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Title

An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from Archaeological Contexts in Southwestern New Mexico

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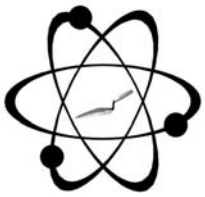

GEOARCHAEOLOGICAL XRF LAB

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 ARCHAEOLOGICAL CONTEXTS IN SOUTHWESTERN NEW MEXICO

7 February 2012

John Roney
Colinas Cultural Resource Consulting
316 Osuna Rd. NE, Suite 102
Albuquerque, NM 87107

Dear John and Bob,

All of the artifacts were produced from one of three sources in New Mexico/Chihuahua; Antelope Wells/El Berrendo, Los Jaguëyes, and Sierra Fresnal. The latter does occur in secondary deposits in the Rio Casas Grandes north of Sierra Fresnal (Shackley 2005). All analyses for this study were conducted on a a ThermoScientific Quant'X XRF spectrometer. 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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http://www.swxrflab.net/

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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	Rb	Sr	Y	Zr	Nb	Pb	Th	Source
5	1150	312	10544	292	43	66	160	37	25	39	Sierra Fresnal, CHIH
31	1098	290	9824	272	38	64	152	34	21	37	Sierra Fresnal, CHIH
46	1601	952	22282	353	10	134	1240	98	43	34	Antelope Wells/El Berrendo
89	1224	341	10627	296	43	62	159	35	23	35	Sierra Fresnal, CHIH
90	1804	1068	24885	379	13	146	1334	109	49	37	Antelope Wells/El Berrendo
129	1513	934	26903	282	12	161	1451	132	67	36	Los Jagueyes, CHIH
136	1185	323	10715	299	45	60	158	37	26	43	Sierra Fresnal, CHIH
139	1286	324	10916	307	42	66	163	40	26	42	Sierra Fresnal, CHIH
140	1114	298	10429	289	39	63	156	36	23	37	Sierra Fresnal, CHIH
147	1416	834	20405	350	12	133	1204	96	38	35	Antelope Wells/El Berrendo
RGM1-S4	1675	281	13287	149	107	23	216	12	20	13	standard