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An Energy-Dispersive X-Ray Fluorescence Analysis of Obsidian Artifacts from LA 153714, Northwestern New Mexico

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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM LA 153714, NORTHWESTERN NEW MEXICO

23 October 2007

SWCA Environmental Consultants
5647 Jefferson St NE
Albuquerque, NM 87109

The two obsidian artifacts were produced one of the source groups at Mount Taylor, in northwestern New Mexico (Shackley 2005). The source group is likely Horace Mesa, but there is still considerable variability present in the Mount Taylor area, and this sub-source assignment could be incorrect (see Shackley 1998, 2005:58-64).

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

Sincerely,

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Director

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1998 Geochemical Differentiation and Prehistoric Procurement of Obsidian in the Mount Taylor Volcanic Field, Northwest New Mexico. *Journal of Archaeological Science* 25:1073-1082.

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).

Site/Sample	Ti	Mn	Fe	Zn	Rb	Sr	Y	Zr	Nb	Source
153714-187	737	614	7006	150	433	9	77	126	202	Mt Taylor
153714-568	763	683	7698	160	466	6	86	129	241	Mt Taylor
RGM1-S3	1761	333	13109	38	149	111	19	222	4	standard