LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF
OBSIDIAN ARTIFACTS FROM LA 149129 and LA 149130, WEST-CENTRAL
NEW MEXICO

3 November 2005

Patricia Walker
Escondida Research Group, LLC
25 Alcalde Road
Santa Fe, NM 87508

Dear Patricia,

While the artifact from LA 149130 is produced from obsidian procured from one of the domes at the Mule Creek Source Area, the other artifact is produced from an obsidian with elemental concentrations that do not match any published source in western North America, particularly Arizona, New Mexico, Sonora, and Chihuahua. The relatively high Sr is quite unique in the latter specimen. Source determination was made using source standards and the data library at Berkeley (http://www.swxrflab.net/; Shackley 2005).

The samples were analyzed with a Spectrace (ThermoNoran) QuanX EDXRF spectrometer in the Archaeological XRF Laboratory, University of California, Berkeley. Instrumental methods can be found at http://www.swxrflab.net/analysis.htm. Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Govnidaraju 1994; Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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http://www.swxrflab.net/
Govindaraju, K.

Shackley, M.S.

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

<table>
<thead>
<tr>
<th>Site/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>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>149129-1</td>
<td>1872</td>
<td>727</td>
<td>13093</td>
<td>158</td>
<td>192</td>
<td>39</td>
<td>251</td>
<td>43</td>
<td>unknown</td>
</tr>
<tr>
<td>149130-3</td>
<td>1113</td>
<td>425</td>
<td>7204</td>
<td>199</td>
<td>20</td>
<td>31</td>
<td>138</td>
<td>23</td>
<td>Mule Creek/AC-MM</td>
</tr>
<tr>
<td>RGM1-S1</td>
<td>1654</td>
<td>304</td>
<td>13214</td>
<td>142</td>
<td>108</td>
<td>24</td>
<td>219</td>
<td>5</td>
<td>standard</td>
</tr>
</tbody>
</table>