

December 8, 2021

REPORT OF: Chemical Analyses

REPORT TO: Ember Body Jewelry  
Attn: Ryan Dreyfuss

DATE APPROVED: December 7, 2021

IDENTIFICATION: 3 ea. Gold samples, client identified as:

- White gold (W.G.)
- Yellow gold (Y.G.)
- Rose gold (R.G.)

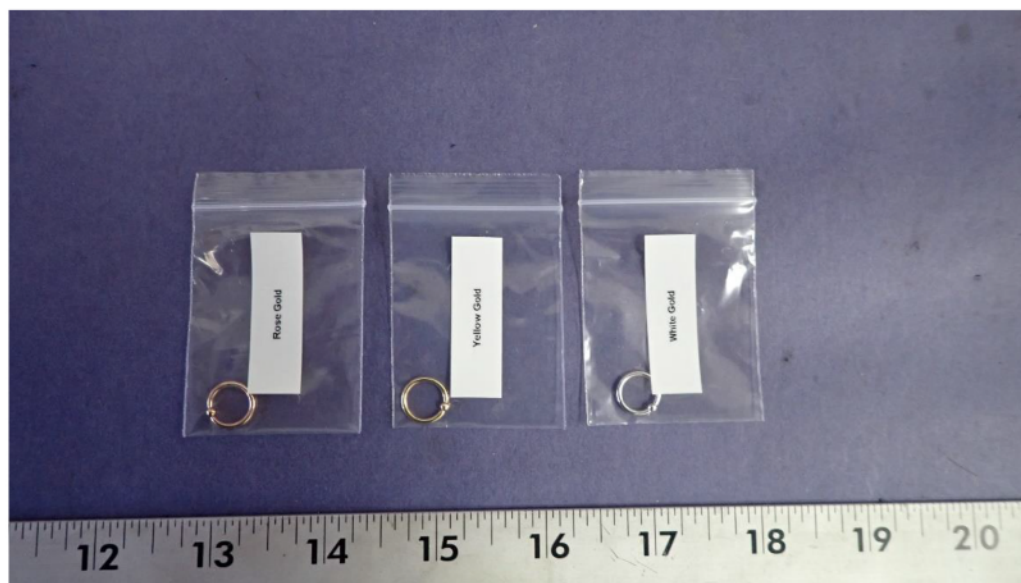


Figure 1: Samples, as received

## PROCEDURES

X-Ray Fluorescence (XRF) was performed per ASTM E1476-04 using a Thermo Electron XL-PMI+ analyzer, S/N: 87413, verified prior to use. Testing was performed on 12/07/2021. Data was collected for RN 2378-2380.

Chemical composition was determined by Wavelength Dispersive X-ray Spectroscopy per ASTM E1621-05 at 20 kV using a Thermo Scientific MagnaRay WDS Spectrometer, Model No. MAGNARAY-ER(2261A), S/N: 12111034. Calibration was verified using NIST Standard Naval Brass C1108. Testing was performed on 12/20/2021.

## RESULTS: *Next Page*

Lab No. 42331 Rev. 1 (12-10-2021)

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## WAVELENGTH DISPERSIVE X-RAY SPECTROSCOPY

After screening the samples with X-ray Fluorescence (XRF) and EDS, the samples were cross-sectioned, mounted in conductive media, and analyzed quantitatively by WDS detection. Quantitative WDS analysis of the cross-sectioned specimens were similar to the XRF analysis.

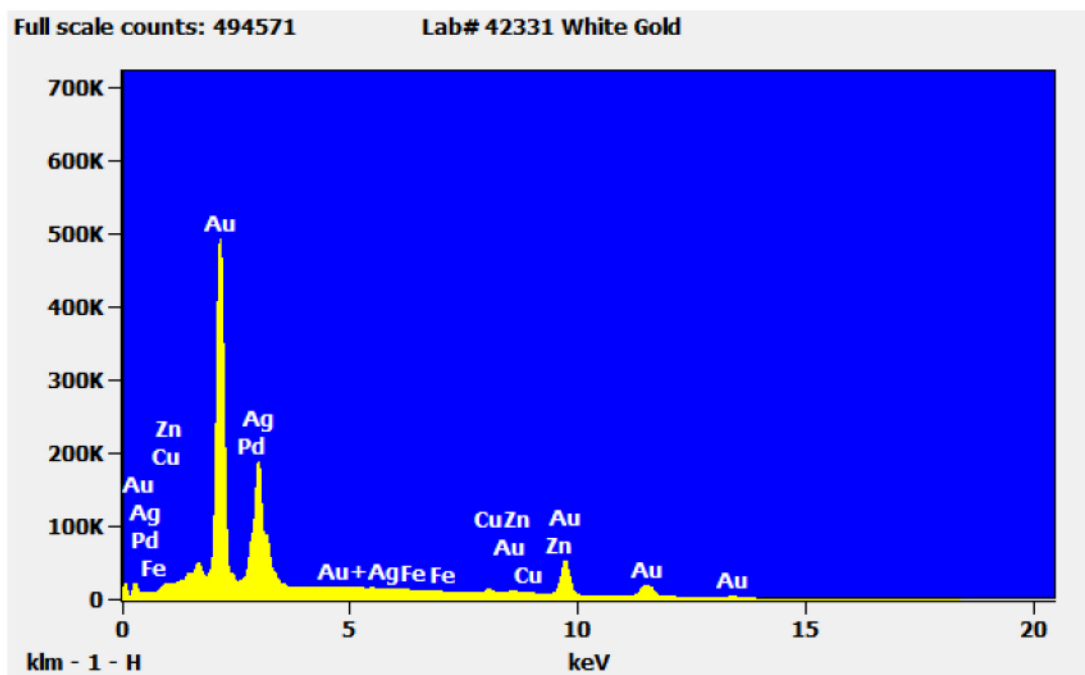
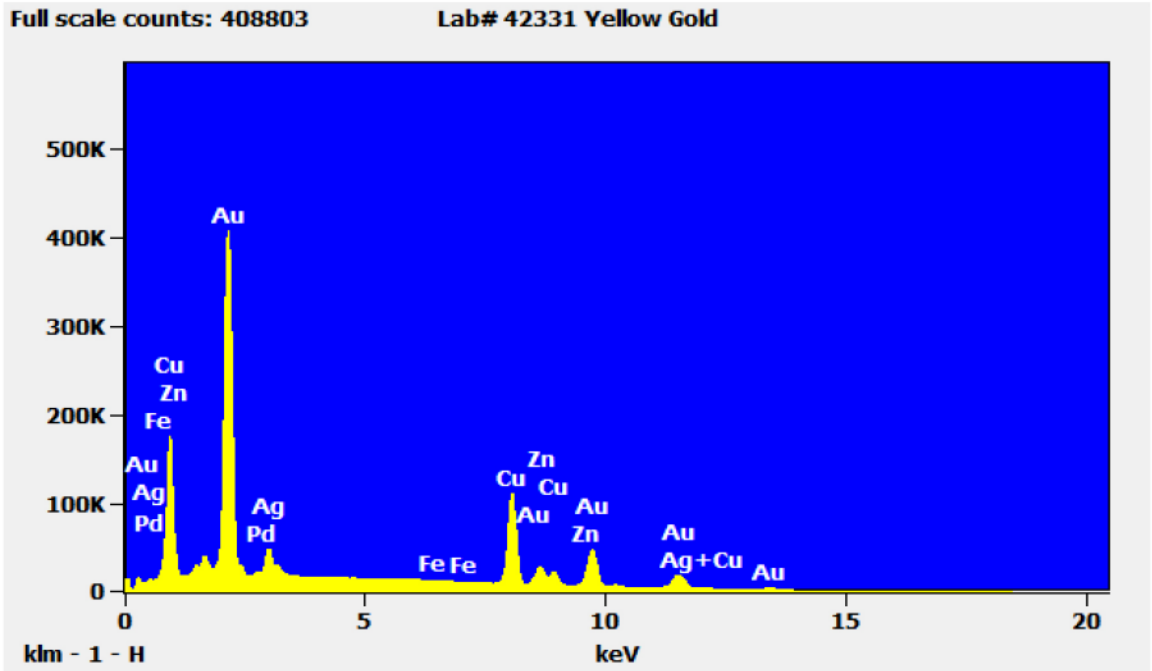


Figure 2: EDS/WDS spectrum of the White Gold Sample

Quantitative WDS results for the White Gold Sample:

| Element      | Source | Weight %<br>Error | Norm.<br>Wt. % |
|--------------|--------|-------------------|----------------|
| Fe           | WDS    | ± 0.02            | 0.08           |
| Cu           | WDS    | ± 0.04            | 0.76           |
| Zn           | WDS    | ± 0.05            | 0.08           |
| Pd           | WDS    | ± 0.18            | 11.43          |
| Ag           | WDS    | ± 0.30            | 29.31          |
| Au           | WDS    | ± 0.51            | 58.34          |
| <b>Total</b> |        |                   | 100.00         |



**Figure 3:** EDS/WDS spectrum of the Yellow Gold Sample

Quantitative WDS results for the Yellow Gold Sample:

| <i>Element</i> | <i>Source</i> | <i>Weight %<br/>Error</i> | <i>Norm.<br/>Wt. %</i> |
|----------------|---------------|---------------------------|------------------------|
| <i>Fe</i>      | WDS           | ± 0.02                    | 0.05                   |
| <i>Cu</i>      | WDS           | ± 0.18                    | 29.98                  |
| <i>Zn</i>      | WDS           | ±0.00                     | 0.00                   |
| <i>Pd</i>      | WDS           | ±0.00                     | 0.00                   |
| <i>Ag</i>      | WDS           | ± 0.12                    | 11.64                  |
| <i>Au</i>      | WDS           | ± 0.45                    | 58.33                  |
| <b>Total</b>   |               |                           | 100.00                 |

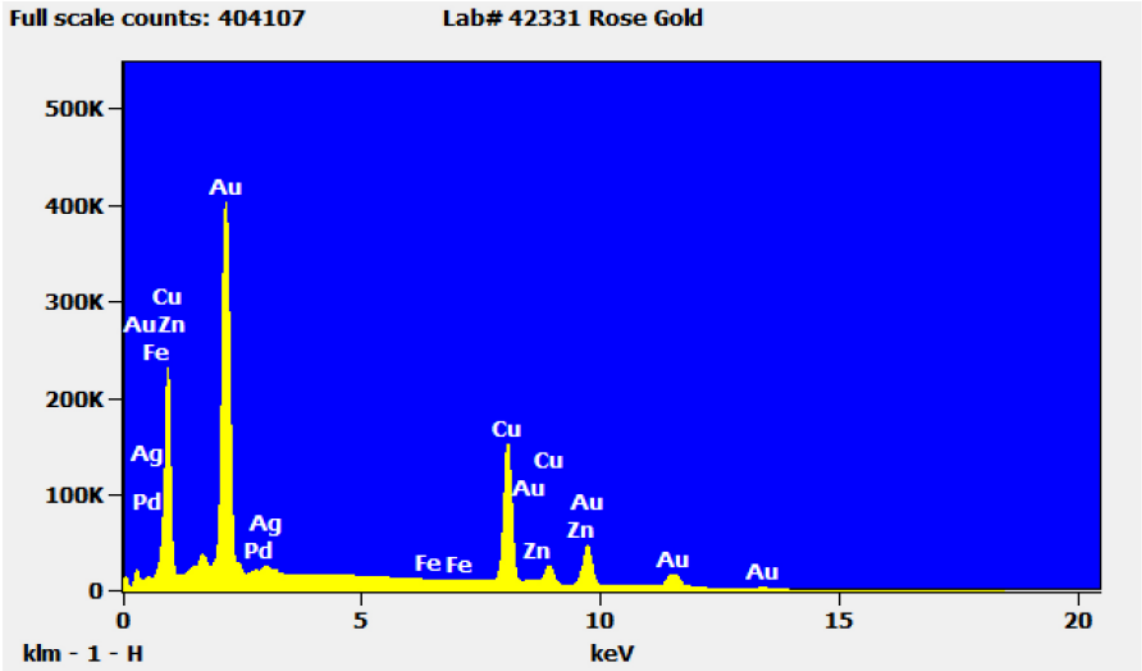


Figure 4: EDS/WDS spectrum of the Rose Gold Sample

Quantitative WDS results for the Rose Gold Sample:

| Element      | Source | Weight %<br>Error | Norm.<br>Wt. % |
|--------------|--------|-------------------|----------------|
| Fe           | WDS    | ±-0.00            | 0.00           |
| Cu           | WDS    | ± 0.38            | 39.49          |
| Zn           | WDS    | ±-0.00            | 0.00           |
| Pd           | WDS    | ±-0.00            | 0.00           |
| Ag           | WDS    | ± 0.09            | 2.19           |
| Au           | WDS    | ± 0.64            | 58.32          |
| <b>Total</b> |        |                   | <b>100.00</b>  |

*These results are based on the tests performed and are subject to change upon the receipt of new or additional information.*

Respectfully submitted,

METALLURGICAL ENGINEERING SERVICES, INC.  
 Firm Registration No. F-2674

Daniel A. Stolk, PE, CWI  
 Principal Engineer

| Revision # | Date of Revision | Description   |
|------------|------------------|---|
| 1          | 12/20/2021       | ➤ Samples were cross-sectioned, mounted, polished, and analyzed by WDS. |