

UC Berkeley

Archaeological X-ray Fluorescence Reports

Title

An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from LA 33085, Southwestern Texas

Permalink

<https://escholarship.org/uc/item/5ff0s92d>

Author

Shackley, M. Steven

Publication Date

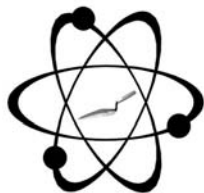
2012-01-03

Supplemental Material

<https://escholarship.org/uc/item/5ff0s92d#supplemental>

Copyright Information

This work is made available under the terms of a Creative Commons Attribution-NonCommercial License, available at <https://creativecommons.org/licenses/by-nc/4.0/>



GEOARCHAEOLOGICAL XRF LAB

ARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
8100 Wyoming Blvd., Ste M4-158

Albuquerque, NM 87113 USA

LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM LA 33085, SOUTHWESTERN TEXAS

3 January 2012

Michael Stowe
Geo-Marine, Inc.
4725 Ripley Dr. Suite A
El Paso, TX 79922

Dear Michael,

The artifacts submitted were all produced from one of the major sources derived from the Valles Caldera, Cerro Toledo Rhyolite and Valles Rhyolite (Shackley 2005; Table 1 here). Valles Rhyolite has not been found in Rio Grande Quaternary alluvium this far south, and must have been originally procured from some point north of Albuquerque, and likely in the caldera proper (Shackley 2010). See Tim Church's paper on secondary deposits in southern New Mexico (Church 2000). All analyses for this study were conducted on a ThermoScientific Quant'X XRF spectrometer at the Archaeological XRF Laboratory, Albuquerque, New Mexico. Specific instrumental methods can be found at <http://www.swxrflab.net/analysis.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

VOICE: 510-393-3931
INTERNET: shackley@berkeley.edu
<http://www.swxrflab.net/>

REFERENCES CITED

Church, T.

2000 Distribution and Sources of Obsidian in the Rio Grande Gravels, New Mexico. *Geoarchaeology* 15:649-678.

Shackley, M.S.

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

2010b The Secondary Distribution of Archaeological Obsidian in the Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Prehistoric Procurement and the Age of Sediments. Poster presentation, 38th International Symposium on Archaeometry, Tampa, Florida.

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
48	878	476	9951	194	8	64	167	97	Cerro Toledo Rhy
50	836	462	10051	200	8	61	170	98	Cerro Toledo Rhy
51	934	472	10185	203	8	59	171	99	Cerro Toledo Rhy
52	929	461	9793	191	10	58	162	89	Cerro Toledo Rhy
53	952	543	11060	216	9	61	175	100	Cerro Toledo Rhy
89	963	426	10730	169	14	45	174	58	Valles Rhyolite
103	890	513	10371	198	9	68	169	99	Cerro Toledo Rhy
RGM1-S4	1645	303	13229	148	109	24	218	9	standard