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LETTER REPORT

AN ENERGY-DISPERSIVE X-RAY FLUORESCENCE ANALYSIS OF OBSIDIAN ARTIFACTS FROM 34SM87, SEMINOLE COUNTY, OKLAHOMA

16 March 2017

Mark Latham
Burns/McDonnell
9400 Ward Parkway
Kansas City, MO 64114

Dear Mark:

I've taken the liberty to update the 2016 report from the same site. Four of the artifacts were produced from the Malad obsidian source in far eastern Idaho, and two were produced from the Obsidian Cliff source in the Yellowstone Volcanic Field, Wyoming (Table 1). Specific instrumental methods can be found at <http://www.swxrflab.net/analysis.htm>, 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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<http://www.swxrflab.net/>

REFERENCE CITED

Shackley, M.S.

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

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

Sample	Mn	Fe	Zn	Rb	Sr	Y	Zr	Nb	Ba	Pb	Th	Source
1	287	10665	99	142	89	34	97	16	1873	29	30	Malad, ID
2	321	11932	180	154	90	35	97	10	1554	37	24	Malad, ID
3	258	11535	142	252	9	77	175	43	0	31	27	Obsidian Cliff, WY
4	282	12740	200	280	15	78	175	47	36	33	39	Obsidian Cliff, WY
5	365	12744	182	165	90	32	99	20	1557	35	37	Malad, ID
6	301	11056	127	142	80	37	95	14	1703	14	17	Malad, ID
RGM1-S4	294	13223	38	152	109	24	214	7	846	21	15	standard