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X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
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LETTER REPORT

AN ENERGY DISPERSIVE X-RAY FLUORESCENCE (EDXRF) ANALYSIS OF OBSIDIAN ARTIFACTS FROM CA-SBR-1913, SAN BERNARDINO COUNTY, CALIFORNIA

18 September 1996
updated 5 October 1996

Dr. Mark Sutton
Department of Sociology/Anthropology
California State University
9001 Stockdale Highway
Bakersfield, CA 93311-1099

Dear Mark:

As shown in Table 1 and Figure 1, most of the artifacts are produced from obsidian procured from the San Felipe (Arroyo Matomí) source in northern Baja California. It seems unusual that the samples would be derived from such a distant source that has not occurred in any known context this far north. A second analysis of 10 more samples did indicate Coso material in the assemblage, but much still from San Felipe. Source assignment was made with data in the Berkeley XRF library and Hughes 1988. Instrument methodology is discussed in Shackley (1994, 1995).

Sincerely,

M. Steven Shackley, Ph.D.
Associate Research Archaeologist

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Shackley, M. Steven

1992 The Upper Gila River Gravels as an Archaeological Obsidian Source Region: Implications for Models of Exchange and Interaction. *Geoarchaeology* 7(4):315-326.

1994 Intersource and Intrasource Geochemical Variability in Two Newly Discovered Archaeological Obsidian Sources in the Southern Great Basin. *Journal of California and Great Basin Anthropology* 16(1):118-129.

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Table 1. EDXRF concentrations for the archaeological samples. All measurement in parts per million (ppm).

SAMPLE	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Source
X174-1	543.83	226.29	11064.476	101.472	32.493	35.184	142.2	10.577	San Felipe, BC
X174-2	613.77	247.71	10908.447	108.437	35.747	34.335	136.609	10.267	San Felipe, BC
X174-3	571.50	234.67	10689.113	96.541	31.847	31.081	130.219	7.554	San Felipe, BC
X174-4	547.91	223.54	10856.737	103.519	31.125	32.985	133.564	8.789	San Felipe, BC
X174-5	633.41	253.39	11604.138	106.284	32.43	36.349	139.319	10.132	San Felipe, BC
X174-6	709.50	277.93	9858.793	232.825	7.583	48.907	130.06	48.249	Coso
X174-7	764.58	246.64	11867.479	108.259	31.902	30.261	140.951	14.502	San Felipe, BC
X174-8	872.44	242.44	11174.883	95.039	27.578	28.93	135.021	8.976	San Felipe, BC
X174-9	773.85	296.44	9818.535	192.929	2.97	39.085	117.516	40.872	Coso
X174-10	779.78	234.24	10095.682	217.4	6.658	46.919	150.365	42.052	Coso
X174-11	801.76	214.01	10890.456	102.631	33.199	31.025	136.779	11.027	San Felipe, BC
X174-12	814.09	229.75	11362.709	106.662	31.185	35.955	138.061	10.799	San Felipe, BC
X174-13	718.68	264.32	10644.284	278.851	7.212	51.542	144.647	48.199	Coso
X174-14	739.30	212.87	9012.687	234.415	6.128	48.014	123.517	49.883	Coso
X174-15	1096.062	449.98	9021.54	173.781	17.311	30.32	137.763	39.735	Coso

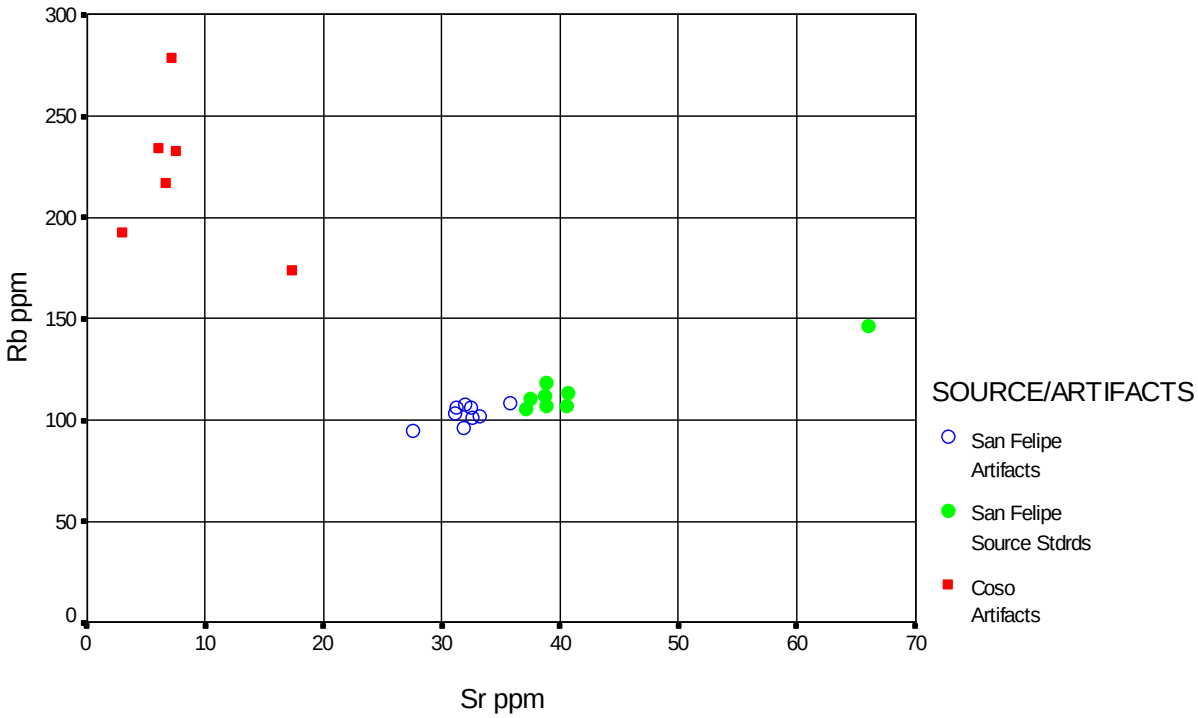

Figure 1. Rb, Sr bivariate plot of archaeological samples and San Felipe source standards.