Title
An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from LA 171726, Southeastern New Mexico

Permalink
https://escholarship.org/uc/item/35j9b98g

Author
Shackley, M. Steven

Publication Date
2014-10-31

Supplemental Material
https://escholarship.org/uc/item/35j9b98g#supplemental

License
https://creativecommons.org/licenses/by-nc/4.0/ 4.0
31 October 2014

Dr. Jim Railey
SWCA
5647 Jefferson St NE
Albuquerque, NM 87109

Dear Jim,

As we suspected, all the artifacts were produced from Cerro Toledo Rhyolite, the primary source of which is in the Jemez Mountains, northern New Mexico, but is available in secondary deposition in Quaternary alluvium of the Rio Grande at least as far south as El Paso (Church 2000; Shackley 2012). 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/analysis.htm, and Shackley (2005). Source assignment was made by comparison to source standard data in the Geoarchaeological XRF Laboratory (see http://swxrflab.net/swobsrcs.htm). 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 of New Mexico.  
*Geoarchaeology* 15:649-678.

Shackley, M.S.


Table 1. Elemental concentrations for the archaeological samples. All measurements in parts per million (ppm).

<table>
<thead>
<tr>
<th>Sample</th>
<th>Ti</th>
<th>Mn</th>
<th>Fe</th>
<th>Rb</th>
<th>Sr</th>
<th>Y</th>
<th>Zr</th>
<th>Nb</th>
<th>Pb</th>
<th>Th</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>679</td>
<td>593</td>
<td>1291</td>
<td>238</td>
<td>8</td>
<td>71</td>
<td>180</td>
<td>105</td>
<td>40</td>
<td>30</td>
<td>Rhy</td>
</tr>
<tr>
<td>125</td>
<td>795</td>
<td>499</td>
<td>1188</td>
<td>197</td>
<td>9</td>
<td>61</td>
<td>164</td>
<td>89</td>
<td>39</td>
<td>30</td>
<td>Rhy</td>
</tr>
<tr>
<td>160</td>
<td>1008</td>
<td>673</td>
<td>1389</td>
<td>230</td>
<td>9</td>
<td>55</td>
<td>160</td>
<td>83</td>
<td>53</td>
<td>31</td>
<td>Rhy</td>
</tr>
<tr>
<td>178</td>
<td>1034</td>
<td>586</td>
<td>1319</td>
<td>217</td>
<td>10</td>
<td>61</td>
<td>165</td>
<td>87</td>
<td>41</td>
<td>29</td>
<td>Rhy</td>
</tr>
<tr>
<td>200</td>
<td>528</td>
<td>522</td>
<td>1209</td>
<td>212</td>
<td>8</td>
<td>64</td>
<td>174</td>
<td>99</td>
<td>35</td>
<td>27</td>
<td>Rhy</td>
</tr>
<tr>
<td>RGM1-S4</td>
<td>1561</td>
<td>293</td>
<td>1366</td>
<td>148</td>
<td>104</td>
<td>25</td>
<td>219</td>
<td>8</td>
<td>21</td>
<td>13</td>
<td>standard</td>
</tr>
</tbody>
</table>

www.escholarship.org/uc/item/35j9b98g