

APPENDIX C

DEBITAGE GEOCHEMICAL ANALYSIS

**GEOCHEMICAL ANALYSIS OF DEBITAGE
FLAKE FROM CA-SDI-2508**

Geochemical Research Laboratory Letter Report 2007-81

November 19, 2007

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Mr. George E. Kline
14215 Pecan Park Lane #120
El Cajon, CA 92021

Dear Geo:

The table below presents energy dispersive x-ray fluorescence (edxrf) data generated from the analysis of an obsidian flake from archaeological site CA-SDi-2508 in Lost Valley, San Diego County, California. This analysis was conducted pursuant to your email request of November 12, 2007. Laboratory equipment and analysis conditions, artifact-to-source (geochemical type) attribution procedures, element-specific measurement resolution, and literature references applicable to this sample are the same as I reported for a fluted obsidian point fragment from SDi-2506 (Hughes 2006).

Table 1

Quantitative EDXRF Data for an Artifact from CA-SDi-2508 in Lost Valley, San Diego County, CA

Cat. Number	Trace Element Concentrations											Ratio	Obsidian Source (Chemical Type)
	Zn	Ga	Rb	Sr	Y	Zr	Nb	Ba	Ti	Mn	Fe ₂ O ₃ ^T	Fe/Mn	
193	nm	nm	137 ±4	37 ±3	121 ±3	333 ±4	30 ±3	518 ±12	nm	nm	nm	53	Obsidian Butte, CA
<i>U.S. Geological Survey Reference Standard</i>													
RGM-1 (measured)	nm	nm	144 ±4	108 ±3	26 ±3	220 ±4	9 ±3	808 ±15	nm	nm	nm	66	Glass Mtn., CA
RGM-1 (recommended)	32	15	149	108	25	219	9	807	1600	279	1.86	nr	Glass Mtn., CA

Values in parts per million (ppm) except total iron [in weight %] and Fe/Mn intensity ratios; ± = expression of x-ray counting uncertainty and regression fitting error at 120-360 seconds livetime. nm= not measured.

Edxrf data in Table 1 indicate that this specimen from SDi-2508 matches the trace element composition of obsidian of the Obsidian Butte chemical type, Imperial County, California. I hope this information will help in your analysis and interpretation of the significance of this specimen. Please contact me at my laboratory (phone: [650] 851-1410; e-mail: rehughes@silcon.com) if I can provide any further assistance or information. As you requested I have forwarded the specimen to Mike Rondeau for lithic analysis.

Sincerely,



Richard E. Hughes, Ph.D., RPA
Director, Geochemical Research Laboratory

Reference

Hughes, Richard E.

- 2006 Energy Dispersive X-ray Fluorescence Analysis of a Fluted Obsidian Projectile Point from Archaeological Site CA-SDi-2506 in Lost Valley, San Diego County, California. Geochemical Research Laboratory Letter Report 2006-42 submitted to George E. Kline, April 20, 2006.