Title
An Energy-Dispersive X-Ray Fluorescence Analysis of One Artifact from CA-SBR-2295, Eastern California

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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF ONE ARTIFACT FROM CA-SBR-2295, EASTERN CALIFORNIA

7 April 2011

Evelyn Chandler
Ecorp Consulting, Inc.
215 North 5th Street
Redlands, CA 92374

Dear Evelyn,

The sample sent for EDXRF analysis appears to be a secondary siliceous sediment according to the major oxide and trace element analysis, probably a chalcedony or chert (Table 1). Note that the silica (SiO2) is over 96%, typical for this kind of rock. The high manganese (MnO) is probably responsible for the dark color. There is a dark “chert” in the Cady Mountains formation to the east, but it is impossible with this analysis to determine the provenance with any confidence.

The samples were analyzed with a Thermo Scientific 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-1 standard indicates high machine precision for the elements of interest (Govindaraju 1994; Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

VOICE: (510) 642-2533
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http://www.swxrflab.net/
REFERENCES CITED

Govindaraju, K.

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>Na2O %</th>
<th>MgO %</th>
<th>Al2O3 %</th>
<th>SiO2 %</th>
<th>Cr2O3 %</th>
<th>MnO %</th>
<th>Fe2O3 ppm</th>
<th>Ti ppm</th>
<th>Mn ppm</th>
<th>Fe ppm</th>
<th>Rb ppm</th>
<th>Sr ppm</th>
<th>Y ppm</th>
<th>Zr ppm</th>
<th>Nb ppm</th>
<th>Ba ppm</th>
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<tr>
<td>120</td>
<td>0.727</td>
<td>0.284</td>
<td>0.683</td>
<td>96.589</td>
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<td>8183.13</td>
<td>0.143</td>
<td>438</td>
<td>4310</td>
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<td>RGM-1</td>
<td>3.154</td>
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<td>12.732</td>
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<td>240</td>
<td>12585</td>
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<td>24</td>
<td>208</td>
<td>9</td>
<td>806</td>
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