NCS DC73372 | 0.85 | 12.1 | 0.15 | 6.2 | 3.4 | 172 | 1.1 | 0.86 | 12.8 | 4240 | 0.6 | 0.44 | 2.1 | 90 | 1.9 | 26 | 2.6 | 61 | 233 | 70 |
| AE SL 3 | 0.56 | 3.91 | . | 3.83 | . | 0.47 | 0.7 | 0.49 | 7 | 2610 | . | . | 2.3 | . | . | 1.89 | . | . | . | 25 |
| BCR 280R | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 224 | . | 30 |

CRM ESTUARY AND MARINE SEDIMENT

analysis listed in mg/kg except % which is mass %

| Number | Hg | CH ₃ Hg | Ag | Al% | As | Ba | Be | Ca% | Cd | Ce | Co | Cr | Cu | Fe% | Ga |
|------------|---------|--------------------|--------|-------|------|-------|------|-------|-------|------|------|------|-------|-------|-----|
| ERM-CC580 | 132 tot | 0.075 | . | . | . | . | . | . | . | . | . | . | . | . | . |
| NMIJ 7302a | 0.52 | . | 0.49 | . | 22.1 | . | . | . | 1.32 | . | 12.4 | 145 | 57.8 | . | . |
| BCR 277R | 0.128 | . | . | . | 18.3 | . | . | . | 0.61 | . | 22.5 | 188 | 63 | . | . |
| NMIJ 7303a | 0.067 | . | 0.098 | . | 8.6 | (210) | (<1) | 0.519 | 0.342 | (34) | 11.1 | 39.1 | 23.1 | . | . |
| SRM 1646a | (0.04) | . | (<0.3) | 2.297 | 6.23 | . | . | . | 0.148 | . | (5) | 40.9 | 10.01 | 2.008 | (5) |

| Number | K% | La | Li | Mg% | Mn | Mo | Na% | Nd | Ni | P% | Pb | Rb | S% | Sb | Sc | Se |
|------------|-------|------|------|-------|------|----|-------|------|------|-------|------|------|-------|-------|-----|-------|
| ERM-CC580 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| NMIJ 7302a | . | . | . | . | 1.98 | . | . | . | 25.8 | . | 82.7 | . | . | 1.22 | . | 0.61 |
| BCR 277R | . | . | . | . | . | . | . | 130 | . | . | . | . | . | . | . | . |
| NMIJ 7303a | . | . | . | . | 0.96 | . | . | . | 21.8 | . | 31.3 | . | . | 0.69 | . | 0.24 |
| SRM 1646a | 0.864 | (17) | (18) | 0.388 | 2345 | . | 0.741 | (15) | 22.5 | 0.027 | 11.7 | (38) | 0.352 | (0.3) | (5) | 0.193 |

| Number | Si% | Sn | Sr | Th | Ti% | Tl | U | V | Zn | Units |
|------------|------|------|------|-------|-------|--------|-----|-------|------|-------|
| ERM-CC580 | . | . | . | . | . | . | . | . | . | 40 g |
| NMIJ 7302a | . | 18.5 | . | . | . | . | . | . | 401 | 60 g |
| BCR 277R | . | . | . | . | . | . | . | . | 178 | 40 g |
| NMIJ 7303a | . | 4.21 | . | . | . | . | . | . | 107 | 60 g |
| SRM 1646a | 40.0 | (1) | (68) | (5.8) | 0.456 | (<0.5) | (2) | 44.84 | 48.9 | 70 g |

CRM MARINE SEDIMENT

analysis listed in mass %

T = Total

| Number | Al ₂ O ₃ | C(org) | T.C | CO ₃ ²⁻ | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | LOI | |
|------------|--------------------------------|--------|--------|-------------------------------|---------|-------|--------------------------------|----------------------------------|-------------------|------------------|---------|---------|-------------------|-------------------------------|--------|------------------|------------------|-------|---|
| JMs-1 | 15.82 | . | 1.69 | . | 2.13 | 2.12 | 4.54 | 6.90 | 6.79 | 2.24 | 2.87 | 0.102 | 4.07 | 0.18 | 1.32T | 53.74 | 0.70 | 15.44 | |
| JMs-2 | 14.18 | . | 0.39 | . | 4.68 | <0.04 | 10.96 | 10.96 | 7.13 | 2.70 | 3.24 | 2.26 | 5.79 | 1.26 | 0.29T | 41.78 | 1.40 | 19.15 | |
| SRM 2702 | 8.41 | (3.27) | (3.36) | . | (0.343) | . | . | 7.91 | . | 2.054 | (0.990) | 0.1757 | 0.681 | 0.1552 | (1.5T) | . | 0.884 | . | |
| SRM 2703 | 8.33 | . | . | . | (0.31) | . | . | 7.38 | . | 2.08 | (1.0) | 0.1734 | 0.693 | (0.16) | . | . | 0.880 | . | |
| NRC MESS-4 | 7.91 | . | (1.79) | . | 1.31 | . | . | 3.79 | . | 2.38 | 1.58 | 0.0298 | 1.26 | 0.104 | 0.158 | 27.8 | 0.384 | . | |
| NRC PACS-3 | 6.58 | . | . | . | 1.89 | . | . | 4.106 | . | 1.253 | 1.402 | 0.0432 | 3.52 | 0.0937 | 1.17 | 26.1 | 0.442 | . | |
| NRC HISS-1 | 0.73 | . | . | . | 1.14 | . | . | 0.246 | . | 0.332 | 0.075 | 0.00661 | 0.373 | . | . | (44) | 0.076 | . | |
| BCR 320R | . | . | . | . | . | . | . | 2.5700 | . | . | . | 0.0910 | . | . | . | . | . | . | . |

continued analysis listed in mg/kg except % which is mass % SRM 2703 is intended for small sample techniques <10mg

| Number | Ag | As | B | Ba% | Be | Bi | Br | Cd | Ce | Cl% | Co | Cr | Cs | Cu | Dy | Er | Eu |
|------------|---------|-------|-----|----------|-------|-------|------|-------|-------|--------|--------|------|-------|---------|----|----|-------|
| JMs-1 | . | 18 | 81 | 0.0307 | 1.3 | . | . | . | 2.69 | 18.1 | 133 | 5.9 | 88 | . | . | . | . |
| JMs-2 | . | 35 | 106 | 0.1856 | 1.8 | . | . | . | 4.05 | 226 | 78 | 3.0 | 447 | . | . | . | . |
| SRM 2702 | (0.622) | 45.3 | . | 0.03974 | (3.0) | . | . | 0.817 | 123.4 | . | 27.76 | 352 | (7.1) | (117.7) | . | . | . |
| SRM 2703 | (0.59) | 45.5 | . | 0.0416 | . | . | . | 0.811 | 125.5 | . | 27.70 | . | (7.7) | (120) | . | . | . |
| NRC MESS-4 | 0.161 | 21.7 | . | (0.0920) | 2.09 | (2.7) | (60) | 0.28 | (72) | 1.31% | 13.0 | 94.3 | (10) | 32.9 | . | . | (1.3) |
| NRC PACS-3 | (1.10) | 30.3 | . | . | 1.06 | . | . | 2.23 | . | . | (12.1) | 90.6 | . | 326 | . | . | . |
| NRC HISS-1 | 0.016 | 0.801 | . | . | 0.129 | . | . | 0.024 | . | (0.35) | (0.65) | 30.0 | . | 2.29 | . | . | . |
| BCR 320R | . | 21.7 | . | . | . | . | . | 2.64 | . | . | 9.7 | 59 | . | 46.3 | . | . | . |

| Number | Ga | Gd | Hf | Hg | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc |
|------------|----------|--------|--------|--------|-------|--------|------|--------|--------|--------|------|------|------|-------|----|-------|--------|--------|
| JMs-1 | . | . | . | . | 0.101 | . | 62 | . | . | . | . | . | 53 | 49 | . | 88 | 1.4 | . |
| JMs-2 | . | . | . | . | 0.178 | . | 43 | . | . | . | . | . | 311 | 88 | . | 65 | 4.5 | . |
| SRM 2702 | (24.3) | . | (12.6) | 0.4474 | . | . | 73.5 | (78.2) | . | (10.8) | (63) | (56) | 75.4 | 132.8 | . | 127.7 | 5.60 | 25.9 |
| SRM 2703 | . | . | (11.8) | 0.474 | . | . | 75.9 | . | . | (11) | (63) | (72) | (75) | 130 | . | 130 | 5.62 | 25.95 |
| NRC MESS-4 | (18) Ge: | (0.16) | (3.0) | (0.08) | . | (0.10) | (35) | 65.3 | (0.11) | (2.53) | (12) | (42) | 42.8 | 21.5 | . | (180) | 1.07 | (13.4) |
| NRC PACS-3 | . | . | . | 2.98 | . | . | . | 31.9 | . | (5.9) | . | . | 39.5 | 188.0 | . | . | 14.7 | . |
| NRC HISS-1 | . | . | . | (0.01) | . | . | . | 2.83 | . | (0.13) | . | . | 2.16 | 3.13 | . | . | (0.13) | . |
| BCR 320R | . | . | . | 0.85 | . | . | . | . | . | . | . | . | 27.1 | 85 | . | . | . | 5.2 |

* BUTILYN CONTENT DETAILED ON CERTIFICATES

| Number | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | Units |
|--------------|--------|--------|--------|-------|-----|----|-------|--------|--------|--------|--------|-------|-------|------|-----|-------|------|-------|
| JMs-1 | . | . | . | 154 | . | . | 0.132 | . | . | . | . | 127 | . | 24.3 | . | 264 | 132 | 100 g |
| JMs-2 | . | . | . | 454 | . | . | 1.38 | . | . | . | . | 183 | . | 254 | . | 166 | 220 | 100 g |
| SRM 2702 | (4.95) | (10.8) | 31.6 | 119.7 | . | . | . | 20.51 | 0.8267 | . | (10.4) | 357.6 | (6.2) | . | . | 485.3 | . | 50 g |
| SRM 2703 | (4.9) | (10.8) | (32) | (118) | . | . | . | 20.22 | (0.83) | . | 8.99 | 360 | (6.4) | . | . | 480 | . | 5 g |
| NRC MESS-4 * | (1.5) | (5.5) | 2.35 | 132 | (1) | . | (0.1) | (12) | 0.85 | . | 3.4 | 216 | (1.3) | (20) | (2) | 147 | (96) | 50 g |
| NRC PACS-3 * | . | . | 22.0 | 267 | . | . | . | . | . | (2.6) | 129 | . | . | . | . | 376 | . | 50 g |
| NRC HISS-1 | 0.050 | . | (0.11) | 96.9 | . | . | . | (0.06) | . | (0.26) | 6.80 | . | . | . | . | 4.94 | . | 100 g |
| BCR 320R | . | . | . | . | . | . | . | 5.3 | 0.65 | . | 1.56 | 46.5 | . | . | . | 319 | . | 40 g |

Re: (0.004)

RIVER SEDIMENT

| analysis listed in mg/kg except % which is mass % | | | | | | | | | | | | | | | | | | | | SRM 1944: CRM, 50 g | | | | | SRM 8704: RM, 50 g | | | | |
|---|-------|-------|------|-------|------|-----|----|-------|-------|------|------|-----|-------|--------|------|-------|-------|-----|-----|---------------------|--|--|--|--|--------------------|--|--|--|--|
| Number | Ag | Al% | As | Au | Ba | Be | Br | C% | Ca% | Cd | Ce | Cl% | Co | Cr | Cs | Cu | Eu | Hf | Hg | Fe | | | | | | | | | |
| SRM 1944 | 6.4 | 5.33 | 18.9 | (0.1) | . | 1.6 | 86 | . | 1.0 | 8.8 | (65) | 1.4 | 14 | 266 | 3 | 380 | (1.3) | . | 3.4 | 3.53% | | | | | | | | | |
| SRM 8704 | . | 6.10 | (17) | . | 413 | . | . | 3.351 | 2.641 | 2.94 | 66.5 | . | 13.57 | 121.9 | 5.83 | . | 1.31 | 8.4 | . | 3.97% | | | | | | | | | |
| continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number | K% | Mg% | Mn | Na% | Ni | Pb | Rb | Sb | Sc | Se | Si% | Sn | Th | Ti% | Tl | U | V | Zn | | | | | | | | | | | |
| SRM 1944 | 1.6 | (1.0) | 505 | 1.9 | 76.1 | 330 | 75 | (5) | 10.2 | 1.4 | 31 | 42 | (13) | 0.4300 | 0.59 | (3.1) | 100 | 656 | | | | | | | | | | | |
| SRM 8704 | 2.001 | 1.200 | 544 | 0.553 | 12.9 | 150 | . | 3.07 | 11.26 | . | . | . | 9.07 | 0.457 | . | 3.09 | 94.6 | 408 | | | | | | | | | | | |

CRM STREAM SEDIMENT

| analysis listed in mass % | | | | | | | | | | | | | | | | | | | BCR: 40 g | | | Jsd 1-3: 20 g | | | Jsd-4: 100 g | | | all others: 70 g units | | |
|---|------------------|--------------------------------|--------|-----------------|-------|--------|--------------------------------|----------------------------------|-------------------|-------------------|------------------|--------|--------|-------------------|-------------------------------|------------------|--------|------|-----------|--------|--|---------------|--|--|--------------|--|--|------------------------|--|--|
| Number | SiO ₂ | Al ₂ O ₃ | Org.C | CO ₂ | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O+ | H ₂ O- | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | | | | | | | | | | | | | |
| GBW 07311 | 76.25 | 10.37 | (0.24) | (0.09) | 0.47 | (0.35) | 4.39 | . | 2.67 | . | 3.28 | 0.62 | . | 0.46 | . | . | (3.02) | | | | | | | | | | | | | |
| Jsd-3 | 76.00 | 9.908 | . | . | 0.560 | 1.161 | 3.057 | 4.368 | 2.838 | 0.964 | 1.971 | 1.17 | 0.149 | 0.411 | 0.0817 | 0.403 | . | | | | | | | | | | | | | |
| Jsd-1 | 66.55 | 14.65 | . | (0.0867) | 3.034 | 1.363 | 3.526 | 5.059 | (2.301) | 0.836 | 2.183 | 1.813 | 0.0924 | 2.727 | 0.122 | 0.643 | . | | | | | | | | | | | | | |
| Jsd-2 | 60.78 | 12.31 | . | (0.501) | 3.658 | 5.955 | 4.552 | 11.65 | 2.554 | 0.451 | 1.145 | 2.731 | 0.120 | 2.438 | 0.105 | 0.614 | . | | | | | | | | | | | | | |
| Jsd-4 | 51.12 | 13.22 | . | . | 5.57 | (2.08) | . | 8.06 | . | . | 1.40 | 4.04 | 0.107 | 2.28 | 0.45 | 0.64 | . | | | | | | | | | | | | | |
| BCR 667 | estuary sediment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| analysis listed in mg/kg except * which is ng/g and % which is mass % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number | Ag | As | Au* | B | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | | | | | | | | | | |
| GBW 07311 | 3.2 | 188 | (3.6) | 68 | 260 | 26 | 50 | (2.3) | 2.3 | 58 | 290 | 8.5 | 40 | 17.4 | 79 | 7.2 | 4.6 | 0.60 | 1650 | 18.5 | | | | | | | | | | |
| Jsd-3 | (3.38) | 252 | (5.66) | . | 462 | . | . | . | 42.0 | . | 12.7 | 35.3 | 30.6 | 426 | 2.22 | 1.07 | 0.686 | 3200 | . | . | | | | | | | | | | |
| Jsd-1 | (0.036) | 2.42 | (0.64) | . | 520 | 1.40 | . | . | 34.4 | . | 11.2 | 21.5 | 1.89 | 22.0 | 2.23 | 0.906 | 0.925 | 306 | . | . | | | | | | | | | | |
| Jsd-2 | (1.04) | 38.6 | (54.6) | . | 1199 | . | . | . | 23.4 | . | 48.4 | 108 | 1.07 | 1117 | 2.86 | 1.48 | 0.81 | 259 | . | . | | | | | | | | | | |
| Jsd-4 | . | . | . | . | (888) | . | . | . | . | . | (21) | (1215) | . | (486) | . | . | . | . | . | . | | | | | | | | | | |
| BCR 667 | . | . | . | . | . | . | . | (99.7) | (0.67) | 56.7 | . | (23.0) | (178) | (7.8) | (60) | 4.01 | 2.35 | 1.00 | Fe: | (4.48) | | | | | | | | | | |
| continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number | Gd | Ge | Hf | Hg* | Ho | I | In | La | Li | Lu | Mn | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | S | | | | | | | | | | |
| GBW 07311 | 5.9 | 1.81 | 5.4 | 72 | 1.4 | 2.0 | 1.9 | 30 | 71 | 0.78 | 2490 | 5.9 | 25 | 27 | 14.3 | 255 | 636 | 7.4 | 408 | 170 | | | | | | | | | | |
| Jsd-3 | . | . | 3.21 | (254) | . | . | . | 19.8 | 151 | 0.196 | . | . | 7.80 | 15.7 | 19.6 | . | 82.1 | 3.09 | 285 | (399) | | | | | | | | | | |
| Jsd-1 | 2.71 | . | 3.55 | (15.5) | . | . | . | 18.1 | 22.8 | 0.186 | . | . | 11.1 | 17.6 | 7.04 | . | 12.9 | 4.05 | 67.4 | (68) | | | | | | | | | | |
| Jsd-2 | . | . | 2.70 | (106) | . | . | . | 11.3 | (19.2) | 0.252 | . | 11.5 | 4.56 | 13.2 | 92.8 | . | 146 | 2.40 | 26.9 | 1.31% | | | | | | | | | | |
| Jsd-4 | . | . | . | . | . | . | . | (16) | (32) | . | . | . | . | . | (114) | . | (240) | . | (57) | . | | | | | | | | | | |
| BCR 667 | 4.41 | . | . | . | 0.80 | . | . | 27.8 | . | 0.325 | (920) | . | . | 25.0 | (128) | . | (31.9) | 6.1 | . | . | | | | | | | | | | |
| continued | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Ti% | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | | | | | | | | | | |
| GBW 07311 | 14.9 | 7.4 | 0.20 | 6.2 | 370 | 29 | 5.7 | 1.13 | (0.36) | 23.3 | 0.2100 | 2.9 | 0.74 | 9.1 | 47 | 126 | 4.3 | 5.1 | 373 | 153 | | | | | | | | | | |
| Jsd-3 | . | 10.5 | . | 3.26 | . | 58.7 | 0.687 | 0.368 | . | 7.79 | . | . | . | 1.66 | 70.4 | . | 14.9 | 1.40 | 136 | 124 | | | | | | | | | | |
| Jsd-1 | . | 10.9 | . | 3.48 | . | 340 | 0.893 | 0.431 | . | 4.44 | . | . | . | 1.00 | 76.0 | . | 14.8 | 1.18 | 96.5 | 132 | | | | | | | | | | |
| Jsd-2 | . | 17.5 | . | 2.68 | . | 202 | . | 0.440 | . | 2.33 | . | . | . | 1.10 | 125 | . | 17.4 | 1.67 | 2056 | 111 | | | | | | | | | | |
| Jsd-4 | . | (17) | . | . | . | (220) | . | . | . | . | . | . | . | . | (152) | . | (21) | . | (1485) | (90) | | | | | | | | | | |
| BCR 667 | (0.96) | 13.7 | (1.59) | 4.66 | . | . | (0.876) | 0.682 | . | 10.0 | . | . | 0.326 | 2.26 | . | . | . | 2.20 | (175) | . | | | | | | | | | | |

CRM STREAM SEDIMENT

| analysis listed in mass % | | | | | | | | | | | | | | | | | DC360xx: 75 g units | | DC730xx: 70 g units | |
|---------------------------|------------------|--------------------------------|--------|--------|-----------------|-------|--------|----------------------------------|-------------------|------------------|------|--------|----------|-------------------|--------|--------|---------------------|--|---------------------|--|
| Number | SiO ₂ | Al ₂ O ₃ | C | C.Org | CO ₂ | CaO | FeO | Fe ₂ O ₃ T | H ₂ O+ | K ₂ O | MgO | Mn | N | Na ₂ O | P | S | Ti | | | |
| NCS DC73017 | 77.42 | 11.44 | (0.25) | 0.20 | (0.11) | 0.85 | (0.2) | 1.86 | (1.0) | 3.89 | 0.18 | 0.122 | 0.0218 | 2.53 | 0.0234 | 0.0066 | 0.151 | | | |
| NCS DC73015 | 74.33 | 11.65 | (0.46) | (0.08) | (1.34) | 2.85 | (0.57) | 1.79 | 0.98 | 2.96 | 0.71 | 0.0290 | (0.0079) | 2.85 | 0.0335 | 0.0087 | 0.146 | | | |
| NCS DC73014 | 69.40 | 11.06 | (0.48) | 0.28 | (0.76) | 2.96 | (1.83) | 7.00 | 2.31 | 2.35 | 1.70 | 0.142 | (0.0150) | 1.40 | 0.0568 | 0.0432 | 0.32 | | | |
| NCS DC73018 | 66.02 | 11.25 | 1.01 | 0.34 | 2.57 | 3.82 | (2.1) | 6.31 | 3.23 | 2.41 | 2.34 | 0.0798 | 0.0291 | 0.83 | 0.0459 | 0.0110 | 0.53 | | | |
| NCS DC73021 | 51.43 | 10.73 | 2.6 | 0.18 | 8.60 | 13.12 | (0.66) | 3.81 | (3.5) | 2.17 | 1.83 | 0.0675 | 0.0312 | 1.68 | 0.0571 | (0.62) | 0.285 | | | |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga |
|-------------|-------|------|-----|------|-----|------|------|-------|----|------|------|-----|-----|------|-----|------|------|-----|------|
| NCS DC73017 | 0.044 | 4.4 | 5.5 | 1054 | 1.6 | 0.33 | 1.0 | 0.095 | 32 | (30) | 12.5 | 8.4 | 1.5 | 3.9 | 1.3 | 0.8 | 0.54 | 131 | 12.0 |
| NCS DC73015 | 0.050 | 3.6 | 48 | 600 | 3.6 | 0.48 | 0.61 | 0.093 | 24 | 33 | 4.4 | 21 | 7.2 | 7.2 | 1.7 | 0.93 | 0.62 | 279 | 12.4 |
| NCS DC73014 | 0.14 | 14.3 | 53 | 455 | 2.2 | 0.51 | 0.8 | 0.34 | 47 | 53 | 10.2 | 61 | 5.8 | 132 | 4.1 | 2.5 | 1.20 | 550 | 14.6 |
| NCS DC73018 | 0.092 | 3.0 | 14 | 567 | 1.9 | 0.22 | 1.0 | 0.12 | 90 | 62 | 19.5 | 79 | 4.6 | 43 | 6.5 | 3.7 | 1.4 | 664 | 16.5 |
| NCS DC73021 | 0.068 | 10.5 | 46 | 584 | 1.5 | 0.25 | 1.3 | 0.165 | 47 | 298 | 10.0 | 48 | 5.4 | 22.6 | 4.5 | 2.6 | 1.08 | 506 | 13.4 |

| Number | Gd | Ge | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc |
|-------------|-----|------|-----|---------|------|------|---------|------|------|------|------|------|-----|------|-----|------|-----|------|------|
| NCS DC73017 | 1.4 | 1.21 | 2.7 | 0.016 | 0.26 | 0.46 | (0.014) | 11.8 | 8.1 | 0.14 | 0.64 | 9.5 | 8.9 | 4.7 | 22 | 2.5 | 81 | 0.29 | 2.1 |
| NCS DC73015 | 1.7 | 1.64 | 2.1 | (0.007) | 0.33 | 0.27 | 0.018 | 13.9 | 40 | 0.16 | 0.33 | 5.1 | 9.8 | 7.0 | 31 | 2.9 | 118 | 0.16 | 4.9 |
| NCS DC73014 | 4.1 | 1.87 | 3.8 | 0.018 | 0.83 | 0.47 | 0.14 | 24 | 20.7 | 0.42 | 0.94 | 9.4 | 22 | 18.9 | 210 | 5.9 | 96 | 1.18 | 11.4 |
| NCS DC73018 | 7.0 | 1.45 | 7.8 | (0.014) | 1.27 | 0.4 | 0.068 | 45 | 43 | 0.60 | 0.84 | 15.3 | 40 | 70 | 19 | 11.0 | 121 | 0.15 | 16.9 |
| NCS DC73021 | 4.5 | 1.05 | 4.1 | 0.019 | 0.92 | 1.7 | 0.046 | 24 | 28 | 0.42 | 1.1 | 9.2 | 23 | 26 | 17 | 5.9 | 77 | 0.90 | 10.3 |

| Number | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|-------------|-------|-----|-------|-----|------|------|--------|------|------|------|-----|-----|------|-----|------|-----|-----|
| NCS DC73017 | 0.072 | 1.6 | (1.0) | 167 | 0.81 | 0.22 | (0.03) | 5.4 | 0.44 | 0.13 | 1.1 | 28 | 0.58 | 7.0 | 0.83 | 19 | 100 |
| NCS DC73015 | 0.053 | 1.9 | 2.3 | 253 | 0.72 | 0.29 | (0.02) | 4.1 | 0.83 | 0.16 | 1.9 | 31 | 0.66 | 9.7 | 1.0 | 27 | 71 |
| NCS DC73014 | 0.47 | 4.5 | 2.5 | 171 | 0.65 | 0.68 | (0.05) | 8.3 | 0.91 | 0.40 | 2.2 | 77 | 2.0 | 23 | 2.6 | 209 | 132 |
| NCS DC73018 | 0.24 | 7.5 | 1.9 | 117 | 1.04 | 1.14 | (0.05) | 15.4 | 0.77 | 0.59 | 3.5 | 120 | 1.7 | 34 | 3.8 | 74 | 275 |
| NCS DC73021 | 0.21 | 4.7 | 2.0 | 273 | 0.63 | 0.77 | (0.05) | 7.8 | 0.48 | 0.43 | 2.3 | 69 | 1.3 | 25 | 2.7 | 59 | 150 |

CRM STREAM SEDIMENT

analysis listed in mass % T = total Fe reported

| Number | Al2O3 | Ba | CaO | Cr2O3 | Cu | FeO | T.Fe2O3 | K2O | MgO | MnO | Na2O | P2O5 | Pb | S | SiO2 | TiO2 | Zn | Zr |
|---------|-------|----------|------|-------|--------|-------|---------|------|------|------|-------|------|------|--------|-------|------|--------|--------|
| SARM 52 | 9.38 | (0.0410) | 0.37 | 0.19 | 0.0219 | (4.0) | 19.71 | 0.25 | 0.60 | 0.27 | (0.1) | 0.09 | 0.12 | (0.02) | 57.81 | 1.30 | 0.0264 | 0.0250 |

continued analysis listed in mg/kg except % for mass %

| Number | Ce | Co | Ga | Nb | Ni | Rb | Sr | Th | V | Y | Units |
|---------|-------|----|------|----|-----|----|----|------|-----|----|-------|
| SARM 52 | (210) | 81 | (15) | 11 | 182 | 20 | 25 | (11) | 346 | 20 | 100 g |

CRM STREAM SEDIMENT

analysis listed in mass % T = TOTAL 70 g units

| Number | SiO ₂ | Al ₂ O ₃ | C.Org | C.T | CaO | CO ₂ | F | Fe ₂ O ₃ .T | FeO | H ₂ O+ | K ₂ O | MgO | Mn | Na ₂ O | P | S | Ti |
|--------------|------------------|--------------------------------|-------|--------|------|-----------------|--------|-----------------------------------|--------|-------------------|------------------|------|--------|-------------------|-----|----------|------|
| NCS DC73318a | 73.58 | 13.25 | 0.11 | (0.18) | 0.17 | (0.16) | 0.0646 | 3.70 | (0.43) | 2.98 | 4.31 | 0.47 | 0.0645 | 0.38 | 221 | (0.0066) | 0.29 |

continued analysis listed in mg/kg

| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Ge |
|--------------|------|-----|-----|-----|-----|------|-----|------|----|------|-----|------|-----|-----|-----|-----|------|------|-----|------|
| NCS DC73318a | 0.12 | 7.3 | 5.3 | 620 | 3.5 | 0.18 | 1.1 | 0.16 | 88 | (29) | 6.8 | 11.6 | 9.7 | 5.8 | 5.4 | 3.1 | 1.03 | 18.5 | 5.6 | 1.15 |

| Number | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | N | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Se |
|--------------|-----|-------|------|-----|-------|----|----|------|-----|-------|----|----|-----|----|-----|-----|------|-----|------|
| NCS DC73318a | 6.7 | 0.024 | 1.06 | 1.2 | 0.070 | 45 | 22 | 0.54 | 1.3 | (119) | 27 | 33 | 3.0 | 37 | 9.4 | 232 | 0.38 | 9.0 | 0.14 |

| Number | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|--------------|-----|-----|----|------|------|--------|------|------|------|-----|----|-----|----|-----|----|-----|
| NCS DC73318a | 6.3 | 3.8 | 52 | 1.78 | 0.90 | (0.03) | 20.5 | 1.60 | 0.53 | 4.7 | 31 | 3.3 | 29 | 3.4 | 80 | 228 |

CRM SEDIMENT

| analysis listed in mass % | | | | | | | | | | | | | | 3480 series: 100 g units | | | 5360 series: 50 g units | | |
|---------------------------|------------------|--------------------------------|-----------------|-------|--------|--------------------------------|----------------------------------|------------------|-------|-------|-------------------|-------------------------------|------|--------------------------|---------|--|-------------------------|--|--|
| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI | | | | |
| VS 3486-86 | 70.54 | 11.29 | . | 0.52 | . | (3.5) | 5.24 | 2.21 | 0.48 | 0.11 | 1.67 | 0.28 | 0.43 | 0.62 | . | | | | |
| VS 5361-90 | 70.5 | 11.31 | . | 0.48 | 1.3 | . | 5.24 | 2.23 | 0.49 | 0.105 | 1.65 | 0.27 | 0.44 | 0.61 | 5.5 | | | | |
| VS 5365-90 | 60.4 | 16.49 | 0.13 | 0.40 | 3.3 | . | 8.80 | 2.44 | 1.62 | 0.132 | 1.57 | 0.19 | 0.03 | 0.98 | 6.8 | | | | |
| VS 3484-86 | 51.95 | 16.76 | . | 1.13 | (2.2) | (3.5) | 6.33 | 2.51 | 1.53 | 0.071 | 1.37 | 0.18 | 0.05 | 0.85 | (17.17) | | | | |
| VS 5363-90 | 51.9 | 16.65 | . | 1.11 | 2.2 | . | 6.28 | 2.50 | 1.54 | 0.070 | 1.34 | 0.19 | 0.04 | 0.83 | 17.1 | | | | |
| VS 3483-86 | 45.59 | 11.60 | . | 7.05 | (1.3) | (2.8) | 4.62 | 2.96 | 5.82 | 0.073 | 0.87 | 0.15 | 0.05 | 0.63 | (20.33) | | | | |
| VS 5362-90 | 45.4 | 11.58 | . | 7.04 | 1.5 | . | 4.59 | 2.96 | 5.72 | 0.074 | 0.85 | 0.14 | 0.04 | 0.63 | 20.3 | | | | |
| VS 3485-86 | 25.07 | 5.03 | . | 17.76 | (0.24) | (0.2) | 10.59 | 1.13 | 11.70 | 0.50 | 0.61 | 1.82 | 0.05 | 0.27 | (25.14) | | | | |
| VS 5364-90 | 25.0 | 4.98 | 21.6 | 17.83 | 0.4 | . | 10.56 | 1.13 | 11.7 | 0.48 | 0.63 | 1.82 | 0.05 | 0.26 | 25.1 | | | | |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | As% | Au | B% | Ba% | Be% | Bi% | Cd | Ce | Co | Cr | Cs | Cu% | F% | Ga | Ge | La% |
|------------|-------|---------|---------|----------|-------|---------|--------|-------|-------|-----|--------|----|--------|------|----|----|---------|
| VS 3486-86 | . | . | . | 0.016 | 0.039 | 0.00036 | . | 9 | . | 9 | 0.0076 | . | 0.025 | . | 16 | . | 0.0032 |
| VS 5361-90 | 35 | 0.8 | 0.11 | 0.015 | 0.038 | 0.004 | 0.009 | 9 | 0.004 | 9.0 | 0.0075 | 17 | 0.025 | 0.21 | 16 | 15 | 0.0030 |
| VS 5365-90 | . | . | . | 0.007 | 0.055 | 0.0003 | . | . | 0.006 | 29 | 0.013 | 4 | 0.0049 | . | 17 | . | 0.0032 |
| VS 3484-86 | (0.7) | (0.004) | (0.025) | (0.008) | 0.058 | 0.00023 | . | (1.9) | . | 18 | 0.0120 | . | 0.0052 | . | 17 | . | 0.0034 |
| VS 5363-90 | 0.10 | 0.004 | 0.016 | 0.008 | 0.050 | 0.00021 | . | . | . | 17 | 0.012 | 6 | 0.0050 | 0.09 | 17 | 12 | 0.0029 |
| VS 3483-86 | (0.5) | (0.004) | (0.04) | (0.009) | 0.047 | 0.00020 | . | (2) | . | 14 | 0.0066 | . | 0.0048 | . | 12 | . | 0.00322 |
| VS 5362-90 | 0.06 | . | 0.03 | 0.008 | 0.050 | 0.00020 | . | . | 0.005 | 13 | 0.0065 | 4 | 0.0044 | 0.12 | 12 | 12 | 0.0030 |
| VS 3485-86 | 2.6 | (0.009) | 1.3 | (0.0014) | 0.035 | 0.00025 | . | (3.5) | . | 11 | 0.0028 | . | 0.026 | . | 9 | . | 0.026 |
| VS 5364-90 | 2.3 | 0.006 | 1.2 | 0.0013 | 0.034 | 0.0003 | 0.0006 | 3 | 0.05 | 12 | 0.0029 | 4 | 0.024 | 0.19 | 8 | 16 | 0.022 |

| Number | Li% | Mo | Nb | Ni | Pb% | Rb% | Sb% | Sc | Sn% | Sr% | V% | W% | Y% | Yb | Zn% | Zr% | Others |
|------------|--------|-----|-----|----|---------|--------|-------|----|---------|-------|--------|--------|--------|------|--------|---------|---------------|
| VS 3486-86 | 0.015 | . | 17 | 25 | 0.011 | 0.019 | 0.017 | 8 | 0.04 | 0.020 | 0.006 | . | 0.0016 | 2.24 | 0.039 | 0.021 | |
| VS 5361-90 | 0.014 | 2.7 | 17 | 24 | 0.010 | 0.019 | 0.015 | 8 | 0.040 | 0.018 | 0.0058 | 0.20 | 0.0018 | 2.5 | 0.039 | 0.020 | |
| VS 5365-90 | 0.007 | 2.1 | 13 | 72 | 0.0024 | 0.0080 | . | 18 | 0.00036 | 0.013 | 0.018 | . | 0.0030 | 4 | 0.012 | 0.021 | Nd: 25, Sm: 4 |
| VS 3484-86 | 0.0012 | (3) | 60 | 58 | 0.0016 | 0.010 | . | 15 | 0.00044 | 0.020 | 0.014 | . | 0.0030 | 3.2 | 0.009 | (0.018) | |
| VS 5363-90 | 0.006 | 1.1 | 10 | 55 | 0.0015 | 0.0095 | . | 16 | 0.00040 | 0.019 | 0.014 | . | 0.0023 | 3 | 0.0086 | 0.018 | |
| VS 3483-86 | 0.010 | (3) | 12 | 33 | 0.0016 | 0.009 | . | 9 | 0.00037 | 0.030 | 0.009 | . | 0.0023 | 2.5 | 0.005 | 0.014 | |
| VS 5362-90 | 0.009 | 1.0 | 12 | 31 | 0.0014 | 0.0085 | . | 11 | 0.00040 | 0.025 | 0.0087 | . | 0.0020 | 2.6 | 0.0054 | 0.015 | |
| VS 3485-86 | 0.0020 | 29 | (7) | 19 | (0.020) | 0.004 | . | 9 | 0.0004 | 0.018 | 0.007 | . | 0.004 | 3.3 | 0.014 | 0.007 | |
| VS 5364-90 | 0.0020 | 27 | 7 | 18 | 0.015 | 0.0045 | . | 7 | 0.00033 | 0.017 | 0.0075 | 0.0025 | 0.0040 | 2.9 | 0.014 | 0.007 | Th: 40 |

CRM RIVER SEDIMENT

| analysis listed in mass % | | | | | | | | | | | | | | 85 g units | | |
|---------------------------|--------------------------------|--------|------|----------------------------------|------------------|--------|-------|-------------------|-------------------------------|--------|----------|------------------|------------------|------------|-------|--|
| Number | Al ₂ O ₃ | Ba | CaO | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Pb | S | SiO ₂ | TiO ₂ | Zn | LOI | |
| US SDAR-M2 | 12.47 | 0.0990 | 0.84 | 2.63 | 5.00 | (0.49) | 0.134 | 2.58 | (0.079) | 0.0808 | (0.0970) | 73.45 | 0.300 | 0.0760 | (1.6) | |

continued analysis listed in mg/kg

| Number | Ag | As | Be | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Ge |
|------------|------|------|-----|------|-----|------|------|------|------|-----|------|------|------|------|------|-------|
| US SDAR-M2 | (15) | (76) | 6.6 | 1.05 | 5.1 | 98.8 | 12.4 | 49.6 | 1.82 | 236 | 5.88 | 3.58 | 1.44 | 17.6 | 6.28 | (1.5) |

| Number | Hf | Hg | Ho | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pr | Rb | Sb | Sc |
|------------|------|------|------|-------|------|------|------|------|------|------|------|------|-----|-------|-----|
| US SDAR-M2 | 7.29 | 1.44 | 1.21 | (2.1) | 46.6 | 17.9 | 0.54 | 13.3 | 26.2 | 39.4 | 48.8 | 11.0 | 149 | (107) | 4.1 |

| Number | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zr |
|------------|-------|------|-------|-----|-----|------|-------|------|-------|------|------|------|-------|------|------|-----|
| US SDAR-M2 | (2.7) | 7.18 | (2.4) | 144 | 1.8 | 0.97 | (2.1) | 14.2 | (2.8) | 0.54 | 2.53 | 25.2 | (3.5) | 32.7 | 3.63 | 259 |

CRM CONTAMINATED RIVER SEDIMENT

| certified analysis listed in mg/kg | | | | | | | | | | informational analysis listed in mass % | | | | | | | | | | |
|------------------------------------|------|------|------|-----|-----|------|-----|-----|----|---|-----|---------|-------|-----|-----|-----|-----|------|------|-------|
| Number | As | Cd | Co | Cr | Cu | Hg | Ni | Pb | V | Zn | Al | C.Inorg | C.Org | Ca | Fe | K | Mg | Si | LOI | Units |
| BAM CC020 | 56.6 | 20.8 | 32.8 | 290 | 560 | 27.4 | 158 | 255 | 53 | 2030 | 5.5 | 0.2 | 9.7 | 2.9 | 5.1 | 1.7 | 0.9 | 25.3 | 18.5 | 52 g |

CRM TIBET SEDIMENT

| analysis listed in mass % | | | | | | | | | | | | | | | | T = Total | | 60 g units | |
|---------------------------|------------------|--------------------------------|--------|------|--------|----------------------------------|------------------|------|--------|-------|-------------------|--------|-------------------------------|---------|-------|------------------|--|------------|--|
| Number | SiO ₂ | Al ₂ O ₃ | Ba | CaO | F | Fe ₂ O ₃ T | K ₂ O | MgO | Mn | MnO | Na ₂ O | P | P ₂ O ₅ | Sr | Ti | TiO ₂ | | | |
| NCS DC70322 | 73.67 | 12.57 | 0.0711 | 1.38 | 0.0415 | 2.85 | 3.87 | 0.62 | 0.0430 | 0.056 | 2.50 | 0.0455 | 0.104 | 0.0250 | 0.249 | 0.421 | | | |
| NCS DC70321 | 73.59 | 13.41 | 0.0875 | 1.53 | 0.0452 | 1.71 | 4.33 | 0.49 | 0.0258 | 0.034 | 2.69 | 0.0459 | 0.105 | 0.0340 | 0.170 | 0.290 | | | |
| NCS DC70318 | 73.37 | 12.73 | 0.0437 | 1.32 | 0.0456 | 3.19 | 3.56 | 1.07 | 0.0422 | 0.055 | 2.09 | 0.0420 | 0.097 | 0.0165 | 0.253 | 0.422 | | | |
| NCS DC70319 | 71.23 | 13.22 | 0.0470 | 1.40 | 0.0459 | 4.11 | 3.65 | 0.70 | 0.0527 | 0.069 | 2.72 | 0.0484 | 0.111 | 0.0256 | 0.344 | 0.589 | | | |
| NCS DC70320 | 70.36 | 13.95 | 0.0483 | 2.40 | 0.0505 | 3.20 | 3.18 | 0.93 | 0.0451 | 0.059 | 3.26 | 0.0564 | 0.129 | 0.0404 | 0.274 | 0.461 | | | |
| NCS DC70324 | 70.16 | 12.79 | 0.0472 | 2.29 | 0.0457 | 4.82 | 2.67 | 0.62 | 0.0392 | 0.051 | 1.48 | 0.0625 | 0.142 | 0.0157 | 0.364 | 0.616 | | | |
| NCS DC70313 | 69.70 | 13.19 | 0.0508 | 0.39 | 0.0622 | 5.85 | 2.56 | 1.58 | 0.0876 | 0.113 | 1.23 | 0.0613 | 0.140 | 0.00593 | 0.439 | 0.725 | | | |
| NCS DC70316 | 68.50 | 14.42 | 0.0476 | 0.53 | 0.0440 | 4.81 | 2.66 | 1.74 | 0.0668 | 0.087 | 1.66 | 0.0571 | 0.134 | 0.0113 | 0.451 | 0.753 | | | |
| NCS DC70315 | 66.50 | 10.17 | 0.0384 | 6.50 | 0.0539 | 3.70 | 2.26 | 1.14 | 0.0567 | 0.074 | 1.17 | 0.0501 | 0.115 | 0.0132 | 0.290 | 0.491 | | | |
| NCS DC70317 | 64.22 | 10.84 | 0.0369 | 8.19 | 0.0424 | 3.07 | 2.86 | 0.87 | 0.0614 | 0.079 | 1.74 | 0.0389 | 0.090 | 0.0185 | 0.217 | 0.366 | | | |
| NCS DC70323 | 60.95 | 11.89 | 0.0475 | 7.77 | 0.0555 | 5.47 | 2.01 | 0.78 | 0.0608 | 0.078 | 1.09 | 0.0542 | 0.124 | 0.0327 | 0.339 | 0.558 | | | |

continued analysis listed in mg/kg except * for ng/g and % for mass percent

| Number | Ag | As | Au* | B | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd |
|-------------|------|------|-----|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| NCS DC70322 | 0.08 | 28.8 | 0.7 | 28.1 | 2.48 | 0.29 | 0.7 | 0.12 | 77.6 | 93 | 6.0 | 17.7 | 48.1 | 10.7 | 3.49 | 1.99 | 1.05 | 15.5 | 4.43 |
| NCS DC70321 | 0.06 | 14.3 | 0.4 | 19.7 | 3.60 | 0.33 | 0.8 | 0.07 | 109 | 82 | 4.4 | 16.5 | 16.2 | 10.8 | 2.95 | 1.62 | 0.98 | 16.5 | 4.40 |
| NCS DC70318 | 0.06 | 18.0 | 1.4 | 30.6 | 3.32 | 0.49 | 0.9 | 0.10 | 89.6 | 207 | 6.7 | 47.6 | 20.2 | 16.2 | 4.92 | 2.90 | 1.07 | 16.3 | 5.83 |
| NCS DC70319 | 0.21 | 19.6 | 1.2 | 66.2 | 2.31 | 0.80 | 1.4 | 0.19 | 78.1 | 244 | 7.6 | 22.6 | 15.0 | 151 | 3.91 | 2.39 | 0.97 | 15.8 | 4.57 |
| NCS DC70320 | 0.14 | 12.3 | 1.1 | 41.5 | 2.56 | 0.70 | 1.1 | 0.17 | 60 | 152 | 7.3 | 24.4 | 13.0 | 49.0 | 2.94 | 1.64 | 0.96 | 16.9 | 3.74 |
| NCS DC70324 | 0.07 | 24.9 | 1.4 | 143 | 5.62 | 0.45 | 0.9 | 0.08 | 84.4 | 63 | 10.3 | 55.2 | 16.6 | 27.7 | 5.10 | 2.75 | 1.29 | 17.6 | 6.05 |
| NCS DC70313 | 0.09 | 22.0 | 1.4 | 77.0 | 2.34 | 0.50 | 1.0 | 0.54 | 74.0 | 63 | 17.9 | 93.8 | 11.9 | 27.1 | 4.73 | 2.81 | 1.21 | 17.8 | 5.40 |
| NCS DC70316 | 0.07 | 13.7 | 1.8 | 56.1 | 2.43 | 0.30 | 1.9 | 0.10 | 93.4 | 56.7 | 14.7 | 139 | 13.7 | 23.1 | 6.10 | 3.54 | 1.58 | 18.5 | 7.11 |
| NCS DC70315 | 0.10 | 22.5 | 1.6 | 59.5 | 2.13 | 0.46 | 1.5 | 0.33 | 71.3 | 96.7 | 9.2 | 37.5 | 7.9 | 16.6 | 4.40 | 2.60 | 1.04 | 14.1 | 5.15 |
| NCS DC70317 | 0.32 | 37.3 | 6.2 | 30.0 | 2.67 | 1.22 | 0.9 | 0.57 | 72.0 | 69.1 | 9.8 | 39.8 | 17.2 | 247 | 4.24 | 2.47 | 0.96 | 14.4 | 4.90 |
| NCS DC70323 | 0.10 | 54.6 | 2.9 | 134 | 3.88 | 0.48 | 1.3 | 0.08 | 90.1 | 71 | 13.2 | 59.0 | 42.5 | 44.0 | 5.56 | 2.98 | 1.40 | 17.1 | 6.58 |

| Number | Ge | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pd* | Pr | Pt* | Rb |
|-------------|------|-----|-------|------|--------|---------|------|------|------|------|------|------|------|------|-------|------|-------|-----|
| NCS DC70322 | 1.18 | 6.9 | 0.017 | 0.69 | (0.22) | (0.042) | 41.6 | 26.7 | 0.30 | 0.65 | 10.9 | 30.2 | 8.5 | 36.3 | (0.3) | 8.61 | (0.4) | 170 |
| NCS DC70321 | 1.02 | 6.1 | 0.008 | 0.58 | (0.23) | (0.03) | 63.2 | 25.7 | 0.24 | 0.60 | 10.1 | 37.0 | 8.8 | 48.9 | (0.3) | 11.2 | (0.2) | 229 |
| NCS DC70318 | 1.33 | 6.7 | 0.030 | 0.97 | (0.3) | (0.04) | 47.8 | 36.6 | 0.44 | 0.59 | 14.7 | 35.8 | 16.9 | 35.8 | (0.4) | 9.78 | (0.3) | 180 |
| NCS DC70319 | 1.13 | 9.5 | 0.028 | 0.79 | (0.3) | (0.04) | 42.6 | 26.1 | 0.39 | 7.0 | 16.1 | 30.6 | 9.5 | 46.8 | (0.3) | 8.57 | (0.3) | 154 |
| NCS DC70320 | 1.12 | 5.5 | 0.012 | 0.58 | (0.3) | (0.04) | 32.5 | 25.6 | 0.25 | 2.7 | 10.5 | 25.7 | 11.1 | 45.4 | (0.3) | 6.94 | (0.3) | 136 |
| NCS DC70324 | 1.63 | 7.4 | 0.053 | 0.99 | (0.5) | (0.06) | 40.0 | 66.8 | 0.37 | 0.65 | 17.2 | 34.8 | 27.8 | 32.1 | (0.7) | 9.42 | (0.4) | 131 |
| NCS DC70313 | 1.34 | 6.5 | 0.033 | 0.95 | (0.8) | (0.06) | 38.8 | 53.9 | 0.41 | 0.60 | 15.9 | 31.1 | 51.9 | 61.9 | (0.6) | 8.33 | (0.4) | 115 |
| NCS DC70316 | 1.22 | 8.8 | 0.043 | 1.20 | (0.7) | (0.06) | 48.2 | 41.9 | 0.52 | 0.83 | 15.3 | 41.9 | 75.3 | 24.0 | (0.6) | 10.9 | (0.4) | 117 |
| NCS DC70315 | 1.09 | 6.0 | 0.026 | 0.87 | (0.5) | (0.05) | 37.0 | 27.9 | 0.38 | 0.83 | 15.6 | 29.3 | 20.1 | 31.7 | (0.4) | 8.10 | (0.3) | 104 |
| NCS DC70317 | 1.19 | 5.7 | 0.034 | 0.83 | (0.4) | (0.07) | 37.9 | 29.7 | 0.36 | 6.6 | 12.0 | 29.0 | 20.8 | 127 | (0.3) | 7.89 | (0.4) | 141 |
| NCS DC70323 | 1.66 | 6.3 | 0.066 | 1.06 | (0.5) | (0.07) | 42.6 | 69.8 | 0.38 | 0.66 | 15.5 | 36.3 | 37.2 | 27.7 | (0.8) | 10.1 | (0.6) | 110 |

| Number | S | Sb | Sc | Se | Sm | Sn | Ta | Tb | Te | Tm | Th | Tl | U | V | W | Y | Yb | Zn | Zr |
|-------------|-------|------|------|------|------|------|-----|------|--------|------|------|------|-----|------|-----|------|------|------|-----|
| NCS DC70322 | (59) | 2.34 | 5.5 | 0.05 | 5.26 | 2.0 | 1.1 | 0.64 | (0.04) | 0.32 | 19.9 | 1.26 | 3.5 | 50.6 | 3.1 | 18.6 | 1.96 | 50.8 | 243 |
| NCS DC70321 | (57) | 0.67 | 3.9 | 0.04 | 5.69 | 2.1 | 1.0 | 0.59 | (0.03) | 0.25 | 31.7 | 1.42 | 5.1 | 31.5 | 2.5 | 15.5 | 1.54 | 39.7 | 210 |
| NCS DC70318 | (48) | 0.84 | 7.3 | 0.05 | 6.62 | 3.8 | 1.8 | 0.91 | (0.03) | 0.46 | 25.1 | 1.0 | 4.8 | 52.5 | 4.1 | 26.5 | 2.83 | 54.1 | 225 |
| NCS DC70319 | (480) | 2.70 | 6.2 | 0.18 | 5.42 | 2.7 | 1.8 | 0.70 | 0.10 | 0.38 | 25.5 | 1.1 | 4.8 | 74.7 | 9.3 | 21.6 | 2.55 | 62.9 | 299 |
| NCS DC70320 | (183) | 1.27 | 6.0 | 0.11 | 4.49 | 2.0 | 1.2 | 0.54 | 0.07 | 0.25 | 16.7 | 0.91 | 3.6 | 59.4 | 4.2 | 15.3 | 1.63 | 61.1 | 184 |
| NCS DC70324 | (160) | 1.55 | 9.3 | 0.33 | 6.69 | 6.4 | 1.4 | 0.93 | 0.07 | 0.41 | 14.9 | 0.69 | 2.3 | 77.3 | 2.6 | 25.9 | 2.57 | 76.4 | 247 |
| NCS DC70313 | (123) | 1.91 | 12.0 | 0.16 | 5.99 | 14.9 | 1.2 | 0.83 | 0.05 | 0.43 | 12.1 | 0.64 | 2.6 | 101 | 2.6 | 24.4 | 2.73 | 176 | 222 |
| NCS DC70316 | (157) | 1.10 | 11.7 | 0.16 | 8.11 | 3.2 | 1.3 | 1.08 | 0.05 | 0.54 | 15.5 | 0.67 | 2.5 | 87.7 | 2.3 | 32.7 | 3.47 | 80.9 | 299 |
| NCS DC70315 | (177) | 0.82 | 7.9 | 0.12 | 5.61 | 3.3 | 1.3 | 0.78 | (0.03) | 0.40 | 12.3 | 0.62 | 2.5 | 57.4 | 2.4 | 23.7 | 2.55 | 91.1 | 206 |
| NCS DC70317 | (117) | 4.44 | 6.5 | 0.19 | 5.39 | 3.3 | 1.1 | 0.76 | 0.21 | 0.38 | 17.5 | 0.96 | 3.4 | 45.7 | 9.2 | 23.0 | 2.46 | 116 | 188 |
| NCS DC70323 | (528) | 10.4 | 10.5 | 0.39 | 7.19 | 4.6 | 1.2 | 1.01 | 0.15 | 0.44 | 15.6 | 0.66 | 2.1 | 85.0 | 6.5 | 29.5 | 2.67 | 77.1 | 210 |

SILLIMANITE

= class, where 1 = CRM and 2 = RM

| # | Number | Al ₂ O ₃ | SiO ₂ | CaO | Fe ₂ O ₃ | K ₂ O | Li ₂ O | MgO | MnO | Na ₂ O | TiO ₂ | LOI | Units |
|---|--------------|--------------------------------|------------------|------|--------------------------------|------------------|-------------------|------|--------|-------------------|------------------|------|-------------|
| 2 | CERAM 2CAS12 | 63.8 | 33.9 | 0.25 | 0.31 | 0.13 | . | 0.12 | . | 0.15 | 1.31 | 0.13 | 25 or 100 g |
| 1 | BCS 309 | 61.1 | 34.1 | 0.22 | 1.51 | 0.46 | (0.01) | 0.17 | (0.03) | 0.34 | 1.92 | . | 100 g |

CRM SILLIMANITE SCHIST

analysis listed in mass %

| Number | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | FeO | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | 100 g units |
|---------|--------------------------------|------|--------------------------------|-------|------------------|-------|--------|-------------------|-------------------------------|------------------|------------------|-------------|
| SARM 44 | 58.80 | 0.14 | 2.06 | (1.0) | (0.18) | (0.1) | (0.03) | (0.05) | (0.10) | 34.84 | 1.83 | |

continued analysis listed in mg/kg

| Number | Ba | Ce | Co | Cr | Cu | Ga | Mo | Nb | Ni | Pb | Rb | Sr | Th | V | Y | Zn | Zr |
|---------|------|-------|-----|-----|------|------|------|----|------|------|----|----|----|-----|----|-----|-----|
| SARM 44 | (50) | (220) | (8) | 384 | (10) | (55) | (15) | 96 | (15) | (30) | 13 | 5 | 50 | 395 | 84 | 271 | 406 |

CRM SILICEOUS MINERAL SETS

available in SETS/3, as grouped

50 g units

| Number | Material | SiO ₂ | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI |
|-----------|---------------------------|------------------|--------------------------------|-------|--------------------------------|------------------|-------|--------|-------------------|-------------------------------|----------|------------------|-------|
| JCRM R702 | Albite | 67.69 | 19.64 | 0.546 | 0.058 | 0.137 | 0.103 | 0.004 | 11.31 | 0.139 | . | 0.030 | 0.23 |
| JCRM R703 | Potassium Feldspar | 66.99 | 17.93 | 0.095 | 0.082 | 11.02 | 0.040 | 0.003 | 3.32 | 0.008 | . | 0.005 | 0.36 |
| JCRM R803 | Prophyllite | 68.52 | 23.95 | 0.033 | 0.047 | 2.32 | 0.017 | 0.0014 | 0.165 | 0.018 | 0.02 | 0.104 | 4.40 |
| JCRM R604 | Gairome Clay | 47.88 | 35.37 | 0.216 | 1.357 | 0.468 | 0.251 | 0.006 | 0.083 | 0.020 | (0.014) | 0.865 | 13.37 |
| JCRM R605 | Kaolin | 49.77 | 35.64 | 0.004 | 0.283 | (0.008) | 0.004 | . | 0.032 | 0.105 | (0.023) | 0.068 | 13.90 |
| JCRM R751 | Pottery Stone | 79.32 | 14.15 | 0.033 | 0.340 | (3.00) | 0.049 | 0.003 | 0.121 | 0.009 | (0.0010) | 0.010 | 2.73 |

Also see our Industrial Materials catalog for more Siliceous Materials
<http://www.brammerstandard.com/pdf/industrial.pdf>

CRM SILT

analysis listed in mass %

| Number | SiO ₂ | Al ₂ O ₃ | Co ₂ | CaO | FeO | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | L.O.I. | Units |
|------------|------------------|--------------------------------|-----------------|------|-----|----------------------------------|------------------|------|-------|-------------------|-------------------------------|---------|------------------|--------|-------|
| VS 5366-90 | 60.9 | 14.35 | 2.4 | 2.95 | 1.9 | 5.44 | 3.58 | 2.54 | 0.088 | 2.33 | 0.18 | 0.08 | 0.62 | 6.5 | 50 g |
| VS 3133-85 | 60.85 | 14.40 | . | 2.95 | . | 5.45 | 3.56 | 2.54 | 0.087 | 2.33 | 0.18 | (0.10) | 0.62 | 6.39 | 100 g |
| VS 3132-85 | 60.54 | 16.46 | . | 0.41 | . | 8.76 | 2.43 | 1.60 | 0.13 | 1.61 | 0.19 | (0.027) | 0.98 | 6.78 | 100 g |
| VS 3131-85 | 47.0 | 9.48 | . | 7.76 | . | 5.92 | 2.26 | 6.06 | 0.30 | 0.53 | 0.13 | (0.037) | 0.50 | 20.10 | 100 g |
| VS 5367-90 | 46.7 | 9.45 | 9.8 | 7.74 | 1.1 | 5.88 | 2.24 | 6.0 | 0.30 | 0.53 | 0.13 | 0.03 | 0.50 | 20.0 | 50 g |

continued analysis listed mass %

| Number | As | B | Ba | Ce | Cr | Cu | Li | Ni | Rb | Sb | Sr | V | Zn | Zr |
|------------|----------|-------|-------|---------|--------|--------|---------|--------|--------|-----------|-------|--------|--------|-------|
| VS 5366-90 | 0.04 | 0.007 | 0.09 | 0.007 | 0.008 | 0.019 | 0.0035 | 0.0036 | 0.011 | 0.013 | 0.027 | 0.011 | 0.0094 | 0.023 |
| VS 3133-85 | (0.043) | 0.006 | 0.091 | 0.008 | 0.0088 | 0.019 | 0.0037 | 0.0036 | 0.012 | (0.0015) | 0.028 | 0.011 | 0.009 | 0.023 |
| VS 3132-85 | (0.0038) | 0.007 | 0.057 | (0.006) | 0.014 | 0.0048 | 0.00716 | 0.0072 | 0.0077 | (0.00019) | 0.013 | 0.018 | 0.012 | 0.022 |
| VS 3131-85 | (0.0016) | 0.007 | 0.062 | (0.006) | 0.0068 | 0.0037 | 0.0096 | 0.0040 | 0.0061 | . | 0.025 | 0.011 | 0.005 | 0.013 |
| VS 5367-90 | . | 0.008 | 0.059 | 0.005 | 0.0062 | 0.0037 | 0.009 | 0.0040 | 0.0062 | . | 0.025 | 0.0097 | 0.0049 | 0.013 |

continued analysis listed in mg/kg

| Number | Ag | Be | Cd | Co | Cs | Ga | Ge | La | Mo | Nb | Nd | Pb | Sc | Sm | Sn | W | Y | Yb |
|------------|--------|-----|-------|----|-----|----|-------|------|-----|----|----|----|----|----|-----|----|----|-------|
| VS 5366-90 | . | 4 | . | 13 | 5 | 18 | . | 55 | 6.5 | 11 | 30 | 55 | 12 | 5 | 5 | 12 | 25 | 2.9 |
| VS 3133-85 | (0.8) | 3.7 | (1.5) | 13 | 5.8 | 16 | 1.4 | 61 | 10 | 17 | . | 58 | 17 | . | 5 | . | 26 | 3.3 |
| VS 3132-85 | (0.17) | 2.8 | (0.2) | 30 | 4.1 | 16 | 1.6 | 43 | 2.5 | 13 | . | 23 | 20 | . | 3.9 | . | 30 | 4.3 |
| VS 3131-85 | (0.2) | 2.4 | (2.3) | 21 | 4 | 11 | (1.2) | (38) | 2.4 | 11 | . | 20 | 11 | . | 5 | . | 22 | (2.8) |
| VS 5367-90 | . | 2.1 | . | 21 | 3.2 | 11 | . | 35 | 2.1 | 9 | 15 | 17 | 10 | 3 | 3.6 | . | 21 | 3 |

CRM SILVER ORE

analysis listed in mass % except * which is mg/kg

GBM, USZ: 250 g KZ: 100 g SRM: 200 g

| Number | Ag* | Ba | Cu | Fe | Fe ₂ O ₃ | Pb | S | SO ₃ | Zn | Al ₂ O ₃ | As | Bi | CO ₂ | CaO | Cd | Co* | F | Ge* |
|------------|-------|------|--------|--------|--------------------------------|--------|-------|-----------------|--------|--------------------------------|--------|------|-----------------|-------|--------|-----|-------|-----|
| USZ 9-92 | 740 | . | 2.25 | . | . | 0.041 | . | . | 0.20 | . | . | . | . | . | . | . | . | . |
| USZ 8-91 | 331 | . | 0.83 | . | 48.40 | 0.13 | . | 6.85 | 0.59 | 2.11 | 0.53 | 0.11 | . | 0.25 | 0.0020 | . | . | . |
| USZ 7-91 | 169 | . | 0.46 | . | . | 0.101 | . | . | 0.42 | . | . | . | . | . | 0.0015 | . | . | . |
| GBM908-13 | 151.4 | . | 0.0176 | . | . | 1.7721 | 0.29 | . | . | . | . | . | . | . | . | . | . | . |
| KZ 6587-93 | 60.2 | 33.6 | 0.019 | 2.5 | . | 2.86 | 11.5 | . | 2.72 | . | 0.016 | . | . | . | 0.012 | . | . | . |
| GBM310-2 | 45.5 | . | 0.6936 | . | . | 0.6577 | . | . | 2.0680 | . | 0.0078 | . | . | . | . | 39 | . | . |
| KZ 3031-84 | 37.4 | . | 3.37 | 15.17T | . | . | 2.78 | . | . | 4.93 | . | 2.87 | 28.05 | . | . | . | 0.056 | . |
| GBM310-1 | 19.0 | . | 0.5825 | . | . | 0.3046 | . | . | 0.9772 | . | 0.0362 | . | . | . | . | 36 | . | . |
| KZ 6586-93 | 19 | 0.38 | 0.013 | 2.03 | . | 3.5 | 0.55 | . | 0.045 | . | . | . | . | . | . | . | . | . |
| KZ 6588-93 | 13.7 | 0.42 | . | 3.67 | . | 1.57 | 5.88 | . | 4.68 | . | . | . | . | . | 0.013 | . | . | 4.4 |
| KZ 47-85 | 8.7 | . | 0.42 | 21.0 | . | . | 2.70 | . | . | . | . | . | . | . | . | . | . | . |
| KZ 3030-84 | 8.6 | . | . | 13.84T | . | . | 2.04 | . | . | 10.85 | . | . | 1.04 | 18.94 | . | . | 0.048 | . |
| SRM 886 | 8.25 | . | . | . | . | . | 1.466 | . | . | . | . | . | . | . | . | . | . | . |
| KZ 48-85 | 7.3 | . | 1.98 | 15.9T | . | . | 1.94 | . | . | 5.47 | . | . | 2.73 | 29.75 | . | . | 0.054 | . |
| KZ 8079-94 | 3.7 | . | 0.73 | . | . | 0.62 | 1.25 | . | 0.41 | . | . | . | . | . | 0.016 | . | . | . |
| KZ 3029-84 | 2.1 | . | 0.30 | 3.11T | . | . | 1.59 | . | . | 15.18 | . | . | . | . | . | . | 0.074 | . |
| KZ 8078-94 | 1.6 | . | 0.38 | . | . | 0.21 | 0.75 | . | 0.15 | . | . | . | . | . | 0.0036 | . | . | . |

continued

| Number | K ₂ O | MgO | MnO | Mo | Na ₂ O | Ni | P ₂ O ₅ | Re* | Sb | Se* | SiO ₂ | Sr | Te* | TiO ₂ | Zr |
|------------|------------------|------|-------|--------|-------------------|--------|-------------------------------|--------|------|------|------------------|-------|-----|------------------|-------|
| USZ 9-92 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 8-91 | 0.53 | 1.48 | 2.77 | . | . | . | 0.54 | . | 0.50 | . | 17.80 | . | . | 0.12 | . |
| USZ 7-91 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GBM908-13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 6587-93 | . | . | . | . | . | . | . | 0.013 | . | . | . | 0.69 | . | . | . |
| GBM310-2 | . | . | . | . | . | 0.0029 | . | . | . | . | . | . | . | . | . |
| KZ 3031-84 | 0.26 | 1.33 | 0.33 | 0.18 | 0.18 | . | 0.40 | . | . | 13.1 | 33.56 | . | 9.1 | 0.19 | . |
| GBM310-1 | . | . | . | . | . | 0.0346 | . | . | . | . | . | . | . | . | . |
| KZ 6586-93 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 0.019 |
| KZ 6588-93 | . | . | . | . | . | . | . | 0.0066 | . | . | . | 0.029 | . | . | . |
| KZ 47-85 | . | . | . | 0.012 | . | . | . | . | . | . | . | . | . | . | . |
| KZ 3030-84 | 0.48 | 2.06 | 0.41 | 0.38 | 0.16 | . | 0.17 | 0.30 | . | . | 42.32 | . | . | 0.54 | . |
| SRM 886 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 48-85 | 0.13 | 0.66 | 0.36 | . | 0.10 | . | 0.11 | 0.04 | . | 5.7 | 33.77 | . | . | 0.147 | . |
| KZ 8079-94 | . | . | . | . | . | . | . | 0.29 | . | . | . | . | . | . | . |
| KZ 3029-84 | 4.06 | . | 0.081 | 0.0086 | 1.95 | . | 0.094 | 0.043 | . | . | 68.09 | . | . | 0.42 | . |
| KZ 8078-94 | . | . | . | . | . | . | . | 0.072 | . | . | . | . | . | . | . |

SLATE WITH EXTENSIVE ANALYSIS

= class, where 1 = CRM and 2 = RM analysis listed in mass %

| # | Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | FeO | Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI |
|---|----------|------------------|--------------------------------|-----------------|-------|--------|--------------------------------|------------------|------------------|--------|---------|-------------------|-------------------------------|--------|------------------|------|
| 1 | GUW TB2 | 60.4 | 20.5 | . | 0.20 | 5.4 | 6.95T | 3.6+ | 0.86 | 1.86 | 0.047 | 1.29 | 0.095 | . | 0.93 | 3.46 |
| 1 | GUW TB | 60.23 | 20.64 | 0.14 | . | 5.43 | 6.90 | 3.78+ | 3.87 | (1.93) | (0.052) | 1.32 | 0.097 | . | 0.93 | . |
| 1 | JSL-1 | 59.47 | 17.60 | (0.769) | 1.479 | 4.523 | 1.875 | +3.92 -0.654 | 2.845 | 2.413 | 0.0599 | 2.184 | 0.202 | . | 0.725 | . |
| 1 | JSL-2 | 59.45 | 18.17 | (1.236) | 1.885 | 5.048 | 0.959 | +4.158 -0.362 | 3.008 | 2.385 | 0.0818 | 1.344 | 0.164 | 0.1467 | 0.754 | . |
| 2 | IAG OU-6 | 57.35 | 20.45 | (0.23) | 0.74 | (1.65) | 8.94T | (0.14-) | 3.03 | 2.41 | 0.28 | 1.76 | 0.12 | . | 0.99 | 3.62 |

continued analysis listed in mg/kg

| Number | As | Ba | Be | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | Gd | Hf | Ho | La | Li | Lu |
|----------|-------|-----|--------|------|------|------|------|------|--------|------|------|-----|-------|------|------|---------|------|--------|-------|
| GUW TB2 | . | 649 | . | 14 | 92 | 11 | 49 | . | . | . | . | . | . | . | . | . | . | 109 | . |
| GUW TB | 10.5 | 780 | 4.1 | 104 | 14 | 82 | 9 | 49 | 1.8 | . | . | 740 | 25 | . | 5 | . | 61 | 111 | 0.45 |
| JSL-1 | 14.9 | 305 | 2.28 | 60.6 | 15.5 | 60.9 | 7.60 | 40.8 | (5.11) | . | 1.22 | 598 | . | . | 4.63 | 0.688 | 29.3 | (50.7) | 0.442 |
| JSL-2 | 11.4 | 302 | 2.68 | 69.6 | 15.7 | 64.7 | 8.24 | 44.5 | 4.71 | . | 1.14 | 678 | . | . | 5.54 | (0.671) | 32.7 | 52.6 | 0.404 |
| IAG OU-6 | 13.23 | 480 | (2.53) | 77.1 | 29.2 | 70.7 | 8.10 | 40.4 | 5.06 | 2.93 | 1.36 | . | 24.17 | 5.30 | 4.70 | 1.04 | 33.2 | (95.3) | 0.45 |

| Number | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm |
|----------|-------|------|------|-------|--------|-------|--------|------|------|------|-------|-------|-------|------|--------|--------|
| GUW TB2 | . | . | 39 | . | . | 185 | . | . | . | 5 | 159 | . | . | . | . | . |
| GUW TB | . | 50 | 40 | 8 | . | 180 | 3.4 | 16 | 8.4 | 6 | 160 | 1.4 | . | 18 | . | . |
| JSL-1 | 9.53 | 28.8 | 37.6 | 17.4 | 6.07 | 117 | . | 16.7 | 6.02 | . | 193 | 0.842 | 0.717 | 9.97 | . | . |
| JSL-2 | 12.3 | 32.0 | 40.6 | 19.7 | (6.44) | 118 | . | 16.8 | 5.95 | . | 230 | 1.04 | 0.727 | 11.5 | . | . |
| IAG OU-6 | 14.49 | 30.2 | 40.2 | 28.80 | 7.91 | 121.3 | (0.56) | 23.1 | 6.01 | 2.67 | 131.7 | 1.02 | 0.86 | 11.3 | (0.54) | (0.45) |

| Number | U | V | Y | Yb | Zn | Zr | Units |
|----------|------|-------|-------|------|-------|-------|-------|
| GUW TB2 | . | 96 | . | 3.8 | 94 | 180 | 50 g |
| GUW TB | . | 107 | 39 | 3.3 | 94 | 180 | 50 g |
| JSL-1 | 2.63 | 131 | 30.0 | 2.81 | 108 | 174 | 100 g |
| JSL-2 | 2.92 | 122 | 31.3 | 3.15 | 101 | 191 | 100 g |
| IAG OU-6 | 1.92 | 129.8 | 27.75 | 2.98 | 111.4 | 174.2 | ~35 g |

B: 0.0090% W: 0.00022%

CRM SOIL - AQUA REGIA METHOD

certified analysis listed in mg/kg, BAM U115 is one sample with two methods used

| Number | As | Cd | Co | Cr | Cu | Hg | Mn | Ni | Pb | V | Zn | Units | Method Used with 11465 Correction |
|------------|------|------|------|------|-----|------|-----|------|------|------|-----|-------|--------------------------------------|
| BAM U115 | 27.7 | 4.52 | 7.35 | 96.9 | 167 | 4 | . | 29.3 | 16.4 | 22.4 | 342 | 35 g | EN 16174 Method A open vessel reflux |
| BAM U115 | 27.9 | 4.65 | 7.3 | 99.6 | 171 | 4.07 | . | 29.9 | 16.9 | 23.5 | 349 | 35 g | EN 16174 Method B microwave assisted |
| BAM U110 * | 13.0 | 7.0 | 14.5 | 190 | 262 | 49.3 | 580 | 95.6 | 185 | . | 990 | 60 g | ISO 11466 |

* BAM U110 spectroscopic analysis also certified, see "Soil - Contaminated"

informational analysis listed in mass %

| Number | Si | Al | Ca | Fe | K | S | Mg | Dry Matter | LOI | Org.C | Inorg.C | Tot.C | H | N |
|------------|------|-----|-----|-----|-----|-----|-----|--------------|--------------|-------|---------|-------|-----|-----|
| BAM U115 | 34.7 | 3.2 | 3.5 | 2.2 | 1.4 | . | . | 98.6 @ 105°C | 8.3 @ 550°C | 2.5 | 1.1 | . | . | . |
| BAM U110 * | 25.7 | 5.1 | 4.1 | 2.8 | 1.9 | 1.1 | 1.0 | 97.3 @ 105°C | 13.3 @ 550°C | 6.7 | 0.8 | 7.5 | 1.2 | 0.4 |

CRM MERCURY IN SOIL

analysis listed in mass % except * which is mg/kg

30 or 50 g

| Number | Hg* | Al ₂ O ₃ | C | CaO | Fe ₂ O ₃ T | K ₂ O | MgO | MnO | N | Na ₂ O | S | SiO ₂ | TiO ₂ | Dry Mass |
|---------|-------|--------------------------------|--------|--------|----------------------------------|------------------|--------|---------|---------|-------------------|---------|------------------|------------------|----------|
| USZ 305 | 2.75 | (13.38) | (1.31) | (4.02) | (4.95) | (2.88) | (2.10) | (0.104) | (0.085) | (1.63) | (0.071) | (61.89) | (0.659) | (98.90%) |
| USZ 304 | 1.52 | (11.96) | (1.42) | (4.55) | (4.22) | (2.85) | (1.79) | (0.082) | (0.075) | (1.99) | (0.093) | (64.11) | (0.605) | (99.21%) |
| USZ 303 | 0.157 | (13.10) | (1.19) | (3.39) | (4.68) | (2.98) | (1.68) | (0.097) | (0.088) | (1.84) | (0.021) | (64.39) | (0.65) | (99.05%) |

CRM SOIL

| analysis listed in mass % | | | | | | | | | | | | | | 100 g units | |
|---------------------------|--------------------------------|-----|------|--------|--------------------------------|----------------------------------|-------------------|------------------|------|--------|-------------------|-------------------------------|------------------|------------------|--------|
| Number | Al ₂ O ₃ | T.C | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O- | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI |
| JSo-1 | 17.99 | . | 2.56 | . | . | 11.49 | . | 0.34 | 2.11 | 0.202 | 0.66 | 0.48 | 38.28 | 1.23 | . |
| USZ 15-94 | 14.84 | . | 2.66 | (1.44) | 5.75 | . | (4.97) | 2.47 | 1.65 | 0.08 | 3.14 | 0.16 | 62.51 | 0.86 | (5.29) |
| USZ 16-94 | (14.11) | . | 2.78 | 1.22 | (5.18) | . | . | 2.61 | 1.84 | (0.08) | 3.07 | (0.18) | 63.18 | 0.88 | (4.53) |

continued informational analysis listed in mg/kg

| Number | B | Ba | Co | Cr | Cs | Cu | Li | Ni | Pb | Rb | Sr | V | Y | Zn | Zr |
|-----------|------|-----|----|----|-----|-----|------|----|----|------|-----|-----|------|-----|----|
| JSo-1 | 12.0 | 269 | 32 | 71 | 1.5 | 169 | 11.2 | 39 | 13 | 14.5 | 196 | 300 | 24.9 | 105 | 96 |
| USZ 15-94 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 16-94 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

CRM SOIL SET

available in SET/6 ONLY analysis listed in mg/kg% 25 g units

| Number | As | Cd | Cr | Hg | Pb | Se |
|------------|-------|--------|-------|-------|-------|--------|
| J SAC 0466 | 1093 | 1199 | 1483 | 113.5 | 1214 | 1175 |
| J SAC 0465 | 550 | 607.4 | 738 | 57.8 | 612.4 | 587 |
| J SAC 0464 | 271.1 | 301.0 | 499 | 28.6 | 302.7 | 291.9 |
| J SAC 0463 | 137.6 | 146.8 | 244 | 14.76 | 151.6 | 141.5 |
| J SAC 0462 | 71.5 | 74.2 | 149.6 | 7.27 | 73.7 | 71.6 |
| J SAC 0461 | 21.53 | (0.30) | 97.2 | 0.075 | 24.4 | (0.44) |

CRM SOIL (TILL) REFERENCE MATERIALS WITH ACID EXTRACTION

| analysis listed in mass % | | | | | | | | | | | | | | | | 100 g units | | | |
|---------------------------|------------------|--------------------------------|------|------|--------------------------------|------------------|------|--------|------|-------------------|--------|-------------------------------|-------|--------|------------------|-------------|-----------|-------|--|
| Number | SiO ₂ | Al ₂ O ₃ | CaO | Fe | Fe ₂ O ₃ | K ₂ O | MgO | Mn | MnO | Na ₂ O | P | P ₂ O ₅ | S | Ti | TiO ₂ | LOI 1000°C | LOI 500°C | Sum | |
| CAN TILL-3 | 69.1 | 12.2 | 2.63 | 2.78 | 3.92 | 2.42 | 1.71 | 0.0520 | 0.06 | 2.64 | 0.0490 | 0.11 | <0.05 | 0.2910 | 0.49 | 4.6 | 3.6 | 99.88 | |
| CAN TILL-1 | 60.9 | 13.7 | 2.72 | 4.81 | 6.82 | 2.22 | 2.15 | 0.1420 | 0.18 | 2.71 | 0.0930 | 0.22 | <0.05 | 0.5990 | 0.98 | 7.3 | 6.3 | 99.90 | |
| CAN TILL-2 | 60.8 | 16.0 | 1.27 | 3.84 | 5.39 | 3.07 | 1.83 | 0.0780 | 0.10 | 2.19 | 0.0750 | 0.17 | <0.05 | 0.5300 | 0.88 | 8.1 | 6.8 | 99.80 | |

continued analysis in mg/kg except % for mass percent and * for parts per billion

| Number | As | Au* | Ba | Be | Bi | Br | Ce | Co | Cr | Cs | Cu | Eu | Er | Hf | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Rb | Sb | Sc |
|------------|----|-----|-----|-----|----|------|----|----|-----|-----|-----|------|-----|----|----|----|-----|----|----|----|----|----|-----|-----|----|
| CAN TILL-3 | 87 | 6 | 489 | 2.0 | <5 | 4.5 | 42 | 15 | 123 | 1.7 | 22 | <1.0 | 1.4 | 8 | 21 | 21 | 0.2 | 2 | 7 | 16 | 39 | 26 | 55 | 0.9 | 10 |
| CAN TILL-1 | 18 | 13 | 702 | 2.4 | <5 | 6.4 | 71 | 18 | 65 | 1.0 | 47 | 1.3 | 3.6 | 13 | 28 | 15 | 0.6 | 2 | 10 | 26 | 24 | 22 | 44 | 7.8 | 13 |
| CAN TILL-2 | 26 | 2 | 540 | 4.0 | <5 | 12.2 | 98 | 15 | 74 | 12. | 150 | 1.0 | 3.7 | 11 | 44 | 47 | 0.6 | 14 | 20 | 36 | 32 | 31 | 143 | 0.8 | 12 |

continued

| Number | analysis in mg/kg except % for mass percent and * for parts per billion | | | | | | | | | | | | | partial extraction elements from dilute acid | | | | | | | |
|------------|---|-----|------|------|------|-----|----|----|----|-----|-----|-----|------|--|-----|-----|------|----|----|----|-----|
| | Sm | Sr | Ta | Tb | Th | U | V | W | Y | Yb | Zn | Zr | Ag | Co | Cu | Fe% | Mn | Mo | Ni | Pb | Zn |
| CAN TILL-3 | 3.3 | 300 | <0.5 | <0.5 | 4.6 | 2.1 | 62 | <1 | 17 | 1.5 | 56 | 230 | 49 | 10 | 23 | 2.2 | 310 | 1 | 32 | 17 | 43 |
| CAN TILL-1 | 5.9 | 291 | 0.7 | 1.1 | 5.6 | 2.2 | 99 | <1 | 38 | 3.9 | 98 | 502 | <0.2 | 12 | 49 | 3.4 | 1020 | 1 | 17 | 14 | 71 |
| CAN TILL-2 | 7.4 | 144 | 1.9 | 1.2 | 18.4 | 5.7 | 77 | 5 | 40 | 3.7 | 130 | 390 | 12 | 12 | 152 | 3.4 | 570 | 13 | 30 | 24 | 116 |

continued partial extraction elements from concentrated acid

| Number | Ag | As | Ba | Bi | Cd | Co | Cr | Cu | Fe% | Hg* | Mn | Mo | Ni | Pb | V | Zn |
|------------|-----|----|----|----|------|----|----|-----|-----|-----|-----|----|----|----|----|-----|
| CAN TILL-3 | 1.6 | 84 | 43 | <3 | <0.2 | 11 | 73 | 23 | 2.0 | 107 | 310 | <2 | 32 | 16 | 33 | 43 |
| CAN TILL-1 | 0.2 | 13 | 84 | <3 | <0.2 | 12 | 30 | 48 | 3.1 | 92 | 950 | <2 | 18 | 12 | 48 | 70 |
| CAN TILL-2 | 0.2 | 22 | 95 | 4 | 0.3 | 13 | 40 | 149 | 3.2 | 74 | 530 | 11 | 31 | 21 | 38 | 116 |

CRM SOIL

| analysis listed in mass % | | 100 g units | | | | | | | | | | | |
|---------------------------|-----------------|------------------|--------------------------------|-------|--------------------------------|------------------|------|-------|-------------------|-------------------------------|------------------|--------|--------|
| Number | Type | SiO ₂ | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | As | B |
| VS 2498-83 | Sandy, Turf-Ash | 91.24 | 3.36 | 0.27 | 0.99 | 1.23 | 0.13 | 0.011 | 0.51 | 0.036 | 0.29 | 0.0003 | 0.003 |
| VS 2499-83 | Sandy, Turf-Ash | 91.24 | 3.36 | 0.27 | 0.99 | 1.23 | 0.13 | 0.011 | 0.51 | 0.036 | 0.29 | 0.0017 | 0.003 |
| VS 2507-83 | Black | 71.49 | 9.81 | 1.60 | 3.48 | 2.42 | 0.95 | 0.079 | 0.81 | 0.18 | 0.74 | 0.0008 | 0.0056 |
| VS 2508-83 | Black | 71.49 | 9.81 | 1.60 | 3.48 | 2.42 | 0.95 | 0.079 | 0.81 | 0.18 | 0.74 | 0.0021 | 0.0056 |
| VS 2509-83 | Black | 71.49 | 9.81 | 1.60 | 3.48 | 2.42 | 0.95 | 0.079 | 0.81 | 0.18 | 0.74 | 0.004 | 0.0056 |
| VS 2501-83 | Red | 59.18 | 17.01 | 0.17 | 7.86 | 0.98 | 0.92 | 0.051 | 0.15 | 0.10 | 1.56 | 0.0010 | 0.006 |
| VS 2502-83 | Red | 59.18 | 17.01 | 0.17 | 7.86 | 0.98 | 0.92 | 0.051 | 0.15 | 0.10 | 1.56 | 0.003 | 0.006 |
| VS 2503-83 | Red | 59.18 | 17.01 | 0.17 | 7.86 | 0.98 | 0.92 | 0.051 | 0.15 | 0.10 | 1.56 | 0.005 | 0.006 |
| VS 2504-83 | Grey | 52.65 | 11.48 | 11.47 | 4.60 | 2.09 | 2.99 | 0.089 | 1.64 | 0.17 | 0.64 | 0.0013 | 0.0063 |
| VS 2505-83 | Grey | 52.65 | 11.48 | 11.47 | 4.60 | 2.09 | 2.99 | 0.089 | 1.64 | 0.17 | 0.64 | 0.0029 | 0.0063 |
| VS 2506-83 | Grey | 52.65 | 11.48 | 11.47 | 4.60 | 2.09 | 2.99 | 0.089 | 1.64 | 0.17 | 0.64 | 0.006 | 0.0063 |

continued analysis listed in mass % except * which is mg/kg

| Number | Ba | Be* | Cd* | Ce | Co | Cr | Cs* | Cu | F | Ga* | Hg* | La* | Li | Mo* |
|------------|-------|-----|------|--------|---------|--------|-----|--------|-------|-----|-------|-----|---------|-----|
| VS 2498-83 | 0.031 | 1.1 | 0.1 | 0.0017 | 0.00020 | 0.010 | 1.6 | 0.0009 | . | 5 | 0.03 | 10 | 0.00035 | 1.5 |
| VS 2499-83 | 0.031 | 10 | 1.3 | 0.0017 | 0.0045 | 0.010 | 1.6 | 0.010 | . | 5 | 0.13 | 10 | 0.00035 | 7 |
| VS 2507-83 | 0.050 | 2.0 | 0.10 | 0.007 | 0.0009 | 0.0083 | 4 | 0.0025 | 0.028 | 11 | 0.05 | 36 | 0.0023 | 1.2 |
| VS 2508-83 | 0.050 | 9 | 1.8 | 0.007 | 0.0046 | 0.0083 | 4 | 0.011 | 0.028 | 11 | 0.21 | 36 | 0.0023 | 6 |
| VS 2509-83 | 0.050 | 24 | 4.5 | 0.007 | 0.013 | 0.0083 | 4 | 0.027 | 0.028 | 11 | 0.4 | 36 | 0.0023 | 11 |
| VS 2501-83 | 0.027 | 1.6 | 0.12 | 0.007 | 0.0014 | 0.018 | 9 | 0.0047 | 0.04 | 15 | 0.08 | 30 | 0.005 | 3 |
| VS 2502-83 | 0.027 | 10 | 2.6 | 0.007 | 0.0063 | 0.018 | 9 | 0.017 | 0.04 | 15 | 0.26 | 30 | 0.005 | 8 |
| VS 2503-83 | 0.027 | 25 | 5 | 0.007 | 0.015 | 0.018 | 9 | 0.031 | 0.04 | 15 | 0.4 | 30 | 0.005 | 13 |
| VS 2504-83 | 0.050 | 2.2 | 0.3 | 0.006 | 0.0012 | 0.0084 | 5 | 0.0034 | 0.05 | 13 | 0.025 | 29 | 0.0032 | 1.4 |
| VS 2505-83 | 0.050 | 8 | 2.1 | 0.006 | 0.0057 | 0.0084 | 5 | 0.012 | 0.05 | 13 | 0.18 | 29 | 0.0032 | 6 |
| VS 2506-83 | 0.050 | 26 | 5.5 | 0.006 | 0.015 | 0.0084 | 5 | 0.029 | 0.05 | 13 | 0.4 | 29 | 0.0032 | 13 |

| Number | Nb* | Ni | Pb | Rb* | S | Sc* | Se* | Sn | Sr | V | Y* | Yb* | Zn | Zr |
|------------|-----|--------|--------|-----|------|-----|-------|---------|--------|--------|----|-----|--------|-------|
| VS 2498-83 | 12 | 0.0010 | 0.0008 | 32 | . | 2.6 | (0.8) | 0.00019 | 0.0069 | 0.0014 | 13 | 1.5 | 0.0010 | 0.035 |
| VS 2499-83 | 12 | 0.0087 | 0.0087 | 32 | . | 2.6 | (0.8) | 0.0019 | 0.0069 | 0.0014 | 13 | 1.5 | 0.014 | 0.035 |
| VS 2507-83 | 14 | 0.0032 | 0.0018 | 88 | 0.05 | 11 | (3) | 0.0003 | 0.011 | 0.0072 | 31 | 4.1 | 0.0056 | 0.047 |
| VS 2508-83 | 14 | 0.011 | 0.009 | 88 | 0.05 | 11 | (3) | 0.0020 | 0.011 | 0.0072 | 31 | 4.1 | 0.018 | 0.047 |
| VS 2509-83 | 14 | 0.030 | 0.026 | 88 | 0.05 | 11 | (3) | 0.006 | 0.011 | 0.0072 | 31 | 4.1 | 0.046 | 0.047 |
| VS 2501-83 | 25 | 0.0054 | 0.0023 | 80 | 0.04 | 15 | (3) | 0.0005 | 0.005 | 0.018 | 27 | 3.6 | 0.0087 | 0.034 |
| VS 2502-83 | 25 | 0.016 | 0.015 | 80 | 0.04 | 15 | (3) | 0.0022 | 0.005 | 0.018 | 27 | 3.6 | 0.027 | 0.034 |
| VS 2503-83 | 25 | 0.038 | 0.028 | 80 | 0.04 | 15 | (3) | 0.006 | 0.005 | 0.018 | 27 | 3.6 | 0.061 | 0.034 |
| VS 2504-83 | 13 | 0.0045 | 0.0017 | 81 | 0.04 | 14 | (1) | 0.0004 | 0.031 | 0.009 | 26 | 3.3 | 0.0070 | 0.019 |
| VS 2505-83 | 13 | 0.013 | 0.010 | 81 | 0.04 | 14 | (1) | 0.0020 | 0.031 | 0.009 | 26 | 3.3 | 0.017 | 0.019 |
| VS 2506-83 | 13 | 0.032 | 0.028 | 81 | 0.04 | 14 | (1) | 0.006 | 0.031 | 0.009 | 26 | 3.3 | 0.039 | 0.019 |

CRM SOIL

| analysis listed in mass % | | | | | | | | | | | | |
|---------------------------|-------|------|------|------|------|------|--------|-------|------|--------|-------|-------|
| Number | Si | Al | Ca | Fe | K | Mg | Mn | N | Na | P | Ti | Units |
| SRM 2711a | 31.4 | 6.72 | 2.42 | 2.82 | 2.53 | 1.07 | 0.0675 | . | 1.20 | 0.0842 | 0.317 | 50 g |
| GBW 08302 | 30.57 | 7.11 | 2.59 | 3.34 | 2.12 | 1.53 | 0.0677 | 0.128 | 1.52 | 0.086 | 0.40 | 15 g |
| BCR 142R | . | . | . | . | . | . | 0.0970 | . | . | . | . | 40 g |
| ERM-CC690 | . | . | . | . | . | . | . | . | . | . | . | 70 g |

continued analysis listed in mg/kg except % which is mass %

| Number | As | B | Ba | Be | Br | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Hf | Hg | In | La | Lu | |
|-----------|-----|------|-------|------|-------|-------|------|-------|-------|-------|------|-----|-------|-----|------|-------|-------|---------|--------|-------|--------|--|
| SRM 2711a | 107 | . | 730 | . | 54.1 | (70) | 9.89 | 52.3 | (6.7) | 140 | (5) | . | (1.1) | . | (5) | (9.2) | 7.42 | . | (38) | (0.5) | | |
| GBW 08302 | 3.8 | (25) | (509) | 2.96 | (1.3) | 0.081 | 83.6 | 13.1 | 60.8 | (7.3) | 24.6 | (5) | (239) | 1.4 | (13) | . | (7.3) | (0.018) | (0.06) | 41.9 | (0.48) | |
| BCR 142R | . | . | . | . | 0.34 | . | 12.1 | (113) | . | 69.7 | . | . | . | . | . | . | . | 0.067 | . | . | . | |
| ERM-CC690 | . | . | . | . | . | 49.1 | . | . | . | . | 2.90 | . | . | . | 3.2 | . | . | . | . | 24.4 | . | |

| Number | Mo | Nd | Ni | Pb | Pr | Rb | Sb | Sc | Se | Sm | Sr | Ta | Tb | Th | Tm | U | V | W | Y | Yb | Zn | |
|-----------|-------|------|------|--------|-----|-------|-------|-------|------|------|-----|-------|-------|------|-------|------|------|-------|------|------|-------|--|
| SRM 2711a | . | (29) | 21.7 | 0.140% | . | (120) | 23.8 | (8.5) | (2) | 5.93 | 242 | (1) | (0.8) | (15) | . | 3.01 | 80.7 | . | . | (3) | 414 | |
| GBW 08302 | (0.8) | 42.3 | 31.1 | 14.2 | (9) | 135 | (0.4) | 10.8 | 0.16 | 7.1 | 163 | (1.1) | (0.9) | 17.6 | . | 3.84 | 77.5 | (3.5) | (25) | 3.1 | 58 | |
| BCR 142R | . | . | 64.5 | 40.2 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | (101) | |
| ERM-CC690 | . | 19.1 | . | . | . | . | 7.9 | . | . | 3.5 | . | . | 0.50 | 7.6 | 0.232 | 1.90 | . | . | . | 1.57 | . | |

CRM SOIL

| analysis listed in mass % | | | | | | | | | | | | | | 70 g units | | listed in mg/kg | | | | |
|---|--------------------------------|--------|--------|-----------------|------|------|----------------------------------|-------------------|------------------|------|-------|-------------------|------------------|------------|-------|-----------------|-----|-----|-----|------|
| Number | Al ₂ O ₃ | T.C | C(org) | CO ₂ | CaO | FeO | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | N | Na ₂ O | SiO ₂ | Ti | Ag | As | B | | | |
| NCS ZC73003 | 13.27 | (1.5) | (0.47) | 3.9 | 5.83 | 1.39 | 4.71 | (3.6) | 2.62 | 2.43 | 0.055 | 2.00 | 60.0 | 0.392 | 0.078 | 12.2 | 55 | | | |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | | | | |
| Number | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | Gd | Ge | Hf | |
| NCS ZC73003 | 492 | 2.04 | 0.30 | 2.1 | 0.15 | 57 | (50) | 12.6 | 59 | 7.2 | 29 | 4.9 | 2.9 | 1.22 | 592 | 16.8 | 5.1 | 1.3 | 5.5 | |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | | | | |
| Number | Hg | Ho | I | In | La | Li | Lu | Mn | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | S | | | |
| NCS ZC73003 | 0.021 | 1.01 | 1.4 | 0.058 | 29 | 36 | 0.46 | 774 | 0.96 | 12 | 27.9 | 32 | 708 | 19 | 7.0 | 94 | 154 | | | |
| continued analysis listed in mg/kg (DA) indicates decomposition by aqua regia | | | | | | | | | | | | | | | | | | | | |
| Number | Sb(DA) | T.Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | |
| NCS ZC73003 | 1.05 | (1.17) | 12.6 | 0.16 | 5.6 | 2.8 | 240 | 0.85 | 0.84 | 10 | 0.51 | 0.44 | 2.4 | 86 | 1.64 | 26.4 | 2.9 | 78 | 195 | last |

CRM SOIL

| analysis listed in mass % | | | | | | | | | | | | | | T = Total | | 100 g units | | | | | |
|------------------------------------|------------------|--------------------------------|-------|-----------------|---------|--------------------------------|----------------------------------|-------------------|------------------|------|-------|-------|-------------------|-------------------------------|----------|------------------|--------|----|----|----|-----|
| Number | SiO ₂ | Al ₂ O ₃ | CaO | CO ₂ | FeO | Fe ₂ O ₃ | Fe ₂ O ₃ T | H ₂ O+ | K ₂ O | MgO | MnO | N | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI | | | | |
| NCS DC87103 | 72.92 | 12.28 | 1.44 | (0.083) | (0.36) | 3.38 | (3.78) | (2.37) | 2.16 | 1.14 | 0.072 | 0.029 | 2.20 | 0.11 | (0.0045) | 0.69 | (3.28) | | | | |
| NCS DC87101 | 67.96 | 14.35 | 0.90 | (0.076) | (0.34) | 4.69 | (5.09) | (3.57) | 2.56 | 1.62 | 0.093 | 0.035 | 1.78 | 0.10 | (0.0065) | 0.72 | 4.64 | | | | |
| NCS DC87105 | 67.53 | 10.84 | 5.42 | 3.59 | (0.58) | 2.64 | (3.26) | (2.49) | 2.18 | 1.68 | 0.062 | 0.021 | 1.87 | 0.074 | 0.0092 | 0.54 | 6.67 | | | | |
| NCS DC87102 | 67.21 | 10.78 | 5.21 | 3.48 | (1.06) | 2.28 | (3.46) | 2.29 | 2.15 | 1.73 | 0.066 | 0.064 | 1.95 | 0.15 | 0.034 | 0.56 | 6.73 | | | | |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | | | | | |
| Number | As | B | Ba | Be | Bi | Cd | Cl | Co | Cr | Cu | F | Ga | Hg | I | La | Li | Mo | Nb | Ni | Pb | Rb |
| NCS DC87103 | 6.3 | 50 | 524 | 1.9 | (0.17) | (0.20) | (50) | 12 | 56 | 23 | 383 | 15 | 0.017 | . | 38 | 28 | (0.68) | 14 | 22 | 19 | 91 |
| NCS DC87101 | 10 | 46 | 677 | 2.4 | (0.24) | (0.26) | (61) | 15 | 93 | 23 | 458 | 17 | 0.014 | (3.1) | 43 | 37 | (1.09) | 15 | 41 | 28 | 111 |
| NCS DC87105 | 8.2 | 33 | 555 | 1.8 | 0.21 | (0.21) | (85) | 8.9 | 54 | 16 | 657 | 13 | (0.018) | . | 32 | 25 | (0.71) | 11 | 22 | 20 | 83 |
| NCS DC87102 | 9.8 | (51) | 469 | 2.0 | (0.20) | (0.22) | 600 | 9.4 | 61 | 17 | (414) | 12 | 0.031 | . | 36 | 27 | (0.94) | 12 | 23 | 21 | 86 |
| continued analysis listed in mg/kg | | | | | | | | | | | | | | | | | | | | | |
| Number | Sb | Se | Sn | Sr | Te | Th | U | V | W | Y | Zn | Zr | | | | | | | | | |
| NCS DC87103 | 0.65 | 0.11 | 3.2 | 227 | (0.036) | 10 | 1.9 | 74 | 1.5 | 22 | 48 | 331 | | | | | | | | | |
| NCS DC87101 | 0.73 | (0.12) | (3.2) | 168 | 0.033 | 12 | 1.9 | 88 | 1.8 | 24 | 68 | 274 | | | | | | | | | |
| NCS DC87105 | 0.70 | (0.08) | 2.2 | 231 | (0.053) | 8.9 | 2.4 | 66 | 1.3 | 19 | (39) | 298 | | | | | | | | | |
| NCS DC87102 | 0.84 | 0.14 | 2.9 | 197 | (0.039) | 9.6 | 1.9 | 63 | 1.5 | 21 | 51 | 291 | | | | | | | | | |

CRM SOIL

| analysis listed in mass % | | T = Total | | | | | | | | | | | | 100 g units | | |
|---------------------------|----------------|------------------|--------------------------------|-----------------|--------|--------------------------------|-------|----------------------------------|------------------|--------|-------|-------------------|-------------------------------|-------------|------------------|-------|
| Number | Type | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | Cr ₂ O ₃ | FeO | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI |
| NCS DC85112 | Agricultural | 83.34 | 8.89 | . | (0.16) | . | . | 1.34 | 0.65 | (0.20) | 0.015 | (0.038) | 0.124 | (0.014) | 0.22 | 4.86 |
| VS 5360-90 | Sod-Pozolic | 78.3 | 9.58 | . | 0.82 | . | 0.5 | 3.00 | 2.48 | 0.77 | 0.070 | 1.15 | 0.075 | 0.03 | 0.84 | 2.6 |
| SARM 42 | Sedimentary | 74.09 | 10.03 | . | 0.89 | 0.63 | (4.0) | 4.68 | 0.45 | 1.92 | 0.10 | (0.15) | (0.03) | (0.02) | 0.36 | . |
| NCS DC85111 | Agricultural | 69.68 | 14.58 | . | (0.22) | . | . | 5.21 | 1.08 | 0.54 | 0.029 | (0.090) | 0.122 | (0.014) | 0.96 | 7.52 |
| VS 5359-90 | Chernozemic | 69.4 | 10.30 | . | 1.62 | . | . | 3.83 | 2.27 | 1.03 | 0.077 | 0.80 | 0.18 | 0.04 | 0.75 | 9.3 |
| VS 5358-90 | Light Chestnut | 65.5 | 12.45 | 1.2 | 2.83 | . | . | 4.90 | 2.58 | 1.95 | 0.090 | 1.16 | 0.22 | 0.03 | 0.74 | 6.7 |
| NCS DC85107 | Agricultural | 65.37 | 15.06 | . | 1.68 | . | . | 4.98 | 2.72 | 1.62 | 0.094 | 2.48 | 0.120 | (0.013) | 0.74 | 4.83 |
| NCS DC85108 | Agricultural | 63.06 | 12.76 | . | 4.57 | . | . | 4.49 | 2.43 | 2.01 | 0.077 | 1.69 | 0.162 | (0.017) | 0.68 | 7.71 |
| NCS DC85110 | Agricultural | 61.03 | 16.21 | . | 0.84 | . | . | 6.20 | 2.45 | 1.90 | 0.050 | 0.99 | 0.098 | (0.033) | 0.92 | 9.01 |
| NCS DC85109 | Agricultural | 53.72 | 14.74 | . | 7.93 | . | . | 5.72 | 2.72 | 2.09 | 0.106 | 0.99 | 0.197 | (0.019) | 0.65 | 11.17 |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | B% | Ba% | Be | C% | Ce% | Co | Cr% | Cs | Cu | F% | Ga | Ge | La | Li |
|-------------|------|----------|----------|-----|------|----------|----|-------|------|-----|-------|------|-----|----|----|
| NCS DC85112 | . | (0.0020) | . | . | . | . | . | . | . | 2.8 | . | . | . | . | . |
| VS 5360-90 | 0.08 | 0.004 | 0.051 | 1.5 | 0.55 | 0.005 | 10 | 0.008 | 0.21 | 18 | 0.021 | 9 | . | 35 | 16 |
| SARM 42 | . | . | (0.0250) | . | . | (0.0030) | 35 | . | . | 17 | . | (12) | . | . | . |
| NCS DC85111 | . | 0.0071 | . | . | . | . | . | . | . | 32 | . | . | . | . | . |
| VS 5359-90 | 0.10 | 0.005 | 0.040 | 2.0 | 3.6 | 0.006 | 10 | 0.008 | 4 | 23 | 0.027 | 10 | 1.0 | 35 | 25 |
| VS 5358-90 | 0.12 | 0.007 | 0.046 | 2.1 | 1.7 | 0.006 | 14 | 0.014 | 4 | 30 | 0.034 | 13 | 1.6 | 38 | 28 |
| NCS DC85107 | . | 0.0034 | . | . | . | . | . | . | . | 24 | . | . | . | . | . |
| NCS DC85108 | . | 0.0054 | . | . | . | . | . | . | . | 25 | . | . | . | . | . |
| NCS DC85110 | . | 0.0065 | . | . | . | . | . | . | . | 42 | . | . | . | . | . |
| NCS DC85109 | . | 0.0075 | . | . | . | . | . | . | . | 29 | . | . | . | . | . |

| Number | Mo | Nb | Ni | Pb | Rb | Sc | Sn | Sr% | Th | V% | Y | Yb | Zn | Zr% |
|-------------|--------|-----|-----|------|----|----|-----|--------|-----|--------|----|----|----|--------|
| NCS DC85112 | 1.15 | . | . | . | . | . | . | . | . | . | . | . | 22 | . |
| VS 5360-90 | 0.8 | 20 | 25 | 15 | 78 | 9 | 2.6 | 0.0012 | . | 0.0064 | 27 | 4 | 42 | 0.053 |
| SARM 42 | (5) | (8) | 125 | (10) | 22 | . | . | 0.0037 | (5) | 0.0094 | 11 | . | 44 | 0.0192 |
| NCS DC85111 | 1.47 | . | . | . | . | . | . | . | . | . | . | . | 81 | . |
| VS 5359-90 | 1.0 | 15 | 33 | 16 | 84 | 12 | 3.5 | 0.014 | . | 0.0075 | 30 | 4 | 54 | 0.045 |
| VS 5358-90 | 1.0 | 15 | 58 | 17 | 87 | 13 | 3.4 | 0.016 | . | 0.011 | 27 | 3 | 73 | 0.030 |
| NCS DC85107 | 0.80 | . | . | . | . | . | . | . | . | . | . | . | 67 | . |
| NCS DC85108 | (0.82) | . | . | . | . | . | . | . | . | . | . | . | 68 | . |
| NCS DC85110 | 0.73 | . | . | . | . | . | . | . | . | . | . | . | 93 | . |
| NCS DC85109 | 1.53 | . | . | . | . | . | . | . | . | . | . | . | 96 | . |

CRM SOIL

| analysis listed in mass % | | | | | | | | | | | | | | | | |
|---------------------------|------------------|--------------------------------|-----------------|------|--------|--------------------------------|----------------------------------|-------------------|------------------|------|-------|-------------------|-------------------------------|------------------|------|-------|
| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | TiO ₂ | LOI | Units |
| GBW 07418 | 67.96 | 14.35 | (0.076) | 0.90 | (0.34) | 4.69 | (5.09) | (3.57) | 2.56 | 1.62 | 0.093 | 1.78 | 0.10 | 0.72 | 4.64 | 100 g |
| GBW 07410 | 65.64 | 14.55 | . | 1.42 | . | . | 4.60 | . | 2.59 | 1.25 | . | 1.90 | . | . | . | 50 g |

continued analysis listed in mg/kg except * which is ng/g

| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Cl | Co | Cr | Cs | Cu |
|-----------|------|------|------|-----|-----|--------|-------|--------|------|--------|------|------|-----|------|
| GBW 07418 | . | 10 | 46 | 677 | 2.4 | (0.24) | . | (0.26) | . | (61) | 15 | 93 | . | 23 |
| GBW 07410 | 0.11 | 10.5 | 38.3 | 623 | 2.6 | 0.37 | (5.0) | 0.090 | 76.6 | (45.6) | 12.8 | 66.0 | 7.9 | 23.2 |

| Number | Dy | Er | Eu | F | Ga | Gd | Ge | Hg* | Ho | I | In | La | Li | Lu |
|-----------|-------|-------|-----|-----|------|-----|-------|-----|-------|-------|--------|------|------|------|
| GBW 07418 | . | . | . | 458 | 17 | . | . | 14 | . | (3.1) | . | 43 | 37 | . |
| GBW 07410 | (5.3) | (2.9) | 1.2 | 438 | 18.8 | 5.6 | (1.6) | 66 | (1.1) | (2.6) | (0.07) | 37.6 | 33.2 | 0.46 |

| Number | Mn | Mo | N | Nb | Nd | Ni | P | Pb | Pr | Rb | S | Sb | Sc | Se | Sm | Sn |
|-----------|-----|--------|--------|------|------|------|-----|------|-------|-----|-------|------|------|--------|-----|-------|
| GBW 07418 | . | (1.09) | 350 | 15 | . | 41 | . | 28 | . | 111 | (65) | 0.73 | . | (0.12) | . | (3.2) |
| GBW 07410 | 706 | 0.84 | (1200) | 17.1 | 34.4 | 27.6 | 439 | 29.2 | (8.8) | 109 | (174) | 0.93 | 11.4 | 0.28 | 6.6 | 4.2 |

| Number | Sr | Tb | Te | Th | Ti | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|-----------|-----|------|---------|------|------|------|------|-----|------|-----|------|-----|------|-----|
| GBW 07418 | 168 | . | 0.033 | 12 | . | . | . | 1.9 | 88 | 1.8 | 24 | . | 68 | 274 |
| GBW 07410 | 188 | 0.85 | (0.035) | 12.0 | 4600 | 0.62 | 0.48 | 2.4 | 82.7 | 5.0 | 27.4 | 3.1 | 72.8 | 337 |

last of stock

| CRM | SOIL | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|--------------------------------|------|------|-------|-----------------|-------------------------|----------------------------------|--------|-------------------|---------------------|------|--------|--------|---------------------|----------|--------|------|-----|------|
| | analysis listed in mass % | | | | | | Org = Organic T = Total | | | | DC360xx: 75 g units | | | | DC730xx: 70 g units | | | | | |
| Number | SiO ₂ | Al ₂ O ₃ | C | CaO | Cl | CO ₂ | C.Org | Fe ₂ O ₃ T | FeO | H ₂ O+ | K ₂ O | MgO | Mn | N | Na ₂ O | S | Ti | | | |
| NCS DC73029 | 59.80 | 13.92 | 1.28 | 4.21 | 0.63 | (3.0) | (0.5) | 5.54 | (1.5) | (4.2) | 2.64 | 2.61 | 0.0882 | 0.0600 | 1.91 | (0.0420) | 0.50 | | | |
| continued analysis listed in mg/kg except * which is ng/g | | | | | | | | | | | | | | | | | | | | |
| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | F | Ga | Gd | Ge |
| NCS DC73029 | 0.069 | 11.8 | 77 | 441 | 2.3 | 0.44 | 26 | 0.15 | 78 | 16.0 | 82 | 9.3 | 32 | 5.4 | 3.0 | 1.4 | 665 | 18.5 | 5.8 | 1.40 |
| Number | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | P | Pb | Pr | Rb | Re* | | | |
| NCS DC73029 | 6.1 | 0.058 | 1.08 | 6.1 | 0.066 | 42 | 50 | 0.48 | 0.65 | 17.4 | 36 | 38 | 675 | 28 | 9.3 | 123 | (0.17) | | | |
| Number | Sb | Sc | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr | |
| NCS DC73029 | 0.77 | 13.8 | 0.13 | 6.6 | 3.4 | 154 | 1.3 | 0.93 | (0.06) | 13.5 | 0.71 | 0.49 | 2.6 | 104 | 2.1 | 29 | 3.1 | 97 | 210 | |

CRM SOIL - CONTAMINATED

certified analysis listed in mg/kg

T = Total

| Number | As | B | Be | Cd | Co | Cr | Cu | F | Hg | Mn | Ni | Pb | Se | V | Zn | Type | Units | |
|------------|-------|-----|------|-------|------|------|------|------|------|------|------|------|------|------|------|-------------------|-------------------|------|
| JSAC 0403 | 199 | 269 | . | 183 | . | 257 | T | 26.2 | 269 | 11.1 | 252 | 26.2 | 224 | 169 | 101 | 91.8 | Brown Forest Soil | 50 g |
| BAM U113 | 41.9 | . | . | 3.6 | 32.3 | 35.5 | 458 | . | 1.95 | . | 37.6 | 220 | . | 26.7 | 614 | 1.95 | | 40 g |
| BAM U110 * | 15.8 | . | . | 7.3 | 16.2 | 230 | 263 | . | 51.5 | 621 | 101 | 197 | . | . | 1000 | | | 60 g |
| JSAC 0411 | 11.3 | . | 1.04 | 0.274 | . | 23.5 | 26.7 | . | . | 943 | 11 | 18.9 | 1.32 | 68.6 | 64.6 | Volcanic Ash Soil | 50 g | |
| JSAC 0401 | 10.62 | . | 5.28 | 4.25 | . | 50.4 | 15.3 | . | . | 266 | 18.9 | 26 | 0.27 | 65.0 | 66.8 | Brown Forest Soil | 50 g | |

* Aqua Regia values for BAM U110 listed under "Soil - Aqua Regia Method" in this catalog

CRM SOIL - CONTAMINATED

analysis listed in mass % except as noted

powder 75 g

| Number | Hexavalent Cr | Cr | Fe | Mn | Al | Tot.Org.C | Ca | K | Mg | Na | Si | Ti | V | PH | Redox Potential |
|----------|---------------|------|-------|--------|--------|-----------|--------|---------|--------|---------|--------|---------|---------|-----|-----------------|
| SRM 2701 | 0.05512 | 4.26 | 23.73 | 0.2137 | (5.05) | (3.69) | (7.47) | (0.174) | (7.47) | (0.255) | (4.17) | (0.547) | (0.236) | 9.6 | (526 mV) |

CRM SOIL - CONTAMINATED

certified analysis listed in mg/kg

55 g units

informational analysis in mass %

| Number | As | Cd | Co | Cr | Cu | Hg | Ni | Pb | V | Zn | Al | C.Org | C.Inorg | Ca | Si | Fe | K | LOI @ 500'C |
|-----------|------|-----|-----|-----|----|------|------|-----|------|-----|-----|-------|---------|-----|------|-----|-----|-------------|
| BAM CC018 | 22.9 | 5.4 | 5.9 | 129 | 80 | 1.38 | 25.8 | 289 | 19.4 | 313 | 2.1 | 2.4 | 0.4 | 2.6 | 38.8 | 1.4 | 0.9 | 4.6 |

CRM SOIL - CYANIDE

analysis in mg/kg powder

| Number | Total Cyanide | Uncertainty | Units |
|----------|---------------|-------------|-------|
| BAM U114 | 23.1 | 1.3 | 66 g |

SOIL - CONTAMINATED

= class where 1 = CRM and 2 = RM analysis listed in mg/kg except % which is mass % CETEM: 80 g all others: 50-55 g units

| # Number | Ag | Al% | As | Au | B | Ba | Be | Bi | Br | C% | Ca% | Cd | Ce | Co | Cr | Cs | Cu | Dy |
|-------------|------|--------|--------|-------|------|-----|-------|------|-----|--------|---------|-------|-------|------|------|--------|--------|-------|
| 2 SRM 2780a | 72.5 | 8.43 | 65.9 | 6.6 | (27) | 930 | (1.1) | (45) | . | (0.19) | 0.247 | (4.8) | 67.7 | 16.5 | 205 | 8.3 | 240 | (3.1) |
| 1 SRM 2710a | (40) | 5.95 | 1,540 | (0.2) | (20) | 792 | . | . | . | . | 0.964 | 12.3 | (60) | 5.99 | (23) | (8.25) | 342 | (3) |
| 1 IRNT SVM | (4) | (8.96) | 13.6 | . | (70) | 582 | (500) | . | (5) | . | (0.692) | 0.214 | (100) | 15.4 | 79.8 | (6) | 30.0 | (5) |
| 1 IRNT SSP | (5) | (7.48) | 14.0 | . | . | 315 | . | . | . | . | 6.34 | 0.285 | . | 15.6 | 75.3 | . | 30.9 | . |
| 1 SRM 2709a | . | 7.37 | (10.5) | . | (74) | 979 | . | . | . | . | 1.91 | 0.371 | (42) | 12.8 | 130 | (5.0) | (33.9) | (3) |
| 1 SRM 2586 | . | 6.652 | 8.7 | . | . | 413 | (1.4) | . | . | . | 2.218 | 2.71 | 58 | (35) | 301 | . | (81) | (5.4) |
| 1 SRM 2587 | . | 5.86 | 13.7 | . | . | 568 | (9.2) | . | . | . | 0.927 | 1.92 | (57) | (14) | 92 | . | (160) | . |

continued

| Number | Er | Eu | Fe% | Ga | Gd | Ge | Hf | Hg | Ho | In | K% | La | Li | Lu | Mg% | Mn% | Mo |
|-----------|-------|--------|-------|------|-------|------|-------|--------|-------|--------|-------|--------|------|--------|---------|--------|------|
| SRM 2780a | (2.0) | (0.9) | 8.75 | (21) | (3.2) | (<6) | (5.5) | (0.2) | (0.7) | (1.65) | 3.99 | 34.4 | (14) | (0.33) | 0.465 | 0.0490 | 25.0 |
| SRM 2710a | . | (0.82) | 4.32 | . | (3.0) | . | (7) | 9.88 | . | . | 2.17 | 30.6 | . | (0.3) | 0.734 | 0.214 | . |
| IRNT SVM | . | (2) | 3.73 | . | (7) | . | (10) | 0.171 | . | . | 3.08 | (60) | (30) | (500) | (0.593) | 0.0897 | . |
| IRNT SSP | . | . | 3.73 | . | . | . | . | 0.0874 | . | . | 2.63 | . | . | . | (1.19) | 0.0734 | . |
| SRM 2709a | . | (0.83) | 3.36 | . | (3.0) | . | (4) | (0.9) | . | . | 2.11 | (21.7) | . | (0.3) | 1.46 | 0.0529 | . |
| SRM 2586 | (3.3) | (1.5) | 5.161 | (14) | (5.8) | . | . | 0.367 | (1.1) | . | 0.976 | 29.7 | (25) | . | 1.707 | 0.1000 | . |
| SRM 2587 | . | . | 2.813 | (13) | . | . | . | 0.29 | . | . | 1.583 | (29) | (32) | . | 0.6690 | 0.0651 | . |

continued

| Number | Na% | Nb | Nd | Ni | P% | Pb% | Pr | Rb | Re | S% | Sb | Sc | Se | Si% | Sm | Sn | Sr |
|-----------|-------|------|------|------|------------|---------|-------|-------|---------|------|------|--------|-------|-------|-------|-------|--------|
| SRM 2780a | 0.108 | (20) | 28.3 | 95 | 0.0286 | 0.665 | (8) | 220 | (0.003) | 8.85 | 18.3 | 15.6 | (6) | 24.1 | 4.7 | (7.2) | 121 |
| SRM 2710a | 0.894 | . | (22) | (8) | 0.105 | 0.552 | . | (117) | . | . | 52.5 | (9.9) | (1) | 31.1 | (4.0) | . | 255 |
| IRNT SVM | (0.3) | . | (50) | 30.8 | (0.000013) | 0.00196 | . | (200) | . | . | 4.58 | (15) | (300) | 25 | (10) | . | (82.0) |
| IRNT SSP | . | . | . | 37.4 | . | 0.00413 | . | . | . | . | 2.11 | . | . | . | . | . | 274 |
| SRM 2709a | 1.22 | . | (17) | (85) | 0.0688 | 0.00173 | . | (99) | . | . | 1.55 | (11.1) | (1.5) | 30.3 | (4) | . | 239 |
| SRM 2586 | 0.468 | (6) | 26.4 | (75) | 0.1001 | 0.0432 | (7.3) | . | . | . | . | (24) | (0.6) | 29.15 | (6.1) | . | 84.1 |
| SRM 2587 | 1.127 | (14) | (25) | (36) | 0.0970 | 0.3242 | . | . | . | . | . | (11) | . | 33.13 | . | . | 126 |

continued

| Number | Ta | Tb | Te | Th | Ti% | Tl | Tm | U | V | W | Y | Yb | Zn% | Zr | |
|-----------|-------|--------|------|--------|--------|--------|--------|--------|-------|--------|------|-------|----------|-------|-------------|
| SRM 2780a | (1.2) | (0.5) | (22) | 12.0 | 0.643 | (5.5) | (0.31) | 4.0 | 152 | (17.4) | (18) | (2) | 0.102 | 206 | LOI: (11.1) |
| SRM 2710a | (0.9) | (0.5) | . | (18.1) | 0.311 | (1.52) | . | 9.11 | (82) | (190) | . | (2) | 0.418 | (200) | . |
| IRNT SVM | (1) | (1) | . | (20) | 0.55 | (<200) | . | (3) | 98.3 | (3) | . | (4) | 0.00888 | (350) | . |
| IRNT SSP | . | . | . | . | . | . | . | . | 89.7 | . | . | . | 0.0119 | (200) | . |
| SRM 2709a | (0.7) | (0.5) | . | (10.9) | 0.336 | (0.58) | . | (3.15) | 110 | . | . | (2) | (0.0103) | 195 | . |
| SRM 2586 | . | (0.09) | . | (7) | 0.605 | . | (0.5) | . | (160) | . | (21) | 2.64 | 0.0352 | . | . |
| SRM 2587 | . | . | . | (7.5) | 0.3920 | . | . | . | (78) | . | (15) | (1.6) | 0.03358 | . | . |

RM

STEATITE

analysis listed in mass %

25 or 100 g units

| Number | SiO ₂ | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | TiO ₂ | LOI |
|--------------|------------------|--------------------------------|-------|--------------------------------|------------------|-------|-------------------|------------------|------|
| CERAM 2CAS14 | 62.7 | 0.149 | 0.249 | 0.314 | 0.002 | 31.28 | 0.008 | 0.005 | 5.10 |

CRM SULPHUR

| Number | Recommended S Value (%) | 95% Confidence Limits | | Standard Deviation of Laboratories (%) | | Number of Sets | Results | Units |
|-----------|-------------------------|-----------------------|-------|--|--------|----------------|---------|-------|
| | | Low% | High% | Between | Within | | | |
| CAN HCC-1 | 33.92 | 33.80 | 34.03 | 0.14 | 0.095 | 9 | 53 | 50 g |
| CAN INM-1 | 22.17 | 21.97 | 22.37 | 0.24 | 0.051 | 9 | 53 | 50 g |

CRM SULPHUR IN VARIOUS FORMS - SEE ALSO "MULTI-METAL ORE"

analysis listed in mass %

| Number | Type | S | SO ₄ | Al | CO ₂ | Ca | Cu | Fe | H ₂ O | Mg | Pb | Si | Zn | LOI | Units |
|-------------|--------------|-------|-----------------|-------|-----------------|------|---------|--------|------------------|---------|-----------|-------|----------|--------|-------|
| NCS DC71307 | Sulphide | 52.72 | . | . | . | . | 0.0431 | 46.08 | . | . | (0.00234) | . | 0.0219 | . | 5 g |
| NCS DC71308 | Sulphide | 34.69 | . | . | . | . | 33.30 | 30.30 | . | . | 0.0128 | . | 0.30 | . | 5 g |
| CAN HCC-1 | Concentrate | 33.92 | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| NCS DC71310 | Sulphide | 32.33 | . | . | . | . | 0.10 | 2.14 | . | . | 0.099 | . | 62.51 | . | 5 g |
| CAN WMS-1A | Sulphide | 28.17 | . | 1.350 | . | 3.09 | 1.396 | 45.4 | (0.2) | (0.331) | (0.0033) | (4.7) | (0.0130) | . | 200 g |
| CAN INM-1 | Concentrate | 22.17 | . | . | . | . | . | . | . | . | . | . | . | . | 50 g |
| NCS DC71309 | Sulphide | 13.30 | . | . | . | . | 0.00624 | 0.0127 | . | . | 84.26 | . | 0.0533 | . | 5 g |
| CAN RTS-3a | Ore Tailings | 9.59 | (1.1) | 5.12 | 0.04 | 2.14 | 0.2353 | 20.49 | . | 2.483 | 0.0209 | 18.28 | 0.2890 | (10.6) | 100 g |

continued analysis listed in mass %

| Number | C | Cd | Co | K | Mn | Na | Ni | P | Sb | Sn | Ti |
|-------------|--------|-----------|-----------|----------|----------|----------|---------|---------|------------|-----------|----------|
| NCS DC71307 | . | 0.000071 | (0.00039) | . | 0.00289 | . | 0.00340 | . | 0.00011 | (0.00027) | . |
| NCS DC71308 | . | 0.00202 | 0.00751 | . | 0.00475 | . | 0.00413 | . | (0.00027) | (0.00058) | . |
| CAN HCC-1 | . | . | . | . | . | . | . | . | . | . | . |
| NCS DC71310 | . | 0.15 | 0.0491 | . | 0.0169 | . | 0.00432 | . | 0.0249 | (0.00032) | . |
| CAN WMS-1A | (0.1) | (0.00014) | (0.145) | (0.0991) | (0.0600) | (0.0329) | 3.02 | (0.018) | (0.000692) | (0.00023) | (0.0840) |
| CAN INM-1 | . | . | . | . | . | . | . | . | . | . | . |
| NCS DC71309 | . | 0.00165 | (0.00004) | . | . | . | . | . | 0.43 | 0.11 | . |
| CAN RTS-3a | (0.04) | 0.000921 | 0.0143 | 0.460 | 0.1585 | 0.684 | 0.00613 | 0.0446 | 0.000283 | . | 0.351 |

continued analysis listed in mg/kg

| Number | Ag | As | Au | Ba | Bi | Cr | Ga | Ge | In | Pd | Pt | Se | Sr | Te | Tl | Zr |
|-------------|-------|--------|-------|------|-------|------|-------|-------|--------|---------|------|-------|--------|--------|------|------|
| NCS DC71307 | 0.59 | (14.4) | . | . | 2.9 | . | 0.44 | (0.2) | . | . | . | 5.8 | . | 0.95 | . | . |
| NCS DC71308 | 846 | (3.1) | . | . | 16.1 | . | (0.3) | . | (66.6) | . | . | 48.3 | . | 10.4 | . | . |
| CAN HCC-1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| NCS DC71310 | 5.0 | (3.3) | . | . | 6.1 | . | 251 | 6.0 | 21.0 | . | . | (3.0) | . | (0.3) | . | . |
| CAN WMS-1A | (3.7) | 30.9 | 0.300 | (70) | (1.2) | (68) | (4) | . | (0.2) | 1.45 | 1.91 | (87) | (31.3) | . | . | (20) |
| CAN INM-1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| NCS DC71309 | 0.97% | 5.3 | . | . | 1.4 | . | (0.3) | 1.47 | 0.29 | . | . | . | . | (0.07) | 0.65 | . |
| CAN RTS-3a | 11.1 | 18.2 | 0.561 | 106 | 31.3 | 176 | (30) | . | (1.6) | (0.004) | . | 44.8 | 44.7 | (2.0) | (3) | 78 |

CRM SULPHUR ORE

analysis listed in mass %

| Number | Al ₂ O ₃ | BaO | CaO | Cu | T.Fe | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | Zn | LOI | Units |
|---------|--------------------------------|-------|------|------|------|------------------|------|------|-------------------|-------------------------------|-----|------------------|------------------|------|------|-------|
| UNS MII | 10.63 | 0.049 | 0.49 | 0.21 | 6.79 | 2.22 | 2.06 | 0.11 | 0.93 | (12) | (7) | (16) | 0.50 | 1.79 | (10) | 100 g |

continued analysis listed in mg/kg

| Number | Ag | As | B | Cd | Co | Cr | Cs | Eu | Ga | Hf | La | Mo | Ni |
|---------|---------|--------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|
| UNS MII | (0.012) | 0.0901 | (0.005) | 0.0767 | 0.0223 | (0.012) | (0.003) | (0.003) | (0.008) | (0.003) | (0.003) | (0.003) | 0.0329 |

| Number | Pb | Rb | Sb | Sc | Sr | Ta | Th | U | V | W | Y | Yb | Zr |
|---------|-------|---------|---------|---------|--------|---------|---------|---------|--------|---------|---------|---------|---------|
| UNS MII | 0.868 | (0.005) | (0.004) | (0.003) | 0.0259 | (0.003) | (0.006) | (0.004) | 0.0845 | (0.004) | (0.008) | (0.006) | (0.008) |

CRM SULPHUR ORE

| Number | S% | C% |
|----------|-------|------|
| GS908-4 | 30.08 | . |
| GS914-3 | 29.86 | 0.38 |
| GS314-1 | 29.11 | 1.41 |
| GS399-10 | 28.22 | . |
| GS310-2 | 27.59 | . |
| GS315-7 | 26.90 | 0.36 |
| GS900-2 | 26.62 | . |
| GS300-5 | 26.54 | . |
| GS310-1 | 26.44 | . |
| GS301-2 | 25.86 | . |
| GS316-8 | 25.59 | 0.07 |
| GS300-7 | 24.85 | . |
| GS317-4 | 24.43 | 0.25 |
| GS307-8 | 23.98 | . |
| GS916-8 | 23.76 | 0.60 |
| GS917-6 | 21.99 | 0.41 |
| GS904-2 | 21.73 | . |
| GS916-6 | 19.20 | 0.48 |
| GS317-2 | 18.66 | 0.48 |
| GS316-7 | 18.13 | 0.41 |
| GS916-7 | 17.67 | 0.52 |
| GS317-3 | 16.76 | 0.67 |
| GS317-5 | 15.53 | 8.46 |
| GS917-7 | 14.79 | 5.15 |
| GS916-9 | 14.55 | 0.60 |
| GS910-1 | 12.96 | . |
| GS912-8 | 11.63 | 2.91 |
| GS904-4 | 11.12 | . |
| GS913-3 | 10.95 | 0.03 |
| GS310-7 | 10.92 | . |
| GS312-7 | 10.53 | 2.63 |
| GS916-4 | 9.95 | 0.86 |
| GS309-3 | 9.80 | . |
| GS312-6 | 9.80 | 3.10 |
| GS315-10 | 8.40 | 0.16 |
| GS910-4 | 8.27 | . |
| GS913-1 | 7.90 | 0.06 |
| GS314-8 | 7.82 | 0.26 |
| GS907-4 | 7.68 | . |
| GS908-7 | 7.55 | . |
| GS917-1 | 7.33 | 0.47 |
| GS913-5 | 7.30 | 0.03 |
| GS913-6 | 7.22 | 0.04 |
| GS913-7 | 7.18 | 0.04 |
| GS307-7 | 7.04 | . |
| GS915-10 | 6.90 | 0.13 |
| GS302-6 | 6.75 | 2.84 |
| GS913-4 | 6.58 | 0.04 |
| GS913-8 | 6.56 | 0.04 |
| GS314-10 | 6.50 | 0.37 |
| GS914-6 | 6.35 | 1.18 |
| GS301-1 | 6.13 | . |
| GS310-8 | 5.91 | . |
| GS907-6 | 5.77 | . |
| GS905-3 | 5.64 | . |
| GS913-2 | 5.49 | 0.06 |
| GS914-4 | 5.44 | 1.00 |
| GS315-6 | 5.35 | 0.26 |
| GS300-2 | 5.16 | . |
| GS315-2 | 4.91 | 0.18 |
| GS314-4 | 4.87 | 0.24 |
| GS311-7 | 4.43 | . |
| GS905-8 | 4.38 | . |
| GS915-5 | 3.88 | 0.12 |
| GS902-3 | 3.84 | . |
| GS912-7 | 3.52 | 0.09 |
| GS314-3 | 3.37 | 0.36 |
| GS914-7 | 3.34 | 0.04 |
| GS901-1 | 3.20 | . |
| GS310-3 | 3.30 | . |
| GS917-2 | 3.09 | 0.40 |
| GS916-10 | 2.90 | 0.03 |
| GS311-2 | 2.88 | . |
| GS907-7 | 2.82 | . |
| GS310-6 | 2.64 | . |
| GS314-2 | 2.56 | 5.15 |
| GS903-3 | 2.54 | . |
| GS311-1 | 2.35 | . |
| GS902-7 | 2.32 | . |
| Number | S% | C% |

CRM SULPHUR ORE

| Number | S% | C% |
|----------|------|------|
| GS914-9 | 2.29 | 0.57 |
| GS399-5 | 2.29 | . |
| GS305-1 | 2.20 | . |
| GS310-5 | 2.20 | . |
| GS916-3 | 2.17 | 0.26 |
| GS915-1 | 2.06 | 0.08 |
| GS916-5 | 2.05 | 0.07 |
| GS302-5 | 1.98 | . |
| GS311-9 | 1.98 | . |
| GS302-9 | 1.94 | . |
| GS313-9 | 1.89 | 0.08 |
| GS911-8 | 1.76 | . |
| GS997-10 | 1.74 | . |
| GS305-6 | 1.71 | . |
| GS901-8 | 1.65 | . |
| GS910-6 | 1.50 | . |
| GS300-4 | 1.43 | . |
| GS305-5 | 1.41 | . |
| GS305-7 | 1.41 | . |
| GS313-8 | 1.24 | 0.94 |
| GS916-1 | 1.18 | 0.59 |
| GS310-4 | 1.17 | . |
| GS311-3 | 1.12 | . |
| GS398-2 | 1.10 | . |
| GS914-5 | 1.08 | 1.39 |
| GS915-7 | 1.07 | 0.16 |
| GS312-4 | 1.05 | 0.04 |
| GS315-9 | 0.94 | 0.34 |
| GS900-3 | 0.92 | . |
| GS910-3 | 0.92 | . |
| GS910-7 | 0.86 | . |
| GS313-7 | 0.78 | 0.74 |
| GS305-2 | 0.76 | . |
| GS312-8 | 0.75 | 0.03 |
| GS900-4 | 0.71 | . |
| GS302-3 | 0.68 | . |
| GS906-9 | 0.68 | . |
| GS312-1 | 0.67 | 0.05 |
| GS314-9 | 0.64 | 1.13 |
| GS903-1 | 0.63 | . |
| GS910-9 | 0.63 | . |
| GS309-1 | 0.61 | . |
| GS303-7 | 0.59 | . |
| GS316-4 | 0.58 | 0.09 |
| GS916-2 | 0.56 | 0.17 |
| GS314-6 | 0.56 | 0.15 |
| GS316-2 | 0.56 | 0.08 |
| GS311-4 | 0.54 | . |
| GS917-5 | 0.53 | 0.30 |
| GS912-3 | 0.52 | 0.07 |
| GS305-10 | 0.51 | . |
| GS312-3 | 0.47 | 0.06 |
| GS301-6 | 0.40 | . |
| GS300-8 | 0.37 | . |
| GS917-4 | 0.36 | 0.05 |
| GS316-1 | 0.36 | 0.04 |
| GS316-3 | 0.34 | 0.06 |
| GS303-9 | 0.31 | . |
| GS312-5 | 0.28 | 0.88 |
| GS915-2 | 0.28 | 0.13 |
| GS303-10 | 0.27 | . |
| GS310-10 | 0.27 | . |
| GS914-2 | 0.26 | 0.06 |
| GS313-3 | 0.25 | 0.13 |
| GS315-8 | 0.25 | 0.19 |
| GS914-10 | 0.24 | 0.21 |
| GS903-6 | 0.23 | . |
| GS317-1 | 0.21 | 0.15 |
| GS906-6 | 0.21 | . |
| GS312-9 | 0.21 | 0.03 |
| GS915-3 | 0.19 | 0.11 |
| GS914-1 | 0.18 | 0.04 |
| GS906-5 | 0.18 | . |
| GS398-6 | 0.16 | . |
| GS915-8 | 0.13 | 0.07 |
| GS915-9 | 0.12 | 0.04 |
| GS917-8 | 0.11 | 5.78 |
| GS314-5 | 0.11 | 0.08 |
| GS912-1 | 0.09 | 0.03 |
| GS917-9 | 0.09 | 5.56 |
| Number | S% | C% |

CRM SULPHUR ORE

| Number | S% | C% |
|----------|------|------|
| GS915-6 | 0.09 | 0.04 |
| GS316-9 | 0.08 | 0.06 |
| GS316-10 | 0.08 | 0.03 |
| GS311-5 | 0.07 | . |
| GS317-8 | 0.06 | 0.04 |
| GS912-2 | 0.06 | 0.03 |
| GS307-2 | 0.06 | . |
| GS316-5 | 0.05 | 0.46 |
| GS316-6 | 0.05 | 0.45 |
| GS912-10 | 0.05 | 0.11 |
| GS912-6 | 0.05 | 0.06 |
| GS317-6 | 0.05 | 0.05 |
| GS915-4 | 0.05 | 0.03 |
| GS313-1 | 0.05 | 0.03 |
| GS910-5 | 0.05 | . |
| GS911-5 | 0.05 | . |
| GS911-9 | 0.05 | . |
| GS315-4 | 0.04 | 0.11 |
| GS912-9 | 0.04 | 0.12 |
| GS314-7 | 0.04 | 0.09 |
| GS313-10 | 0.04 | 0.06 |
| GS917-3 | 0.04 | 0.05 |
| GS315-3 | 0.04 | 0.04 |
| GS317-10 | 0.04 | 0.04 |
| GS312-10 | 0.04 | 0.03 |
| GS312-2 | 0.04 | 0.22 |
| GS910-2 | 0.04 | . |
| GS313-4 | 0.03 | 0.26 |
| GS313-5 | 0.03 | 0.25 |
| GS313-6 | 0.03 | 0.12 |
| GS912-5 | 0.03 | 0.10 |
| GS313-2 | 0.03 | 0.03 |
| Number | S% | C% |

for all GS Sulfur Ore samples,
unit size is 10 g powder

CRM SYENITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | * Provisional Analysis ⁸⁷ Sr/ ⁸⁶ Sr ratio: 0.70375 | | | | | | | | | | | | | | GBW, US: 50 g | | all others: 100 g units | |
|---------------------------|------------------|--|-----------------|------|----------|--------|--------|--------------------------------|----------------------------------|------------------|------------------|-------|-----------|-------------------|-------------------------------|---------------|------------------|-------------------------|--|
| Number | SiO ₂ | Al ₂ O ₃ | CO ₂ | CaO | Cl | F | FeO | Fe ₂ O ₃ | T.Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | TiO ₂ | LOI | |
| US STM-2 * | 60.98 | 18.4 | . | 1.09 | (0.0570) | . | (2.08) | . | 5.39 | T.Fe:3.77 | 4.07 | 0.12 | Mn:0.1640 | 8.90 | 0.17 | . | 0.16 | . | |
| JSy-1 | 60.02 | 23.17 | . | 0.25 | . | . | . | . | 0.084 | . | 4.82 | 0.016 | 0.0024 | 10.74 | . | . | . | . | |
| VS 6104-91 | 57.86 | 16.68 | (0.20) | 6.94 | . | 0.082 | 2.51 | . | 5.41 | (-0.05, +0.28) | 4.77 | 1.25 | 0.14 | 4.51 | 0.39 | (0.017) | 0.78 | (0.38) | |
| GBW 07109 | 54.48 | 17.72 | 0.26 | 1.39 | 0.059 | 0.048 | 1.23 | 6.04 | . | 2.38 | 7.48 | 0.65 | 0.12 | 7.16 | 0.018 | 0.011 | 0.48 | . | |
| CGL 015 | 52.20 | 24.59 | . | 1.98 | . | (0.10) | 2.60 | . | 4.67 | (-0.104, +0.58) | 4.44 | 0.37 | (0.100) | 9.76 | 0.139 | . | 0.37 | 1.05 | |

continued analysis listed in mg/kg except % which is mass %

| Number | Ag | As | B | Ba | Be | Bi | Br | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Ge |
|------------|--------|------|-------|-------|--------|------|------|------|-------|--------|------|--------|------|--------|--------|--------|-------|--------|-------|
| US STM-2 * | (1.2) | . | (5.4) | 639 | 9.7 | . | . | . | 256 | . | . | 1.52 | . | (8.01) | (4.4) | 3.45 | 34 | (8) | . |
| JSy-1 | . | . | . | 15.7 | . | . | . | . | 2.6 | . | 2.0 | 0.69 | 1.3 | 0.37 | 0.30 | 0.16 | 23.5 | 7.0 | 0.95 |
| VS 6104-91 | (0.03) | (12) | (7) | 0.69% | 1.9 | . | . | . | 219 | 8 | 16 | (1) | 5 | (6.9) | (2.5) | 4.5 | 17 | (10) | (1.2) |
| GBW 07109 | . | 6.27 | 31.8 | 251 | 17.2 | 0.37 | 1.21 | 0.07 | 242 | 4.59 | 3.6 | 2.05 | 11.8 | 4.70 | 2.48 | 2.35 | 35.8 | . | . |
| CGL 015 | . | . | . | 1305 | (1.86) | . | . | . | 58.24 | (5.33) | 25.6 | (1.31) | 6.40 | (4.49) | (2.69) | (1.36) | 22.63 | (4.75) | . |

| Number | Hf | Hg | Ho | I | In | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Rb | Sb | Sc |
|------------|--------|-------|--------|------|------|-------|-------|--------|--------|-------|-------|-------|------|--------|-------|--------|------|
| US STM-2 * | 27 | . | (1.55) | . | . | 154 | 36 | 0.60 | 6.2 | 267 | 81 | (4.8) | 12 | 25 | 114 | . | . |
| JSy-1 | 1.2 | . | 0.094 | . | . | 1.2 | . | 0.076 | . | 0.51 | 1.2 | 1.1 | 4.9 | 0.32 | 66.3 | 0.15 | . |
| VS 6104-91 | 5 | . | (1) | . | . | 108 | 10.5 | 0.33 | 1.1 | 20 | 102 | 8.4 | 21 | (23) | 56 | . | 4 |
| GBW 07109 | 34.0 | 0.005 | 0.96 | 0.14 | 0.15 | 149 | 32.9 | 0.43 | 0.26 | 66.9 | 65.1 | 1.75 | 196 | 22.5 | 130 | 0.15 | 2.22 |
| CGL 015 | (3.15) | . | (0.93) | . | . | 27.48 | 64.95 | (0.42) | (1.51) | 22.63 | 27.34 | (3.4) | 7.00 | (6.99) | 85.36 | (0.14) | 2.76 |

| Number | Se | Sm | Sn | Sr | Ta | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb | Zn | Zr |
|------------|------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|-------|--------|-------|------|-------|------|
| US STM-2 * | . | 12.0 | (6.6) | 782 | 16 | (1.38) | . | 27 | . | 0.55 | (7.6) | (5.5) | (2.2) | 43 | 4.2 | 223 | 1280 |
| JSy-1 | . | 0.27 | 0.17 | 19.3 | . | . | 0.23 | . | 0.053 | 0.20 | 2.1 | . | . | 2.6 | 0.41 | 3.2 | 70.2 |
| VS 6104-91 | . | 16 | (1.9) | 0.52% | (1.8) | (1.7) | . | (12) | . | (0.45) | (2) | 79 | . | 25 | 2.3 | 109 | 185 |
| GBW 07109 | 0.05 | 9.7 | 6.50 | 1160 | 1.96 | 1.02 | 0.012 | 79.3 | 0.76 | 0.46 | 14.6 | 179 | 1.24 | 24.7 | 2.56 | 112 | 1540 |
| CGL 015 | . | (5.09) | . | 312 | (1.21) | (0.76) | . | (4.63) | (0.32) | (0.4) | (1.59) | (5.8) | (4.36) | 25.32 | 2.66 | 75.42 | 157 |

NEPHELINE SYENITE

= class, where 1 = CRM and 2 = RM analysis listed in mass % GBW: 50 g units all others: 100 g units

| # | Number | SiO ₂ | Al ₂ O ₃ | Ba | CO ₂ | CaO | FeO | Fe ₂ O ₃ | H ₂ O | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | Sr | TiO ₂ | LOI |
|---|-------------|------------------|--------------------------------|--------|-----------------|------|--------|--------------------------------|------------------|------------------|-------|--------|-------------------|-------------------------------|---------|---------|------------------|------|
| 1 | GBW 03124 | 60.64 | 20.05 | . | . | 0.52 | 0.28 | 1.37 | 2.34+ | 5.06 | 0.13 | 0.050 | 8.97 | 0.020 | (0.011) | . | 0.12 | 2.37 |
| 2 | BCS 201a | 57.3 | 23.54 | . | . | 1.07 | . | 0.12 | . | 8.90 | 0.025 | . | 7.53 | 0.025 | . | . | 0.05 | 0.76 |
| 1 | USZ 45-2007 | 51.88 | 22.58 | 0.0447 | (1.16) | 2.28 | 0.80 | 2.63 | . | 9.10 | 0.24 | 0.14 | 6.78 | 0.04 | . | 0.01740 | 0.37 | 3.35 |
| 1 | VS 728-75 | 40.18 | 28.5 | . | 1.6 | 7.13 | (1.43) | 3.25T | (1.9+) | (3.3) | 1.01 | (0.04) | 12.2 | 0.51 | 0.084 | . | 0.24 | . |
| 1 | GBW 03125 | 39.42 | 29.67 | . | 2.97 | 5.98 | 1.24 | 0.33 | 1.78+ | 4.72 | 0.92 | 0.031 | 12.59 | 0.072 | (0.064) | . | 0.14 | . |

continued analysis in mg/kg except % which is mass %

| Number | As | Ce | Cr | Cu | F% | Ga | La% | Li | Nb% | Pb | Rb% | Th | U | V | Y | Zn% | Zr% |
|-------------|------|------|----|-------|--------|----|--------|----|--------|-----|--------|------|--|----|----|----------------|--------|
| GBW 03124 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| BCS 201a | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 45-2007 | 23.8 | 30.8 | 44 | (2.6) | (0.26) | 23 | 0.0163 | 54 | 0.0040 | 114 | 0.0207 | 61.6 | 12.4 | 30 | 23 | 0.0098 | 0.0600 |
| VS 728-75 | . | . | . | . | . | . | . | . | . | . | . | . | Fe ₂ O ₃ : (1.66%) | . | . | InsRes: (3.5%) | . |
| GBW 03125 | . | . | . | . | . | . | . | . | . | . | . | . | 2.3 | . | . | . | . |

TITANIUM ORE

analysis listed in mass %

| # | Number | Ilmenite | TiO ₂ | Al ₂ O ₃ | C | CaO | Co | Cr | Cr ₂ O ₃ | Fe | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O |
|---|----------------|-----------|------------------|--------------------------------|-------|-------|--------|----------|--------------------------------|-----------|-------|--------------------------------|------------------|------|-------|-------------------|
| 2 | OSO Ki-370-99 | 95.41 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 1 | NCS HC26619 | . | 98.21 | 0.65 | 0.011 | . | . | . | . | . | . | 0.006 | . | . | . | . |
| 1 | DSZU 123.22-95 | . | 65.33 | 3.17 | . | 0.51 | . | . | 1.32 | 16.10 | . | . | . | 0.53 | 0.92 | . |
| 1 | DSZU 123.21-95 | . | 59.48 | 1.02 | . | 0.40 | . | . | 0.15 | 26.76 | . | . | . | 0.38 | 0.51 | . |
| 1 | VS R31 | . | 56.5 | 1.99 | . | . | . | . | 2.59 | 24.4 | . | . | . | . | . | . |
| 1 | NCS DC28139 | . | 55.68 | 2.30 | . | 0.070 | 0.0026 | . | 2.80 | 22.04 | 9.15 | . | . | 1.09 | 1.26 | . |
| 1 | NCS DC26705 | . | 51.35 | 0.75 | 0.043 | 0.16 | . | (0.07) | 31.40 | 23.81 | . | . | . | 0.84 | 0.90 | . |
| 1 | NCS DC28142 | . | 50.06 | 1.30 | . | 0.68 | 0.011 | . | 0.84 | 30.23 | 28.85 | . | . | 1.52 | 0.875 | . |
| 1 | NCS DC19019 | . | 49.78 | 0.53 | . | 0.028 | . | . | 0.054 | 34.56 | 25.05 | . | . | 0.32 | 1.55 | . |
| 1 | NCS DC28138 | . | 47.82 | 0.68 | . | 0.68 | 0.0087 | . | 0.014 | 34.79 | 39.14 | . | . | 2.11 | 0.652 | . |
| 1 | NCS DC28140 | . | 45.73 | 0.95 | . | 2.23 | 0.051 | . | 0.012 | 33.02 | 36.68 | . | . | 1.68 | 0.882 | . |
| 1 | NCS DC19017 | . | 45.71 | 1.64 | . | 1.75 | . | . | 0.014 | 29.12 | 32.56 | . | . | 5.18 | 0.709 | . |
| 1 | NCS DC28141 | . | 45.61 | 0.867 | . | 1.65 | 0.0098 | . | 0.0067 | 33.58 | 37.51 | . | . | 1.74 | 0.799 | . |
| 1 | AMIS 0454 * | Ti: 26.78 | 44.45 | 0.731 | . | 0.216 | . | (0.0713) | (0.114) | see below | 52.53 | (0.045) | . | 0.74 | 1.19 | (0.03) |
| 1 | NCS DC28137 | . | 40.66 | 1.35 | . | 4.78 | 0.010 | . | 0.0064 | 30.31 | 33.33 | . | . | 1.30 | 1.20 | . |
| 1 | NCS DC28143 | . | 35.60 | 1.65 | . | 6.25 | 0.013 | . | 0.0077 | 29.29 | 29.34 | . | . | 1.55 | 1.02 | . |
| 1 | NCS DC19018 | . | 33.94 | 4.47 | . | 3.14 | . | . | 0.0085 | 27.30 | 29.70 | . | . | 6.88 | 0.524 | . |
| 1 | NCS DC28136 | . | 27.23 | 2.31 | . | 9.49 | 0.015 | . | 0.0078 | 26.50 | 23.62 | . | . | 2.34 | 0.802 | . |
| 1 | CGL 129 | 17025 | 14.88 | 9.79 | . | 1.16 | 0.0209 | 0.3068 | . | 61.86 | . | 61.86T | 0.137 | 3.05 | 0.240 | (0.086) |
| 1 | NCS DC28134 | . | 7.11 | 8.67 | . | 12.39 | 0.0052 | . | 0.0084 | 14.85 | 12.45 | . | . | 6.33 | 0.216 | . |
| 1 | NCS DC28135 | . | 6.14 | 8.82 | . | 9.87 | 0.0079 | . | 0.0095 | 15.07 | 12.77 | . | . | 6.78 | 0.187 | . |

| Number | Ni | P | P ₂ O ₅ | S | SiO ₂ | Sr | V | V ₂ O ₅ | Zn | Zr | LOI | Units |
|----------------|--------|--------|-------------------------------|--------|------------------|--------|---------|-------------------------------|--------|-------------|-------------|-----------------------|
| OSO Ki-370-99 | . | . | . | . | . | . | . | . | . | . | . | 1 kg of ~3mm material |
| NCS HC26619 | . | . | . | 0.006 | . | . | . | . | . | . | . | 20 g |
| DSZU 123.22-95 | . | . | 0.15 | 0.0090 | 1.45 | . | . | 0.18 | . | . | . | 100 g |
| DSZU 123.21-95 | . | . | 0.24 | 0.96 | 3.00 | . | . | 0.26 | . | . | . | 100 g |
| VS R31 | . | . | 0.25 | 1.24 | . | . | . | . | . | . | . | 100 g |
| NCS DC28139 | 0.0007 | 0.047 | . | 0.025 | 1.54 | . | . | 0.266 | 0.017 | . | Cu:0.0093 | 50 g |
| NCS DC26705 | . | 0.045 | . | 0.004 | 1.98 | . | . | 0.22 | . | . | . | 40 g |
| NCS DC28142 | 0.0021 | 0.048 | . | 0.172 | 2.04 | . | . | 0.700 | 0.017 | . | Cu:0.0073 | 50 g |
| NCS DC19019 | . | 0.0048 | . | 0.010 | 0.578 | . | . | 0.137 | . | . | . | 100 g |
| NCS DC28138 | 0.0029 | 0.0076 | . | 0.184 | 2.65 | . | . | 0.095 | 0.016 | . | Cu:0.0056 | 50 g |
| NCS DC28140 | 0.0051 | 0.048 | . | 0.74 | 4.85 | . | . | 0.203 | 0.016 | . | Cu:0.013 | 50 g |
| NCS DC19017 | . | 0.117 | . | 0.0080 | 5.99 | . | . | 0.090 | . | . | . | 100 g |
| NCS DC28141 | 0.0046 | 0.047 | . | 0.536 | 4.16 | . | . | 0.188 | 0.015 | . | Cu:0.011 | 50 g |
| AMIS 0454 * | . | . | (0.030) | . | 2.23 | . | . | (0.24) | . | ZrO2:(0.12) | Nb:(0.0576) | 100 g |
| NCS DC28137 | 0.0084 | 0.117 | . | 1.52 | 9.21 | . | . | 0.068 | 0.014 | . | Cu:0.022 | 50 g |
| NCS DC28143 | 0.011 | 0.476 | . | 2.76 | 10.41 | . | . | 0.505 | 0.016 | . | Cu:0.027 | 50 g |
| NCS DC19018 | . | 0.558 | . | 0.028 | 11.73 | . | . | 0.101 | . | . | . | 100 g |
| NCS DC28136 | 0.013 | 1.07 | . | 4.77 | 14.41 | . | . | 0.066 | 0.015 | . | Cu:0.038 | 50 g |
| CGL 129 | 0.0306 | . | 0.022 | . | 7.77 | 0.0152 | 0.02818 | . | 0.0575 | 0.00354 | (-0.25) | 150 g |
| NCS DC28134 | 0.0037 | 0.883 | . | 0.196 | 38.43 | . | . | 0.062 | 0.019 | . | Cu:0.0082 | 50 g |
| NCS DC28135 | 0.0098 | 0.232 | . | 0.021 | 42.61 | . | . | 0.092 | 0.018 | . | Cu:0.016 | 50 g |

* AMIS 0454 certifies Fe by XRF 36.50%, Titration 37.14%, and M/ICP 36.37%.

Special Note: more Titanium Powders are in our "Other Chips & Powders Catalog."

RM

ILMENITE

typical analysis listed in mass %

100 g

| Number | TiO ₂ | Al ₂ O ₃ | C | CaO | Co ₃ O ₄ | Cr ₂ O ₃ | CuO | Fe | K ₂ O | MgO | Mn | NiO | P ₂ O ₃ | S | SiO ₂ | SrO | V ₂ O ₅ | ZnO | ZrO ₂ |
|---------|------------------|--------------------------------|-------|-------|--------------------------------|--------------------------------|-------|-------|------------------|------|-------|-------|-------------------------------|-------|------------------|-------|-------------------------------|-------|------------------|
| DH 6706 | 32.37 | 4.46 | 0.044 | 1.179 | 0.024 | 0.143 | 0.017 | 36.83 | 0.118 | 2.82 | 0.094 | 0.049 | 0.017 | 0.288 | 7.31 | 0.016 | 0.285 | 0.020 | 0.044 |

CRM

TITANIUM ORE - ILMENITE WITH EXTENSIVE ANALYSIS

80 g units

| Number | TiO ₂ | Al ₂ O ₃ | CaO | CO ₂ | Fe | FeO | K ₂ O | MgO | MnO | Na ₂ O | P | S | SiO ₂ | Sr | V | Zn | Zr |
|-------------|------------------|--------------------------------|-------|-----------------|-------|-------|------------------|-------|------|-------------------|-------|-------|------------------|---------|----------|--------|---------|
| NCS DC87109 | 19.83 | 2.21 | 6.69 | 0.15 | 37.87 | 24.88 | 0.17 | 2.88 | 0.62 | 0.39 | 0.25 | 0.053 | 14.22 | 0.0308 | 0.1326 | 0.0162 | 0.0240 |
| NCS DC87110 | 16.13 | 3.68 | 10.32 | 0.32 | 27.10 | 20.53 | 0.21 | 5.78 | 0.53 | 0.49 | 0.26 | 0.15 | 24.02 | 0.0340 | 0.0902 | 0.0212 | 0.0266 |
| NCS DC87108 | 12.91 | 6.73 | 0.98 | 1.25 | 51.36 | 29.65 | 0.03 | 3.05 | 0.24 | 0.063 | 0.043 | 0.28 | 2.57 | 0.0470 | 0.000033 | 0.0493 | 0.00168 |
| NCS DC87106 | 8.96 | 5.19 | 13.86 | 0.50 | 19.23 | 15.60 | 0.23 | 8.79 | 0.32 | 0.54 | 0.22 | 0.25 | 33.46 | 0.0334 | 0.0681 | 0.0267 | 0.0274 |
| NCS DC87107 | 2.95 | 4.23 | 3.86 | 0.15 | 18.88 | 11.17 | 0.021 | 19.40 | 0.28 | 0.12 | 0.089 | 0.012 | 37.85 | 0.00535 | 0.0303 | 0.0390 | 0.0147 |

| Number | As | Ba | Cd | Ce | Co | Cr | Cu | Dy | Er | Eu | Ga | Gd | Ho | La | Li |
|-------------|------|------|-------|------|------|--------|------|------|------|------|------|------|-------|------|------|
| NCS DC87109 | 0.52 | 58.1 | 0.063 | 87.8 | 55.5 | 82.1 | 40.5 | 7.05 | 2.28 | 4.14 | 31.8 | 11.2 | 1.04 | 32.6 | 4.89 |
| NCS DC87110 | 0.54 | 63.3 | 0.075 | 85.2 | 68.1 | 58.2 | 49.6 | 7.14 | 2.32 | 4.10 | 29.0 | 11.4 | 1.07 | 32.8 | 8.63 |
| NCS DC87108 | 1.90 | 38.5 | 0.050 | 3.39 | 236 | (0.42) | 170 | 0.28 | 0.14 | 0.17 | 55.4 | 0.42 | 0.051 | 1.34 | 0.95 |
| NCS DC87106 | 0.61 | 71.0 | 0.072 | 72.1 | 84.4 | 47.4 | 70.1 | 6.49 | 2.18 | 3.65 | 30.3 | 9.91 | 0.97 | 28.2 | 12.7 |
| NCS DC87107 | 2.16 | 15.0 | 0.33 | 12.9 | 104 | 916 | 213 | 3.26 | 1.22 | 1.01 | 17.9 | 3.75 | 0.53 | 3.71 | 1.68 |

| Number | Lu | Nb | Nd | Ni | Pb | Pr | Rb | Sm | Tb | Th | Tm | U | Y | Yb |
|-------------|-------|------|------|------|------|------|------|------|-------|------|-------|-------|------|------|
| NCS DC87109 | 0.16 | 49.1 | 66.3 | 52.6 | 6.70 | 13.7 | 4.92 | 14.4 | 1.56 | 2.30 | 0.26 | 0.63 | 22.8 | 1.32 |
| NCS DC87110 | 0.17 | 44.2 | 64.3 | 68.9 | 6.72 | 13.3 | 6.38 | 14.4 | 1.62 | 2.27 | 0.28 | 0.64 | 23.3 | 1.37 |
| NCS DC87108 | 0.019 | 4.25 | 2.26 | 611 | 7.58 | 0.46 | 0.35 | 0.44 | 0.056 | 0.10 | 0.022 | 0.029 | 1.52 | 0.12 |
| NCS DC87106 | 0.16 | 30.0 | 54.6 | 91.2 | 6.85 | 11.1 | 7.28 | 12.5 | 1.43 | 2.06 | 0.24 | 0.61 | 21.5 | 1.28 |
| NCS DC87107 | 0.11 | 14.5 | 14.8 | 700 | 371 | 2.60 | 0.65 | 4.51 | 0.62 | 2.50 | 0.16 | 0.67 | 12.3 | 0.85 |

CRM TUNGSTEN ORE

analysis listed in mass % except * which is mg/kg

CAN: 200 g GW: 10 g IGS: 65 g all others: 100 g

| Number | W | WO ₃ | Ag* | As | Be | Bi | Cu | Fe | Ge* | Mo | Nb | P | Pb | S | Sn | Zn |
|------------|--------|-----------------|-------|-------|--------|--------|-------|------|-----|---------|--------|-------|-------|----------|--------|----------|
| VS 1710-79 | . | 71.96 | . | . | . | 0.146 | . | . | . | . | . | . | . | . | . | . |
| SRM 2430 | . | 70.26 | . | 0.002 | . | 0.078 | . | . | . | 0.22 | . | 0.017 | . | 0.26 | . | . |
| SRM 277 | . | 67.50 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| CAN CT-1 | 1.04 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| CAN BH-1 | 0.422 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 7027-93 | 0.17 | . | . | . | . | 0.015 | . | . | . | 0.0093 | 0.0014 | . | . | . | . | Zr:0.013 |
| GW-03 | 0.1744 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| GW-02 | 0.1231 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| KZ 7026-93 | 0.11 | 1.2 | . | . | 0.0022 | 0.018 | 0.052 | . | 3.6 | 0.00098 | 0.0015 | . | . | Sr:0.017 | . | . |
| CAN TLG-1 | 0.083 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| VS 1712-79 | . | 6.00 | 150.3 | . | 0.021 | 1.30 | 0.077 | . | 3.9 | 0.26 | . | . | 0.77 | . | 0.89 | 0.28 |
| VS 1714-79 | . | 1.04 | 10.3 | . | . | 0.089 | . | . | . | 0.041 | . | . | . | . | 0.113 | . |
| VS 1715-79 | . | 0.60 | . | . | 0.013 | 0.054 | 0.020 | . | 3.1 | 0.026 | . | . | 0.049 | . | 0.068 | 0.038 |
| VS 2040-81 | . | 0.49 | . | . | . | 0.0058 | 0.053 | 0.94 | . | 0.016 | . | . | . | . | . | . |
| VS 2042-81 | . | 0.38 | . | . | . | 0.0032 | 0.105 | 4.17 | . | 0.039 | . | . | . | . | . | . |
| VS 2039-81 | . | 0.22 | . | . | . | 0.023 | 0.27 | 2.47 | . | 0.0026 | . | . | . | . | . | . |
| VS 1713-79 | . | 0.17 | 5.5 | . | 0.0058 | 0.015 | . | . | 2.9 | 0.011 | . | . | . | . | 0.028 | . |
| VS 2041-81 | . | 0.076 | . | . | . | 0.0058 | 0.053 | 0.94 | . | 0.016 | . | . | . | . | . | . |
| VS 1711-79 | . | 0.036 | . | . | 0.0022 | 0.0044 | . | . | . | 0.0026 | . | . | . | . | 0.0071 | . |

CRM TUNGSTEN ORE

analysis listed in mass %

T = Total GBW: 50 g USZ: 100 g units

| Number | WO ₃ | Al ₂ O ₃ | As | Bi | CaO | Cy | F | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Mo | Na ₂ O | Pb | Rb | S | SiO ₂ |
|-----------|-----------------|--------------------------------|------|--------|-------|-------|------|------|--------------------------------|------------------|------|-------|-------|-------------------|--------|--------|------|------------------|
| USZ 26-99 | 0.41 | 14.14 | 0.09 | 0.0067 | 1.95 | . | . | 3.72 | 5.59T | 4.32 | 2.04 | 0.12 | 0.079 | 2.13 | 0.0076 | 0.106 | . | 64.87 |
| GBW 07241 | . | 11.15 | . | 0.068 | 4.17 | 0.096 | 4.84 | . | 5.60 | 1.58 | 0.14 | 0.090 | 0.098 | 0.12 | . | (0.05) | 1.90 | 71.27 |
| GBW 07240 | . | 8.24 | 0.18 | 0.011 | 37.73 | 0.79 | 9.91 | . | 7.79 | 1.94 | 1.45 | 0.97 | . | 0.16 | 0.26 | (0.08) | 3.12 | 13.27 |

analysis listed in mass %

analysis listed in mg/kg except % which is mass %

| Number | Sn | TiO ₂ | Zn | Ag | As | Cd | Ce | Co | Cu% | Dy | Eu | Er | Ga | Gd | Ge | Ho | In | La |
|-----------|---------|------------------|-------|-----|------|------|------|----|-------|------|------|------|------|------|------|-----|-----|----|
| USZ 26-99 | (0.016) | 0.82 | 0.017 | . | . | . | . | 11 | 0.022 | . | . | . | . | . | . | . | . | . |
| GBW 07241 | 0.17 | 0.044 | 0.010 | 1.8 | 69.6 | 0.94 | 60.3 | . | 20.7 | 0.17 | 13.1 | 16.5 | 14.8 | 11.2 | 4.5 | 1.3 | 1.8 | |
| GBW 07240 | 0.14 | 0.079 | 0.29 | 8.3 | . | 26.1 | 10.0 | . | 0.46 | 0.15 | 0.23 | 17.8 | 0.64 | 2.5 | 0.11 | 8.7 | 5.0 | |

analysis listed in mg/kg except % which is mass %

| Number | Lu | Mo | Nd | Ni | Pb | Pr | Sb | Sc | Se | Sm | Sr | Tb | Te | Th | Tl | Tm | Y | V% | Yb | Zr% |
|-----------|------|-----|------|-----|------|-----|------|-----|------|------|----|------|------|------|-----|------|-----|-------|------|-------|
| USZ 26-99 | . | . | . | 35 | . | . | (20) | . | . | . | 78 | . | . | . | . | . | . | 0.010 | . | 0.017 |
| GBW 07241 | 2.4 | . | 32.9 | 2.8 | 81.2 | 7.9 | 3.1 | 5.4 | 0.96 | 12.5 | . | 3.3 | 2.9 | 28.3 | 1.8 | 2.2 | 128 | . | 14.9 | . |
| GBW 07240 | 0.06 | 4.2 | 4.0 | 4.1 | . | 1.1 | 5.1 | 1.8 | 0.39 | 0.79 | . | 0.15 | 0.66 | 2.2 | 5.0 | 0.04 | 2.8 | . | 0.28 | . |

CRM TUNGSTEN ORE

analysis in mass % except * is mg/kg more information on certificates 10g, 60g, 500g, or 1 kg units

| Number | W | WO ₃ | Au* | Cu | Fe | FeO | Fe ₃ O ₄ | Mo | SiO ₂ | Sn | Mass Recovered |
|-----------|------|-----------------|-------|-------|-------|-------|--------------------------------|--------|------------------|--------|----------------|
| OREAS 701 | 2.43 | 3.07 | 1.11 | 0.491 | 23.98 | 17.35 | 17.95 | 0.0254 | 33.95 | 0.0197 | 20.80 |
| OREAS 700 | 1.13 | 1.42 | 0.506 | 0.202 | 16.06 | 12.07 | 10.91 | 0.0081 | 47.30 | 0.0182 | 11.28 |

RM TUNGSTEN ORE

analysis listed in mass % 10 x 100 g units

| Number | W | Ag | Al ₂ O ₃ | Bi | C | CaO | Cu | Fe ₂ O ₃ | K ₂ O | MgO | Mo | Na ₂ O | S | SiO ₂ | TiO ₂ | LOI |
|---------|-------|---------|--------------------------------|--------|-------|--------|-------|--------------------------------|------------------|-------|-------|-------------------|-------|------------------|------------------|-------|
| CDN W-2 | 2.78 | . | (3.1) | 0.32 | . | (10.1) | 0.45 | (43.4) | (1.0) | (5.2) | . | (0.8) | . | (27.9) | (0.1) | (5.7) |
| CDN W-3 | 1.73 | . | (2.4) | 0.2142 | . | (8.4) | 0.44 | (49.5) | (0.6) | (3.9) | . | (0.8) | . | (25.3) | (0.1) | (6.5) |
| CDN W-5 | 0.391 | . | (12.7) | . | (0.2) | (28.9) | . | (11.9) | (0.1) | (1.0) | . | (0.1) | . | (41.6) | (0.1) | (0.9) |
| CDN W-4 | 0.366 | (0.319) | (12.7) | . | . | (3.8) | 0.139 | (13.7) | (2.4) | (2.3) | 0.110 | (2.0) | (0.3) | (56.2) | (0.5) | (4.5) |

CRM ULTRAMAFIC ROCK

| certified soluble analysis in mass % | | | | informational analysis | | | | | | | last of stock | | | | | | | 100 g |
|--------------------------------------|-------|-------|------|--------------------------------|------|-----------------|--------------------------------|------|------------------|------|---------------|------|-------------------|-------------------------------|------|------------------|------------------|-------|
| Number | Co | Cu | Ni | Al ₂ O ₃ | CaO | CO ₂ | Cr ₂ O ₃ | FeO | H ₂ O | La | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | ZnO |
| CAN UM-4 | 0.007 | 0.054 | 0.19 | 8.98 | 6.27 | 0.26 | 2.59 | 12.8 | 4.86 | 0.18 | 22.5 | 0.15 | 0.45 | 0.007 | 0.44 | 39.35 | 0.35 | 0.008 |

RM ULTRAMAFIC ROCK - KOMATIITE * provisional analysis listed in mass % 100 g

| Number | Al ₂ O ₃ | CaO | FeO | T.Fe ₂ O ₃ | H ₂ O- | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI |
|------------|--------------------------------|-------|------|----------------------------------|-------------------|-------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|------------------|------|
| IAG OKUM * | 7.973 | 7.859 | 8.10 | 11.81 | 0.140 | 5.75 | 0.045 | 21.27 | 0.181 | 1.140 | 0.027 | 44.113 | 0.381 | 4.60 |

* provisional analysis listed in mg/kg except % which is mass %

| Number | As | Ba | Be | Ce | Co | Cr% | Cs | Cu | Dy | Er | Eu | Ga | Gd | Hf | Ho |
|------------|-------|------|-------|-------|------|--------|-------|------|-------|-------|-------|------|-------|-------|-------|
| IAG OKUM * | 0.465 | 6.38 | 0.066 | 1.271 | 89.0 | 0.2461 | 0.184 | 43.0 | 1.609 | 1.042 | 0.303 | 8.81 | 1.141 | 0.548 | 0.355 |

| Number | La | Li | Lu | Nb | Nd | Ni% | Pb | Pr | Rb | Sb | Sc | Sm | Sn | Sr |
|------------|-------|------|-------|-------|------|--------|-------|-------|------|-------|------|-------|------|------|
| IAG OKUM * | 0.415 | 4.38 | 0.149 | 0.346 | 1.49 | 0.0884 | 0.265 | 0.239 | 0.96 | 0.077 | 28.0 | 0.712 | 0.25 | 16.1 |

| Number | Ta | Tb | Th | Tl | Tm | U | V | Y | Yb | Zn | Zr |
|------------|-------|-------|-------|-------|-------|-------|-----|------|------|------|------|
| IAG OKUM * | 0.026 | 0.225 | 0.031 | 0.015 | 0.154 | 0.014 | 167 | 9.27 | 1.02 | 61.2 | 17.4 |

CRM URANIUM ORE

analysis listed in mass % powder 10 g

| Number | U | Cu | Fe |
|--------|----------|---------|-----|
| GU-10 | 0.1876 | . | . |
| GU-09 | 0.1134 | . | . |
| GU-08 | 0.03124 | . | . |
| GU-07 | 0.02429 | . | . |
| GU-11 | 0.003467 | . | . |
| GU-03 | 0.00048 | 0.00210 | 3.5 |
| GU-04 | 0.00042 | . | . |
| GU-06 | 0.000382 | . | . |
| GU-05 | 0.000356 | . | . |

CRM URTITE

analysis listed in mass %

40 g units

| Number | SiO ₂ | TiO ₂ | Al ₂ O ₃ | Fe ₂ O ₃ | MnO | MgO | CaO | Na ₂ O | K ₂ O | FeO | P ₂ O ₅ | Ba | Sr |
|------------|------------------|------------------|--------------------------------|--------------------------------|-------|------|------|-------------------|------------------|------|-------------------------------|-------|-------|
| VS 2123-81 | 42.80 | 1.79 | 26.47 | 2.67 | 0.084 | 0.14 | 3.73 | 13.33 | 5.16 | 1.40 | 0.388 | 0.035 | 0.100 |

continued analysis listed in mg/kg

| Number | Be | Co | Cr | Cu | Ga | La | Li | Mo | Nb | Ni | Pb | Rb | Sn | V | Y | Yb | Zn | Zr |
|------------|-----|-----|-----|----|----|-----|-----|-----|----|-----|-----|----|-----|----|----|-----|----|-----|
| VS 2123-81 | 5.1 | 8.1 | 9.7 | 24 | 48 | 100 | 8.9 | 2.3 | 97 | 6.5 | 5.8 | 79 | 3.4 | 86 | 26 | 1.7 | 44 | 220 |

RM VOLCANIC TUFF WITH EXTENSIVE ANALYSIS

analysis listed in mass %

~35 g units

| Number | Al ₂ O ₃ | Ba | CaO | FeO | T.Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | SiO ₂ | Sr | TiO ₂ | V | LOI |
|----------|--------------------------------|---------|-------|-------|----------------------------------|------------------|-------|-------|-------------------|-------------------------------|------------------|----------|------------------|----------|-------|
| IAG OU-1 | 15.136 | 0.01314 | 6.488 | 4.995 | 8.987 | 0.215 | 4.727 | 0.129 | 2.463 | 0.050 | 58.247 | 0.010476 | 0.440 | 0.022223 | 3.058 |

continued analysis listed in mg/kg

| Number | As | Be | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Hf | Ho | La | Li |
|----------|-------|------|------|-------|-------|-------|------|-------|------|------|------|-------|------|------|------|------|-------|
| IAG OU-1 | 8.221 | 0.43 | 0.17 | 12.49 | 24.41 | 27.65 | 0.14 | 61.55 | 3.40 | 2.40 | 0.52 | 13.63 | 2.78 | 1.65 | 0.80 | 5.60 | 20.35 |

| Number | Lu | Nb | Nd | Ni | Rb | Sb | Sc | Sm | Ta | Tb | Th | Tm | U | Y | Yb | Zn | Zr |
|----------|------|-----|------|-------|------|------|-------|------|------|------|------|------|------|-------|------|-------|-------|
| IAG OU-1 | 0.39 | 2.3 | 7.32 | 13.00 | 2.05 | 0.22 | 32.69 | 2.13 | 0.15 | 0.49 | 1.68 | 0.37 | 0.40 | 21.63 | 2.49 | 74.40 | 55.00 |

CRM WOLLASTONITE

| analysis listed in mass % | | | | | | | | | | | 50 g units | | |
|---------------------------|--------------------------------|-------|------|--------------------------------|------------------|------|-------|-------------------|-------------------------------|---------|------------------|------------------|------|
| Number | Al ₂ O ₃ | CaO | FeO | Fe ₂ O ₃ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | S | SiO ₂ | TiO ₂ | LOI |
| GBW 03123 | 0.39 | 40.39 | 0.28 | 0.10 | 0.14 | 0.95 | 0.096 | 0.052 | 0.052 | (0.010) | 50.50 | 0.022 | 6.93 |

CRM ZEOLITE WITH EXTENSIVE ANALYSIS

| analysis listed in mass % | | | | | | | | | | | | | | | T = Total | | |
|---------------------------|--------------------------------|--------|-------|--------------------------------|-------------------|------------------|--------|-------|-------------------|-------------------------------|--------|------------------|--------|------------------|-----------|--------|-------|
| Number | Al ₂ O ₃ | Ba | CaO | Fe ₂ O ₃ | H ₂ O- | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Rb | SiO ₂ | Sr | TiO ₂ | Zr | LOI | Units |
| FLX CRM104 | 33.74 | . | 0.063 | 0.014 | . | 0.075 | . | . | 20.06 | . | . | 45.98 | . | . | . | 22.64 | 35 g |
| USZ 49-2009 | 12.98 | 0.0371 | 1.34 | 1.27T | . | 3.19 | 0.573 | 0.033 | 3.44 | 0.032 | 0.0106 | 67.44 | 0.0635 | 0.158 | 0.0177 | 8.80 | 70 g |
| CGL 017 | 12.91 | 0.0383 | 1.30 | 0.802T | (4.17) | 3.21 | (0.55) | 0.007 | 3.35 | 0.030 | 0.0107 | 67.64 | 0.0651 | 0.161 | (0.0179) | (9.77) | 70 g |

continued analysis listed in mg/kg

| Number | As | Be | Bi | Cd | Ce | Co | Cr | Cs | Cu | Dy | Er | Eu | Ga | Gd | Hf | Hg | Ho |
|----------------|------|--------|--------|--------|------|--------|-------|------|-------|--------|--------|--------|-------|--------|--------|--------|--------|
| FLX CRM104 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 49-2009 | 60.5 | (2.75) | (11.7) | (7.85) | 74.8 | 20.3 | 12.7 | 4.73 | 79.3 | (3.46) | (1.83) | (0.50) | 13.8 | (3.81) | (5.38) | (1.85) | (0.66) |
| CGL 017 | (63) | (2.6) | . | . | (77) | (0.94) | (7.9) | . | (2.9) | (3.5) | (1.91) | (0.49) | 14.84 | (4.3) | (7.9) | . | (0.67) |

| Number | La | Li | Lu | Mo | Nb | Nd | Ni | Pb | Pr | Sb | Sc | Sm | Sn | Ta | Tb | Th | Tm |
|----------------|--------|--------|--------|--------|-------|--------|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
| FLX CRM104 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| USZ 49-2009 | 37.2 | (6.07) | (0.27) | (0.43) | 14.1 | 27.3 | 14.6 | 84.2 | (7.97) | (50.9) | 3.27 | (4.82) | (2.27) | (1.16) | (5.9) | 17.2 | (0.27) |
| CGL 017 | (39.5) | (6.4) | (0.28) | . | 14.17 | (27.5) | (2.2) | 21.78 | (8.4) | . | (3.6) | (5.1) | (2.6) | (1.26) | (0.63) | (17.3) | (0.29) |

| Number | U | V | W | Y | Yb | Zn |
|----------------|-------|--------|--------|-------|--------|-------|
| FLX CRM104 | . | . | . | . | . | . |
| USZ 49-2009 | 3.09 | 42.3 | (1.52) | 18.6 | (1.81) | 79.3 |
| CGL 017 | (3.1) | (11.1) | . | 20.36 | (1.8) | 25.37 |

17025

CRM ZINC ORE

analysis listed in mass % except * which is mg/kg T = Total

| Number | Zn | S | Al ₂ O ₃ | Ca | CaO | Cd | Cu | Fe | Hg* | Mg | MgO | Ni | Pb | Sb | SiO ₂ |
|-----------|---------|--------|--------------------------------|----------|-------|--------|--------|-------|------|----------|-------|----------|---------|----------|------------------|
| CAN CZN-4 | 55.24 | 33.07 | Al:0.0715 | (0.0419) | . | 0.2604 | 0.403 | (9) | 4.54 | (0.0352) | . | (0.0016) | 0.1861 | (0.0010) | Si:0.295 |
| IMN TC 9 | 53.4 | 0.52 | . | . | 6.96 | 0.0049 | . | 5.64 | . | . | 3.50 | . | 3.77 | . | 5.47 |
| GBM310-14 | 17.9087 | 11.0 | . | . | . | . | 0.0114 | . | . | . | . | 0.0042 | 8.9774 | . | . |
| GBM305-12 | 17.0581 | . | . | . | . | . | 0.0119 | . | . | . | . | . | 0.0042 | 0.4214 | . |
| GBM310-16 | 17.0201 | 21.4 | . | . | . | . | 0.3459 | . | . | . | . | 0.0035 | 11.2603 | . | . |
| GBM310-13 | 10.8471 | 5.9 | . | . | . | . | 0.0334 | . | . | . | . | 0.0072 | 2.1599 | . | . |
| GBM907-13 | 6.6270 | 5.85 | . | . | . | . | 1.6853 | . | . | . | . | 0.0073 | 0.4102 | . | . |
| IMN RG 8 | 5.4 | 0.57 | 0.9 | . | 26.45 | 0.047 | . | 6.34 | . | . | 12.16 | . | 0.84 | . | 2.64 |
| GBM910-12 | 4.5469 | 16.7 | . | . | . | . | 0.1419 | . | . | . | . | 0.0026 | 2.2000 | . | . |
| GBM909-12 | 4.0073 | 9.9 | . | . | . | . | 1.0830 | . | . | . | . | 0.0023 | 0.4191 | . | . |
| GBM910-11 | 4.0055 | 12.9 | . | . | . | . | 0.1305 | . | . | . | . | 0.0020 | 1.3656 | . | . |
| GBM907-14 | 3.1882 | 2.90 | . | . | . | . | 0.8167 | . | . | . | . | 0.0061 | 1.973 | . | . |
| GBM311-11 | 3.1115 | 3.3 | . | . | . | . | 1.4504 | . | . | . | . | 0.0078 | 1.0730 | . | . |
| IMN RB 7 | 3.07 | (10.3) | . | . | 24.35 | 0.033 | . | 8.28 | . | . | 15.26 | . | (0.26) | . | (0.8) |
| GBM307-14 | 1.7179 | 23.59 | . | . | . | . | 0.7502 | . | . | . | . | 0.0054 | 0.0217 | . | . |
| GBM906-14 | 1.5949 | . | . | . | . | . | 1.1758 | . | . | . | . | . | 0.0405 | . | . |
| BCR 109 | . | . | . | . | . | 0.46 | 0.946 | 14.51 | 0.96 | 0.020 | . | . | 0.738 | . | . |

continued

| Number | Ag* | As | Au* | Bi* | C | Cl | Co | F | In | Mn | PbO | Se* | Sn | ZnO | Units |
|-----------|-------|--------|--------|------|--------|---------|---------|---------|---------|---------|--------|------|--------|--------|-------|
| CAN CZN-4 | 51.4 | 0.0356 | (0.04) | (10) | (0.09) | (0.003) | 0.00935 | (0.004) | (0.020) | (0.009) | . | 86.7 | (0.05) | . | 200 g |
| IMN TC 9 | . | . | . | . | . | 0.033 | . | 0.055 | . | . | . | . | . | . | 220 g |
| GBM310-14 | 59.6 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM305-12 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM310-16 | 314.3 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM310-13 | 30.8 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM907-13 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| IMN RG 8 | . | . | . | . | . | . | . | . | . | . | (0.72) | . | . | (4.36) | 130 g |
| GBM910-12 | 24.4 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM909-12 | 51.7 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM910-11 | 19.6 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM907-14 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM311-11 | 19.6 | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| IMN RB 7 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 170 g |
| GBM307-14 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 250 g |
| GBM906-14 | 2.9 | . | . | . | . | . | 31 | . | . | . | . | . | . | . | 250 g |
| BCR 109 | . | . | . | . | . | . | . | 0.0081 | . | . | . | . | . | . | 200 g |

CRM ZINC ORE WITH EXTENSIVE ANALYSIS

analysis listed in mass % T = Total * Provisional Analysis CGL: 200 g GBW: 50 g JZn-1: 100 g units

| Number | Zn | Al ₂ O ₃ | CaO | T.C | Cu | F | Fe ₂ O ₃ | H ₂ O- | H ₂ O+ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | Pb | S | SiO ₂ | TiO ₂ | LOI |
|-----------|-------|--------------------------------|-------|--------|----------|------|--------------------------------|-------------------|-------------------|------------------|---------|------|-------------------|-------------------------------|--------|---------|------------------|------------------|--------|
| CGL 207 | 49.14 | 0.112 | 0.850 | . | 0.1940 | . | 10.45T | . | . | . | (0.068) | 6.20 | (0.016) | (0.026) | 0.3407 | 31.12 | (1.73) | . | . |
| GBW 07237 | 2.75 | 2.80 | 1.91 | . | 0.71 | 1.20 | 3.50 | . | 0.99 | 0.082 | 0.026 | 0.56 | . | 0.25 | 0.25 | 2.87 | 82.95 | 0.017 | . |
| JZn-1 * | 2.22 | 6.32 | 18.1 | (1.28) | (0.0029) | . | 11.8 | (0.61) | (1.71) | 0.83 | 1.94 | 1.49 | 0.45 | . | 0.161 | (1.30T) | (43.95) | 0.20 | (6.61) |

continued analysis listed in mg/kg

| Number | Ag | As | Ba | Be | Bi | Cd | Ce | Co | Cr | Cs | Dy | Eu | Er | Ga | Gd | Ge | Ho | In | La | Li | | |
|-----------|-------|-------|--------|---------|---------|-------|--------|-------|---------|---------|------|--------|------|--------|---------|---------|------|-------|--------|------|--------|------|
| CGL 207 | 33.43 | 167.7 | (9.48) | (0.254) | 309.6 | 910.5 | (9.82) | 424.4 | (29.86) | (0.425) | . | . | . | (2.83) | . | (0.743) | . | 152.9 | (7.30) | . | | |
| GBW 07237 | 13.5 | 12.4 | . | . | 56.4 | 29.3 | 2.3 | . | (62) | . | 0.49 | 0.06 | 0.28 | 8.0 | 0.31 | 1.4 | 0.13 | 0.23 | 1.3 | (86) | | |
| JZn-1 * | . | (99) | (208) | . | . | (114) | . | (24) | (21) | . | . | . | . | . | . | . | . | . | . | . | (19.5) | |
| Number | Lu | Mo | Nd | Ni | Pr | Rb | Sb | Sc | Se | Sm | Sn | Sr | Tb | Te | Th | Tl | Tm | U | V | W | Y | Yb |
| CGL 207 | . | 255.6 | . | 11.18 | (0.938) | . | (3.24) | . | . | . | . | (5.65) | . | . | (0.450) | . | . | 7.86 | (1.52) | . | . | . |
| GBW 07237 | 0.08 | 2.8 | 0.92 | 5.5 | 0.30 | (73) | 1.1 | 0.33 | 2.3 | 0.36 | 6.1 | . | 0.10 | 0.17 | (1.1) | 0.49 | 0.05 | . | . | 3.4 | 4.5 | 0.42 |
| JZn-1 * | . | . | . | (6) | . | (42) | (31) | . | . | . | . | . | . | . | . | . | . | . | (24) | . | . | . |

CRM ZINC ORE - EXTENSIVE CERTIFIED ANALYSIS ON CERTIFICATES AVAILABLE ON REQUEST

analysis listed in mass % except * which is mg/kg

| Number | Zn | Ag* | Au* | Cu | Pb | S | Units |
|-----------|-------|------|-------|-------|-------|-------|------------|
| OREAS 622 | 10.24 | 102 | 1.85 | 0.486 | 2.21 | 7.95 | 10 or 60 g |
| OREAS 621 | 5.22 | 69 | 1.25 | 0.363 | 1.36 | 4.54 | 10 or 60 g |
| OREAS 620 | 3.15 | 38.5 | 0.685 | 0.173 | 0.774 | 2.52 | 10 or 60 g |
| OREAS 624 | 2.40 | 45.3 | 1.16 | 3.10 | 0.624 | 13.29 | 10 or 60 g |
| OREAS 623 | 1.03 | 20.4 | 0.827 | 1.73 | 0.250 | 9.07 | 10 or 60 g |

CRM ZIRCONIUM ORE

analysis listed in mass %

| Number | ZrO ₂ | Al ₂ O ₃ | CaO | F | FeO | Fe ₂ O ₃ (T) | H ₂ O+ | HfO ₂ | K ₂ O | MgO | MnO | Na ₂ O | P ₂ O ₅ | RE _x O _y * | SiO ₂ | TiO ₂ | LOI |
|-------------|------------------|--------------------------------|------|-----------|------|------------------------------------|-------------------|------------------|------------------|-------|-------|-------------------|-------------------------------|----------------------------------|------------------|------------------|------|
| NCS DC86316 | 4.68 | (14.57) | 0.63 | 0.027(F-) | 0.10 | 0.38 | 0.49 | 0.084 | 3.90 | 0.079 | 0.021 | 4.20 | 0.040 | 0.0515 | 70.73 | 0.64 | 0.56 |
| NCS DC86308 | 1.25 | 14.70 | 2.64 | 0.082 | 1.82 | 4.69 | 1.29 | 0.025 | 3.31 | 2.01 | 0.083 | 3.74 | 0.167 | 0.022 | 65.66 | 0.410 | 1.51 |
| NCS DC86307 | 0.187 | 14.74 | 2.70 | 0.080 | 1.83 | 4.80 | 1.35 | 0.00421 | 3.37 | 2.10 | 0.085 | 3.83 | 0.163 | 0.018 | 66.02 | 0.420 | 1.55 |

continued analysis listed in mg/kg

| Number | CeO ₂ | Dy ₂ O ₃ | Er ₂ O ₃ | Eu ₂ O ₃ | Gd ₂ O ₃ | Ho ₂ O ₃ | La ₂ O ₃ | Lu ₂ O ₃ | Nd ₂ O ₃ | Pr ₆ O ₁₁ | Sc ₂ O ₃ | Sm ₂ O ₃ | Tb ₄ O ₇ | Th | Tm ₂ O ₃ | W | Y ₂ O ₃ | Yb ₂ O ₃ | Units |
|-------------|------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------------|--------------------------------|--------------------------------|------|--------------------------------|------|-------------------------------|--------------------------------|-------|
| NCS DC86316 | 146 | 14.9 | 16.4 | 0.55 | 9.92 | 3.66 | 69.2 | 6.11 | 53.4 | 15.7 | 10.7 | 10.1 | 2.02 | 202 | 2.84 | 5.01 | 142 | 25.9 | 70 g |
| NCS DC86308 | 74.4 | 4.6 | 4.6 | 1.2 | (4.1) | 1.3 | 37.9 | 1.5 | 26.9 | 7.8 | 14.8 | 4.9 | 0.74 | 15.2 | 0.92 | . | 41.9 | 7.8 | 70 g |
| NCS DC86307 | 70.7 | 2.8 | 1.8 | 1.2 | 3.4 | 0.59 | 36.6 | 0.38 | 27.5 | 7.7 | 14.1 | 4.7 | 0.53 | 7.8 | 0.31 | . | 19.5 | 2.2 | 70 g |

* RE_xO_y : Rare Earth Oxide**ZIRCONIUM MATERIALS**

CERAM: 25 or 100 g IGS: 50 g NCS: 20 g all others: 100 g units

| Number | ZrO ₂ | HfO ₂ | ZrO ₂ + HfO ₂ | Al ₂ O ₃ | CaO | Fe ₂ O ₃ | K ₂ O | MgO | Na ₂ O | P ₂ O ₅ | SiO ₂ | TiO ₂ | LOI | Other |
|--------------|------------------|------------------|--|--------------------------------|--------|--------------------------------|------------------|----------|-------------------|-------------------------------|------------------|------------------|------|--|
| CRM | | | | | | | | | | | | | | |
| NCS HC26618 | . | . | 99.48 | 0.009 | 0.17 | 0.054 | . | 0.093 | . | . | 0.11 | . | . | |
| BCS 358 | 92.70 | 1.63 | . | 0.08 | 1.50 | 0.065 | . | 3.42 | . | . | 0.21 | 0.20 | 0.08 | BaO: 0.10 SrO: 0.07 |
| VS K7/3 | . | . | 92.2 | (0.1) | 5.39 | 0.73 | . | . | . | . | 0.65 | . | . | |
| VS K8/2 | 65.9 | . | . | 1.16 | . | 0.081 | . | . | . | 0.110 | 32.3 | 0.163 | . | S: 0.0064 |
| IGS 35 | 65.86 | 1.368 | . | . | . | . | . | . | . | . | . | 0.27 | . | |
| BCS 388 | (64.9) | 1.28 | 66.2 | 0.291 | . | 0.049 | . | . | . | 0.122 | 32.7 | 0.232 | . | ThO ₂ :0.019 U ₃ O ₈ :0.034 Y ₂ O ₃ : 0.136 |
| SARM 13 | 64.01 | 1.29 | . | 0.61 | (0.14) | 0.187 | . | (0.0440) | . | 0.23 | 32.56 | 0.295 | . | Th:2 (0.0300) ₃ U:(0.0328) ₂ |
| RM | | | | | | | | | | | | | | |
| CERAM 2CAS15 | (63.6) | (1.28) | 65.0 | 0.38 | 0.28 | 0.07 | 0.01 | 0.07 | 0.02 | . | 33.9 | 0.20 | 0.23 | |
| CERAM AN46 | 15.41 | 0.32 | 15.68 | 30.52 | 0.20 | 0.85 | 1.03 | 5.34 | 0.15 | . | 45.46 | 0.48 | 0.08 | Li ₂ O: 0.02 |
| BCS 204A | . | . | 53.8 | 0.74 | 0.15 | 0.18 | 0.017 | 0.012 | 0.014 | 0.77 | 37.6 | 2.22 | 0.50 | SnO ₂ : 1.69 |