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AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF AN OBSIDIAN CORE
FRAGMENT FROM LA44517 SOUTHERN NEW MEXICO

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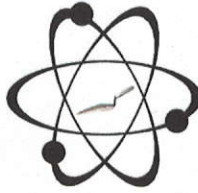
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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF AN OBSIDIAN CORE FRAGMENT FROM LA 44517 SOUTHERN NEW MEXICO

8 June 2020

Jeff Charest
Westland Resources, Inc.
1750 S Woodlands Blvd, Suite 150
Flagstaff, AZ 86001

Dear Jeff:

The source provenance of the "lonely" bipolar core fragment is Cerro Toledo Rhyolite, and between the waterworn cortex and typical procurement in that part of New Mexico was likely procured from Rio Grande Quaternary alluvium where Cerro Toledo Rhyolite obsidian is the most commonly recovered secondarily deposited obsidian in the Rio Grande gravels at least as far as Las Cruces (Church 2000; Shackley 2005, 2020). 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 laboratory. 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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<http://www.swxrflab.net/>

REFERENCES CITED

- Church, T. (2000). Distribution of 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. (2020). Distribution and sources of secondary deposit archaeological obsidian in Rio Grande quaternary alluvium from northern through central New Mexico. In preparation for *Geoarchaeology*.

Table 1. Elemental concentrations for the archaeological sample, and USGS RGM-1 rhyolite standard. All measurements in parts per million (ppm).

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Ba	Ce	Source
1997.08	1006	508	11342	211	14	66	175	97	0	67	Cerro Toledo Rhy
RGM1-S4	1632	296	13228	148	109	26	215	12	779	44	standard