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## Archaeological X-ray Fluorescence Reports

### Title

An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from AZ BB:13:525 (ASM), Tucson Basin, Arizona

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**LETTER REPORT**

**AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF  
OBSIDIAN ARTIFACTS FROM AZ BB:13:525 (ASM), TUCSON BASIN,  
ARIZONA**

23 September 2010

Mary Prasciunas  
Westland Resources, Inc.  
4001 E Paradise Falls Dr  
Tucson, AZ 85712

Dear Mary,

The three artifacts were produced from very diverse sources in all directions from the site: east to Mule Creek in western New Mexico; north to Government Mountain in the San Francisco Volcanic Field in northern Arizona; and southwest to Los Sitios del Agua in northern Sonora. The Mule Mountains-Mule Creek obsidian is also available in secondary deposits along the Gila River in eastern Arizona, and Los Sitios del Agua is a newly discovered source east of the Piñacate Volcanic Field in far northern Sonora (Martyneć et al. 2010; Shackley 2005). This spatial diversity of sources is typical of Archaic and Early Formative contexts in the Southwest (Shackley 2005). The samples were analyzed with a ThermoScientific *Quant'X* EDXRF spectrometer in the Archaeological XRF Laboratory, El Cerrito, California. Specific instrumental methods can be found at <http://www.swxrflab.net/anlysis.htm>, and Shackley (2005). Analysis of the USGS RGM-2 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/>

**REFERENCES CITED**

Martynec, R., R. Davis, and M.S. Shackley

2010 The Los Sitios Del Agua Obsidian Source (Formerly AZ Unknown A) and Recent Archaeological Investigations Along the Rio Sonoyta, Northern Sonora. *Kiva*, in press.

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	Rb	Sr	Y	Zr	Nb	Source
8185	1400	550	26551	153	11	80	680	47	Los Sitios del Agua, SON
8433	702	397	9155	251	16	41	106	28	Mule Mts-Mule Cr, NM
8434	425	494	8334	103	77	20	77	49	Government Mtn, AZ
RGM2-S1	1553	309	12973	154	108	25	216	11	standard