# *Certificate of Analysis*

## *MEG, LLC*

**Moment Exploration GeoServices**

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# MEG-Au.17.01

**Certified Reference Material**

| | | | |
|---|---|---|---|
| **MEAN =** | **0.381** | **ppm Au** | |
| **95% Confidence =** | **0.351** | **to** | **0.410** |

| | | | |
|---|---|---|---|
| **MEAN =** | **6.522** | **ppm Ag** | |
| **95% Confidence =** | **6.115** | **to** | **6.929** |

| | | | |
|---|---|---|---|
| **MEAN =** | **723.209** | **ppm Cu** | |
| **95% Confidence =** | **685.558** | **to** | **760.859** |

**Prepared By:** Shea Clark Smith / Minerals Exploration & Environemental Geochemistry
**Certified By:** Shea Clark Smith, MSc.( Geochemistry)
**Manufactured for:** MEG LABS, Inc.
**Date of Certification:** March 24 2017

**Origin of Reference Material:**
Certified Reference Material MEG-Au.17.01
ore material of the Walker Mine, California
This material is not intended to be matrix-matched to any specific ore lithology.

**Method of Preparation:**
100 Kg of ore was jaw crushed and roll crushed.
The batch was comminuted to powder in a ceramic ball mill for 168 hours
Sizing tests of the final product show greater than 95% pass -177um (-80 mesh).
The standard was packaged in 50 g envelopes, each envelope with a removable sticky-label.

**Method of Analysis:**
Using the ICPMS capabilities of just one laboratory, homogeneity tests were done to estimate
Then, 10 samples each to 10 laboratories were fire assayed on 30 gram subsamples, and these data to certify the material for gold concentration. New fire assay crucibles were used.
Silver and copper were certified by 4-acid digestion and trace element analysis by ICP-OES

**Summarized Assay Results:**

**PROJECT: Au.17.01**

**GOLD** Au reported in ppm (parts per million)

| | | | | **PPM** |
|---|---|---|---|---|
| **DATA POINTS (ALL DATA)** | | | | **108** |
| **MEAN (ALL DATA)** | | | | **0.382** |
| **STANDARD DEVIATION (ALL DATA)** | | | | **0.026** |
| **% RSD** | | | | **6.760** |
| **RANGE OF VALUES - HIGH** | | | | **0.471** |
| **RANGE OF VALUES - LOW** | | | | **0.320** |
| **95% CONFIDENCE LIMITS** | **0.330** | **to** | | **0.434** |

| | |
|---|---|
| **DATA POINTS (LAB AVERAGE DATA)** | **11** |
| **MEAN (LABS)** | **0.381** |

| | | | |
|---|---|---|---|
| **STANDARD DEVIATION (LABS)** | | | **0.015** |
| **CV (% RSD)** | | | **3.911** |
| **RANGE OF VALUES - HIGH** | | | **0.400** |
| **RANGE OF VALUES - LOW** | | | **0.346** |
| **95% CONFIDENCE LIMITS** | **0.351** | **to** | **0.410** |

| **SILVER** Ag reported in ppm (parts per million) | | | **PPM** |
|---|---|---|---|
| **DATA POINTS (ALL DATA)** | | | **115** |
| **MEAN (ALL DATA)** | | | **6.525** |
| **STANDARD DEVIATION (ALL DATA)** | | | **0.294** |
| **% RSD** | | | **4.509** |
| **RANGE OF VALUES - HIGH** | | | **7.600** |
| **RANGE OF VALUES - LOW** | | | **5.800** |
| **95% CONFIDENCE LIMITS** | **5.937** | **to** | **7.114** |

| | | | |
|---|---|---|---|
| **DATA POINTS (LAB DATA)** | | | **11** |
| **MEAN (LABS)** | | | **6.522** |
| **STANDARD DEVIATION (LABS)** | | | **0.203** |
| **CV (% RSD)** | | | **3.120** |
| **RANGE OF VALUES - HIGH** | | | **6.818** |
| **RANGE OF VALUES - LOW** | | | **6.100** |
| **95% CONFIDENCE LIMITS** | **6.115** | **to** | **6.929** |

| **COPPER** Cu reported in ppm | | | **PPM** |
|---|---|---|---|
| **DATA POINTS (ALL DATA)** | | | **104** |
| **MEAN (ALL DATA)** | | | **723** |
| **STANDARD DEVIATION (ALL DATA)** | | | **24** |
| **% RSD** | | | **3.3** |
| **RANGE OF VALUES - HIGH** | | | **766** |
| **RANGE OF VALUES - LOW** | | | **654** |
| **95% CONFIDENCE LIMITS** | **676** | **to** | **771** |

| | | | |
|---|---|---|---|
| **DATA POINTS (LAB DATA)** | | | **10** |
| **MEAN (LABS)** | | | **723** |
| **STANDARD DEVIATION (LABS)** | | | **19** |
| **CV (% RSD)** | | | **2.6** |
| **RANGE OF VALUES - HIGH** | | | **751** |
| **RANGE OF VALUES - LOW** | | | **697** |
| **95% CONFIDENCE LIMITS** | **686** | **to** | **761** |

**Statistical Procedures:**

Acceptable assay limits are based on the results of 5 samples shipped to each of 10 laboratories. Some labs assayed submitted samples twice, in different months, or different years.

The samples were submitted with other MEG standards in randomized order, so that as much as

Standards with an RSD (Relative Standard Deviation) of near or less than 5% are termed "Certified", while RSD's 5% to 15% are designated "Provisional". RSD's over 15% are "Informational".

**Instructions and Recommendations for Use:**

Submit the entire contents of one 50 g envelope in random locations in the submittal, approximately every 10-20 samples. Use of blanks (samples with "below detection" concentration of analyte) are also recommended, randomly placed every 30-40 samples.

**Intended Use:**

The standard material can be used to validate the analysis of samples from gold ores with a similar

The recommended concentrations and limits for this material are based on multiple assays from several laboratories and reflect a consensus of the inherent chemical concentration. These values are a first attempt at a chemical characterization to which  to which later data may be added as experience with the material increases. later data may be added as experience with the material increases.

Slight variations in analytical procedures between laboratories will result in slight biases to the recommended statistical limits.

This standard material is not recommended for method development, nor instrumental calibration.

**Handling Instructions:**

The material is packaged in manila tin-top envelopes for easy open and close use. The material should be reblended just prior to use in the assay laboratory. This can be done with a micro-riffle splitter or rubber sheeting.

Simple agitation and shaking is not sufficient to rehomogenize prior to use.

Normal safety precautions for handling powders are recommended. The use of safety glasses, dust inhalation protection, gloves, and a laboratory coat are suggested.

**Safety Notice**:

A Material Safety Data Sheet (MSDS) is not required for this material. This material will not release or otherwise result in exposure to a hazaardous chemical, under normal conditions of use. Use regular precautions as for any work with fine powder material.

**Legal Notice:**

This certificate and the referenced material have been prepared with due care and attention. However, Minerals Exploration & Environmental Geochemistry (MEG Labs), and Shea Clark Smith, MSc, P.G., accept no liability for any decisions or actions taken following the use of this geochemical reference material.

**Assay Data Used to Calculate "True" Gold Value:**

| | Lab 1 | | | Lab 2 | | | Lab 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) |
| 1 | 0.40 | 6.60 | 674.00 | 0.39 | 6.50 | 732.00 | 0.32 | 6.20 | 701.00 |
| 2 | 0.35 | 6.70 | 717.00 | 0.34 | 6.50 | 722.00 | 0.36 | 6.80 | 698.00 |
| 3 | 0.45 | 6.70 | 725.00 | 0.38 | 6.50 | 737.00 | 0.35 | 6.70 | 710.00 |
| 4 | 0.39 | 6.50 | 698.00 | 0.38 | 6.40 | 729.00 | 0.35 | 6.70 | 688.00 |
| 5 | 0.39 | 6.60 | 685.00 | 0.38 | 6.40 | 739.00 | 0.36 | 6.80 | 700.00 |
| 6 | 0.38 | 6.60 | 717.00 | 0.37 | 6.40 | 730.00 | 0.33 | 6.80 | 711.00 |
| 7 | 0.44 | 6.90 | 698.00 | 0.37 | 6.50 | 736.00 | 0.33 | 6.70 | 685.00 |
| 8 | 0.39 | 7.00 | 754.00 | 0.40 | 6.30 | 731.00 | 0.37 | 7.00 | 729.00 |
| 9 | 0.39 | 6.80 | 731.00 | 0.43 | 6.30 | 716.00 | | 6.80 | 693.00 |
| 10 | 0.47 | 6.50 | 685.00 | | 6.30 | 733.00 | | 6.10 | 654.00 |
| 11 | 0.42 | 6.60 | 691.00 | | | | | | |
| 12 | | 6.90 | 683.00 | | | | | | |

| | Lab 4 | | | Lab 5 | | | Lab 6 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) |
| 1 | 0.36 | 6.60 | 706.00 | 0.37 | 6.70 | 701.00 | 0.38 | 6.50 | 722.00 |
| 2 | 0.39 | 7.60 | 729.00 | 0.36 | 6.50 | 748.00 | 0.42 | 6.30 | 695.00 |
| 3 | 0.41 | 6.30 | 689.00 | 0.37 | 6.40 | 735.00 | 0.38 | 6.60 | 720.00 |
| 4 | 0.40 | 6.40 | 686.00 | 0.37 | 6.50 | 740.00 | 0.36 | 6.60 | 715.00 |
| 5 | 0.41 | 6.50 | 715.00 | 0.38 | 6.50 | 743.00 | 0.39 | 6.50 | 729.00 |
| 6 | 0.39 | 6.20 | 691.00 | 0.42 | 6.50 | 736.00 | 0.37 | 6.60 | 729.00 |
| 7 | 0.38 | 6.50 | 697.00 | 0.36 | 6.50 | 745.00 | 0.41 | 6.40 | 702.00 |
| 8 | 0.39 | 6.30 | 703.00 | 0.38 | 6.50 | 738.00 | 0.35 | 6.50 | 710.00 |
| 9 | 0.37 | 6.20 | 701.00 | 0.39 | 6.30 | 713.00 | 0.40 | 6.50 | 692.00 |
| 10 | | 6.40 | 670.00 | 0.42 | 6.40 | 735.00 | 0.38 | 6.60 | 706.00 |
| 11 | | | | | | | | | |

| | Lab 7 | Lab 8 | Lab 9 |
|---|---|---|---|

| | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.36 | 6.80 | 740.00 | 0.37 | 6.60 | 758.00 | 0.40 | 7.00 | 720.00 |
| 2 | 0.40 | 6.80 | 743.00 | 0.39 | 6.20 | 766.00 | 0.39 | 7.00 | 742.00 |
| 3 | 0.39 | 7.10 | 745.00 | 0.38 | 6.80 | 736.00 | 0.39 | 7.00 | 754.00 |
| 4 | 0.39 | 6.70 | 738.00 | 0.39 | 6.20 | 746.00 | 0.38 | 7.00 | 760.00 |
| 5 | 0.39 | 6.70 | 726.00 | 0.38 | 6.20 | 746.00 | 0.41 | 7.00 | 737.00 |
| 6 | 0.37 | 7.00 | 731.00 | 0.38 | 6.60 | 748.00 | 0.41 | 7.00 | 735.00 |
| 7 | 0.34 | 6.50 | 735.00 | 0.37 | 6.40 | 742.00 | 0.38 | 7.00 | 721.00 |
| 8 | 0.36 | 6.70 | 734.00 | 0.40 | 6.40 | 758.00 | 0.38 | 7.00 | 739.00 |
| 9 | 0.38 | 6.60 | 760.00 | 0.37 | 6.40 | 754.00 | 0.40 | 6.00 | 721.00 |
| 10 | 0.34 | 6.60 | 747.00 | 0.40 | 6.60 | 760.00 | 0.40 | 6.00 | 741.00 |
| 11 | | | | 0.39 | 6.40 | 754.00 | | 7.00 | |
| | | | | | 6.40 | 748.00 | | | |

| | Lab 10 | | | Lab 11 | | |
|---|---|---|---|---|---|---|
| | Au (ppm) | Ag (ppm) | Cu (ppm) | Au (ppm) | Ag (ppm) | Cu (ppm) |
| 1 | 0.37 | 5.90 | | 0.40 | 6.38 | 761.00 |
| 2 | 0.35 | 6.40 | | 0.41 | 6.29 | 762.00 |
| 3 | 0.39 | 6.00 | | 0.40 | 6.43 | 718.00 |
| 4 | 0.38 | 6.00 | | 0.38 | 6.31 | 699.00 |
| 5 | 0.36 | 6.00 | | 0.44 | 6.35 | 718.00 |
| 6 | 0.37 | 6.20 | | 0.36 | 6.26 | 706.00 |
| 7 | 0.36 | 5.80 | | 0.37 | 6.51 | 737.00 |
| 8 | 0.39 | 6.20 | | 0.36 | 6.56 | 757.00 |
| 9 | 0.35 | 6.10 | | 0.38 | 6.32 | 709.00 |
| 10 | | 6.40 | | 0.43 | 6.28 | 710.00 |

## Major Constituents as Oxides

**Average of 10 samples: 4-acid, ICPMS (Total Digestion)**

| **Raw Data:** | **Al%** | **Ca%** | **Fe%** | **K%** | **Mg%** | **Na%** | **S%** | **Ti%** | **Si%** |
|---|---|---|---|---|---|---|---|---|---|
| **ICP/MS Data (n=10)** | 3.08 | 0.03 | 7.92 | 1.15 | 0.01 | 0.03 | 2.34 | 0.13 | |
| **Conversion Factor** | 1.8899 | 1.3992 | 1.4297 | 1.2046 | 1.6579 | 1.348 | 2.4953 | 1.6681 | 2.1392 |
| | **Al02** | **CaO** | **Fe2O3** | **K2O** | **MgO** | **Na2O** | **SO3** | **TiO2** | **SiO2** estimated |
| **% Oxide:** | **5.82** | **0.04** | **11.32** | **1.39** | **0.02** | **0.04** | **5.84** | **0.22** | **86.91** |

**Raw Data:**
**ICP/MS Data (n=5)**
**Conversion Factor**

## Participating Laboratories:

American Assay Labs, Sparks
Activation Labs, Ancaster
Activation Labs, Kamloops
ALS, Loughrea
ALS, Vancouver
BV-Inspectorate, Sparks
MS Analytical
McClelland, Reno
Skyline, Tucson
SGS, Burnaby

**Certified By:**

**Shea Clark Smith, MSc., P.G.**