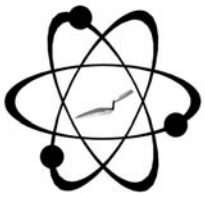

GEOARCHAEOLOGICAL XRF LAB

GEOARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
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## *LETTER REPORT*

# AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF AN OBSIDIAN ARTIFACT FROM (AZ AA:12:788 ASM), TUCSON BASIN, ARIZONA

7 March 2014

Jennifer Hider
SWCA Environmental Consultants
343 W Franklin Street
Tucson, AZ 85701

Dear Jennifer,

The artifact was produced from obsidian originally procured from the Antelope Creek group at Mule Creek, however the Mule Creek sources have eroded through the San Francisco to Gila Rivers at least as far west as Geronimo, Arizona (Shackley 2005). All analyses for this study were conducted on a ThermoScientific Quant'X XRF spectrometer at the Geoarchaeological XRF Laboratory, Albuquerque, New Mexico. Specific instrumental methods can be found at http://www.swxrflab.net/anlysis.htm, and Shackley (2005). Source assignment was made by comparison to source standard data in the Archaeological XRF Laboratory. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (USGS; Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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## 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 samples. All measurements in parts per million (ppm).

| Sample | Ti | Mn | Fe | Zn | Rb | Sr | Y | Zr | Nb | Pb | Th | Source |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 564 | 306 | 7008 | 44 | 214 | 17 | 40 | 104 | 26 | 27 | 32 | Mule Cr/Antelope Cr |
| RGM1-S5 | 1587 | 257 | 13112 | 40 | 146 | 108 | 28 | 221 | 9 | 24 | 17 | standard |