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## Archaeological X-ray Fluorescence Reports

### Title

An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Los Morteros, Tucson Basin, Arizona

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## **AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM LOS MORTEROS, TUCSON BASIN, ARIZONA**

9 December 2011

Stacy Ryan  
Desert Archaeology, Inc.  
3975 N Tucson Blvd.  
Tucson, AZ 85716

Dear Stacy,

The sources present in the collection are rather typical for Sedentary contexts in the Tucson Basin (Shackley 2005). The presence of Tank Mountains is somewhat unusual, but not rare (Table 1).

The samples were analyzed with a Thermo Scientific *Quant'X* EDXRF spectrometer in the Archaeological XRF Laboratory, Albuquerque, New Mexico. Specific instrumental methods can be found at <http://www.swxrflab.net/analysis.htm>, and Shackley (2005). Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.  
Director

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<http://www.swxrflab.net/>

**REFERENCE CITED**

Shackley, M.S.

2005 *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.

Table 1. Elemental concentrations for the archaeological specimens and USGS RGM-1 standard. All measurements in parts per million (ppm).

| Sample  | Ti   | Mn  | Fe   | Rb  | Sr  | Y  | Zr  | Nb | Pb | Th | Source            |
|---------|------|-----|------|-----|-----|----|-----|----|----|----|-------------------|
| 4294    | 1408 | 450 | 1014 | 186 | 156 | 19 | 129 | 13 | 25 | 20 | Tank Mountains    |
| 4038    | 1635 | 323 | 1178 | 169 | 115 | 29 | 183 | 20 | 19 | 26 | Sauceda Mountains |
| 4322    | 1024 | 515 | 8305 | 126 | 23  | 24 | 97  | 34 | 25 | 19 | Superior          |
| 4339    | 968  | 227 | 1233 | 241 | 16  | 72 | 221 | 32 | 25 | 33 | Los Vidrios       |
| 3569    | 764  | 425 | 9023 | 237 | 12  | 41 | 87  | 52 | 40 | 32 | Partridge Creek   |
| 4260    | 1608 | 299 | 1131 | 162 | 109 | 27 | 185 | 22 | 22 | 34 | Sauceda Mountains |
| RGM1-S4 | 1646 | 283 | 1324 | 151 | 112 | 27 | 211 | 9  | 22 | 18 | standard          |