

**TRC**  
ENVIRONMENTAL  
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# **The Varga Site: A Multicomponent, Stratified Campsite in the Canyonlands of Edwards County, Texas**

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**APPENDIX F:**

**INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS OF CHERT  
FROM THE VARGA SITE (41ED28) IN SOUTHWEST TEXAS**

# **INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS OF CHERT FROM THE VARGA SITE (41ED28) IN SOUTHWEST TEXAS**

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## **F.1 INTRODUCTION**

Instrumental neutron activation analysis (INAA) was performed on 154 chert artifacts from the Varga Site (41ED28) in Edwards County, Texas, and 107 natural (i.e., culturally unmodified) source specimens from various locations in the Edwards Formation in across Southwest and Central Texas. Data on the source specimens were examined for possible differences within the Edwards Formation and data on the artifacts were examined to calculate probabilities of membership with the various Edwards Formation chert subtypes. INAA data from previous samples of Edwards Formation chert from the Texas Hill Country conducted for Charles Frederick (i.e., Fort Hood) and Chris Turnbull (i.e., Segovia Formation) were also used for comparison.

## **F.2 CHERT SAMPLE PREPARATION**

Following their arrival at the University of Missouri Research Reactor Center (MURR), the source samples and artifacts were washed in deionized water to remove dirt and other loose materials from the surface. Samples for INAA were prepared by placing the source specimens between two tool-steel plates and crushing them with a Carver Press to obtain a number of small, 50- to 100-mg fragments. The fragments were examined with a magnifier to eliminate those with metallic streaks or crush fractures that could possibly contain contamination. Several grams of clean fragments were obtained from each sample and stored temporarily in plastic bags.

Two analytical samples were prepared from each source specimen. The first sample, used for short irradiations, was made by placing about 200 mg of fragments into clean, high-density polyethylene vials. A second sample, used for long irradiation and weighing about 800 mg, was placed in clean, high-purity quartz vials. Individual sample weights were recorded to the nearest 0.01 mg using an analytical balance. Both irradiation vials were sealed prior to irradiation. Standards made from the National Institute of Standards and Technology (NIST) certified standard reference materials SRM-1633a (Coal Fly Ash), SRM-278 (Obsidian Rock), and SRM-688 (Basalt Rock) were similarly prepared.

## **F.3 IRRADIATION AND GAMMA-RAY SPECTROSCOPY**

INAA of archaeological materials at MURR, which consists of two irradiations and a total of three measurements of emitted gamma rays, constitutes a superset of the procedures employed at most other INAA laboratories. As discussed in detail in Glascock (1992), a short irradiation is carried out through the pneumatic-tube irradiation system at MURR. Samples and standards in polyethylene vials are sequentially irradiated, two at a time, for five seconds by a thermal neutron flux of  $8 \times 10^{13} \text{ n cm}^{-2} \text{ s}^{-1}$ . Following irradiation, the samples are allowed to decay for 25 minutes so that radioactivity from the short-lived radioisotope  $^{28}\text{Al}$  (half-life = 2.24 minutes) can decline to acceptable levels. Sample vials are mounted in sample holders at a distance of 10 cm from the face of separate high-purity germanium (HPGe) detectors. The sample holders are designed to continuously rotate the samples during a 12-minute counting period to compensate for slight differences between individual sample shapes. The short-count, gamma-ray spectra are stored and subsequently analyzed in batches to determine the concentrations of elements in the unknown archaeological samples relative to the known concentrations in the standard reference materials. The short-lived elements measured in chert characterization studies

are usually aluminum (Al), calcium (Ca), dysprosium (Dy), potassium (K), manganese (Mn), sodium (Na), titanium (Ti), and vanadium (V).

The long-irradiation samples and standards in high-purity quartz vials are wrapped in bundles of approximately 32 unknowns and six standards each. Two sample bundles are placed inside an aluminum can and irradiated for a total of 70 hours by a thermal neutron flux of  $5 \times 10^{13} \text{ n cm}^{-2} \text{ s}^{-1}$ . Following irradiation, the sample bundles are unwrapped and the quartz vials are washed in aqua regia to remove possible surface contamination. Two gamma measurements are performed on the individual samples from each bundle using a pair of HPGe detectors coupled to automatic sample changers with rotating sample holders. The first count for 2,000 seconds each (i.e., the “middle count”) is usually made about one week after the end of irradiation to allow  $^{24}\text{Na}$  (half-life = 15 hours) to decay to a safe handling level. The middle count yields data for the determination of several medium half-life elements, including arsenic (As), barium (Ba), lanthanum (La), lutetium (Lu), neodymium (Nd), samarium (Sm), uranium (U), and ytterbium (Yb). After an additional three or four weeks of decay, a final measurement of approximately three hours on each sample (i.e., the “long count”) is carried out. The latter measurement yields the data for several long-lived elements, including cerium (Ce), cobalt (Co), chromium (Cr), cesium (Cs), europium (Eu), iron (Fe), hafnium (Hf), nickel (Ni), rubidium (Rb), antimony (Sb), scandium (Sc), strontium (Sr), tantalum (Ta), terbium (Tb), thorium (Th), and zinc (Zn). Additional details about gamma-ray spectroscopy, neutron activation analysis, and standardization can be found in Glascock (1998).

The element concentration data from the three measurements are tabulated in parts per million using the Microsoft Excel spreadsheet program. Descriptive data for the archaeological samples are appended to the concentration spreadsheet and the data are also stored in a dBase/Foxpro database file useful for organizing, sorting, and extracting sample information. Table F-1 following this appendix presents the sample database.

#### **F.4 INTERPRETING THE COMPOSITIONAL DATA**

The interpretation of compositional data obtained from the analysis of archaeological materials is discussed in detail elsewhere (e.g., Baxter and Buck 2000; Bieber et al. 1976; Bishop and Neff 1989; Glascock 1992; Harbottle 1976; Neff 2000) and is only summarized here. The main goal of data analysis is to identify distinct, homogeneous groups within the analytical database. Based on the provenance postulate of Weigand et al. (1977), different chemical groups may be assumed to represent geographically restricted sources. For lithic materials such as obsidian, basalt, and cryptocrystalline silicates (e.g., chert, flint, or jasper), raw material samples are frequently collected from known outcrops or secondary deposits, and the compositional data obtained from the samples are used to define the source localities or boundaries. In contrast, the locations of ceramic raw materials are often inferred by comparing unknown specimens (i.e., ceramic artifacts) to knowns (i.e., clay samples), by indirect methods such as the “criterion of abundance” (Bishop et al. 1992), or by arguments based on geological and sedimentological characteristics (Steponaitis et al. 1996). The ubiquity of ceramic raw materials usually makes it impossible to sample all potential “sources” intensively enough to create groups of knowns to which unknowns can be compared. Lithic sources tend to be more localized and compositionally homogeneous, in the case of obsidian, or compositionally heterogeneous, as is the case for most cherts.

Compositional groups are viewed as “centers of mass” in the compositional hyperspace described by the measured elemental data. Groups are characterized by the locations of their centroids and the unique relationships (i.e., correlations) among the elements. Decisions about whether or not to assign a specimen to a particular compositional group are based on the overall probability that the measured concentrations for the specimen could have been obtained from that group.

Potential compositional groups can be hypothesized initially by using non-compositional information (e.g., archaeological context, visual attributes) or by application of one or more different pattern recognition techniques to the multivariate chemical data. Some of the pattern recognition techniques that have been used to investigate archaeological data sets are cluster analysis (CA), principal component analysis (PCA), and discriminant analysis (DA). Each of the techniques has its own advantages and disadvantages for data interpretation that may depend upon the types and quantity of data available.

The variables (measured elements) in archaeological and geological data sets are often correlated and are frequently large in number. This makes handling and interpreting patterns within the data set more challenging. As a result, it is often advantageous to transform the original variables in the data set into a smaller set of uncorrelated variables to make data interpretation easier. Of the abovementioned pattern recognition techniques, PCA is the technique that most readily transforms the data from the original, correlated variables into uncorrelated variables.

PCA uses all of the variables measured in the sample (in this case, element concentrations) and calculates the variation among those variables. The individual principal components (PCs) are measures of the magnitude of variation, each describing a decreasing amount of variance. The first PC subsumes the greatest amount of variance in the data set and is aligned along the direction of greatest variation. The second PC is orthogonal to the first PC and, like the first PC, is a linear summary of the variables analyzed. The second PC subsumes the greatest amount of variation after removal of the variation accounted for by the first PC and is aligned along the direction of greatest remaining variation. The third PC is orthogonal to the first two PCs and subsumes the greatest amount of remaining variation after removing the first two PCs, and so forth. The number of PCs calculated equals the number of original variables measured.

PCA creates a new set of reference axes arranged in decreasing order of variance subsumed. The individual PCs are linear combinations of the original variables. The data can be displayed on combinations of the new axes, just as they can be displayed on the original elemental concentration axes. PCA can be used in a pure pattern-recognition mode (i.e., to search for subgroups in an undifferentiated data set) or in a more evaluative mode (i.e., to assess the coherence of hypothetical groups suggested by other criteria). Generally, compositional differences among specimens can be expected to be larger for specimens in different groups than for specimens in the same group, and this implies that groups should be detectable as distinct areas

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC001	MQ-1-1	source	Edwards County	Devils River Member
TRC002	MQ-1-2	source	Edwards County	Devils River Member
TRC003	MQ-1-3	source	Edwards County	Devils River Member
TRC004	MQ-1-4	source	Edwards County	Devils River Member
TRC005	MQ-1-5	source	Edwards County	Devils River Member
TRC006	MQ-1-6	source	Edwards County	Devils River Member
TRC007	41ED58-1	source	Edwards County	Segovia Member
TRC008	41ED58-2	source	Edwards County	Segovia Member
TRC009	41ED58-7-2	source	Edwards County	Segovia Member
TRC010	41ED58-7-3	source	Edwards County	Segovia Member
TRC011	41ED58-7-4	source	Edwards County	Segovia Member
TRC012	41ED58-7-5	source	Edwards County	Segovia Member
TRC013	41ED54-5	source	Edwards County	Segovia Member
TRC014	41ED54-6	source	Edwards County	Segovia Member
TRC015	41ED141-4	source	Edwards County	Segovia Member
TRC016	41ED58-7-1	source	Edwards County	Segovia Member
TRC017	1274-1	source	Varga, Edwards County	mixture
TRC018	1274-2	source	Varga, Edwards County	mixture
TRC019	1274-3	source	Varga, Edwards County	mixture
TRC020	1274-4	source	Varga, Edwards County	mixture
TRC021	1274-5	source	Varga, Edwards County	mixture
TRC022	1274-6	source	Varga, Edwards County	mixture
TRC023	1274-7	source	Varga, Edwards County	mixture
TRC024	1274-8	source	Varga, Edwards County	mixture
TRC025	1274-9	source	Varga, Edwards County	mixture
TRC026	1274-10	source	Varga, Edwards County	mixture
TRC027	1253-0	source	Camp Wood, Real County	mixture
TRC028	1253-2	source	Camp Wood, Real County	mixture
TRC029	1253-5	source	Camp Wood, Real County	mixture
TRC030	1253-6	source	Camp Wood, Real County	mixture
TRC031	1253-15	source	Camp Wood, Real County	mixture
TRC032	1253-24a	source	Camp Wood, Real County	mixture
TRC033	1253-25a	source	Camp Wood, Real County	mixture
TRC034	1253-27	source	Camp Wood, Real County	mixture
TRC035	1253-28	source	Camp Wood, Real County	mixture
TRC036	1253-29	source	Camp Wood, Real County	mixture



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<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC037	1253-30a	source	Camp Wood, Real County	mixture
TRC038	1253-31g	source	Camp Wood, Real County	mixture
TRC039	1253-34a	source	Camp Wood, Real County	mixture
TRC040	1253-38a	source	Camp Wood, Real County	mixture
TRC041	1253-39d	source	Camp Wood, Real County	mixture
TRC042	1253-66	source	Camp Wood, Real County	mixture
TRC043	1253-256	source	Camp Wood, Real County	mixture
TRC044	1253-306	source	Camp Wood, Real County	mixture
TRC045	1253-376	source	Camp Wood, Real County	mixture
TRC046	1253-35a	source	Camp Wood, Real County	mixture
TRC047	CF-7-1	source	Kerr County	Terrett Member
TRC048	CF-7-2	source	Kerr County	Terrett Member
TRC049	CF-7-3	source	Kerr County	Terrett Member
TRC050	CF-7-4	source	Kerr County	Terrett Member
TRC051	CF-7-5	source	Kerr County	Terrett Member
TRC052	CF-9-1	source	Real County	Segovia Member
TRC053	CF-9-2	source	Real County	Segovia Member
TRC054	CF-9-3	source	Real County	Segovia Member
TRC055	CF-9-4	source	Real County	Segovia Member
TRC056	CF-10-1	source	Edwards County	Segovia Member
TRC057	CF-10-2	source	Edwards County	Segovia Member
TRC058	CF-10-3	source	Edwards County	Segovia Member
TRC059	CF-10-4	source	Edwards County	Segovia Member
TRC060	CF-10-5	source	Edwards County	Segovia Member
TRC061	CF-6-1	source	Kerr County	Glen Rose
TRC062	CF-6-2	source	Kerr County	Glen Rose
TRC063	CF-6-3	source	Kerr County	Glen Rose
TRC064	CF-6-4	source	Kerr County	Glen Rose
TRC065	CF-6-5	source	Kerr County	Glen Rose
TRC066	CF-11-1	source	Kerr County	Terrett Member
TRC067	CF-11-2	source	Kerr County	Terrett Member
TRC068	CF-11-3	source	Kerr County	Terrett Member
TRC069	CF-11-4	source	Kerr County	Terrett Member
TRC070	CFC-11-5	source	Kerr County	Terrett Member
TRC071	CFC-11-6	source	Kerr County	Terrett Member
TRC072	CF-12-1	source	Val Verde County	Segovia Member

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC073	CF-12-2	source	Val Verde County	Segovia Member
TRC074	CF-12-3	source	Val Verde County	Segovia Member
TRC075	CF-16a-1	source	Pecos County	Terrett Member
TRC076	CF-16a-2	source	Pecos County	Terrett Member
TRC077	CF-16b-1	source	Pecos County	Terrett Member
TRC078	CF-16c-1	source	Pecos County	Terrett Member
TRC079	CF-17-1	source	Pecos County	Segovia Member
TRC080	CF-17-2	source	Pecos County	Segovia Member
TRC081	CF-17-3	source	Pecos County	Segovia Member
TRC082	CF-19-1	source	Sutton County	Segovia Member
TRC083	1252-0	source	Hackberry Creek, Edwards County	mixture
TRC084	1252-1	source	Hackberry Creek, Edwards County	mixture
TRC085	1252-2	source	Hackberry Creek, Edwards County	mixture
TRC086	1252-3	source	Hackberry Creek, Edwards County	mixture
TRC087	1252-4	source	Hackberry Creek, Edwards County	mixture
TRC088	1252-5	source	Hackberry Creek, Edwards County	mixture
TRC089	1252-6	source	Hackberry Creek, Edwards County	mixture
TRC090	1252-9	source	Hackberry Creek, Edwards County	mixture
TRC091	1252-10	source	Hackberry Creek, Edwards County	mixture
TRC092	1252-15	source	Hackberry Creek, Edwards County	mixture
TRC093	1252-17	source	Hackberry Creek, Edwards County	mixture
TRC094	1252-19	source	Hackberry Creek, Edwards County	mixture
TRC095	1252-21	source	Hackberry Creek, Edwards County	mixture
TRC096	1252-22	source	Hackberry Creek, Edwards County	mixture
TRC097	1252-23	source	Hackberry Creek, Edwards County	mixture
TRC098	1252-24	source	Hackberry Creek, Edwards County	mixture
TRC099	1252-25	source	Hackberry Creek, Edwards County	mixture
TRC100	1252-26	source	Hackberry Creek, Edwards County	mixture
TRC101	1252-28	source	Hackberry Creek, Edwards County	mixture
TRC102	1252-31	source	Hackberry Creek, Edwards County	mixture
TRC103	1252-32	source	Hackberry Creek, Edwards County	mixture
TRC104	Georgetown-M	source	Williamson County	Lower Cretaceous
TRC105	Georgetown-DK	source	Williamson County	Lower Cretaceous
TRC106	Georgetown-LY	source	Williamson County	Lower Cretaceous
TRC107	Burro Mesa-Y	source	Brewster County	Cretaceous Volcanic
TRC108	662-10	artifact	Varga, Edwards County	unknown

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC109	100-11	artifact	Varga, Edwards County	unknown
TRC110	149-10	artifact	Varga, Edwards County	unknown
TRC111	191-11	artifact	Varga, Edwards County	unknown
TRC112	397-13	artifact	Varga, Edwards County	unknown
TRC113	397-10	artifact	Varga, Edwards County	unknown
TRC114	417-10	artifact	Varga, Edwards County	unknown
TRC115	417-13	artifact	Varga, Edwards County	unknown
TRC116	418-28	artifact	Varga, Edwards County	unknown
TRC117	419-12	artifact	Varga, Edwards County	unknown
TRC118	484-16	artifact	Varga, Edwards County	unknown
TRC119	484-17	artifact	Varga, Edwards County	unknown
TRC120	537-16	artifact	Varga, Edwards County	unknown
TRC121	213-12	artifact	Varga, Edwards County	unknown
TRC122	537-17	artifact	Varga, Edwards County	unknown
TRC123	544-12	artifact	Varga, Edwards County	unknown
TRC124	649-11	artifact	Varga, Edwards County	unknown
TRC125	28-11	artifact	Varga, Edwards County	unknown
TRC126	29-12	artifact	Varga, Edwards County	unknown
TRC127	39-15	artifact	Varga, Edwards County	unknown
TRC128	40-12	artifact	Varga, Edwards County	unknown
TRC129	49-12	artifact	Varga, Edwards County	unknown
TRC130	63-16	artifact	Varga, Edwards County	unknown
TRC131	77-13	artifact	Varga, Edwards County	unknown
TRC132	86-20	artifact	Varga, Edwards County	unknown
TRC133	116-20	artifact	Varga, Edwards County	unknown
TRC134	117-21	artifact	Varga, Edwards County	unknown
TRC135	142-11	artifact	Varga, Edwards County	unknown
TRC136	153-31	artifact	Varga, Edwards County	unknown
TRC137	157-11	artifact	Varga, Edwards County	unknown
TRC138	183-21	artifact	Varga, Edwards County	unknown
TRC139	192-11	artifact	Varga, Edwards County	unknown
TRC140	205-10	artifact	Varga, Edwards County	unknown
TRC141	215-21	artifact	Varga, Edwards County	unknown
TRC142	255-11	artifact	Varga, Edwards County	unknown
TRC143	260-14	artifact	Varga, Edwards County	unknown
TRC144	268-21	artifact	Varga, Edwards County	unknown

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC145	299-14	artifact	Varga, Edwards County	unknown
TRC146	311-13	artifact	Varga, Edwards County	unknown
TRC147	312-19	artifact	Varga, Edwards County	unknown
TRC148	323-20	artifact	Varga, Edwards County	unknown
TRC149	324-16	artifact	Varga, Edwards County	unknown
TRC150	333-22	artifact	Varga, Edwards County	unknown
TRC151	345-28	artifact	Varga, Edwards County	unknown
TRC152	346-11	artifact	Varga, Edwards County	unknown
TRC153	346-25	artifact	Varga, Edwards County	unknown
TRC154	347-13	artifact	Varga, Edwards County	unknown
TRC155	366-13	artifact	Varga, Edwards County	unknown
TRC156	391-10	artifact	Varga, Edwards County	unknown
TRC157	400-10	artifact	Varga, Edwards County	unknown
TRC158	400-11	artifact	Varga, Edwards County	unknown
TRC159	401-36	artifact	Varga, Edwards County	unknown
TRC160	402-11	artifact	Varga, Edwards County	unknown
TRC161	411-17	artifact	Varga, Edwards County	unknown
TRC162	412-10	artifact	Varga, Edwards County	unknown
TRC163	412-11	artifact	Varga, Edwards County	unknown
TRC164	422-19	artifact	Varga, Edwards County	unknown
TRC165	449-10	artifact	Varga, Edwards County	unknown
TRC166	462-15	artifact	Varga, Edwards County	unknown
TRC167	465-10	artifact	Varga, Edwards County	unknown
TRC168	539-12	artifact	Varga, Edwards County	unknown
TRC169	546-14	artifact	Varga, Edwards County	unknown
TRC170	563-19	artifact	Varga, Edwards County	unknown
TRC171	578-15	artifact	Varga, Edwards County	unknown
TRC172	592-11	artifact	Varga, Edwards County	unknown
TRC173	598-13	artifact	Varga, Edwards County	unknown
TRC174	615-20	artifact	Varga, Edwards County	unknown
TRC175	621-10	artifact	Varga, Edwards County	unknown
TRC176	627-13	artifact	Varga, Edwards County	unknown
TRC177	628-11	artifact	Varga, Edwards County	unknown
TRC178	670-5-12	artifact	Varga, Edwards County	unknown
TRC179	670-13	artifact	Varga, Edwards County	unknown
TRC180	671-11	artifact	Varga, Edwards County	unknown

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC181	699-20	artifact	Varga, Edwards County	unknown
TRC182	718-15	artifact	Varga, Edwards County	unknown
TRC183	719-10	artifact	Varga, Edwards County	unknown
TRC184	724-13	artifact	Varga, Edwards County	unknown
TRC185	725-14	artifact	Varga, Edwards County	unknown
TRC186	729-10	artifact	Varga, Edwards County	unknown
TRC187	735-12	artifact	Varga, Edwards County	unknown
TRC188	854-10	artifact	Varga, Edwards County	unknown
TRC189	1203-10	artifact	Varga, Edwards County	unknown
TRC190	1213-10	artifact	Varga, Edwards County	unknown
TRC191	2-1	artifact	Varga, Edwards County	unknown
TRC192	2-11	artifact	Varga, Edwards County	unknown
TRC193	2-12	artifact	Varga, Edwards County	unknown
TRC194	3-10	artifact	Varga, Edwards County	unknown
TRC195	11-5-11	artifact	Varga, Edwards County	unknown
TRC196	22-15	artifact	Varga, Edwards County	unknown
TRC197	42-10	artifact	Varga, Edwards County	unknown
TRC198	89-10	artifact	Varga, Edwards County	unknown
TRC199	98-12	artifact	Varga, Edwards County	unknown
TRC200	187-10	artifact	Varga, Edwards County	unknown
TRC201	197-16	artifact	Varga, Edwards County	unknown
TRC202	197-17	artifact	Varga, Edwards County	unknown
TRC203	208-10	artifact	Varga, Edwards County	unknown
TRC204	233-10	artifact	Varga, Edwards County	unknown
TRC205	263-10	artifact	Varga, Edwards County	unknown
TRC206	274-5-11	artifact	Varga, Edwards County	unknown
TRC207	283-12	artifact	Varga, Edwards County	unknown
TRC208	293-5-12	artifact	Varga, Edwards County	unknown
TRC209	293-5-13	artifact	Varga, Edwards County	unknown
TRC210	459-11	artifact	Varga, Edwards County	unknown
TRC211	525-5-13	artifact	Varga, Edwards County	unknown
TRC212	543-12	artifact	Varga, Edwards County	unknown
TRC213	691-11	artifact	Varga, Edwards County	unknown
TRC214	159-5-27	artifact	Varga, Edwards County	unknown
TRC215	159-5-28	artifact	Varga, Edwards County	unknown
TRC216	207-11	artifact	Varga, Edwards County	unknown

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC217	220-13	artifact	Varga, Edwards County	unknown
TRC218	220-15	artifact	Varga, Edwards County	unknown
TRC219	262-20	artifact	Varga, Edwards County	unknown
TRC220	282-17	artifact	Varga, Edwards County	unknown
TRC221	291-14	artifact	Varga, Edwards County	unknown
TRC222	302-21	artifact	Varga, Edwards County	unknown
TRC223	349-13	artifact	Varga, Edwards County	unknown
TRC224	474-10	artifact	Varga, Edwards County	unknown
TRC225	482-10	artifact	Varga, Edwards County	unknown
TRC226	525-10	artifact	Varga, Edwards County	unknown
TRC227	526-10	artifact	Varga, Edwards County	unknown
TRC228	562-10	artifact	Varga, Edwards County	unknown
TRC229	572-15	artifact	Varga, Edwards County	unknown
TRC230	781-10	artifact	Varga, Edwards County	unknown
TRC231	800-11	artifact	Varga, Edwards County	unknown
TRC232	806-17	artifact	Varga, Edwards County	unknown
TRC233	825-10	artifact	Varga, Edwards County	unknown
TRC234	836-10	artifact	Varga, Edwards County	unknown
TRC235	841-13	artifact	Varga, Edwards County	unknown
TRC236	842-10	artifact	Varga, Edwards County	unknown
TRC237	845-10	artifact	Varga, Edwards County	unknown
TRC238	881-17	artifact	Varga, Edwards County	unknown
TRC239	888-14	artifact	Varga, Edwards County	unknown
TRC240	889-13	artifact	Varga, Edwards County	unknown
TRC241	895-12	artifact	Varga, Edwards County	unknown
TRC242	903-12	artifact	Varga, Edwards County	unknown
TRC243	903-22	artifact	Varga, Edwards County	unknown
TRC244	903-24	artifact	Varga, Edwards County	unknown
TRC245	913-17	artifact	Varga, Edwards County	unknown
TRC246	934-19	artifact	Varga, Edwards County	unknown
TRC247	974-11	artifact	Varga, Edwards County	unknown
TRC248	967-24	artifact	Varga, Edwards County	unknown
TRC249	1002-13	artifact	Varga, Edwards County	unknown
TRC250	1029-5-11	artifact	Varga, Edwards County	unknown
TRC251	1031-13	artifact	Varga, Edwards County	unknown
TRC252	1038-12	artifact	Varga, Edwards County	unknown

Table 1. Descriptions of the chert samples in this study.

<b>ANID</b>	<b>Field ID</b>	<b>Sample type</b>	<b>Site name</b>	<b>Description</b>
TRC253	1041-14	artifact	Varga, Edwards County	unknown
TRC254	1054-16	artifact	Varga, Edwards County	unknown
TRC255	1074-12	artifact	Varga, Edwards County	unknown
TRC256	1088-13	artifact	Varga, Edwards County	unknown
TRC257	1092-15	artifact	Varga, Edwards County	unknown
TRC258	1101-13	artifact	Varga, Edwards County	unknown
TRC259	1132-10	artifact	Varga, Edwards County	unknown
TRC260	1162-11	artifact	Varga, Edwards County	unknown
TRC261	1256-5-11	artifact	Varga, Edwards County	unknown

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC001	0.1441	230.88	0.0978	0.0050	0.6861	0.0715	0.7979	0.0000	0.2374	0.0136	0.1113
TRC002	0.1812	29.74	0.0905	0.0050	0.1964	0.0646	0.7177	0.0000	0.2254	0.0148	0.3588
TRC003	0.1705	37.43	0.1513	0.0082	0.2044	0.0908	0.8442	0.0055	0.3911	0.0183	0.0950
TRC004	0.0000	39.22	0.0827	0.0052	0.1446	0.0730	0.7871	0.0000	0.2252	0.0092	0.1173
TRC005	0.2762	45.03	0.1133	0.0071	0.2454	0.0906	1.0240	0.0000	0.2828	0.0160	0.1044
TRC006	0.0000	58.57	0.1083	0.0065	0.2566	0.0844	0.9479	0.0000	0.2683	0.0090	0.1035
TRC007	0.2353	20.46	0.1313	0.0076	0.5541	0.1019	1.0788	0.0000	0.3440	0.0326	0.3258
TRC008	0.0000	28.22	0.4309	0.0224	0.9381	0.3099	3.4348	0.0025	0.9790	0.0787	0.5933
TRC009	0.9205	20.55	0.1888	0.0098	0.3845	0.1352	1.4812	0.0000	0.4304	0.0312	0.3848
TRC010	0.0888	10.89	0.1967	0.0105	0.3741	0.1348	1.4834	0.0057	0.4134	0.0333	0.5028
TRC011	0.1198	11.40	0.1268	0.0000	0.4325	0.1531	1.6941	0.0000	0.5092	0.0118	0.3342
TRC012	0.1420	16.44	0.1078	0.0000	0.1988	0.1141	1.2195	0.0000	0.3653	0.0218	0.3017
TRC013	0.1004	71.19	0.0523	0.0033	0.0000	0.0355	0.3328	0.0000	0.1570	0.0145	0.4354
TRC014	0.2954	29.94	0.2995	0.0000	1.8278	0.3904	4.2566	0.0000	1.2231	0.0122	0.2173
TRC015	0.4329	34.05	0.1326	0.0000	0.4284	0.1525	1.6197	0.0000	0.4874	0.1332	0.1364
TRC016	0.1913	13.51	0.1312	0.0000	0.2210	0.1384	1.4344	0.0053	0.4780	0.0109	0.2357
TRC017	0.3865	39.82	0.1013	0.0000	0.5338	0.1117	1.1737	0.0000	0.3475	0.0224	0.2113
TRC018	0.1870	17.25	0.0708	0.0000	0.0000	0.0763	0.7863	0.0000	0.2376	0.0122	0.9637
TRC019	0.0863	19.01	0.1321	0.0032	0.0000	0.0499	0.3717	0.0000	0.1289	0.0078	0.1027
TRC020	0.1172	30.76	0.1109	0.0066	0.1182	0.0700	0.6327	0.0032	0.2515	0.0378	0.1370
TRC021	0.0579	19.18	0.0949	0.0048	0.0000	0.0522	0.4747	0.0000	0.1931	0.0120	0.2367
TRC022	0.0000	18.42	0.1849	0.0018	0.0000	0.0397	0.2422	0.0050	0.1455	0.0090	0.1037
TRC023	0.1669	24.61	0.2112	0.0000	0.7292	0.2188	2.3518	0.0000	0.7007	0.0234	0.0837
TRC024	0.1791	24.87	0.1893	0.0000	0.7831	0.2044	2.1266	0.0000	0.6423	0.0243	0.0908
TRC025	0.1038	25.63	0.0869	0.0000	0.0000	0.0691	0.6855	0.0031	0.2461	0.0105	0.1262
TRC026	0.0710	20.73	0.0763	0.0000	0.0000	0.0649	0.6369	0.0000	0.2231	0.0099	0.1037
TRC027	0.1022	26.53	0.2147	0.0000	0.6783	0.2499	2.6595	0.0000	0.7498	0.0060	0.2943
TRC028	0.2094	69.34	0.0905	0.0000	0.0000	0.0867	0.8941	0.0000	0.2879	0.0252	0.1883
TRC029	0.2291	127.34	0.0462	0.0000	0.2426	0.0403	0.4166	0.0000	0.1130	0.0220	0.1475
TRC030	0.1587	78.30	0.2520	0.0000	0.9752	0.2867	3.0221	0.0000	0.8719	0.0182	0.8794
TRC031	1.2333	51.75	0.1090	0.0092	0.0000	0.0909	0.8348	0.0081	0.2414	0.1889	0.5279
TRC032	0.0790	22.17	0.1452	0.0000	0.5707	0.1555	1.6006	0.0000	0.4671	0.0205	0.2379
TRC033	0.1464	34.28	0.1571	0.0000	0.3257	0.1610	1.6489	0.0000	0.4990	0.0127	0.5005
TRC034	0.1462	17.45	0.3167	0.0000	0.4855	0.1863	1.9701	0.0000	0.8879	0.0078	0.3181
TRC035	0.1333	110.14	0.0857	0.0000	0.0000	0.0867	0.9061	0.0000	0.2673	0.0078	0.1530
TRC036	0.1443	104.73	0.2459	0.0000	0.7078	0.2662	2.7767	0.0000	0.8040	0.0106	0.7925



Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC037	0.5288	21.01	0.1476	0.0000	0.4838	0.1348	1.3419	0.0000	0.4813	0.0253	1.2717
TRC038	0.1587	37.70	0.2741	0.0000	0.8611	0.2943	3.0487	0.0000	0.8914	0.0101	0.1993
TRC039	0.1929	61.61	0.0752	0.0000	0.0000	0.0644	0.6174	0.0000	0.2235	0.0226	4.9581
TRC040	0.2943	16.61	0.0598	0.0038	0.0000	0.0448	0.4171	0.0000	0.1749	0.0089	0.4009
TRC041	0.3979	41.94	0.1078	0.0000	0.0000	0.1109	1.2997	0.0000	0.4149	0.0271	1.1556
TRC042	0.3007	78.47	0.2944	0.0000	1.4279	0.3368	3.7912	0.0000	1.1559	0.0583	0.4069
TRC043	0.0713	33.49	0.1197	0.0000	0.4340	0.1475	1.7854	0.0000	0.5195	0.0143	0.0982
TRC044	0.2890	21.28	0.1156	0.0000	0.0000	0.1135	1.3377	0.0000	0.4912	0.0317	0.2715
TRC045	0.1988	27.04	0.2378	0.0000	1.0833	0.2973	3.6322	0.0000	1.0168	0.0305	0.3467
TRC046	0.0861	41.53	0.1132	0.0000	0.6726	0.1348	1.6319	0.0000	0.5074	0.0215	0.1314
TRC047	0.1501	24.04	0.1476	0.0000	0.8647	0.1703	1.9430	0.0000	0.5970	0.0162	0.3825
TRC048	0.3058	85.32	0.2211	0.0000	1.2024	0.2687	3.1862	0.0000	0.9562	0.0266	0.5176
TRC049	0.3153	46.68	0.1793	0.0000	0.6276	0.1950	2.3503	0.0000	0.7298	0.0354	0.4161
TRC050	0.0824	24.14	0.2062	0.0000	0.8271	0.2506	2.9984	0.0000	0.8928	0.0147	0.4640
TRC051	0.2887	37.52	0.1562	0.0000	0.7251	0.1239	1.2927	0.0150	0.5240	0.0254	0.2169
TRC052	0.1373	34.42	0.2607	0.0000	1.2093	0.3011	3.6899	0.0000	1.0557	0.0096	0.4688
TRC053	0.2029	97.67	0.2010	0.0000	0.9563	0.2271	2.6933	0.0000	0.7804	0.0131	0.2642
TRC054	0.0000	81.14	0.1435	0.0000	0.5364	0.1597	1.9092	0.0000	0.5792	0.0129	0.1523
TRC055	0.0000	53.46	0.1854	0.0000	1.0234	0.2077	2.5046	0.0000	0.7393	0.0089	0.1644
TRC056	0.0531	41.08	0.0420	0.0000	0.0000	0.0288	0.3534	0.0000	0.1011	0.0129	0.5332
TRC057	0.0000	71.96	0.0898	0.0000	0.7167	0.0992	1.1871	0.0000	0.3689	0.0097	1.2985
TRC058	0.0000	58.91	0.0875	0.0000	0.0000	0.0958	1.1527	0.0000	0.3536	0.0083	0.4071
TRC059	0.0000	31.62	0.0877	0.0000	0.0000	0.0898	1.0637	0.0000	0.3162	0.0105	0.3325
TRC060	0.0986	64.43	0.0924	0.0000	0.0000	0.0681	0.7664	0.0000	0.2510	0.0122	0.4188
TRC061	0.3935	38.07	0.1679	0.0000	0.2897	0.1416	1.3851	0.0000	0.4731	0.0397	1.0154
TRC062	0.6106	38.00	0.2016	0.0134	0.4272	0.1715	1.5923	0.0057	0.5612	0.0545	1.4892
TRC063	0.3534	61.94	0.1738	0.0000	0.7239	0.1749	2.0994	0.0000	0.6280	0.0472	0.7320
TRC064	0.5470	76.85	0.1854	0.0000	0.3606	0.1835	2.1714	0.0000	0.6612	0.0573	0.6554
TRC065	0.5333	67.79	0.1995	0.0000	0.9025	0.1841	2.0276	0.0000	0.6384	0.0707	1.0639
TRC066	0.5774	28.71	0.0990	0.0000	0.0000	0.0590	0.6339	0.0071	0.2878	0.1546	0.2719
TRC067	0.2448	44.34	0.0764	0.0000	0.0000	0.0779	0.8818	0.0000	0.2937	0.0320	0.1590
TRC068	0.0000	22.36	0.0458	0.0000	0.0000	0.0461	0.5322	0.0000	0.1618	0.0091	0.0977
TRC069	0.3089	23.50	0.0754	0.0000	0.0000	0.0606	0.6550	0.0000	0.2353	0.0622	0.2827
TRC070	0.1727	22.43	0.1197	0.0041	0.0000	0.0355	0.3429	0.0000	0.1604	0.0382	0.7541
TRC071	0.1593	90.69	0.2120	0.0000	0.0000	0.0835	0.9621	0.0070	0.3436	0.0268	0.4021
TRC072	0.5694	84.15	0.2042	0.0000	0.0000	0.0894	1.0311	0.0000	0.3496	0.0313	0.1533

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC073	1.7010	403.79	0.1944	0.0000	0.0000	0.0659	0.6732	0.0146	0.2826	0.0540	0.3549
TRC074	1.8670	213.23	0.2122	0.0000	0.0000	0.0707	0.7485	0.0129	0.3272	0.0929	0.2389
TRC075	0.6009	23.23	0.2623	0.0367	0.9827	0.3066	3.7248	0.0070	1.0720	0.0127	0.2215
TRC076	0.2176	66.98	0.1770	0.0268	0.5741	0.2205	2.7296	0.0000	0.7638	0.0125	0.5235
TRC077	0.3708	25.10	0.3227	0.0014	1.3313	0.4085	5.0234	0.0000	1.3898	0.0163	0.1317
TRC078	3.9448	23.98	0.3055	0.0013	1.0391	0.3683	4.5061	0.0000	1.2501	0.1195	0.3997
TRC079	0.2961	44.58	0.1455	0.0006	0.4398	0.1691	2.0017	0.0000	0.6503	0.0965	0.8119
TRC080	0.2884	641.30	0.2671	0.0341	0.8944	0.3005	3.5981	0.0000	1.0107	0.0043	0.5925
TRC081	0.1384	34.14	0.1706	0.0009	0.4868	0.2133	2.5547	0.0000	0.7185	0.0045	0.2352
TRC082	0.5433	25.08	0.1355	0.0024	0.1360	0.0500	0.3032	0.0115	0.3639	0.0211	0.4633
TRC083	0.1053	89.28	0.2818	0.0369	1.0220	0.3257	3.9830	0.0000	1.1128	0.0066	0.1073
TRC084	0.0812	66.95	0.2383	0.0352	0.7832	0.3041	3.6802	0.0000	1.0165	0.0000	0.1259
TRC085	0.3683	53.64	0.0912	0.0006	0.2354	0.0686	0.8044	0.0045	0.2656	0.0256	2.0682
TRC086	0.0507	47.34	0.0858	0.0104	0.2761	0.0951	1.1218	0.0000	0.3131	0.0022	0.0898
TRC087	0.1209	91.04	0.2424	0.0323	0.9948	0.2941	3.5344	0.0000	0.9714	0.0082	0.1811
TRC088	0.3514	16.14	0.0776	0.0005	0.1647	0.0807	0.9220	0.0000	0.2512	0.0081	0.1120
TRC089	0.1016	21.93	0.1304	0.0109	0.2972	0.1068	1.2526	0.0000	0.3948	0.0070	0.2923
TRC090	0.3130	95.26	0.1071	0.0007	0.2087	0.0612	0.6254	0.0000	0.2301	0.0056	0.1109
TRC091	0.1129	33.16	0.0789	0.0080	0.1207	0.0712	0.8214	0.0000	0.2249	0.0059	0.2863
TRC092	0.7427	174.38	0.2135	0.0012	0.4642	0.1758	1.9950	0.0000	0.6867	0.0488	0.4871
TRC093	0.1801	57.64	0.1344	0.0108	0.2663	0.1064	1.2008	0.0055	0.3879	0.0062	0.1487
TRC094	0.2024	19.88	0.0878	0.0005	0.2733	0.0644	0.7039	0.0000	0.2212	0.0070	0.2763
TRC095	0.3095	76.15	0.1527	0.0150	0.4840	0.1463	1.7212	0.0000	0.4907	0.0070	0.5894
TRC096	0.2320	68.44	0.1780	0.0147	0.5378	0.1452	1.5345	0.0069	0.5175	0.0132	0.2802
TRC097	0.1105	42.65	0.1814	0.0162	0.5926	0.1591	1.8233	0.0000	0.5269	0.0066	0.2124
TRC098	0.0000	45.70	0.1440	0.0145	0.5521	0.1479	1.7273	0.0000	0.5107	0.0054	0.2016
TRC099	0.2210	67.20	0.1235	0.0130	0.2853	0.1273	1.5101	0.0000	0.4233	0.0043	0.1356
TRC100	0.8031	41.77	0.1105	0.0097	0.6376	0.0898	1.0614	0.0000	0.3438	0.0073	0.2081
TRC101	0.1648	17.55	0.1109	0.0094	0.2196	0.0941	1.0863	0.0000	0.2999	0.0034	0.2102
TRC102	0.0698	56.19	0.1340	0.0123	0.3299	0.1238	1.4094	0.0000	0.4232	0.0041	0.1088
TRC103	0.1322	21.92	0.2459	0.0227	0.8092	0.2322	2.6714	0.0059	0.8326	0.0107	0.1915
TRC104	0.1720	56.83	0.6148	0.0644	1.6784	0.6574	7.6883	0.0000	2.0626	0.0096	0.1661
TRC105	0.2353	30.33	0.4154	0.0431	0.9785	0.4365	5.0813	0.0000	1.3855	0.0047	0.4888
TRC106	0.1260	76.89	0.7004	0.0000	1.7036	0.7118	8.1010	0.0000	2.2223	0.0094	0.0918
TRC107	3.1744	216.40	8.8710	0.1392	13.4584	5.2995	37.5021	0.9702	24.8490	0.0333	1.1564
TRC108	0.2207	17.28	0.0871	0.0008	0.1787	0.0573	0.6043	0.0029	0.2366	0.0098	0.4844

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ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC109	0.5731	25.53	0.4762	0.0046	0.6968	0.1945	1.5800	0.0290	1.4583	0.1457	0.8337
TRC110	0.6371	46.48	0.4282	0.0000	1.4799	0.4005	4.5649	0.0000	1.2878	0.0125	0.7015
TRC111	0.0000	47.41	0.1064	0.0090	0.2824	0.0998	1.1168	0.0039	0.3225	0.0068	0.6623
TRC112	0.1781	27.38	0.3384	0.0033	0.5330	0.1350	0.9428	0.0265	0.5074	0.0527	0.3526
TRC113	0.0836	19.61	0.1984	0.0184	0.5846	0.1980	2.2504	0.0000	0.6192	0.0092	0.2299
TRC114	0.2395	17.52	0.1986	0.0020	0.4057	0.0731	0.5134	0.0204	0.5475	0.0476	1.4080
TRC115	0.1113	61.69	0.2342	0.0028	0.4822	0.1977	2.2087	0.0000	0.6393	0.0121	0.2693
TRC116	0.0000	57.38	0.1578	0.0147	0.4476	0.1612	1.8677	0.0000	0.4889	0.0031	0.2544
TRC117	0.1670	26.23	0.0677	0.0000	0.2121	0.0555	0.6127	0.0031	0.2052	0.0111	0.1400
TRC118	0.4216	64.28	0.1995	0.0028	0.3655	0.0778	0.5462	0.0132	0.3738	0.0443	0.5462
TRC119	0.4198	39.86	0.3672	0.0036	0.5660	0.2098	2.0254	0.0109	0.9288	0.0637	0.6529
TRC120	0.2329	34.88	0.2427	0.0005	0.5207	0.1738	1.8792	0.0056	0.6145	0.0168	0.2234
TRC121	0.1566	33.53	0.3777	0.0000	0.8343	0.3321	3.6853	0.0000	1.0648	0.0160	0.2783
TRC122	0.1710	47.57	0.1013	0.0000	0.2664	0.0737	0.8125	0.0000	0.2694	0.0077	0.2528
TRC123	0.1058	49.50	0.2837	0.0000	0.4954	0.1744	1.7704	0.0063	0.6796	0.0204	0.3242
TRC124	0.2297	50.30	0.1650	0.0019	0.1963	0.0639	0.4134	0.0133	0.3546	0.0213	0.7074
TRC125	0.2930	96.28	0.0875	0.0000	0.0000	0.0372	0.3586	0.0000	0.2103	0.0155	0.2392
TRC126	0.0883	40.64	0.3192	0.0015	0.8545	0.2532	2.7822	0.0000	0.8523	0.0068	0.1943
TRC127	0.7676	73.55	0.1951	0.0010	0.4598	0.1169	1.2306	0.0178	0.4741	0.0731	0.6839
TRC128	0.2045	25.35	0.1328	0.0011	0.1490	0.0624	0.5637	0.0046	0.2655	0.0141	0.2464
TRC129	0.2112	75.21	0.3223	0.0000	0.9432	0.2751	3.0456	0.0000	0.8774	0.0074	0.1896
TRC130	0.2158	174.81	0.3636	0.0037	0.5057	0.2211	2.2413	0.0170	0.8296	0.0352	0.5961
TRC131	0.1252	37.94	0.2115	0.0012	0.4572	0.1696	1.8691	0.0000	0.5491	0.0034	0.1937
TRC132	0.0000	30.63	0.1136	0.0000	0.3921	0.0845	0.8773	0.0000	0.2809	0.0089	0.1847
TRC133	0.1397	14.53	0.1580	0.0012	0.3050	0.1172	1.2646	0.0000	0.4344	0.0470	0.4684
TRC134	0.0000	73.48	0.2573	0.0000	0.5710	0.1933	2.1182	0.0000	0.6286	0.0061	0.1422
TRC135	0.2539	19.76	0.4651	0.0000	0.8474	0.2932	3.1944	0.0000	1.4264	0.0246	5.2229
TRC136	0.3362	240.13	0.3385	0.0000	0.7323	0.2625	2.8146	0.0000	0.8971	0.0252	2.0514
TRC137	0.0000	18.21	0.4128	0.0000	0.8204	0.3078	3.3892	0.0000	0.9573	0.0147	0.8271
TRC138	0.3178	26.30	0.2375	0.0000	0.5586	0.1655	1.7924	0.0000	0.5746	0.0182	0.8903
TRC139	0.2457	72.69	0.3768	0.0027	0.7656	0.2380	2.3536	0.0157	0.8880	0.0415	0.2698
TRC140	0.4349	20.55	1.1075	0.0083	0.9842	0.2477	1.5056	0.0586	2.1846	0.1952	3.6306
TRC141	0.3756	95.74	0.1643	0.0206	0.5855	0.1812	2.1691	0.0000	0.6376	0.0264	1.2517
TRC142	0.0555	32.17	0.2502	0.0010	0.6762	0.2744	3.2739	0.0055	0.9499	0.0132	0.2220
TRC143	0.2333	20.02	0.2071	0.0303	0.8145	0.2665	3.2454	0.0000	0.8706	0.0092	0.2751
TRC144	0.3058	292.38	0.2940	0.0033	0.5883	0.1374	1.2667	0.0261	0.7480	0.3834	1.9895

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC145	0.1912	37.62	0.0551	0.0008	0.2031	0.0561	0.5953	0.0080	0.1869	0.0142	0.2236
TRC146	0.0595	70.78	0.3011	0.0344	1.0057	0.3258	3.7334	0.0062	1.0784	0.0137	0.2022
TRC147	0.2226	39.66	0.2824	0.0011	1.1676	0.3190	3.8354	0.0000	1.0258	0.0138	0.3259
TRC148	0.2585	41.72	0.1334	0.0162	0.6772	0.1531	1.8275	0.0000	0.5062	0.0136	0.3483
TRC149	0.3088	20.40	0.0730	0.0008	0.0000	0.0614	0.7240	0.0000	0.2427	0.0119	0.5369
TRC150	0.1507	20.12	0.2999	0.0400	1.3453	0.3727	4.4974	0.0000	1.1792	0.0086	0.6226
TRC151	0.0000	141.73	0.1862	0.0009	0.6472	0.1367	1.3824	0.0000	0.4642	0.0095	0.4140
TRC152	0.5138	34.29	0.2835	0.0000	0.3996	0.1546	1.5757	0.0000	0.5380	0.0574	0.1511
TRC153	0.0000	46.66	0.2353	0.0126	0.3457	0.1491	1.5365	0.0116	0.5675	0.0284	0.2564
TRC154	1.2358	87.00	0.2653	0.0011	1.0082	0.1734	1.8929	0.0000	0.6178	0.0580	0.3613
TRC155	0.5093	20.25	0.3890	0.0141	0.5303	0.1599	1.1944	0.0176	0.5998	0.0431	0.6721
TRC156	0.1609	20.31	0.1510	0.0009	0.2559	0.0995	1.0312	0.0000	0.3548	0.0080	0.8296
TRC157	0.2546	37.98	0.1668	0.0009	0.2461	0.1003	1.0432	0.0000	0.3275	0.0106	0.3473
TRC158	2.1529	127.87	0.1883	0.0000	0.0000	0.0479	0.3126	0.0099	0.3185	0.1375	0.7926
TRC159	0.2672	21.02	0.2247	0.0024	0.2536	0.0975	0.8127	0.0128	0.4243	0.0283	0.6822
TRC160	0.7894	41.58	0.1789	0.0126	0.3535	0.1419	1.5853	0.0063	0.4919	0.0158	0.9726
TRC161	0.2602	37.06	0.1148	0.0089	0.4000	0.0830	0.8925	0.0000	0.3000	0.0265	0.3497
TRC162	0.2605	21.80	0.2623	0.0215	0.6926	0.2463	2.7244	0.0056	0.7650	0.0201	0.3259
TRC163	0.2020	282.62	0.2582	0.0207	0.7775	0.2415	2.6817	0.0057	0.7467	0.0163	0.3590
TRC164	0.2642	213.72	0.2260	0.0139	0.5496	0.1607	1.6255	0.0059	0.5488	0.0379	0.5798
TRC165	0.1054	24.51	0.3151	0.0254	0.8323	0.2943	3.3050	0.0000	0.9366	0.0176	0.2915
TRC166	0.9622	89.85	0.1841	0.0012	0.2197	0.0984	0.9572	0.0093	0.3976	0.0499	0.9310
TRC167	0.1917	15.12	0.1690	0.0017	0.2876	0.0774	0.6178	0.0149	0.4174	0.0353	0.7014
TRC168	0.5499	92.26	0.2905	0.0167	0.8855	0.2117	2.1730	0.0000	0.7235	0.0696	0.5295
TRC169	0.4696	38.08	0.1978	0.0018	0.4253	0.1092	0.9715	0.0116	0.4544	0.0380	0.2481
TRC170	0.4607	43.34	0.3532	0.0233	0.8979	0.2515	2.5674	0.0130	1.0939	0.0502	0.3363
TRC171	0.2068	22.44	0.1564	0.0102	0.3069	0.1207	1.2413	0.0057	0.4312	0.0218	0.6114
TRC172	0.6730	19.89	0.1706	0.0013	0.4646	0.1062	1.0032	0.0129	0.3839	0.0768	0.2082
TRC173	0.2099	40.64	0.2362	0.0174	0.6556	0.2182	2.4182	0.0037	0.6570	0.0051	0.2065
TRC174	0.1776	25.36	0.2364	0.0156	0.5925	0.1828	1.9701	0.0000	0.5662	0.0152	0.4254
TRC175	0.0000	49.39	0.3734	0.0229	0.7636	0.2883	3.2202	0.0000	0.8461	0.0036	0.0671
TRC176	1.0467	34.35	0.4000	0.0103	0.4330	0.1201	0.6526	0.0378	1.0021	0.1700	1.7549
TRC177	0.0000	24.98	0.2959	0.0205	0.8715	0.2355	2.5413	0.0000	0.7754	0.0270	0.3924
TRC178	0.3999	34.22	0.1329	0.0015	0.1152	0.0686	0.6069	0.0089	0.3334	0.0227	0.9130
TRC179	0.1747	12.41	0.2000	0.0011	0.2704	0.1026	1.0303	0.0000	0.4062	0.0147	0.6540
TRC180	0.1497	11.00	0.2073	0.0057	0.0000	0.0639	0.7838	0.0000	0.4840	0.0253	0.5378

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC181	0.0000	14.95	0.3236	0.0171	0.6894	0.2421	2.5968	0.0000	0.7131	0.0134	0.3519
TRC182	0.1193	35.08	0.4048	0.0233	0.8211	0.3271	3.5357	0.0000	0.9374	0.0117	0.1588
TRC183	0.3403	28.18	0.1994	0.0082	0.2930	0.1231	1.2141	0.0049	0.4171	0.0126	0.5508
TRC184	0.0000	69.58	0.7440	0.0028	1.6285	0.4950	5.1689	0.0112	1.5866	0.0453	0.3087
TRC185	0.6238	23.41	0.4174	0.0014	0.7481	0.2666	2.6640	0.0000	0.8386	0.1104	0.4425
TRC186	0.6462	57.92	0.2293	0.0018	0.4263	0.1263	1.1359	0.0121	0.4510	0.0523	0.5904
TRC187	0.0000	147.50	0.1955	0.0083	0.4361	0.1270	1.3324	0.0000	0.4022	0.0158	0.4204
TRC188	0.0000	41.54	0.3495	0.0172	0.4882	0.2433	2.6135	0.0000	0.6963	0.0081	0.1868
TRC189	0.0000	8.68	0.0978	0.0014	0.0997	0.0449	0.3712	0.0062	0.1715	0.0088	0.6219
TRC190	0.3596	44.20	0.4017	0.0009	0.6292	0.2837	3.0099	0.0000	0.8407	0.0291	0.3632
TRC191	0.2325	32.06	0.0868	0.0011	0.0983	0.0577	0.6326	0.0036	0.2489	0.0286	0.2076
TRC192	0.5244	29.33	0.0945	0.0014	0.1638	0.0538	0.5445	0.0097	0.2293	0.0339	2.2838
TRC193	0.3612	71.41	0.3144	0.0014	0.8207	0.1219	1.1795	0.0181	0.5731	0.0287	5.5686
TRC194	0.3708	34.74	0.1059	0.0010	0.1599	0.0688	0.7102	0.0076	0.2948	0.0147	0.8123
TRC195	0.6837	22.79	0.1301	0.0082	0.2984	0.0594	0.5740	0.0080	0.3064	0.0619	0.4124
TRC196	0.4635	19.08	0.1957	0.0000	0.5412	0.1705	1.9961	0.0000	0.6084	0.0108	0.5506
TRC197	0.2240	32.04	0.1848	0.0011	0.3427	0.1161	1.2176	0.0124	0.4962	0.0384	0.4334
TRC198	0.2595	28.16	0.3678	0.0020	0.9998	0.2440	2.5867	0.0178	1.0481	0.0448	0.5996
TRC199	0.0000	15.50	0.0945	0.0008	0.1741	0.0562	0.5675	0.0064	0.2429	0.0143	0.2617
TRC200	1.1844	109.89	0.7021	0.0000	1.4961	0.3883	4.4237	0.0140	1.8777	0.2624	0.6522
TRC201	0.1337	22.39	0.1395	0.0010	0.2093	0.0970	1.0589	0.0032	0.3759	0.0070	0.3750
TRC202	0.8128	21.08	0.0856	0.0051	0.1649	0.0511	0.4924	0.0000	0.2378	0.0237	0.7016
TRC203	0.3416	16.56	0.1526	0.0112	0.4752	0.1229	1.3772	0.0048	0.4615	0.0138	0.6678
TRC204	0.2416	36.17	0.2207	0.0000	0.4695	0.1927	2.1988	0.0000	0.6192	0.0058	0.1629
TRC205	0.1617	15.87	0.2226	0.0000	0.5575	0.2247	2.6180	0.0000	0.7152	0.0042	0.1697
TRC206	0.6505	47.45	0.1473	0.0011	0.7089	0.0798	0.8561	0.0030	0.3478	0.0179	0.5376
TRC207	0.1524	20.57	0.1902	0.0019	0.2754	0.1087	1.0314	0.0101	0.5281	0.0110	0.3681
TRC208	0.1741	30.39	0.1152	0.0010	0.1687	0.0890	1.0133	0.0000	0.3001	0.0070	0.1745
TRC209	0.0000	11.05	0.1007	0.0006	0.1821	0.0601	0.6376	0.0000	0.2231	0.0051	0.2172
TRC210	0.2671	34.00	0.3969	0.0000	1.0666	0.3618	4.2210	0.0000	1.1410	0.0114	0.1061
TRC211	0.1804	43.26	0.2227	0.0128	0.3263	0.1457	1.5994	0.0000	0.4924	0.0122	0.2165
TRC212	0.0933	74.57	0.2855	0.0011	0.9040	0.3118	3.6721	0.0000	1.0098	0.0198	0.4294
TRC213	0.3337	23.45	0.0846	0.0048	0.1682	0.0577	0.6567	0.0000	0.2120	0.0110	0.2304
TRC214	0.1286	35.35	0.0857	0.0092	0.3628	0.0905	1.0825	0.0000	0.2979	0.0060	0.1710
TRC215	0.4419	55.55	0.2915	0.0024	0.8168	0.2613	2.7866	0.0087	0.9835	0.0523	0.5434
TRC216	0.5748	174.53	0.1088	0.0077	0.5793	0.0825	0.8880	0.0094	0.3286	0.0490	0.7581

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ANID	As (ppm)	Ba (ppm)	La (ppm)	Lu (ppm)	Nd (ppm)	Sm (ppm)	U (ppm)	Yb (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)
TRC217	0.2891	38.77	0.1756	0.0007	0.4591	0.0752	0.6373	0.0102	0.2861	0.0231	0.4044
TRC218	0.3547	37.14	0.7676	0.0028	1.9418	0.6000	6.7603	0.0119	2.1483	0.0656	0.8265
TRC219	0.2993	45.50	0.2057	0.0000	0.6016	0.1579	1.7313	0.0000	0.5424	0.0289	0.0917
TRC220	0.3569	36.22	0.4261	0.0000	0.9389	0.3648	4.2354	0.0000	1.1961	0.0144	0.2574
TRC221	0.3625	79.70	0.1505	0.0000	0.0000	0.0803	0.8021	0.0000	0.3400	0.0141	0.8396
TRC222	0.2041	31.44	0.2446	0.0000	0.5620	0.1874	2.1681	0.0000	0.6280	0.0059	0.2064
TRC223	0.1083	15.57	0.2284	0.0000	0.5442	0.1644	1.8268	0.0000	0.5631	0.0102	0.2920
TRC224	0.3850	58.97	0.2427	0.0000	0.4784	0.1647	1.8100	0.0000	0.6113	0.0089	0.1317
TRC225	0.3881	135.18	0.1552	0.0024	0.0000	0.0925	0.9206	0.0000	0.4094	0.0134	0.8621
TRC226	0.2232	35.63	0.1203	0.0048	0.0000	0.0581	0.5076	0.0072	0.2762	0.0321	0.2181
TRC227	0.0000	15.00	0.0999	0.0050	0.0000	0.0501	0.5064	0.0075	0.2272	0.0167	0.2925
TRC228	0.2975	17.23	0.1699	0.0000	0.3864	0.1158	1.3015	0.0049	0.4408	0.0434	2.0460
TRC229	0.5019	591.24	0.1668	0.0019	0.6573	0.0756	0.7435	0.0000	0.3521	0.0205	0.8440
TRC230	0.1297	54.60	0.1689	0.0000	0.3394	0.1177	1.3088	0.0000	0.4466	0.0101	0.1824
TRC231	0.0000	15.81	0.4475	0.0000	0.4813	0.1508	0.9425	0.0287	0.7881	0.0259	0.8310
TRC232	0.0000	29.64	0.2443	0.0186	0.8716	0.2150	2.5223	0.0000	0.7211	0.0098	0.1893
TRC233	0.3995	104.73	0.1765	0.0179	0.0000	0.1672	1.8924	0.0000	0.5951	0.0124	0.1473
TRC234	0.8687	39.30	0.3679	0.0345	1.6150	0.3707	4.3329	0.0000	1.2425	0.0327	0.4568
TRC235	0.2678	22.53	0.2767	0.0087	0.0000	0.0801	0.8884	0.0000	0.3754	0.0177	0.2804
TRC236	0.3109	111.04	0.1969	0.0091	0.0000	0.1053	1.1568	0.0000	0.5052	0.0219	0.9254
TRC237	0.4114	34.05	0.2578	0.0023	0.0000	0.1486	1.6555	0.0000	0.6753	0.0282	0.6944
TRC238	0.7247	71.71	0.5590	0.0547	2.1014	0.5611	6.5665	0.0000	1.8942	0.0383	0.2819
TRC239	0.0000	16.64	0.0939	0.0030	0.0000	0.0259	0.2727	0.0000	0.1943	0.0133	0.2223
TRC240	0.0000	23.44	0.2430	0.0202	0.6010	0.2421	2.8361	0.0000	0.7870	0.0081	0.2232
TRC241	0.0000	19.00	0.1768	0.0086	0.4048	0.1066	1.1550	0.0000	0.3857	0.0175	1.8619
TRC242	0.4277	31.70	0.2046	0.0014	0.5603	0.1792	2.0151	0.0156	0.5594	0.0565	0.1649
TRC243	0.0000	31.63	0.5002	0.0012	0.7216	0.0959	0.9652	0.0068	1.2600	0.0374	0.4264
TRC244	0.5044	36.39	0.2158	0.0141	0.4200	0.1588	1.5842	0.0000	0.5792	0.0433	0.4851
TRC245	0.0000	31.76	0.2353	0.0162	1.3683	0.1923	2.3210	0.0000	0.6143	0.0102	0.0910
TRC246	0.2222	77.00	0.3710	0.0319	1.7760	0.3636	4.2299	0.0000	1.1059	0.0059	0.2214
TRC247	0.0000	123.92	0.6160	0.0034	2.0235	0.6200	7.3256	0.0000	1.9044	0.0235	0.0802
TRC248	0.2534	22.98	0.3774	0.0300	1.2340	0.3498	4.0399	0.0000	1.1831	0.0320	3.0890
TRC249	0.4173	92.88	0.3299	0.0200	1.7738	0.2404	2.8195	0.0000	0.8815	0.0137	0.2876
TRC250	0.0000	33.90	0.2344	0.0175	0.7110	0.2106	2.4095	0.0000	0.6563	0.0204	0.5080
TRC251	0.4423	30.28	0.4089	0.0563	1.6502	0.5318	6.4823	0.0000	1.6602	0.0203	0.2849
TRC252	0.1851	24.03	0.0924	0.0103	0.4107	0.0969	1.1507	0.0000	0.3306	0.0235	0.7481

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<b>ANID</b>	<b>As (ppm)</b>	<b>Ba (ppm)</b>	<b>La (ppm)</b>	<b>Lu (ppm)</b>	<b>Nd (ppm)</b>	<b>Sm (ppm)</b>	<b>U (ppm)</b>	<b>Yb (ppm)</b>	<b>Ce (ppm)</b>	<b>Co (ppm)</b>	<b>Cr (ppm)</b>
TRC253	0.4644	32.41	0.1022	0.0016	0.3334	0.0828	0.9149	0.0057	0.3329	0.0125	0.8624
TRC254	0.4344	46.01	0.1127	0.0027	0.1950	0.0781	0.6482	0.0165	0.2608	0.0466	0.8092
TRC255	0.5556	282.04	32.9773	0.2678	29.0397	5.8433	3.4357	2.0616	68.4576	0.0642	0.6858
TRC256	0.3847	16.30	0.1119	0.0018	0.2804	0.0702	0.7052	0.0149	0.3124	0.0437	0.6166
TRC257	0.5411	14.82	0.0932	0.0014	0.3775	0.0659	0.6084	0.0147	0.2502	0.0435	0.8294
TRC258	0.4172	20.76	0.1173	0.0030	0.2790	0.0967	1.0258	0.0073	0.3430	0.0207	0.7909
TRC259	0.4525	171.51	0.2096	0.0017	0.6558	0.2121	2.4269	0.0096	0.7293	0.0814	0.4492
TRC260	0.1857	52.79	0.2664	0.0008	0.9645	0.2554	2.9491	0.0061	0.9019	0.0217	0.2622
TRC261	0.4587	176.62	0.1870	0.0012	0.5367	0.1786	2.0097	0.0069	0.6098	0.1246	1.1224

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC001	0.0403	0.0017	40.2	0.0284	0.00	0.16	0.0404	0.0061	540.27	0.0000	0.0000
TRC002	0.0190	0.0000	30.2	0.0080	0.00	0.15	0.0323	0.0070	13.46	0.0000	0.0000
TRC003	0.0663	0.0030	21.0	0.0245	0.00	0.21	0.0390	0.0077	9.06	0.0000	0.0010
TRC004	0.0891	0.0009	23.0	0.0262	0.00	0.48	0.0241	0.0040	18.20	0.0011	0.0000
TRC005	0.0752	0.0000	33.8	0.0111	0.00	0.19	0.0528	0.0046	8.99	0.0000	0.0000
TRC006	0.0450	0.0000	19.3	0.0199	0.00	0.11	0.0166	0.0048	115.27	0.0000	0.0000
TRC007	0.0186	0.0024	155.2	0.0194	0.00	0.27	0.0662	0.0299	6.82	0.0029	0.0000
TRC008	0.0109	0.0013	26.2	0.0163	0.00	0.09	0.0401	0.0066	5.12	0.0000	0.0000
TRC009	0.0319	0.0010	282.0	0.0243	1.44	0.24	0.0827	0.0282	3.66	0.0021	0.0000
TRC010	0.0097	0.0011	55.1	0.0089	0.00	0.15	0.0518	0.0167	1.11	0.0000	0.0000
TRC011	0.0172	0.0022	45.5	0.0129	0.00	0.18	0.0400	0.0159	0.00	0.0000	0.0000
TRC012	0.0157	0.0000	55.5	0.0104	0.00	0.18	0.0250	0.0201	2.68	0.0000	0.0000
TRC013	0.0157	0.0025	47.6	0.0132	0.00	0.00	0.0062	0.0120	36.95	0.0000	0.0000
TRC014	0.0332	0.0022	99.6	0.0326	0.00	0.22	0.0328	0.0237	6.98	0.0000	0.0000
TRC015	0.0505	0.0018	169.4	0.0525	0.00	0.18	0.0465	0.0188	5.85	0.0024	0.0000
TRC016	0.0169	0.0028	62.1	0.0105	0.00	0.11	0.0583	0.0148	1.98	0.0000	0.0000
TRC017	0.0385	0.0016	59.8	0.0383	0.00	0.19	0.0839	0.0077	6.59	0.0000	0.0000
TRC018	0.0300	0.0014	52.9	0.0142	0.00	0.27	0.0420	0.0073	5.56	0.0000	0.0000
TRC019	0.0473	0.0034	34.1	0.0681	0.00	0.27	0.0083	0.0110	13.75	0.0000	0.0000
TRC020	0.0478	0.0029	62.6	0.0436	0.00	0.35	0.0112	0.0147	19.49	0.0000	0.0016
TRC021	0.0449	0.0025	48.1	0.0333	0.00	0.33	0.0114	0.0120	6.71	0.0000	0.0000
TRC022	0.0396	0.0053	37.3	0.0436	0.00	0.21	0.0066	0.0219	20.22	0.0000	0.0030
TRC023	0.0482	0.0034	89.5	0.0717	0.00	0.29	0.0226	0.0094	5.66	0.0000	0.0000
TRC024	0.0618	0.0029	96.7	0.0880	0.00	0.37	0.0208	0.0098	6.27	0.0000	0.0000
TRC025	0.0491	0.0027	50.7	0.0373	0.00	0.26	0.0083	0.0114	15.40	0.0000	0.0000
TRC026	0.0523	0.0025	35.5	0.0522	0.00	0.23	0.0111	0.0098	12.46	0.0000	0.0000
TRC027	0.0665	0.0015	74.7	0.0466	0.00	0.21	0.0241	0.0096	7.67	0.0000	0.0000
TRC028	0.0665	0.0023	152.8	0.0488	0.00	0.25	0.0196	0.0098	12.55	0.0000	0.0000
TRC029	0.0352	0.0022	112.3	0.0228	0.00	0.26	0.0094	0.0087	597.37	0.0000	0.0000
TRC030	0.0476	0.0021	79.8	0.0378	0.00	0.23	0.0105	0.0094	12.98	0.0000	0.0000
TRC031	0.0616	0.0049	869.2	0.0740	0.00	0.43	0.1031	0.0216	8.06	0.0016	0.0000
TRC032	0.0509	0.0015	59.9	0.0341	0.00	0.26	0.0119	0.0081	6.91	0.0000	0.0000
TRC033	0.0356	0.0019	76.3	0.0104	0.00	0.07	0.0074	0.0046	16.07	0.0000	0.0000
TRC034	0.0409	0.0014	75.3	0.0076	0.00	0.19	0.0147	0.0114	5.21	0.0000	0.0000
TRC035	0.0123	0.0025	47.8	0.0084	0.00	0.11	0.0168	0.0133	18.23	0.0000	0.0000
TRC036	0.0643	0.0017	59.8	0.0657	0.00	0.20	0.0098	0.0080	11.62	0.0000	0.0000



Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC037	0.0584	0.0023	224.1	0.0355	0.00	0.29	0.0297	0.0323	7.77	0.0033	0.0000
TRC038	0.0387	0.0014	69.2	0.0107	0.00	0.18	0.0184	0.0085	10.62	0.0000	0.0000
TRC039	0.0524	0.0025	129.9	0.0633	0.00	0.21	0.0105	0.0101	7.95	0.0022	0.0000
TRC040	0.0253	0.0022	72.6	0.0147	0.00	0.15	0.0144	0.0204	15.06	0.0000	0.0000
TRC041	0.0532	0.0021	185.1	0.0420	0.00	0.22	0.0212	0.0126	11.54	0.0016	0.0000
TRC042	0.0879	0.0023	278.0	0.0886	0.00	0.48	0.0298	0.0137	21.74	0.0000	0.0000
TRC043	0.0298	0.0007	82.2	0.0100	0.00	0.12	0.0127	0.0066	21.79	0.0000	0.0000
TRC044	0.0747	0.0025	179.2	0.0469	0.00	0.40	0.0272	0.0341	9.68	0.0043	0.0000
TRC045	0.0449	0.0024	154.4	0.0212	0.00	0.12	0.0267	0.0123	6.87	0.0000	0.0000
TRC046	0.0856	0.0021	89.6	0.0498	0.00	0.29	0.0124	0.0057	8.78	0.0000	0.0000
TRC047	0.0000	0.0031	94.3	0.0060	0.00	0.10	0.0267	0.0352	4.88	0.0000	0.0000
TRC048	0.0265	0.0023	125.8	0.0394	0.88	0.27	0.0263	0.0173	2.94	0.0000	0.0000
TRC049	0.0334	0.0032	171.0	0.0332	0.00	0.45	0.0386	0.0316	7.17	0.0052	0.0000
TRC050	0.0120	0.0026	79.5	0.0056	0.00	0.19	0.0297	0.0156	0.00	0.0000	0.0000
TRC051	0.0080	0.0061	155.8	0.0243	0.00	0.21	0.0589	0.0345	14.97	0.0045	0.0044
TRC052	0.0060	0.0020	92.8	0.0069	0.00	0.00	0.0268	0.0219	3.94	0.0000	0.0000
TRC053	0.0263	0.0021	92.8	0.0184	0.00	0.25	0.0217	0.0114	12.15	0.0000	0.0000
TRC054	0.0464	0.0016	67.2	0.0289	0.00	0.33	0.0129	0.0072	15.38	0.0000	0.0000
TRC055	0.0543	0.0032	74.9	0.0521	0.00	0.29	0.0191	0.0109	11.04	0.0000	0.0000
TRC056	0.0339	0.0028	78.5	0.0249	0.00	0.22	0.0183	0.0116	5.71	0.0000	0.0000
TRC057	0.0549	0.0024	77.9	0.0120	0.00	0.30	0.0140	0.0102	8.20	0.0000	0.0000
TRC058	0.0290	0.0019	83.6	0.0112	0.00	0.21	0.0192	0.0115	8.38	0.0021	0.0000
TRC059	0.0337	0.0026	72.8	0.0096	0.00	0.20	0.0203	0.0108	5.79	0.0000	0.0000
TRC060	0.0368	0.0022	105.3	0.0118	0.00	0.29	0.0182	0.0118	8.10	0.0000	0.0000
TRC061	0.0192	0.0034	110.2	0.0788	0.00	0.25	0.0245	0.0271	35.41	0.0000	0.0000
TRC062	0.0125	0.0049	173.3	0.0376	0.00	0.00	0.0433	0.0480	71.55	0.0000	0.0000
TRC063	0.0178	0.0025	146.8	0.0848	0.00	0.10	0.0307	0.0276	12.42	0.0018	0.0000
TRC064	0.0295	0.0027	220.2	0.0655	0.00	0.33	0.0471	0.0277	13.01	0.0022	0.0000
TRC065	0.0213	0.0037	224.3	0.0658	0.00	0.44	0.0477	0.0419	32.05	0.0000	0.0033
TRC066	0.1555	0.0036	542.1	0.1448	0.00	1.01	0.0562	0.0345	12.90	0.0110	0.0000
TRC067	0.0636	0.0024	131.7	0.0289	0.00	0.29	0.0285	0.0150	25.31	0.0033	0.0000
TRC068	0.0897	0.0019	53.3	0.0861	0.00	0.29	0.0117	0.0078	10.74	0.0000	0.0000
TRC069	0.0990	0.0025	268.6	0.0993	0.00	0.48	0.0435	0.0133	7.09	0.0043	0.0000
TRC070	0.0991	0.0031	115.9	0.1185	0.00	0.47	0.0271	0.0117	11.87	0.0054	0.0014
TRC071	0.1301	0.0027	227.2	0.1396	0.00	0.71	0.0234	0.0163	14.79	0.0050	0.0000
TRC072	0.1355	0.0026	158.3	0.1108	0.00	0.54	0.0414	0.0095	53.80	0.0031	0.0000

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC073	0.1348	0.0040	407.7	0.1258	0.00	0.42	0.1065	0.0115	51.01	0.0026	0.0000
TRC074	0.1397	0.0030	260.1	0.1385	0.00	0.75	0.0935	0.0132	18.95	0.0063	0.0000
TRC075	0.0929	0.0025	334.5	0.1507	0.00	0.65	0.0545	0.0158	6.60	0.0057	0.0020
TRC076	0.0756	0.0000	59.0	0.1357	0.00	0.35	0.0201	0.0023	12.49	0.0000	0.0000
TRC077	0.0823	0.0000	91.3	0.1204	0.00	0.51	0.0846	0.0036	3.48	0.0000	0.0000
TRC078	0.1031	0.0000	2087.2	0.1468	5.68	0.86	0.3827	0.0119	13.71	0.0078	0.0000
TRC079	0.0986	0.0017	154.9	0.1142	0.00	0.51	0.0113	0.0192	20.93	0.0038	0.0000
TRC080	0.0967	0.0011	114.3	0.1035	0.00	0.48	0.0234	0.0129	50.16	0.0073	0.0000
TRC081	0.1124	0.0000	57.0	0.0960	0.00	0.59	0.0202	0.0046	27.58	0.0019	0.0000
TRC082	0.0947	0.0059	332.9	0.0510	0.00	0.56	0.0298	0.0400	13.73	0.0062	0.0038
TRC083	0.0436	0.0000	63.9	0.0454	0.00	0.25	0.0121	0.0121	5.37	0.0000	0.0000
TRC084	0.0467	0.0000	16.3	0.0651	0.00	0.18	0.0000	0.0060	2.77	0.0000	0.0000
TRC085	0.0440	0.0020	135.8	0.0430	0.00	0.20	0.0255	0.0155	4.58	0.0014	0.0000
TRC086	0.0531	0.0000	19.7	0.0471	0.00	0.22	0.0056	0.0051	4.82	0.0000	0.0000
TRC087	0.0397	0.0000	36.1	0.0441	0.00	0.18	0.0103	0.0053	5.01	0.0000	0.0000
TRC088	0.0444	0.0000	36.5	0.0300	0.00	0.23	0.0881	0.0046	2.77	0.0000	0.0000
TRC089	0.0303	0.0014	28.0	0.0277	0.00	0.00	0.0043	0.0145	22.27	0.0000	0.0000
TRC090	0.0633	0.0021	75.1	0.0518	0.00	0.31	0.0218	0.0126	3.96	0.0000	0.0000
TRC091	0.0665	0.0000	37.0	0.0573	0.00	0.29	0.0114	0.0058	5.23	0.0031	0.0000
TRC092	0.0300	0.0019	214.2	0.0361	0.00	0.38	0.0566	0.0555	8.00	0.0036	0.0000
TRC093	0.0743	0.0024	72.8	0.0799	0.00	0.34	0.0112	0.0106	7.37	0.0051	0.0000
TRC094	0.0278	0.0009	134.1	0.0144	0.00	0.21	0.0205	0.0315	5.56	0.0027	0.0000
TRC095	0.0387	0.0018	60.1	0.0345	0.00	0.17	0.0253	0.0076	3.31	0.0000	0.0000
TRC096	0.0558	0.0037	163.8	0.0779	0.00	0.29	0.0280	0.0141	5.09	0.0019	0.0051
TRC097	0.0487	0.0011	28.5	0.0640	0.00	0.33	0.0147	0.0079	9.82	0.0000	0.0016
TRC098	0.0529	0.0005	22.6	0.0645	0.00	0.29	0.0089	0.0039	7.68	0.0000	0.0000
TRC099	0.0197	0.0000	41.4	0.0094	0.00	0.17	0.0265	0.0075	2.98	0.0000	0.0000
TRC100	0.0474	0.0000	33.5	0.0313	0.00	0.21	0.0923	0.0062	6.17	0.0000	0.0000
TRC101	0.0146	0.0013	45.9	0.0068	0.00	0.20	0.0331	0.0108	1.29	0.0000	0.0000
TRC102	0.1022	0.0000	21.5	0.1077	0.00	0.42	0.0126	0.0062	4.46	0.0037	0.0000
TRC103	0.0113	0.0000	54.7	0.0154	0.00	0.19	0.0140	0.0274	4.14	0.0030	0.0000
TRC104	0.0657	0.0000	72.5	0.0759	0.00	0.59	0.0141	0.0122	5.41	0.0000	0.0000
TRC105	0.0119	0.0010	59.5	0.0127	0.00	0.00	0.0198	0.0262	2.15	0.0000	0.0000
TRC106	0.0759	0.0000	29.5	0.0989	0.00	0.58	0.0103	0.0079	5.88	0.0000	0.0000
TRC107	0.1923	0.2812	1687.9	20.6346	0.00	1.61	0.9785	0.9888	0.00	7.2111	0.4235
TRC108	0.0291	0.0019	137.6	0.0161	2.62	0.17	0.0381	0.0381	4.82	0.0028	0.0000

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ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC109	0.0973	0.0114	495.6	0.0902	0.00	1.11	0.0416	0.0907	5.20	0.0104	0.0077
TRC110	0.0432	0.0000	250.2	0.0421	0.00	0.36	0.0911	0.0569	7.42	0.0071	0.0000
TRC111	0.0345	0.0013	20.6	0.0383	0.00	0.24	0.0195	0.0134	6.51	0.0000	0.0000
TRC112	0.1095	0.0118	139.4	0.1143	0.00	0.69	0.0980	0.0388	11.32	0.0075	0.0091
TRC113	0.0119	0.0010	93.2	0.0099	1.56	0.15	0.0400	0.0201	1.91	0.0000	0.0000
TRC114	0.0727	0.0057	192.7	0.0471	0.00	0.54	0.1014	0.0579	5.23	0.0067	0.0000
TRC115	0.0659	0.0030	64.7	0.0876	1.75	0.37	0.4882	0.0166	14.32	0.0000	0.0000
TRC116	0.0533	0.0005	11.3	0.0962	0.00	0.31	0.0059	0.0087	9.26	0.0021	0.0000
TRC117	0.0227	0.0012	54.5	0.0142	0.00	0.12	0.0131	0.0095	6.35	0.0000	0.0000
TRC118	0.0481	0.0055	267.0	0.0289	0.00	0.42	0.0232	0.0563	98.56	0.0046	0.0051
TRC119	0.1184	0.0070	258.1	0.1361	0.00	0.80	0.0298	0.0719	5.51	0.0098	0.0057
TRC120	0.0684	0.0000	133.8	0.0307	0.00	0.36	0.0741	0.0195	9.74	0.0029	0.0000
TRC121	0.0888	0.0029	83.3	0.1027	0.00	0.50	0.0223	0.0149	6.61	0.0046	0.0000
TRC122	0.0639	0.0000	50.7	0.0802	0.00	0.30	0.0114	0.0165	12.33	0.0028	0.0000
TRC123	0.0661	0.0054	110.2	0.0451	0.00	0.43	0.0604	0.0339	6.73	0.0000	0.0000
TRC124	0.0689	0.0062	221.8	0.0715	0.00	0.72	0.1474	0.0601	7.65	0.0075	0.0000
TRC125	0.0493	0.0012	197.2	0.0592	0.00	0.40	0.0469	0.0260	5.91	0.0043	0.0000
TRC126	0.0397	0.0000	59.0	0.0329	0.00	0.28	0.0178	0.0165	4.85	0.0000	0.0000
TRC127	0.0989	0.0018	356.3	0.0864	0.00	0.82	0.0670	0.0506	58.36	0.0076	0.0021
TRC128	0.0535	0.0027	130.8	0.0507	0.00	0.47	0.0248	0.0308	5.65	0.0036	0.0024
TRC129	0.0307	0.0019	66.1	0.0262	0.00	0.23	0.0134	0.0151	6.30	0.0013	0.0011
TRC130	0.0673	0.0063	188.7	0.0391	0.00	0.58	0.0288	0.0560	22.51	0.0043	0.0042
TRC131	0.0248	0.0020	21.6	0.0938	0.00	0.29	0.0261	0.0174	4.42	0.0000	0.0000
TRC132	0.0788	0.0000	59.8	0.0300	0.00	0.48	0.1456	0.0114	6.44	0.0000	0.0000
TRC133	0.0262	0.0000	68.5	0.1134	0.00	0.29	0.0295	0.0218	3.74	0.0022	0.0000
TRC134	0.0412	0.0000	44.1	0.0269	0.00	0.22	0.0296	0.0099	3.42	0.0000	0.0000
TRC135	0.0400	0.0044	181.0	0.0394	0.00	0.49	0.0869	0.0964	4.01	0.0091	0.0000
TRC136	0.0524	0.0033	195.6	0.0475	0.00	0.35	0.0242	0.0253	13.65	0.0000	0.0000
TRC137	0.0192	0.0025	60.2	0.0160	0.00	0.29	0.0948	0.0820	0.00	0.0000	0.0000
TRC138	0.0520	0.0022	140.8	0.0275	0.00	0.31	0.0324	0.0308	7.12	0.0000	0.0000
TRC139	0.0995	0.0059	118.7	0.1034	0.00	0.73	0.0343	0.0329	13.28	0.0000	0.0049
TRC140	0.1375	0.0225	975.3	0.1239	32.47	1.95	0.4638	0.2149	5.50	0.0234	0.0178
TRC141	0.0520	0.0016	141.0	0.0511	0.00	0.40	0.0202	0.0447	14.25	0.0036	0.0000
TRC142	0.0574	0.0035	76.5	0.0904	0.00	0.37	0.0208	0.0105	4.86	0.0000	0.0000
TRC143	0.0215	0.0000	131.0	0.0225	0.00	0.29	0.0467	0.0342	0.00	0.0000	0.0000
TRC144	0.0608	0.0067	448.7	0.1134	0.00	1.03	0.1365	0.1549	28.06	0.0153	0.0037

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC145	0.1642	0.0000	117.6	0.1148	0.00	0.66	0.0307	0.0082	8.92	0.0000	0.0000
TRC146	0.0330	0.0032	91.5	0.0840	0.00	0.45	0.1841	0.0188	10.34	0.0000	0.0000
TRC147	0.0168	0.0000	109.6	0.0147	0.00	0.27	0.0270	0.0276	3.11	0.0044	0.0000
TRC148	0.0340	0.0008	97.4	0.0221	0.00	0.16	0.0242	0.0346	14.04	0.0000	0.0000
TRC149	0.0532	0.0010	142.8	0.0363	0.00	0.44	0.0335	0.0307	15.22	0.0045	0.0000
TRC150	0.0120	0.0000	125.0	0.0178	0.00	0.18	0.0320	0.0324	2.02	0.0000	0.0000
TRC151	0.0595	0.0031	96.4	0.0525	0.00	0.51	0.0151	0.0426	18.07	0.0033	0.0042
TRC152	0.0710	0.0033	215.0	0.0451	0.00	0.36	0.0281	0.0206	3.41	0.0000	0.0032
TRC153	0.0705	0.0000	112.3	0.0975	0.00	0.45	0.0282	0.0354	8.01	0.0055	0.0000
TRC154	0.0973	0.0015	262.1	0.0911	0.00	0.78	0.2163	0.0308	10.34	0.0075	0.0000
TRC155	0.1457	0.0085	331.0	0.0709	0.00	1.02	0.0296	0.0709	8.61	0.0069	0.0051
TRC156	0.0580	0.0012	114.2	0.0221	0.00	0.26	0.2523	0.0502	5.57	0.0060	0.0000
TRC157	0.0298	0.0022	93.8	0.0203	0.00	0.17	0.0201	0.0209	8.43	0.0017	0.0000
TRC158	0.2981	0.0025	804.9	0.1225	0.00	1.80	0.1445	0.0612	14.45	0.0150	0.0000
TRC159	0.0678	0.0058	206.9	0.0516	0.00	0.67	0.0195	0.0594	13.76	0.0063	0.0000
TRC160	0.1236	0.0000	270.5	0.0726	0.00	0.68	0.1769	0.0249	9.55	0.0059	0.0000
TRC161	0.0329	0.0000	150.7	0.0697	0.00	0.30	0.0120	0.0244	6.48	0.0046	0.0000
TRC162	0.0544	0.0022	101.5	0.0213	0.00	0.31	0.0202	0.0310	12.29	0.0000	0.0000
TRC163	0.0544	0.0000	79.7	0.0476	0.00	0.32	0.0422	0.0140	20.81	0.0042	0.0000
TRC164	0.0580	0.0025	169.7	0.0494	0.00	0.45	0.0132	0.0379	13.27	0.0034	0.0000
TRC165	0.0387	0.0000	100.2	0.0553	1.18	0.35	0.1641	0.0230	4.91	0.0031	0.0000
TRC166	0.1944	0.0027	368.8	0.1479	0.00	1.46	0.0595	0.0469	14.24	0.0117	0.0000
TRC167	0.0613	0.0040	185.9	0.0369	0.00	0.49	0.0158	0.0452	11.05	0.0042	0.0067
TRC168	0.0507	0.0046	306.5	0.0919	0.00	0.38	0.5244	0.0466	17.32	0.0049	0.0029
TRC169	0.0857	0.0054	136.1	0.0685	0.00	0.51	0.0177	0.0355	8.25	0.0000	0.0000
TRC170	0.0667	0.0036	199.2	0.1183	0.00	0.80	0.0481	0.0484	5.62	0.0031	0.0032
TRC171	0.0378	0.0015	161.7	0.0252	0.00	0.41	0.0166	0.0652	3.75	0.0050	0.0000
TRC172	0.0226	0.0044	234.0	0.0173	0.00	0.00	0.0215	0.0187	6.12	0.0024	0.0043
TRC173	0.0363	0.0000	91.3	0.0628	0.00	0.28	0.0213	0.0112	4.46	0.0021	0.0000
TRC174	0.0234	0.0025	107.9	0.0202	0.00	0.22	0.0669	0.0279	1.93	0.0000	0.0000
TRC175	0.0585	0.0000	10.5	0.0803	0.00	0.27	0.0048	0.0044	6.96	0.0000	0.0000
TRC176	0.2259	0.0116	641.2	0.1297	0.00	1.65	0.0464	0.1007	14.44	0.0175	0.0137
TRC177	0.0410	0.0000	100.7	0.0575	0.00	0.44	0.0146	0.0301	6.90	0.0037	0.0000
TRC178	0.0775	0.0031	340.2	0.0728	0.00	0.43	0.0425	0.0337	7.32	0.0074	0.0000
TRC179	0.0558	0.0030	159.9	0.0706	0.00	0.32	0.0495	0.0337	4.33	0.0054	0.0000
TRC180	0.0497	0.0000	150.7	0.0357	1.75	0.46	0.4064	0.0322	10.22	0.0038	0.0000

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Cs (ppm)	Eu (ppm)	Fe (ppm)	Hf (ppm)	Ni (ppm)	Rb (ppm)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Ta (ppm)	Tb (ppm)
TRC181	0.0163	0.0000	97.5	0.0169	0.00	0.22	0.0381	0.0280	0.00	0.0000	0.0000
TRC182	0.0646	0.0000	82.0	0.1025	0.00	0.50	0.0376	0.0103	8.66	0.0000	0.0000
TRC183	0.0339	0.0013	128.6	0.0283	0.86	0.33	0.0230	0.0530	12.47	0.0038	0.0000
TRC184	0.0696	0.0035	156.8	0.0618	0.00	0.66	0.0150	0.0452	5.87	0.0045	0.0036
TRC185	0.0549	0.0037	275.0	0.0373	0.00	0.25	0.0832	0.0257	7.29	0.0000	0.0037
TRC186	0.1536	0.0043	269.9	0.2477	0.00	0.93	0.0801	0.0490	15.00	0.0188	0.0000
TRC187	0.0376	0.0014	88.6	0.0159	0.00	0.20	0.0148	0.0291	12.91	0.0000	0.0000
TRC188	0.0693	0.0005	100.4	0.0319	0.00	0.32	0.0752	0.0079	6.19	0.0000	0.0000
TRC189	0.0738	0.0031	46.3	0.0209	0.00	0.24	0.1235	0.0538	5.86	0.0021	0.0050
TRC190	0.0094	0.0000	134.9	0.0385	0.00	0.27	0.0133	0.0371	2.86	0.0043	0.0000
TRC191	0.0421	0.0021	126.9	0.0446	0.00	0.32	0.0274	0.0186	4.12	0.0033	0.0015
TRC192	0.1976	0.0020	288.4	0.1128	0.00	0.65	0.0560	0.0205	6.26	0.0067	0.0000
TRC193	0.0730	0.0063	221.2	0.0480	2.69	0.51	0.0306	0.0528	4.71	0.0099	0.0000
TRC194	0.0495	0.0025	191.0	0.0255	0.00	0.23	0.0184	0.0569	9.94	0.0044	0.0000
TRC195	0.0490	0.0017	416.7	0.0724	0.00	0.69	0.0552	0.0437	7.65	0.0081	0.0000
TRC196	0.0726	0.0000	171.8	0.0292	0.76	0.41	0.0615	0.0191	8.54	0.0025	0.0000
TRC197	0.1144	0.0000	170.4	0.0859	0.00	0.71	0.7784	0.0334	7.71	0.0039	0.0000
TRC198	0.0524	0.0041	269.4	0.0424	0.00	0.77	0.0346	0.0781	4.33	0.0066	0.0000
TRC199	0.0340	0.0021	59.3	0.0100	0.00	0.27	0.0172	0.0217	5.69	0.0012	0.0000
TRC200	0.1595	0.0035	510.8	0.1196	0.00	1.11	0.1699	0.0790	5.95	0.0123	0.0000
TRC201	0.0491	0.0024	122.9	0.0242	0.00	0.50	0.1254	0.0516	4.45	0.0045	0.0000
TRC202	0.0161	0.0021	328.3	0.0175	0.00	0.50	0.0599	0.0467	5.75	0.0021	0.0000
TRC203	0.0468	0.0026	207.5	0.0184	0.00	0.32	0.0261	0.0536	3.79	0.0014	0.0000
TRC204	0.0273	0.0008	89.8	0.0146	0.00	0.22	0.0253	0.0140	2.78	0.0000	0.0000
TRC205	0.0070	0.0000	78.3	0.0088	0.00	0.11	0.0426	0.0185	0.00	0.0000	0.0000
TRC206	0.0424	0.0000	177.9	0.0322	0.00	0.33	0.1053	0.0283	5.21	0.0053	0.0000
TRC207	0.0499	0.0053	109.1	0.1017	0.00	0.40	0.0232	0.0178	4.83	0.0008	0.0037
TRC208	0.0754	0.0000	96.4	0.0599	0.00	0.34	0.0252	0.0152	7.59	0.0045	0.0000
TRC209	0.0298	0.0021	53.7	0.0144	0.00	0.00	0.0101	0.0152	4.83	0.0000	0.0000
TRC210	0.0274	0.0017	55.8	0.0776	0.00	0.25	0.0126	0.0157	6.21	0.0000	0.0000
TRC211	0.0707	0.0025	118.6	0.0717	0.00	0.24	0.1332	0.0181	10.09	0.0000	0.0000
TRC212	0.0537	0.0010	77.2	0.0647	0.75	0.28	0.2278	0.0192	7.94	0.0000	0.0000
TRC213	0.0412	0.0000	96.1	0.0172	0.00	0.29	0.1236	0.0180	4.88	0.0000	0.0000
TRC214	0.0367	0.0000	67.3	0.0411	1.08	0.26	0.0754	0.0132	6.15	0.0000	0.0000
TRC215	0.1020	0.0039	290.6	0.0613	0.00	0.92	0.0362	0.0565	22.65	0.0073	0.0033
TRC216	0.0570	0.0018	197.0	0.0262	0.00	0.51	0.0347	0.0411	11.47	0.0000	0.0000

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

<b>ANID</b>	<b>Cs (ppm)</b>	<b>Eu (ppm)</b>	<b>Fe (ppm)</b>	<b>Hf (ppm)</b>	<b>Ni (ppm)</b>	<b>Rb (ppm)</b>	<b>Sb (ppm)</b>	<b>Sc (ppm)</b>	<b>Sr (ppm)</b>	<b>Ta (ppm)</b>	<b>Tb (ppm)</b>
TRC217	0.0533	0.0039	185.6	0.0426	0.00	0.39	0.0318	0.0305	10.16	0.0033	0.0000
TRC218	0.0491	0.0048	257.2	0.0471	0.00	0.72	0.0397	0.0667	0.00	0.0073	0.0037
TRC219	0.1190	0.0016	118.2	0.1329	0.00	0.67	0.0342	0.0172	4.86	0.0037	0.0000
TRC220	0.0308	0.0000	102.3	0.0193	0.00	0.24	0.0544	0.0179	3.42	0.0000	0.0000
TRC221	0.0492	0.0032	207.8	0.0435	0.00	0.51	0.0313	0.0871	5.40	0.0065	0.0000
TRC222	0.0420	0.0000	65.7	0.0513	0.00	0.25	0.0391	0.0119	5.58	0.0000	0.0000
TRC223	0.0302	0.0026	99.1	0.0134	0.00	0.17	0.0358	0.0348	6.16	0.0018	0.0000
TRC224	0.0686	0.0000	150.0	0.0668	0.00	0.42	0.0324	0.0306	5.27	0.0021	0.0000
TRC225	0.0593	0.0030	206.6	0.0428	0.00	0.46	0.0456	0.0588	12.77	0.0000	0.0000
TRC226	0.0706	0.0031	130.1	0.1416	0.00	0.53	0.0423	0.0148	15.00	0.0034	0.0000
TRC227	0.0538	0.0012	76.9	0.0668	0.00	0.40	0.0133	0.0185	10.27	0.0055	0.0000
TRC228	0.0451	0.0016	163.5	0.0280	0.00	0.37	0.0217	0.0465	10.52	0.0039	0.0000
TRC229	0.0528	0.0022	229.5	0.0419	0.00	0.43	0.0355	0.0711	18.14	0.0000	0.0000
TRC230	0.0560	0.0016	81.0	0.0199	0.00	0.19	0.0509	0.0149	5.49	0.0000	0.0000
TRC231	0.0454	0.0157	196.9	0.0350	0.00	0.00	0.0000	0.0574	0.00	0.0000	0.0086
TRC232	0.0436	0.0000	57.6	0.0802	0.00	0.29	0.0000	0.0193	4.86	0.0000	0.0000
TRC233	0.0599	0.0000	173.7	0.1211	0.00	0.56	0.0289	0.0251	19.99	0.0000	0.0000
TRC234	0.0538	0.0000	253.9	0.0306	0.00	0.33	0.4262	0.1063	0.00	0.0000	0.0000
TRC235	0.0252	0.0000	95.6	0.0449	0.00	0.24	0.1211	0.0234	0.00	0.0000	0.0000
TRC236	0.0583	0.0056	182.2	0.0348	0.00	0.00	0.0440	0.0683	9.07	0.0000	0.0000
TRC237	0.0420	0.0051	233.3	0.0384	0.00	0.00	0.0360	0.0860	12.87	0.0045	0.0000
TRC238	0.0189	0.0000	135.3	0.0147	0.00	0.00	0.0736	0.0454	4.70	0.0000	0.0000
TRC239	0.0919	0.0025	32.0	0.0192	0.00	0.38	0.0175	0.0094	11.93	0.0000	0.0000
TRC240	0.0488	0.0000	78.7	0.0078	4.49	0.33	0.1094	0.0118	3.89	0.0000	0.0000
TRC241	0.0727	0.0030	55.9	0.1311	0.00	0.40	0.0092	0.0150	7.61	0.0000	0.0000
TRC242	0.0315	0.0026	178.0	0.0302	0.00	0.18	0.0358	0.0123	3.81	0.0000	0.0000
TRC243	0.0992	0.0031	166.9	0.0345	0.00	0.76	0.0388	0.0266	9.62	0.0000	0.0000
TRC244	0.0943	0.0050	363.1	0.0843	0.00	0.60	0.0562	0.0291	9.93	0.0000	0.0000
TRC245	0.0906	0.0000	46.7	0.0467	0.00	0.27	0.0000	0.0119	5.87	0.0000	0.0000
TRC246	0.0918	0.0000	66.1	0.1211	0.00	0.31	0.0142	0.0102	7.35	0.0000	0.0000
TRC247	0.1109	0.0000	39.9	0.1118	0.00	0.60	0.0181	0.0086	20.96	0.0000	0.0000
TRC248	0.0203	0.0000	127.6	0.0135	0.00	0.51	0.0726	0.0281	0.00	0.0000	0.0000
TRC249	0.0798	0.0000	170.3	0.0760	1.98	0.38	0.1345	0.0329	0.00	0.0000	0.0000
TRC250	0.0479	0.0000	133.5	0.0657	0.00	0.30	0.3232	0.0148	11.95	0.0000	0.0000
TRC251	0.0131	0.0000	109.8	0.0123	0.00	0.15	0.0803	0.0436	0.00	0.0000	0.0000
TRC252	0.0607	0.0000	162.2	0.0908	0.00	0.58	0.0400	0.0094	9.76	0.0000	0.0000

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

<b>ANID</b>	<b>Cs (ppm)</b>	<b>Eu (ppm)</b>	<b>Fe (ppm)</b>	<b>Hf (ppm)</b>	<b>Ni (ppm)</b>	<b>Rb (ppm)</b>	<b>Sb (ppm)</b>	<b>Sc (ppm)</b>	<b>Sr (ppm)</b>	<b>Ta (ppm)</b>	<b>Tb (ppm)</b>
TRC253	0.0522	0.0017	216.3	0.0382	0.00	0.44	0.0272	0.0721	3.96	0.0054	0.0000
TRC254	0.1025	0.0051	245.3	0.0566	0.00	0.43	0.0401	0.0284	6.89	0.0079	0.0085
TRC255	0.6454	0.3706	1036.9	3.4629	0.00	111.18	0.5469	0.7491	25.69	1.7130	0.7186
TRC256	0.0530	0.0023	212.7	0.0588	0.00	0.51	0.0216	0.0398	12.25	0.0063	0.0034
TRC257	0.1004	0.0040	240.4	0.0518	0.00	0.54	0.0554	0.0211	4.09	0.0052	0.0020
TRC258	0.0461	0.0023	192.6	0.0339	1.25	0.40	0.0303	0.0617	9.09	0.0057	0.0000
TRC259	0.0313	0.0034	328.2	0.0248	1.79	0.29	0.0446	0.0232	2.58	0.0000	0.0037
TRC260	0.1031	0.0027	105.5	0.1179	0.00	0.86	0.0300	0.0314	16.84	0.0054	0.0000
TRC261	0.0519	0.0018	194.8	0.0343	0.00	0.20	0.0228	0.0429	12.13	0.0059	0.0000

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ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC001	0.0064	0.28	1200.4	638.2	0.0000	0.0	0.32	161.5	0.0	1.96
TRC002	0.0059	0.38	1174.8	2011.4	0.0000	0.0	1.03	158.8	13.4	0.00
TRC003	0.0305	0.46	1059.2	1794.5	0.0000	0.0	0.74	154.4	0.0	1.07
TRC004	0.0051	0.23	1473.4	941.6	0.0000	535.3	0.71	211.8	0.0	0.80
TRC005	0.0042	0.26	1335.9	131.0	0.0000	201.5	0.19	264.6	0.0	1.30
TRC006	0.0060	0.18	1285.2	689.2	0.0000	0.0	1.26	208.2	0.0	0.67
TRC007	0.0225	1.19	1400.4	487.7	0.0000	233.8	0.35	224.0	0.0	4.76
TRC008	0.0058	0.62	1218.0	1989.4	0.0000	366.0	1.34	185.9	0.0	1.69
TRC009	0.0208	1.31	1262.6	209.0	0.0000	193.6	1.20	262.2	0.0	3.53
TRC010	0.0114	0.39	673.6	204.2	0.0000	281.9	0.25	225.2	0.0	0.00
TRC011	0.0082	0.85	884.6	0.0	0.0000	0.0	0.48	192.3	0.0	0.00
TRC012	0.0082	0.82	1239.8	112.4	0.0000	114.3	0.40	133.3	0.0	0.00
TRC013	0.0141	0.35	969.3	2352.0	0.0000	79.3	0.33	122.6	0.0	1.65
TRC014	0.0138	0.64	1249.0	235.5	0.0000	285.3	0.28	195.6	0.0	0.92
TRC015	0.0172	0.81	1557.2	299.8	0.0000	329.3	0.13	246.9	0.0	1.57
TRC016	0.0117	1.07	1129.9	621.6	0.0000	175.9	0.70	193.4	66.6	0.00
TRC017	0.0069	0.65	987.6	812.0	0.0000	0.0	1.21	155.9	0.0	0.00
TRC018	0.0057	0.58	1084.8	474.4	0.0000	164.2	0.27	166.6	0.0	1.29
TRC019	0.0105	0.51	1255.9	1723.9	0.0000	108.9	0.36	171.5	0.0	0.56
TRC020	0.0120	0.54	1269.2	926.7	0.0000	161.8	0.50	207.7	0.0	2.32
TRC021	0.0136	0.53	1428.0	1926.0	0.0000	267.3	2.49	213.9	57.7	1.10
TRC022	0.0104	0.79	1130.1	3743.9	0.0000	205.0	0.29	123.1	28.7	1.11
TRC023	0.0137	0.71	2125.2	683.8	0.0000	344.2	2.51	273.5	0.0	0.00
TRC024	0.0130	0.98	1772.2	751.9	0.0000	372.0	1.34	256.0	0.0	2.17
TRC025	0.0155	0.75	1361.9	541.4	0.0000	193.8	1.64	181.6	0.0	1.87
TRC026	0.0108	0.58	1269.6	942.0	0.0000	190.6	0.44	186.4	0.0	0.00
TRC027	0.0151	0.58	1241.8	503.6	0.0000	113.1	0.71	205.7	0.0	1.87
TRC028	0.0159	0.63	1492.0	922.5	0.0000	134.4	0.33	232.2	0.0	1.80
TRC029	0.0082	0.70	915.8	355.6	0.0000	176.8	0.41	198.0	0.0	0.00
TRC030	0.0357	0.70	1490.3	1632.8	0.0000	0.0	0.46	188.7	0.0	1.94
TRC031	0.0221	1.22	1650.9	672.0	0.0000	230.6	1.23	225.2	0.0	3.45
TRC032	0.0122	0.67	1286.2	736.4	0.0000	152.8	0.55	137.8	0.0	1.29
TRC033	0.0145	0.48	1092.3	1019.9	0.0000	0.0	0.59	150.3	0.0	0.00
TRC034	0.0093	0.51	1360.5	278.2	0.0000	105.1	0.51	241.4	11.0	2.11
TRC035	0.0104	0.57	1159.9	898.9	0.0000	118.8	0.39	111.8	0.0	0.76
TRC036	0.0120	0.59	1488.1	952.7	0.0000	350.9	0.38	236.4	0.0	1.90



Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC037	0.0470	0.84	1499.4	505.1	0.0000	185.7	0.81	246.9	0.0	4.55
TRC038	0.0102	0.52	1421.8	370.2	0.0000	312.1	0.31	227.5	0.0	2.04
TRC039	0.0227	0.67	1630.4	644.6	0.0000	134.3	0.56	175.2	0.0	0.65
TRC040	0.0249	0.73	1139.1	290.1	0.0000	201.9	0.32	234.9	0.0	2.17
TRC041	0.0098	1.17	1309.3	5534.5	0.0000	149.9	7.24	174.6	0.0	2.84
TRC042	0.0326	1.50	1825.1	699.9	0.0000	302.2	1.41	255.2	0.0	2.63
TRC043	0.0081	1.02	1102.0	826.5	0.0000	88.8	0.52	159.1	0.0	1.29
TRC044	0.0422	1.29	1580.9	527.0	0.0000	339.5	0.92	281.7	0.0	1.86
TRC045	0.0103	1.15	1284.7	301.0	0.0000	189.5	0.99	210.8	0.0	1.88
TRC046	0.0030	1.13	1725.0	172.3	0.0000	154.4	0.51	180.8	0.0	0.00
TRC047	0.0206	1.26	1063.7	1622.5	0.0000	0.0	0.16	182.0	0.0	2.18
TRC048	0.0299	1.19	1406.4	647.9	0.0000	261.1	0.77	239.9	0.0	1.56
TRC049	0.0528	1.59	1463.2	1292.7	0.0000	348.8	0.32	276.6	0.0	2.08
TRC050	0.0141	0.64	1097.8	328.9	0.0000	285.3	0.24	216.4	0.0	1.02
TRC051	0.0479	1.45	898.8	2035.5	0.0000	0.0	14.43	123.4	0.0	4.08
TRC052	0.0080	1.21	959.9	193.3	0.0000	0.0	0.31	181.7	0.0	0.82
TRC053	0.0098	1.22	1139.4	502.5	0.0000	95.4	0.36	200.5	0.0	0.70
TRC054	0.0100	1.19	1192.4	616.3	0.0000	153.1	0.33	221.5	0.0	0.00
TRC055	0.0151	1.08	1193.9	558.5	0.0000	181.2	0.32	241.2	0.0	0.00
TRC056	0.0098	1.07	1027.7	553.3	0.0000	117.5	0.17	149.4	0.0	0.84
TRC057	0.0083	1.02	1304.3	148.6	0.0000	185.3	0.33	227.1	26.1	1.13
TRC058	0.0063	1.09	963.7	401.4	0.0000	153.0	0.19	217.5	0.0	1.19
TRC059	0.0084	1.10	1284.1	316.5	0.0000	184.1	0.40	209.6	0.0	0.99
TRC060	0.0265	1.29	993.7	821.9	0.0000	134.6	1.08	194.4	0.0	1.52
TRC061	0.0201	0.79	1677.4	39950.8	0.0000	406.3	2.43	543.9	0.0	3.45
TRC062	0.0271	0.90	1481.0	52445.3	0.0637	174.5	3.19	379.7	12.3	5.49
TRC063	0.0205	1.16	1477.9	58805.1	0.0000	0.0	3.65	395.6	0.0	3.96
TRC064	0.0202	1.39	1807.0	10085.7	0.0000	188.8	1.67	331.3	0.0	2.90
TRC065	0.0333	1.56	1354.9	18793.8	0.0000	182.5	1.79	409.2	0.0	2.58
TRC066	0.0242	2.11	2664.3	4516.1	0.0000	521.3	6.39	233.1	0.0	4.38
TRC067	0.0169	1.62	1310.0	921.7	0.0000	168.0	0.49	201.2	0.0	1.71
TRC068	0.0040	1.01	1566.2	480.8	0.0000	215.2	0.43	151.8	0.0	0.00
TRC069	0.0193	3.13	1673.6	174.8	0.0000	160.2	0.52	152.0	73.7	1.50
TRC070	0.0308	1.71	1770.9	923.9	0.0000	215.4	1.04	203.5	0.0	1.26
TRC071	0.0226	1.87	1616.2	1010.9	0.0000	372.2	0.53	204.8	0.0	2.13
TRC072	0.0107	1.50	1876.8	417.8	0.0000	0.0	21.29	203.9	74.0	3.11

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC073	0.0110	1.56	1842.6	351.7	0.0000	277.3	2.75	171.3	0.0	8.78
TRC074	0.0124	1.27	1316.8	143.8	0.0000	345.5	0.34	179.5	35.7	1.63
TRC075	0.0304	2.32	1723.9	1114.9	0.0000	285.1	1.01	174.2	0.0	0.00
TRC076	0.0082	0.43	1621.3	291.8	0.0000	185.5	0.35	213.1	0.0	1.44
TRC077	0.0118	0.73	1826.7	211.9	0.0000	0.0	0.38	403.2	0.0	0.00
TRC078	0.0181	13.38	2639.4	977.9	0.0000	300.2	0.74	459.3	0.0	6.86
TRC079	0.0205	0.48	2368.1	322.6	0.0000	306.4	3.20	333.8	0.0	2.19
TRC080	0.0233	0.62	2191.5	355.2	0.0000	363.1	0.21	377.2	0.0	1.99
TRC081	0.0151	0.28	1785.1	319.2	0.0000	304.7	0.28	226.6	0.0	1.90
TRC082	0.0533	0.73	1830.2	775.6	0.0000	273.8	2.46	234.7	0.0	2.04
TRC083	0.0148	0.25	1240.8	406.7	0.0301	0.0	0.59	205.9	0.0	1.78
TRC084	0.0069	0.16	1271.6	477.6	0.0000	0.0	0.21	181.6	0.0	0.00
TRC085	0.0268	0.43	1379.0	869.8	0.0000	195.1	0.47	176.9	0.0	2.09
TRC086	0.0084	0.17	1416.1	510.7	0.0000	254.4	0.41	191.1	0.0	0.00
TRC087	0.0109	0.12	1170.7	447.0	0.0000	246.7	0.35	221.9	0.0	0.61
TRC088	0.0099	0.15	1416.3	455.4	0.0000	221.2	0.50	177.7	36.4	0.55
TRC089	0.0089	0.28	1124.6	48192.4	0.0000	115.0	1.82	174.8	0.0	0.00
TRC090	0.0132	0.62	1583.7	736.9	0.0000	214.9	0.64	238.5	0.0	1.33
TRC091	0.0086	0.21	1426.6	3529.9	0.0000	214.3	0.65	182.4	0.0	1.30
TRC092	0.0407	1.09	1421.6	1116.5	0.0000	270.0	4.85	214.9	0.0	4.24
TRC093	0.0164	0.44	1847.0	495.4	0.0000	261.4	0.53	260.0	0.0	1.18
TRC094	0.0197	0.51	1170.9	252.8	0.0000	274.0	0.31	227.6	43.8	2.11
TRC095	0.0057	0.32	1134.2	238.9	0.0000	250.4	0.40	182.2	5.9	1.09
TRC096	0.0327	1.23	1715.3	521.5	0.0000	337.1	1.09	192.6	0.0	1.00
TRC097	0.0200	0.27	1286.7	1688.2	0.0000	308.8	0.76	175.7	0.0	1.62
TRC098	0.0057	0.12	1429.6	611.8	0.0000	233.9	0.28	174.8	0.0	0.64
TRC099	0.0063	0.19	1088.5	288.1	0.0000	0.0	0.27	188.6	0.0	1.04
TRC100	0.0093	0.35	1159.9	1874.1	0.0000	143.8	0.28	171.4	0.0	1.42
TRC101	0.0098	0.29	1017.1	281.1	0.0000	132.9	0.26	166.3	0.0	0.00
TRC102	0.0067	0.06	2067.7	543.4	0.0000	303.3	0.47	229.1	0.0	1.01
TRC103	0.0197	0.24	1129.7	297.3	0.0000	228.3	0.18	225.2	0.0	1.99
TRC104	0.0132	0.48	1416.0	478.4	0.0000	284.1	0.22	366.8	0.0	0.00
TRC105	0.0162	0.73	1003.0	233.1	0.0000	108.8	0.20	167.5	0.0	1.21
TRC106	0.0125	0.84	2187.5	733.0	0.0000	272.3	0.31	300.4	0.0	0.00
TRC107	7.5076	3.83	1390.2	420.0	2.7129	335.8	4.52	158.7	535.5	14.82
TRC108	0.0271	0.33	1331.8	419.9	0.0000	183.3	0.49	216.3	0.0	1.44

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC109	0.1492	0.85	2611.7	2339.3	0.0698	636.1	24.75	278.0	110.3	5.46
TRC110	0.0517	0.83	1364.3	1515.7	0.0000	304.8	0.92	257.1	37.8	3.08
TRC111	0.0108	0.53	1624.0	54.6	0.0000	346.3	0.58	192.0	0.0	0.00
TRC112	0.0550	0.63	1625.3	724.1	0.0000	425.3	0.65	229.4	5.5	0.00
TRC113	0.0212	0.00	1164.1	356.7	0.0000	224.9	0.64	194.9	0.0	1.79
TRC114	0.0590	1.32	1338.7	437.8	0.0000	161.8	2.66	218.0	48.9	1.92
TRC115	0.0164	0.74	1403.3	566.3	0.0000	368.7	0.39	250.9	0.0	2.15
TRC116	0.0080	0.00	1206.2	714.1	0.0000	358.8	0.45	234.5	0.0	0.00
TRC117	0.0104	0.37	1183.5	694.0	0.0000	117.1	0.25	98.9	0.0	0.88
TRC118	0.0603	1.14	1367.2	433.8	0.0000	240.4	8.53	254.3	0.0	2.57
TRC119	0.0784	0.86	1733.1	1065.6	0.0000	464.9	3.21	276.4	0.0	2.36
TRC120	0.0233	0.67	1549.0	1250.3	0.0000	357.6	0.71	239.3	0.0	2.64
TRC121	0.0243	0.58	1960.4	342.5	0.0000	571.7	1.15	248.6	0.0	0.75
TRC122	0.0188	0.20	1683.2	558.0	0.0708	338.5	0.45	327.1	0.0	0.00
TRC123	0.0483	0.80	1614.3	648.4	0.0000	470.7	0.69	246.5	0.0	1.23
TRC124	0.0774	1.23	1829.6	497.3	0.0000	445.3	2.79	188.9	32.5	0.63
TRC125	0.0415	0.59	1843.2	789.0	0.0000	398.1	0.17	247.0	0.0	2.41
TRC126	0.0228	0.29	1416.9	1500.3	0.0000	356.7	1.91	181.9	0.0	0.72
TRC127	0.0791	2.26	1800.1	425.5	0.0000	518.2	0.48	281.6	0.0	3.70
TRC128	0.0266	0.92	1394.3	1564.5	0.0000	258.6	0.52	138.7	60.2	1.46
TRC129	0.0288	0.34	1178.3	514.3	0.0000	258.7	0.49	188.3	0.0	1.29
TRC130	0.0525	0.79	1291.3	8896.5	0.0000	421.4	2.53	229.5	0.0	2.36
TRC131	0.0219	0.25	1397.7	287.8	0.0000	348.4	0.17	194.8	0.0	0.00
TRC132	0.0140	0.67	1620.0	803.3	0.0000	350.3	0.86	161.3	0.0	2.08
TRC133	0.0239	0.41	1441.9	115.1	0.0000	387.8	0.85	141.1	0.0	0.00
TRC134	0.0103	0.32	1366.4	448.1	0.0000	220.7	0.26	163.9	0.0	1.35
TRC135	0.0679	0.75	1609.2	152.5	0.0000	411.1	0.64	226.5	0.0	2.58
TRC136	0.0237	0.53	1511.9	191.2	0.0000	259.5	0.32	256.8	0.0	1.48
TRC137	0.0315	0.60	1086.2	130.1	0.0000	327.9	0.44	224.9	0.0	1.08
TRC138	0.0264	0.83	1220.7	422.3	0.0000	325.2	0.51	258.7	0.0	2.03
TRC139	0.0450	1.05	2446.1	6758.6	0.0000	512.7	5.60	215.4	0.0	0.00
TRC140	0.2166	19.70	1558.2	837.5	0.0000	444.3	2.84	223.5	1.2	3.42
TRC141	0.0336	0.00	4184.8	0.0	0.0000	0.0	1.34	644.1	0.0	0.00
TRC142	0.0141	2.17	2516.1	7379.8	0.0000	625.6	1.96	268.8	0.0	0.00
TRC143	0.0223	0.75	1060.5	233.4	0.0000	271.0	0.58	199.1	0.0	3.31
TRC144	0.1729	3.96	2447.5	4851.2	0.0000	895.1	2.79	464.6	52.6	2.91

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC145	0.0081	0.74	2065.3	382.2	0.0000	213.2	0.32	179.9	17.9	1.95
TRC146	0.0274	0.84	2186.3	819.6	0.0000	599.3	0.72	134.5	98.9	0.00
TRC147	0.0212	0.00	1590.5	867.7	0.0000	391.5	3.41	254.1	8.5	3.55
TRC148	0.0157	0.00	1172.7	590.5	0.0000	245.0	0.57	163.4	0.0	3.73
TRC149	0.0354	1.55	1796.4	546.9	0.0000	432.6	1.07	240.7	19.3	2.56
TRC150	0.0214	1.63	1936.2	0.0	0.0000	0.0	0.98	367.1	0.0	2.12
TRC151	0.0279	0.49	1574.3	610.7	0.0000	343.2	0.52	257.7	0.0	2.37
TRC152	0.0331	0.84	1836.6	454.2	0.0000	544.4	15.24	250.6	0.0	2.90
TRC153	0.0367	0.56	1821.4	1439.5	0.0000	369.6	2.02	207.8	0.0	2.31
TRC154	0.0286	1.77	1878.2	298.1	0.0000	562.0	0.37	297.5	0.0	4.77
TRC155	0.0705	0.59	2963.9	403.5	0.0440	418.4	6.46	323.3	120.5	4.37
TRC156	0.0314	0.75	1250.0	525.2	0.0000	323.7	0.52	239.5	0.0	2.67
TRC157	0.0221	0.62	1143.1	475.3	0.0000	0.0	0.59	180.9	115.6	2.07
TRC158	0.0491	1.92	3799.9	567.2	0.0000	873.7	1.18	430.4	83.1	10.92
TRC159	0.0562	0.62	1483.1	1190.0	0.0000	332.4	1.98	262.2	84.2	2.23
TRC160	0.0253	2.63	1861.1	1155.4	0.0000	311.6	0.97	245.1	0.0	1.77
TRC161	0.0323	0.63	1460.2	56.6	0.0000	361.7	0.45	226.5	0.0	2.88
TRC162	0.0255	0.52	1414.2	197.7	0.0000	130.7	0.45	219.1	0.0	1.89
TRC163	0.0182	0.79	1395.9	822.4	0.0000	391.2	2.35	261.4	0.0	2.10
TRC164	0.0407	0.82	1561.4	2696.3	0.0000	377.0	2.25	244.1	0.0	2.47
TRC165	0.0242	0.80	1322.6	326.9	0.0000	373.7	1.18	240.6	0.0	2.47
TRC166	0.0576	1.26	2916.3	584.9	0.0000	832.3	1.58	333.8	0.0	4.40
TRC167	0.0474	0.96	1134.9	1908.7	0.0000	233.0	2.37	160.0	84.3	2.11
TRC168	0.0596	3.56	1583.6	753.4	0.0000	283.1	0.52	217.1	0.0	3.78
TRC169	0.0401	0.52	1620.4	957.2	0.0000	381.5	1.62	200.1	0.0	0.00
TRC170	0.0518	0.58	1659.2	958.2	0.0000	425.8	2.09	179.6	67.1	2.61
TRC171	0.0424	0.83	1213.5	378.0	0.0000	371.7	0.90	243.6	0.0	1.58
TRC172	0.0223	0.34	1047.1	1095.8	0.0000	0.0	1.01	126.5	0.0	1.64
TRC173	0.0173	0.32	1182.7	100.3	0.0000	168.4	0.83	207.5	0.0	1.92
TRC174	0.0184	0.89	1211.6	0.0	0.0000	232.1	0.66	206.8	0.0	1.83
TRC175	0.0067	0.17	1506.9	991.4	0.0000	478.1	0.36	207.9	0.0	0.51
TRC176	0.1412	3.53	2563.2	790.6	0.0000	409.0	1.57	303.1	0.0	1.54
TRC177	0.0330	0.55	1424.5	536.6	0.0000	235.4	0.81	241.2	0.0	0.85
TRC178	0.0655	2.05	1888.8	435.3	0.0000	406.3	0.94	258.3	0.0	0.90
TRC179	0.0525	1.02	1592.0	352.7	0.0000	314.5	0.84	205.3	0.0	2.95
TRC180	0.0418	1.37	1566.3	519.5	0.0000	332.5	0.57	278.7	0.0	2.05

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ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC181	0.0235	0.55	1024.8	103.3	0.0000	334.1	1.50	216.6	0.0	1.76
TRC182	0.0118	0.51	1288.4	244.4	0.0000	473.2	0.41	205.0	0.0	2.03
TRC183	0.0358	0.97	1217.4	6681.6	0.0000	163.9	1.56	249.7	0.0	3.42
TRC184	0.0555	0.62	1312.8	557.7	0.0000	358.1	1.17	175.8	0.0	0.00
TRC185	0.0414	0.61	1524.4	3371.1	0.0246	479.3	4.98	269.6	0.0	5.88
TRC186	0.0401	1.29	2644.1	1046.0	0.0000	462.0	1.35	302.2	0.0	7.12
TRC187	0.0277	1.15	1304.3	2436.4	0.0000	266.4	0.79	251.5	0.0	2.60
TRC188	0.0169	0.42	1427.4	1006.6	0.0000	366.5	0.81	193.6	0.0	2.64
TRC189	0.0138	0.98	1151.9	573.5	0.0000	213.0	0.20	180.4	0.0	0.97
TRC190	0.0325	0.36	1152.2	570.0	0.0000	447.0	1.18	221.8	0.0	0.00
TRC191	0.0292	0.75	1357.9	641.6	0.0000	226.2	1.68	202.8	0.0	0.81
TRC192	0.0276	1.81	1978.9	962.9	0.0000	320.9	0.87	191.8	0.0	2.37
TRC193	0.0590	0.78	1535.3	500.8	0.0000	419.6	1.90	246.3	0.0	2.75
TRC194	0.0446	0.86	1611.9	5201.7	0.0000	225.4	2.23	247.4	0.0	2.52
TRC195	0.0403	1.02	2021.5	311.6	0.0000	454.5	1.61	267.0	66.5	2.32
TRC196	0.0252	1.10	1506.0	450.0	0.0000	243.8	2.36	219.1	0.0	1.81
TRC197	0.0368	1.62	1904.1	593.9	0.0000	598.2	6.18	219.7	0.0	4.00
TRC198	0.0689	0.87	1912.4	556.7	0.0000	221.9	6.58	210.4	0.0	2.70
TRC199	0.0169	0.37	1212.1	658.0	0.0000	245.2	1.65	178.3	0.0	0.00
TRC200	0.0580	1.54	2501.6	488.7	0.0000	479.9	1.77	344.6	0.0	4.22
TRC201	0.0289	0.48	1429.1	287.2	0.0000	452.6	0.69	257.8	0.0	3.15
TRC202	0.0363	0.82	1057.3	700.9	0.0000	166.7	1.24	112.1	0.0	4.36
TRC203	0.0289	0.62	1413.9	227.7	0.0000	282.6	2.43	226.0	0.0	3.74
TRC204	0.0167	0.30	1303.3	0.0	0.0000	341.0	0.85	211.5	0.0	1.43
TRC205	0.0177	0.32	1003.8	130.8	0.0389	184.5	0.44	194.1	0.0	1.44
TRC206	0.0314	1.09	1283.1	302.6	0.0000	262.6	0.58	271.8	0.0	1.22
TRC207	0.0361	0.66	2109.4	1291.0	0.0000	318.5	0.86	209.6	0.0	0.94
TRC208	0.0169	0.42	1768.5	458.9	0.0000	294.7	1.02	205.4	0.0	1.08
TRC209	0.0098	0.39	910.3	148.6	0.0000	269.4	0.34	187.9	0.0	0.00
TRC210	0.0177	0.21	1656.9	2352.5	0.0241	256.6	1.50	233.7	0.0	0.00
TRC211	0.0218	1.02	1838.3	779.9	0.0000	316.1	2.10	251.0	162.9	1.92
TRC212	0.0255	0.00	1471.6	364.3	0.0000	271.9	1.27	200.1	201.7	0.00
TRC213	0.0289	1.49	1555.1	277.6	0.0000	369.4	0.86	220.8	188.4	1.91
TRC214	0.0157	0.00	1490.6	486.1	0.0000	0.0	0.31	198.2	129.5	0.00
TRC215	0.0625	0.00	1954.6	544.2	0.0655	459.0	3.60	288.5	222.1	0.00
TRC216	0.0346	0.00	1631.0	350.2	0.0000	0.0	67.05	229.7	367.4	0.00

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

ANID	Th (ppm)	Zn (ppm)	Al (ppm)	Ca (ppm)	Dy (ppm)	K (ppm)	Mn (ppm)	Na (ppm)	Ti (ppm)	V (ppm)
TRC217	0.0255	1.22	1425.8	1716.8	0.0000	564.2	1.35	202.6	167.0	2.16
TRC218	0.0713	0.76	1038.7	267.4	0.0000	389.7	3.63	215.1	0.0	3.50
TRC219	0.0185	0.98	2440.6	489.6	0.0000	379.4	0.99	281.0	0.0	0.00
TRC220	0.0207	0.69	1090.3	295.3	0.0000	202.5	1.37	251.2	0.0	0.00
TRC221	0.0691	0.56	1314.2	289.7	0.0000	584.1	1.24	329.4	0.0	2.82
TRC222	0.0143	2.12	1429.3	326.5	0.0000	356.2	0.88	185.7	69.2	0.81
TRC223	0.0138	0.46	1127.7	263.7	0.0000	230.6	0.51	225.5	0.0	2.00
TRC224	0.0290	1.13	1471.4	1150.0	0.0000	326.7	0.54	250.3	0.0	1.68
TRC225	0.0571	2.14	1471.8	440.1	0.0000	279.0	1.05	293.0	0.0	3.41
TRC226	0.0232	0.67	1937.5	401.9	0.0000	440.9	0.61	264.6	0.0	1.35
TRC227	0.0231	0.37	1462.6	303.1	0.0000	339.3	0.80	273.6	0.0	0.00
TRC228	0.0232	0.42	1412.7	1163.2	0.0000	0.0	0.97	228.9	0.0	3.37
TRC229	0.0644	1.16	1758.9	8516.8	0.0000	0.0	1.95	291.4	0.0	2.44
TRC230	0.0162	0.57	1511.4	254.4	0.0000	387.1	0.72	255.5	0.0	0.00
TRC231	0.0683	0.72	1741.4	409.9	0.0000	385.3	3.17	238.0	0.0	2.16
TRC232	0.0181	0.75	1614.8	253.3	0.0000	319.1	1.09	240.5	0.0	0.00
TRC233	0.0492	1.35	1810.5	503.0	0.0000	396.9	1.38	281.8	0.0	2.15
TRC234	0.0434	13.54	1430.2	329.0	0.0000	164.6	1.90	231.9	0.0	5.54
TRC235	0.0294	2.19	1425.3	679.3	0.0000	132.2	1.34	222.6	0.0	0.00
TRC236	0.0553	2.14	1880.1	113.2	0.0737	393.1	1.06	273.7	0.0	3.20
TRC237	0.0510	1.58	1240.1	387.1	0.0000	260.0	1.51	233.9	0.0	5.01
TRC238	0.0277	1.74	1484.0	1291.3	0.0000	142.3	2.25	186.9	0.0	3.12
TRC239	0.0107	9.83	1698.4	1023.2	0.0000	0.0	0.59	99.4	0.0	1.76
TRC240	0.0163	0.53	1175.4	385.7	0.0000	347.1	0.35	206.4	0.0	1.75
TRC241	0.0137	1.00	1596.7	760.5	0.0582	0.0	1.11	195.6	0.0	0.90
TRC242	0.0163	0.32	1279.4	613.3	0.0000	0.0	1.27	176.0	88.4	1.81
TRC243	0.0338	0.50	1439.5	643.5	0.0000	154.3	2.14	116.9	0.0	1.60
TRC244	0.0355	1.14	2199.5	828.5	0.0430	438.9	5.70	254.5	0.0	4.38
TRC245	0.0125	0.94	18103.7	5684.1	0.0000	2121.6	8.90	1611.1	0.0	0.00
TRC246	0.0138	0.53	1969.2	533.2	0.0000	215.5	1.22	227.1	0.0	0.00
TRC247	0.0000	0.69	2172.9	579.2	0.0000	349.1	0.99	246.7	0.0	0.00
TRC248	0.0334	1.51	1297.1	349.5	0.0000	180.6	2.68	197.4	0.0	0.00
TRC249	0.0309	1.73	1926.6	749.9	0.0000	335.4	0.86	263.3	0.0	1.97
TRC250	0.0350	2.95	1789.4	382.1	0.0000	262.3	1.89	225.7	0.0	2.35
TRC251	0.0219	0.65	1279.0	0.0	0.0000	252.9	0.66	216.9	238.6	0.00
TRC252	0.0103	0.88	2122.3	147.9	0.0000	373.0	0.74	177.1	0.0	1.45

Table 2. Concentrations of elements measured by INAA in the chert samples in this study.

<b>ANID</b>	<b>Th (ppm)</b>	<b>Zn (ppm)</b>	<b>Al (ppm)</b>	<b>Ca (ppm)</b>	<b>Dy (ppm)</b>	<b>K (ppm)</b>	<b>Mn (ppm)</b>	<b>Na (ppm)</b>	<b>Ti (ppm)</b>	<b>V (ppm)</b>
TRC253	0.0593	0.00	1689.3	104.0	0.0000	287.0	0.60	262.3	76.2	3.79
TRC254	0.0464	3.26	1683.7	106.4	0.0000	0.0	13.90	202.5	409.6	1.91
TRC255	10.5094	5.28	36559.9	912.1	14.6378	42428.2	15.65	3692.3	485.2	0.00
TRC256	0.0438	1.66	1891.1	1458.9	0.0000	726.6	1.38	288.8	0.0	1.08
TRC257	0.0437	1.70	2036.4	279.2	0.0000	410.3	9.12	236.8	334.2	1.79
TRC258	0.0540	1.58	1250.3	276.1	0.0412	475.6	1.27	267.9	474.5	4.03
TRC259	0.0322	0.72	1193.2	486.0	0.0000	336.2	3.24	212.7	232.0	3.52
TRC260	0.0294	0.00	2169.7	339.5	0.0000	365.9	2.01	251.5	112.0	1.05
TRC261	0.0505	1.22	1460.1	4604.9	0.0000	314.8	0.76	273.9	0.0	4.75

Table 3. Eigenvalues and percentage of variance explained by principal components analysis of 261 chert samples.

Note: This PCA was performed on the samples in this study which include a collection of Edwards Formation source specimens (TRC001-TRC107) and Varga site artifacts (TRC108-TRC261).

Simultaneous R-Q Factor Analysis Based on Variance-Covariance Matrix

Eigenvalues and Percentage of Variance Explained:

Eigenvalue	%Variance	Cum. %Var.	
1.015	36.30	36.30	
0.4150	14.84	51.14	
0.2776	9.927	61.07	
0.2195	7.850	68.92	
0.1504	5.378	74.30	
0.1184	4.235	78.53	
0.1066	3.814	82.35	
0.07698	2.753	85.10	
0.07299	2.611	87.71	
0.06135	2.194	89.91	← 10 PCs required to explain approximately 90% of variance
0.05184	1.854	91.76	
0.04750	1.699	93.46	
0.04216	1.508	94.97	
0.02758	0.9863	95.95	
0.02290	0.8191	96.77	
0.01833	0.6556	97.43	
0.01603	0.5734	98.00	
0.01329	0.4752	98.48	
0.01154	0.4126	98.89	
0.01004	0.3589	99.25	
0.007592	0.2715	99.52	
0.006608	0.2363	99.76	
0.003808	0.1362	99.89	
0.002126	0.07602	99.97	
0.0009084	0.03249	100.0	



Table 4. Basic characteristics observed for chert sub-types characterized in this study.

Source Specimen Group Name	Main Characteristics
Hackberry Creek	Low concentrations of As, Co, Fe, Hf & Zn
Glen Rose	High concentrations of Mn
Georgetown	Low concentrations of Ca and Sr
Varga area samples	Low concentrations of REEs
Devil River Formation	Low concentrations of REEs, As, Fe, Sb & Zn

Table 5. Mahalanobis distance-based probabilities and posterior classification of TRC specimens from the larger groups (n>12) against one another.

Groups are:

1.000	PC-HC	Hackberry Creek
2.000	PC-SM	Segovia Formation mixture
3.000	PC-TM	Terrett Formation mixture
4.000	PC-CW	Camp Wood

The following variables explaining more than 90% of the variance were used in the calculations:

PC01	PC02	PC03	PC04	PC05
PC06	PC07	PC08	PC09	PC10

Probabilities are jackknifed for specimens included in each group.

The following specimens are in the file PC-HC

ID. NO.	Probabilities:				From:	Into:
	PC-HC	PC-SM	PC-TM	PC-CW		
TRC083	95.515	40.967	86.372	18.801	1	1
TRC084	67.249	4.463	62.628	2.980	1	1
TRC085	7.290	11.367	9.700	71.658	1	4
TRC086	81.232	2.178	77.594	2.243	1	1
TRC087	95.590	17.078	84.787	3.631	1	1
TRC088	0.811	0.796	3.021	0.257	1	3
TRC089	0.918	1.414	4.468	1.848	1	3
TRC090	59.683	11.321	7.667	9.038	1	1
TRC091	94.205	1.793	42.713	3.975	1	1
TRC092	1.102	35.512	18.482	20.113	1	2
TRC093	92.362	50.303	74.535	27.400	1	1
TRC094	47.284	62.259	11.603	80.627	1	4
TRC095	65.927	17.976	11.789	11.660	1	1
TRC096	31.302	59.604	92.611	47.219	1	3
TRC097	99.839	23.450	87.523	6.046	1	1
TRC098	82.085	3.848	47.337	0.864	1	1
TRC099	69.156	5.503	5.115	8.222	1	1
TRC100	8.684	1.971	1.809	1.708	1	1
TRC101	13.399	11.728	7.717	25.232	1	4
TRC102	26.321	0.328	26.543	0.082	1	3
TRC103	24.810	36.542	63.393	43.093	1	3

The following specimens are in the file PC-SM

Probabilities:						
ID. NO.	PC-HC	PC-SM	PC-TM	PC-CW	From:	Into:
TRC007	11.267	72.283	49.408	66.258	2	2
TRC008	0.306	0.035	13.540	0.631	2	3
TRC009	14.937	87.454	17.190	60.108	2	2
TRC010	5.424	53.621	31.807	5.064	2	2
TRC011	3.513	99.327	89.978	89.472	2	2
TRC012	1.111	75.015	73.886	76.678	2	4
TRC013	1.352	0.237	48.374	64.845	2	4
TRC014	32.897	94.910	96.071	88.678	2	3
TRC015	0.200	26.711	39.127	10.522	2	3
TRC016	12.421	64.689	60.191	67.717	2	4
TRC052	5.413	46.291	63.583	5.621	2	3
TRC053	2.644	93.150	81.137	19.487	2	2
TRC054	1.084	91.910	71.474	70.561	2	2
TRC055	6.734	66.276	59.971	47.290	2	2
TRC056	3.231	20.806	54.874	23.012	2	3
TRC057	4.441	49.954	42.061	31.704	2	2
TRC058	7.656	98.291	27.684	24.327	2	2
TRC059	6.275	99.758	63.578	80.451	2	2
TRC060	23.743	96.992	84.014	49.483	2	2
TRC072	0.020	3.004	50.205	0.623	2	3
TRC073	0.167	38.926	1.448	2.785	2	2
TRC074	0.259	37.534	1.460	9.520	2	2
TRC079	0.456	1.606	29.775	2.948	2	3
TRC080	0.756	4.048	4.139	2.785	2	3
TRC081	26.701	19.267	70.813	19.762	2	3
TRC082	50.472	13.921	19.180	25.500	2	1

The following specimens are in the file PC-TM

Probabilities:						
ID. NO.	PC-HC	PC-SM	PC-TM	PC-CW	From:	Into:
TRC047	21.166	51.255	48.566	4.164	3	2
TRC048	58.025	39.770	90.708	87.385	3	3
TRC049	22.234	26.569	73.124	23.800	3	3
TRC050	1.459	17.836	4.940	45.963	3	4
TRC051	5.536	12.523	12.591	7.600	3	3
TRC066	0.446	2.170	35.519	18.618	3	3
TRC067	0.285	77.193	92.512	76.598	3	3
TRC068	0.365	33.133	67.703	37.182	3	3
TRC069	0.055	20.961	33.077	34.793	3	4

TRC070	2.116	16.461	92.337	66.707	3	3
TRC071	7.617	24.271	82.824	42.628	3	3
TRC075	4.169	2.265	31.612	15.314	3	3
TRC076	4.497	34.622	47.820	24.818	3	3
TRC077	1.388	20.095	26.761	15.506	3	3
TRC078	0.007	0.023	7.571	0.193	3	3

The following specimens are in the file PC-CW

Probabilities:

ID. NO.	PC-HC	PC-SM	PC-TM	PC-CW	From:	Into:
TRC027	38.095	88.444	83.952	82.563	4	2
TRC028	6.608	98.539	88.154	78.932	4	2
TRC029	0.000	0.035	7.961	0.167	4	3
TRC030	53.535	37.936	59.888	66.000	4	4
TRC031	1.098	28.321	14.549	3.876	4	2
TRC032	1.613	89.627	27.940	55.181	4	2
TRC033	2.141	94.502	54.871	87.047	4	2
TRC034	10.185	98.529	86.847	93.008	4	2
TRC035	3.289	30.030	32.148	21.042	4	3
TRC036	56.786	53.277	84.669	70.597	4	3
TRC037	75.765	56.318	51.211	92.907	4	4
TRC038	8.946	84.599	99.008	72.690	4	3
TRC039	14.275	1.932	33.964	4.982	4	3
TRC040	11.883	54.057	17.184	75.162	4	4
TRC041	4.063	2.562	21.098	0.344	4	3
TRC042	1.565	34.559	45.738	56.849	4	4
TRC043	0.044	36.338	17.603	44.410	4	4
TRC044	13.786	83.471	91.228	62.809	4	3
TRC045	0.256	88.222	36.690	83.062	4	2
TRC046	0.015	37.594	21.512	20.795	4	2

Summary of Classification Success:

Classified Into Group:

From Group:	PC-HC	PC-SM	PC-TM	PC-CW	Total
PC-HC	12	1	5	3	21
PC-SM	1	13	9	3	26
PC-TM	0	1	12	2	15
PC-CW	0	8	7	5	20
Total	13	23	33	13	82

Table 6. Eigenvalues and percentage of variance explained by principal components analysis of 451 chert specimens.

Note: This PCA was performed on the INAA data for source specimens and artifacts samples in this study combined with earlier source specimen data from the Fort Hood, Segovia Formation, and a mixed collection from the Edwards Formation.

Simultaneous R-Q Factor Analysis Based on Variance-Covariance Matrix

Eigenvalues and Percentage of Variance Explained:

Eigenvalue	%Variance	Cum. %Var.
0.7689	30.90	30.90
0.5305	21.32	52.21
0.3243	13.03	65.24
0.1928	7.745	72.99
0.1504	6.042	79.03
0.1117	4.487	83.52
0.07906	3.177	86.69
0.05900	2.371	89.06
0.05424	2.179	91.24
0.05337	2.145	93.39
0.04112	1.652	95.04
0.03269	1.313	96.35
0.02700	1.085	97.44
0.01618	0.6502	98.09
0.01499	0.6024	98.69
0.01201	0.4825	99.17
0.009875	0.3968	99.57
0.004875	0.1959	99.77
0.003919	0.1575	99.92
0.001916	0.07698	100.0

← 9 PCs were required to exceed 90% of the variance

Table 7. Mahalanobis distance-based probabilities and posterior classification of source specimens TRC001 thru TRC106.

Reference groups and numbers of specimens:

1	PC-E1	19	Fort Hood: Owl Creel
2	PC-E2	21	Fort Hood: Gray-brown-green
3	PC-E3	20	Fort Hood: Tan
4	PC-E4	20	Fort Hood: Texas Novaculite
5	PC-E5	20	Fort Hood: Heiner Lake Tan
6	PC-E6	18	Fort Hood: Gray
7	PC-SF	15	Segovia Formation (Turnbull's collection)
8	PC-CF	59	Edwards Formation mixture (Frederick's collection)

The following variables explaining more than 91% of the variance were used in this calculations:

PC01	PC02	PC03	PC04	PC05	PC06	PC07	PC08	PC09
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The following specimens are in the file PC-TRCS

Probabilities:

ID. NO.	PC-E1	PC-E2	PC-E3	PC-E4	PC-E5	PC-E6	PC-SF	PC-CF	BEST GRP.
TRC001	0.000	0.000	0.000	0.000	0.000	0.001	0.018	2.868	8
TRC002	0.000	0.000	0.000	0.002	0.000	0.013	0.041	31.286	8
TRC003	0.000	0.000	0.000	0.009	0.000	0.023	0.076	52.341	8
TRC004	0.000	0.000	0.000	0.002	0.000	0.003	0.065	38.130	8
TRC005	0.000	0.000	0.000	0.001	0.000	0.005	0.010	21.898	8
TRC006	0.000	0.000	0.000	0.001	0.000	0.006	0.066	27.562	8
TRC007	0.000	0.000	0.000	0.011	0.000	0.020	0.039	30.725	8
TRC008	0.000	0.000	0.000	0.008	0.000	0.004	0.014	28.571	8
TRC009	0.000	0.000	0.000	0.002	0.000	0.011	0.033	30.615	8
TRC010	0.000	0.000	0.000	0.050	0.000	0.008	0.047	18.231	8
TRC011	0.000	0.000	0.000	0.004	0.000	0.004	0.046	44.407	8
TRC012	0.000	0.000	0.000	0.024	0.000	0.022	0.050	33.026	8
TRC013	0.000	0.000	0.000	0.001	0.000	0.012	0.667	7.629	8
TRC014	0.000	0.000	0.000	0.018	0.000	0.050	0.146	91.745	8
TRC015	0.000	0.000	0.000	0.003	0.000	0.000	0.009	3.385	8
TRC016	0.000	0.000	0.000	0.004	0.000	0.002	0.030	20.183	8
TRC017	0.000	0.000	0.000	0.001	0.000	0.010	0.015	37.045	8
TRC018	0.000	0.000	0.000	0.002	0.000	0.001	0.039	27.309	8
TRC019	0.000	0.000	0.000	0.032	0.000	0.006	0.412	15.082	8
TRC020	0.000	0.000	0.000	0.016	0.000	0.013	0.114	24.625	8
TRC021	0.000	0.000	0.000	0.015	0.000	0.017	0.773	54.542	8
TRC022	0.000	0.000	0.000	0.034	0.000	0.010	0.215	0.392	8
TRC023	0.000	0.000	0.000	0.005	0.000	0.011	0.102	67.046	8
TRC024	0.000	0.000	0.000	0.003	0.000	0.007	0.068	69.413	8
TRC025	0.000	0.000	0.000	0.018	0.000	0.037	0.435	70.514	8
TRC026	0.000	0.000	0.000	0.014	0.000	0.011	0.190	50.905	8
TRC027	0.000	0.000	0.000	0.004	0.000	0.024	0.284	93.932	8

TRC028	0.000	0.000	0.000	0.008	0.000	0.014	0.113	65.790	8
TRC029	0.000	0.000	0.000	0.000	0.000	0.001	0.019	0.210	8
TRC030	0.000	0.000	0.000	0.108	0.000	0.664	1.775	99.172	8
TRC031	0.000	0.000	0.000	0.001	0.000	0.000	0.012	6.215	8
TRC032	0.000	0.000	0.000	0.010	0.000	0.087	0.127	90.621	8
TRC033	0.000	0.000	0.000	0.025	0.000	0.067	0.185	61.601	8
TRC034	0.000	0.000	0.000	0.006	0.000	0.009	0.201	89.128	8
TRC035	0.000	0.000	0.000	0.001	0.000	0.042	0.153	23.073	8
TRC036	0.000	0.000	0.000	0.085	0.000	0.196	0.941	96.689	8
TRC037	0.000	0.000	0.004	0.001	0.000	0.034	0.755	84.295	8
TRC038	0.000	0.000	0.000	0.025	0.000	0.093	0.083	88.810	8
TRC039	0.000	0.000	0.007	0.019	0.000	0.011	2.149	56.151	8
TRC040	0.000	0.000	0.004	0.023	0.000	0.009	0.483	22.312	8
TRC041	0.000	0.000	0.000	0.001	0.000	0.035	0.156	79.955	8
TRC042	0.000	0.000	0.000	0.003	0.000	0.009	0.091	85.454	8
TRC043	0.000	0.000	0.000	0.004	0.000	0.098	0.014	20.675	8
TRC044	0.000	0.000	0.000	0.001	0.000	0.050	0.182	92.091	8
TRC045	0.000	0.000	0.000	0.002	0.000	0.011	0.026	51.894	8
TRC046	0.000	0.000	0.000	0.002	0.000	0.006	0.016	21.352	8
TRC047	0.000	0.000	0.000	0.093	0.003	0.011	0.085	6.510	8
TRC048	0.000	0.000	0.000	0.176	0.000	0.068	0.485	96.834	8
TRC049	0.000	0.000	0.000	0.018	0.000	0.032	0.192	70.354	8
TRC050	0.000	0.000	0.000	0.065	0.000	0.006	0.116	38.637	8
TRC051	0.000	0.000	0.001	0.004	0.000	0.009	0.248	40.275	8
TRC052	0.000	0.000	0.000	0.055	0.001	0.004	0.085	24.897	8
TRC053	0.000	0.000	0.000	0.019	0.000	0.089	0.074	58.673	8
TRC054	0.000	0.000	0.000	0.016	0.000	0.099	0.072	77.589	8
TRC055	0.000	0.000	0.000	0.023	0.000	0.107	0.150	68.146	8
TRC056	0.000	0.000	0.000	0.004	0.000	0.003	0.089	5.040	8
TRC057	0.000	0.000	0.000	0.005	0.000	0.002	0.193	37.875	8
TRC058	0.000	0.000	0.000	0.006	0.000	0.011	0.064	27.109	8
TRC059	0.000	0.000	0.000	0.006	0.000	0.008	0.055	33.508	8
TRC060	0.000	0.000	0.001	0.009	0.000	0.030	0.280	67.728	8
TRC061	0.000	0.001	0.000	0.020	0.000	0.607	1.176	94.329	8
TRC062	0.000	0.000	0.001	0.005	0.000	0.041	0.408	51.446	8
TRC063	0.000	0.000	0.000	0.038	0.000	0.087	0.454	98.307	8
TRC064	0.000	0.000	0.000	0.012	0.000	0.025	0.142	94.208	8
TRC065	0.000	0.000	0.000	0.009	0.000	0.038	0.279	82.028	8
TRC066	0.000	0.000	0.000	0.000	0.000	0.000	0.022	30.015	8
TRC067	0.000	0.000	0.000	0.001	0.000	0.014	0.019	26.444	8
TRC068	0.000	0.000	0.000	0.001	0.000	0.001	0.041	27.786	8
TRC069	0.000	0.000	0.000	0.000	0.000	0.001	0.011	10.176	8
TRC070	0.000	0.000	0.000	0.001	0.000	0.005	0.112	34.308	8
TRC071	0.000	0.000	0.000	0.003	0.000	0.010	0.174	55.423	8
TRC072	0.000	0.000	0.000	0.000	0.000	0.005	0.040	26.625	8
TRC073	0.000	0.000	0.000	0.000	0.000	0.001	0.020	2.154	8

TRC074	0.000	0.000	0.000	0.000	0.000	0.000	0.012	1.215	8
TRC075	0.000	0.000	0.000	0.000	0.000	0.007	0.073	80.325	8
TRC076	0.000	0.000	0.000	0.011	0.000	0.041	0.152	90.686	8
TRC077	0.000	0.000	0.000	0.000	0.000	0.002	0.018	42.507	8
TRC078	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.036	8
TRC079	0.000	0.000	0.000	0.002	0.000	0.033	0.768	72.088	8
TRC080	0.000	0.000	0.000	0.002	0.000	0.004	1.498	10.939	8
TRC081	0.000	0.000	0.000	0.002	0.000	0.007	0.349	61.582	8
TRC082	0.000	0.000	0.001	0.002	0.000	0.017	0.518	40.506	8
TRC083	0.000	0.000	0.000	1.616	0.000	1.572	1.509	83.449	8
TRC084	0.000	0.000	0.000	1.612	0.000	0.185	0.638	58.543	8
TRC085	0.000	0.000	0.005	0.032	0.000	0.038	1.188	60.329	8
TRC086	0.000	0.000	0.000	0.354	0.000	0.003	1.735	19.832	8
TRC087	0.000	0.000	0.000	1.962	0.000	0.996	1.465	77.900	8
TRC088	0.000	0.000	0.000	0.004	0.000	0.003	0.044	6.578	8
TRC089	0.000	0.000	0.000	0.080	0.000	0.018	2.521	40.030	8
TRC090	0.000	0.000	0.000	0.015	0.000	0.012	0.479	30.067	8
TRC091	0.000	0.000	0.000	0.038	0.000	0.004	1.124	29.906	8
TRC092	0.000	0.000	0.000	0.014	0.000	0.021	0.474	46.992	8
TRC093	0.000	0.000	0.000	0.088	0.000	0.040	1.371	81.553	8
TRC094	0.000	0.000	0.017	0.043	0.000	0.028	0.751	14.365	8
TRC095	0.000	0.000	0.000	0.052	0.000	0.016	0.319	54.755	8
TRC096	0.000	0.000	0.000	0.032	0.000	0.086	0.479	77.858	8
TRC097	0.000	0.000	0.000	0.142	0.000	0.112	2.272	65.294	8
TRC098	0.000	0.000	0.000	0.147	0.000	0.013	1.282	20.512	8
TRC099	0.000	0.000	0.000	0.024	0.000	0.026	0.200	23.527	8
TRC100	0.000	0.000	0.000	0.003	0.000	0.004	0.039	25.715	8
TRC101	0.000	0.000	0.001	0.119	0.000	0.002	0.224	11.085	8
TRC102	0.000	0.000	0.000	0.075	0.000	0.003	0.691	1.573	8
TRC103	0.000	0.000	0.000	5.996	0.000	3.165	3.933	93.049	8
TRC104	0.000	0.000	0.000	0.009	0.000	0.141	0.310	88.311	8
TRC105	0.000	0.000	0.000	0.150	0.000	0.007	1.130	72.951	8
TRC106	0.000	0.000	0.000	0.012	0.000	0.061	0.134	48.055	8

Summary of Probabilities for Specimens in the file PC-TRCS

Probability Cutoff Values:

Group:	0.01000	0.10000	1.00000	5.00000	10.00000	20.00000	100.00000
PC-E1	106	0	0	0	0	0	0
PC-E2	106	0	0	0	0	0	0
PC-E3	105	1	0	0	0	0	0
PC-E4	56	39	7	3	1	0	0
PC-E5	106	0	0	0	0	0	0
PC-E6	45	51	8	2	0	0	0
PC-SF	3	40	48	15	0	0	0



PC-CF	0	1	2	5	5	7	86
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Summary of Best Classification of Projected Specimens:

From Group:	Classified Into Group:							Total
	PC-E1	PC-E2	PC-E3	PC-E4	PC-E5	PC-E6	PC-SF	
PC-TRCS	0	0	0	0	0	0	0	106
Total	0	0	0	0	0	0	0	106

Table 8. Mahalanobis distance-based probabilities and posterior classification for the Varga site artifacts TRC108 thru TRC261.

Reference groups and numbers of specimens:

1	PC-E1	19	Fort Hood: Owl Creek
2	PC-E2	21	Fort Hood: Gray-brown-green
3	PC-E3	20	Fort Hood: Tan
4	PC-E4	20	Fort Hood: Texas Novaculite
5	PC-E5	20	Fort Hood: Heiner Lake Tan
6	PC-E6	18	Fort Hood: Gray
7	PC-SF	15	Segovia Formation (Turnbull's collection)
8	PC-CF	59	Edwards Formation mixture (Frederick's collection)
9	PC-TRCS	106	Edwards Formation samples from TRC

The following variables explaining more than 91% of the variance were used in these calculations:

PC01	PC02	PC03	PC04	PC05	PC06	PC07	PC08	PC09
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The following specimens are in the file PC-TRCA

Probabilities:

ID. NO.	PC-E1	PC-E2	PC-E3	PC-E4	PC-E5	PC-E6	PC-SF	PC-CF	PC-TRCS	BEST GRP.
TRC108	0.000	0.000	0.013	0.033	0.000	0.008	0.763	24.938	52.870	9
TRC109	0.000	0.000	0.002	0.000	0.000	0.003	0.494	5.970	0.090	8
TRC110	0.000	0.000	0.000	0.002	0.000	0.004	0.617	50.485	21.687	8
TRC111	0.000	0.000	0.000	0.047	0.000	0.009	1.212	67.878	94.669	9
TRC112	0.000	0.000	0.000	0.001	0.000	0.004	0.093	1.635	4.463	9
TRC113	0.000	0.000	0.000	0.259	0.000	0.046	0.305	25.253	41.972	9
TRC114	0.000	0.000	0.000	0.000	0.000	0.002	0.129	18.886	6.768	8
TRC115	0.000	0.000	0.000	0.001	0.000	0.002	0.017	5.738	7.732	9
TRC116	0.000	0.000	0.000	0.238	0.000	0.004	2.373	3.233	24.123	9
TRC117	0.000	0.000	0.000	0.025	0.000	0.051	0.145	32.713	67.046	9
TRC118	0.000	0.000	0.001	0.002	0.000	0.053	0.863	57.171	18.380	8
TRC119	0.000	0.000	0.001	0.000	0.000	0.023	0.542	35.519	8.836	8
TRC120	0.000	0.000	0.000	0.003	0.000	0.026	0.083	87.113	96.557	9
TRC121	0.000	0.000	0.000	0.002	0.000	0.103	0.411	86.168	69.325	8
TRC122	0.000	0.000	0.000	0.064	0.000	0.011	7.404	27.618	47.678	9
TRC123	0.000	0.000	0.000	0.009	0.000	0.024	0.313	46.464	52.435	9
TRC124	0.000	0.000	0.000	0.001	0.000	0.004	0.200	7.099	2.709	8
TRC125	0.000	0.000	0.000	0.002	0.000	0.004	0.378	7.956	1.189	8
TRC126	0.000	0.000	0.000	0.132	0.000	0.202	1.916	67.703	57.606	8
TRC127	0.000	0.000	0.000	0.000	0.000	0.008	0.091	34.271	6.067	8
TRC128	0.000	0.000	0.001	0.012	0.000	0.029	0.435	68.824	89.552	9
TRC129	0.000	0.000	0.000	2.941	0.000	1.808	3.969	99.321	83.691	8
TRC130	0.000	0.000	0.000	0.025	0.000	0.055	2.381	53.340	14.099	8
TRC131	0.000	0.000	0.000	0.817	0.000	0.081	2.012	67.419	59.819	8

TRC132	0.000	0.000	0.000	0.001	0.000	0.002	0.026	14.603	25.738	9
TRC133	0.000	0.000	0.000	0.014	0.000	0.040	0.546	78.520	58.365	8
TRC134	0.000	0.000	0.000	0.144	0.000	0.077	0.252	64.062	82.519	9
TRC135	0.000	0.000	0.000	0.000	0.000	0.000	0.688	14.992	0.315	8
TRC136	0.000	0.000	0.000	0.060	0.000	0.056	2.533	53.251	16.726	8
TRC137	0.000	0.000	0.000	0.002	0.000	0.001	0.482	53.228	31.787	8
TRC138	0.000	0.000	0.001	0.003	0.000	0.021	0.476	90.439	78.837	8
TRC139	0.000	0.000	0.000	0.003	0.000	0.029	0.463	45.015	22.896	8
TRC140	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.000	7
TRC141	0.000	0.000	0.001	0.007	0.000	0.308	4.740	74.300	29.951	8
TRC142	0.000	0.000	0.000	0.001	0.000	0.030	0.124	72.273	59.601	8
TRC143	0.000	0.000	0.000	0.011	0.000	0.023	0.299	82.268	86.710	9
TRC144	0.000	0.000	0.000	0.001	0.000	0.000	0.156	9.054	1.229	8
TRC145	0.000	0.000	0.000	0.000	0.000	0.001	0.055	31.466	19.958	8
TRC146	0.000	0.000	0.000	0.010	0.000	0.010	0.076	38.095	57.271	9
TRC147	0.000	0.000	0.000	0.063	0.000	0.037	1.289	63.890	39.876	8
TRC148	0.000	0.000	0.000	0.017	0.000	0.235	0.239	55.090	50.125	8
TRC149	0.000	0.000	0.001	0.001	0.000	0.015	0.297	16.000	4.871	8
TRC150	0.000	0.000	0.000	0.005	0.000	0.003	0.722	81.411	55.804	8
TRC151	0.000	0.000	0.000	0.092	0.000	0.089	5.396	83.701	52.664	8
TRC152	0.000	0.000	0.000	0.002	0.000	0.006	0.220	32.095	7.114	8
TRC153	0.000	0.000	0.000	0.017	0.000	0.138	1.142	91.464	80.983	8
TRC154	0.000	0.000	0.000	0.000	0.000	0.001	0.017	20.918	17.575	8
TRC155	0.000	0.000	0.001	0.000	0.000	0.023	0.465	23.038	1.781	8
TRC156	0.000	0.000	0.000	0.000	0.000	0.000	0.056	1.588	0.477	8
TRC157	0.000	0.000	0.002	0.094	0.000	0.131	0.959	91.839	99.689	9
TRC158	0.000	0.000	0.000	0.000	0.000	0.001	0.038	9.912	2.244	8
TRC159	0.000	0.000	0.003	0.002	0.000	0.109	1.394	67.407	26.593	8
TRC160	0.000	0.000	0.000	0.000	0.000	0.001	0.033	22.844	2.529	8
TRC161	0.000	0.001	0.000	0.112	0.000	0.136	2.459	78.998	36.403	8
TRC162	0.000	0.000	0.000	0.005	0.000	0.159	0.431	97.954	91.782	8
TRC163	0.000	0.000	0.000	0.005	0.000	0.055	0.335	53.839	38.062	8
TRC164	0.000	0.000	0.000	0.082	0.000	0.240	9.094	97.965	49.210	8
TRC165	0.000	0.000	0.000	0.001	0.000	0.005	0.060	55.882	70.905	9
TRC166	0.000	0.000	0.000	0.000	0.000	0.011	0.328	45.857	14.939	8
TRC167	0.000	0.000	0.001	0.001	0.000	0.079	0.769	67.576	42.995	8
TRC168	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.999	9.148	9
TRC169	0.000	0.000	0.000	0.015	0.000	0.077	0.829	66.529	55.146	8
TRC170	0.000	0.000	0.000	0.003	0.000	0.016	0.607	76.998	48.386	8
TRC171	0.000	0.000	0.042	0.009	0.000	0.284	2.906	62.107	38.882	8
TRC172	0.000	0.000	0.000	0.057	0.000	0.014	0.104	26.751	31.678	9
TRC173	0.000	0.000	0.000	0.213	0.000	0.326	1.641	76.477	92.877	9
TRC174	0.000	0.000	0.000	0.011	0.000	0.005	0.122	51.062	81.868	9
TRC175	0.000	0.000	0.000	0.448	0.000	0.087	0.357	41.738	17.021	8
TRC176	0.000	0.000	0.000	0.000	0.000	0.002	0.077	0.306	0.159	8

TRC177	0.000	0.000	0.000	0.011	0.000	0.615	1.933	99.093	76.761	8
TRC178	0.000	0.000	0.001	0.001	0.000	0.019	0.328	59.735	43.789	8
TRC179	0.000	0.000	0.004	0.001	0.000	0.010	0.460	69.954	48.816	8
TRC180	0.000	0.000	0.000	0.000	0.000	0.001	0.018	17.004	9.250	8
TRC181	0.000	0.000	0.002	0.014	0.000	0.015	0.666	90.290	74.356	8
TRC182	0.000	0.000	0.000	0.005	0.000	0.046	0.126	89.906	91.435	9
TRC183	0.000	0.000	0.013	0.009	0.000	0.128	2.942	62.303	43.232	8
TRC184	0.000	0.000	0.000	0.017	0.000	0.033	1.228	83.063	22.789	8
TRC185	0.000	0.000	0.000	0.001	0.000	0.003	0.073	70.973	55.377	8
TRC186	0.000	0.000	0.000	0.000	0.000	0.007	0.165	51.582	41.052	8
TRC187	0.000	0.000	0.000	0.025	0.000	0.252	1.302	92.592	87.499	8
TRC188	0.000	0.000	0.000	0.004	0.000	0.031	0.075	8.696	20.634	9
TRC189	0.000	0.000	0.000	0.000	0.000	0.000	0.031	2.860	0.684	8
TRC190	0.000	0.000	0.001	15.285	0.000	0.192	16.375	98.266	2.857	8
TRC191	0.000	0.000	0.000	0.016	0.000	0.034	0.258	59.765	64.282	9
TRC192	0.000	0.000	0.000	0.000	0.000	0.001	0.073	33.179	5.652	8
TRC193	0.000	0.000	0.000	0.002	0.000	0.003	0.757	12.575	0.458	8
TRC194	0.001	0.000	0.019	0.009	0.000	0.027	2.939	57.438	41.141	8
TRC195	0.000	0.000	0.000	0.002	0.000	0.012	0.151	45.179	16.407	8
TRC196	0.000	0.000	0.000	0.000	0.000	0.003	0.133	58.431	17.222	8
TRC197	0.000	0.000	0.000	0.000	0.000	0.001	0.011	1.868	0.490	8
TRC198	0.000	0.000	0.008	0.001	0.000	0.024	1.570	65.663	16.372	8
TRC199	0.000	0.000	0.002	0.022	0.000	0.020	0.535	54.794	80.475	9
TRC200	0.000	0.000	0.000	0.000	0.000	0.000	0.037	9.098	9.409	9
TRC201	0.000	0.000	0.000	0.002	0.000	0.001	0.194	11.224	16.750	9
TRC202	0.001	0.000	0.002	0.012	0.000	0.041	0.212	23.037	31.422	9
TRC203	0.000	0.000	0.014	0.002	0.000	0.008	1.218	56.168	37.105	8
TRC204	0.000	0.000	0.000	0.236	0.000	0.157	0.677	18.075	56.408	9
TRC205	0.000	0.000	0.000	0.648	0.000	0.011	0.462	40.098	55.393	9
TRC206	0.000	0.000	0.000	0.004	0.000	0.011	0.094	30.479	51.516	9
TRC207	0.000	0.000	0.000	0.007	0.000	0.050	0.768	56.134	41.159	8
TRC208	0.000	0.000	0.000	0.010	0.000	0.022	0.683	52.833	88.876	9
TRC209	0.000	0.000	0.001	0.057	0.000	0.005	0.698	47.112	79.719	9
TRC210	0.000	0.000	0.000	0.502	0.000	0.935	2.808	80.920	29.561	8
TRC211	0.000	0.000	0.000	0.001	0.000	0.012	0.064	49.121	61.830	9
TRC212	0.000	0.000	0.000	0.001	0.000	0.006	0.031	13.912	16.015	9
TRC213	0.000	0.000	0.000	0.001	0.000	0.003	0.026	10.290	24.450	9
TRC214	0.000	0.000	0.000	0.005	0.000	0.011	0.080	24.397	51.559	9
TRC215	0.000	0.000	0.000	0.001	0.000	0.037	0.463	90.088	45.389	8
TRC216	0.000	0.000	0.000	0.001	0.000	0.022	0.514	1.140	0.084	8
TRC217	0.000	0.000	0.001	0.008	0.000	0.056	0.290	69.702	92.681	9
TRC218	0.000	0.000	0.001	0.000	0.000	0.004	0.971	62.442	10.401	8
TRC219	0.000	0.000	0.000	0.002	0.000	0.002	0.094	68.301	66.805	8
TRC220	0.000	0.000	0.000	0.009	0.000	0.010	0.138	72.570	72.696	9
TRC221	0.000	0.000	0.001	0.029	0.000	0.037	1.867	21.008	8.546	8

TRC222	0.000	0.000	0.000	0.003	0.000	0.018	0.096	84.720	90.490	9
TRC223	0.000	0.000	0.001	0.010	0.000	0.011	0.258	83.915	93.007	9
TRC224	0.000	0.000	0.000	0.020	0.000	0.081	0.454	91.022	95.970	9
TRC225	0.000	0.000	0.000	0.004	0.000	0.014	0.975	45.515	20.851	8
TRC226	0.000	0.000	0.000	0.004	0.000	0.004	0.153	58.450	84.622	9
TRC227	0.000	0.000	0.000	0.008	0.000	0.019	2.036	29.896	27.339	8
TRC228	0.000	0.000	0.004	0.002	0.000	0.098	1.474	70.189	33.812	8
TRC229	0.000	0.000	0.000	0.001	0.000	0.015	4.496	14.690	0.986	8
TRC230	0.000	0.000	0.000	0.010	0.000	0.027	0.107	57.984	93.991	9
TRC231	0.000	0.000	0.025	0.001	0.000	0.004	0.532	2.338	0.047	8
TRC232	0.000	0.000	0.000	0.009	0.000	0.104	0.390	95.400	97.995	9
TRC233	0.000	0.000	0.000	0.020	0.000	0.087	1.446	92.885	74.108	8
TRC234	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.760	0.566	8
TRC235	0.000	0.000	0.000	0.003	0.000	0.007	0.056	39.757	86.686	9
TRC236	0.000	0.000	0.000	0.007	0.000	0.014	0.698	32.010	18.597	8
TRC237	0.000	0.000	0.004	0.003	0.000	0.039	0.812	76.154	53.257	8
TRC238	0.000	0.000	0.000	0.008	0.000	0.001	0.060	24.869	17.488	8
TRC239	0.000	0.000	0.000	0.000	0.000	0.001	0.008	0.571	4.591	9
TRC240	0.000	0.000	0.000	0.001	0.000	0.001	0.025	18.549	24.874	9
TRC241	0.000	0.000	0.000	0.001	0.000	0.013	0.790	59.310	23.609	8
TRC242	0.000	0.000	0.000	0.033	0.000	0.006	0.070	70.585	50.458	8
TRC243	0.000	0.000	0.000	0.002	0.000	0.038	0.329	72.400	63.530	8
TRC244	0.000	0.000	0.000	0.001	0.000	0.017	0.195	67.677	46.879	8
TRC245	0.000	0.000	0.000	0.001	0.000	0.049	0.300	10.402	12.356	9
TRC246	0.000	0.000	0.000	0.023	0.000	0.238	0.505	60.356	51.834	8
TRC247	0.000	0.000	0.000	0.014	0.000	0.008	0.072	32.883	20.396	8
TRC248	0.000	0.000	0.000	0.000	0.000	0.000	0.250	42.166	7.423	8
TRC249	0.000	0.000	0.000	0.002	0.000	0.008	0.081	36.931	41.952	9
TRC250	0.000	0.000	0.000	0.000	0.000	0.002	0.016	24.733	19.242	8
TRC251	0.000	0.000	0.000	0.025	0.000	0.002	0.091	53.988	51.148	8
TRC252	0.000	0.000	0.000	0.001	0.000	0.016	0.090	80.333	69.141	8
TRC253	0.000	0.000	0.005	0.004	0.000	0.020	1.562	18.185	10.012	8
TRC254	0.000	0.000	0.000	0.000	0.000	0.009	0.123	35.144	10.659	8
TRC256	0.000	0.001	0.000	0.001	0.000	0.085	0.322	62.686	37.881	8
TRC257	0.000	0.000	0.000	0.000	0.000	0.004	0.087	31.038	8.164	8
TRC258	0.000	0.000	0.003	0.001	0.000	0.042	0.721	69.355	38.224	8
TRC259	0.000	0.000	0.000	0.024	0.000	0.003	0.166	32.800	6.211	8
TRC260	0.000	0.000	0.000	0.001	0.000	0.093	0.475	92.974	78.153	8
TRC261	0.000	0.000	0.000	0.022	0.000	0.025	0.319	85.657	41.435	8

## Summary of Probabilities for Specimens in the file PC-TRCA

		Probability Cutoff Values:						
Group:	0.01000	0.10000	1.00000	5.00000	10.00000	20.00000	100.00000	
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PC-E1	153	0	0	0	0	0	0	
PC-E2	153	0	0	0	0	0	0	
PC-E3	147	6	0	0	0	0	0	
PC-E4	102	38	11	1	0	1	0	
PC-E5	153	0	0	0	0	0	0	
PC-E6	61	71	20	1	0	0	0	
PC-SF	2	39	80	28	3	1	0	
PC-CF	1	0	4	7	8	14	119	
PC-TRCS	1	3	8	10	13	19	99	

## Summary of Best Classification of Projected Specimens:

		Classified Into Group:								
From Group:	PC-E1	PC-E2	PC-E3	PC-E4	PC-E5	PC-E6	PC-SF	PC-CF	PC-TRCS	Total
PC-TRCA	0	0	0	0	0	0	1	102	50	153
Total	0	0	0	0	0	0	1	102	50	153