

September 19, 2013  
Lab No. 17C-1358  
Invoice No. 352017  
Page 1 of 1

## REPORT OF ANALYSIS

**MATERIAL:** 7ea. Silver Bars, Marked: 02555, 53157, 34467, 054290, 054326, 47765 MFR, 58949 MFR

**SUBJECT:** Compositional Characterization of the Surface of the Submitted Silver Bars

**TEST METHODS:** ASTM E1508-98(2008)–Standard Test Method for Quantitative Analysis by Energy Dispersive Spectroscopy (EDS)

### CONCLUSION:

These analyses suggest that the surface of the submitted samples primarily consist of silver. Lesser concentrations of carbon, oxygen, chlorine, sulfur, silicon, aluminum, magnesium, and sodium were also detected.

### SUMMARY:

Element	% Composition of Surface						
	02555	53157	34467	054290	054326	47765MFR	58949MFR
Silver	70.4	89.8	82.3	91.5	82.4	81.5	90.1
Carbon	5.5	5.6	9.4	5.5	7.8	8.9	6.3
Oxygen	2.4	1.2	1.0	1.1	1.0	1.2	1.1
Chlorine	18.1	1.3	0.8	0.9	0.8	1.3	1.2
Sulfur	<0.5	<0.5	5.8	0.5	6.5	4.9	<0.5
Silicon	1.5	0.7	0.5	<0.5	0.8	0.6	0.6
Aluminum	0.8	0.9	<0.5	<0.5	0.6	<0.5	<0.5
Magnesium	0.7	0.4	<0.4	0.4	<0.4	<0.5	<0.4
Sodium	0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5

Table 1 – Summary Table

### RESULTS:

The surfaces of the samples were analyzed using an energy-dispersive spectrometer (EDS) equipped scanning electron microscope (SEM). EDS uses the characteristic X-rays generated from a sample bombarded with electrons to identify the elemental constituents comprising the sample. This technique generates a spectrum in which the peaks correspond to specific x-ray energy lines corresponding to specific elements which can then be identified. The EDS is capable of qualitative and semi-quantitative chemical analysis of elements atomic numbers 6 through 94. The detected elements are normalized to total 100%. The nominal detection limit for most elements is 0.5%.

