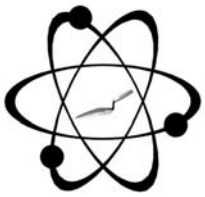

GEOARCHAEOLOGICAL XRF LAB

GEOARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM LA 177527, SOUTHEASTERN NEW MEXICO

21 August 2015

Dr. Kenneth Brown
TRC Environmental Corp.
4221-A Balloon Park Road NE
Albuquerque, NM 87109

Dear Ken and Chris:

The two obsidian artifacts were produced from Cerro Toledo Rhyolite obsidian, the primary source of which is in the Jemez Mountains in northern New Mexico (Table 1). However, nodules of Cerro Toledo obsidian are available as secondary deposits in Rio Grande Quaternary alluvium at least as far south as Las Cruces (see Church 2000; Shackley 2012). Specific instrumental methods can be found at http://www.swxrflab.net/anlysis.htm, and Shackley (2005). Source assignment was made by comparison to the laboratory data base and Shackley (2005). Analysis of the USGS RGM-1 standard indicates high machine precision for the elements of interest (Table 1 here).

Sincerely,

M. Steven Shackley, Ph.D.
Director

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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., 2005, *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.

Shackley, M.S., 2012 The Secondary Distribution of Archaeological Obsidian in Rio Grande Quaternary Sediments, Jemez Mountains to San Antonito, New Mexico: Inferences for Prehistoric Procurement and the Age of Sediments. Poster presentation at the Society for American Archaeology, Annual Meeting, Memphis, Tennessee.

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

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Source
184	543	442	11611	190	9	60	167	91	Cerro Toledo Rhy
235	752	540	12630	218	10	63	161	91	Cerro Toledo Rhy
RGM1-S4	1673	279	13675	141	109	28	214	9	standard