

**APPENDIX D**

**TECHNOLOGICAL ANALYSIS OF THE LOST  
VALLEY FLUTED POINT**

**FLUTED POINT TECHNOLOGICAL ANALYSIS**

**ANALYSIS OF THE LOST VALLEY FLUTED POINT,  
SAN DIEGO COUNTY, CALIFORNIA**

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## SUMMARY

The Lost Valley specimen is the only fluted point recovered in recent decades by archaeological excavation in California. This biface might also be described as a fluted point preform or an unfinished fluted point. It lacks certain fluted point attributes usually present on finished specimens such as edge grinding and a concave base. It is made from what appears to have been a distal end fragment of a much larger, finished obsidian biface that had a rejuvenated blade tip. The Lost Valley specimen exhibits a flute scar on one face as well as a remnant of a collapsed fluting platform that failed in an attempt to flute the second face. These two diagnostic fluted point attributes indicate a placement in the Paleoamerican time period, but not necessarily the classic big game hunter subsistence pattern defined for the Plains region.



Face 1

Face 2

Figure 1

Lost Valley Fluted Point, Artifact # 4408

## INTRODUCTION

Fluted points in California appear to number several hundred. However, a reasonable estimate of the current number is difficult to obtain as there are significant inaccuracies in the literature. Over inflated fluted point estimates have resulted from many non-fluted points in the Tulare Lake region having been erroneously labeled as Clovis points (Rondeau 2005a; Rondeau 2006a) and the unfortunate assumption that the terms “Clovis point” and “fluted point” can be used interchangeably. They cannot be used interchangeably because many fluted points are not Clovis (Rondeau 2007) and some Clovis points are not fluted (Hester 1972).

Regardless, significant numbers of fluted points have been found in southern California. Taylor (2005) lists only 14 specimens for the Mojave Desert while (Dillon 2002) lists 29 for San Bernardino County and one each for Imperial and Riverside Counties. Even so, the count is somewhat higher for that region due to ongoing research (e.g., Rondeau 2004a, 2005b, 2005c; Taylor et al. 1987).

In addition, two fluted specimens have been recovered along the southern coast of California (Erlandson et. al 1987; Rondeau 2004b, 2006b). Two other fluted specimens besides the Lost Valley biface (Kline and Kline 2006) have been reported for San Diego County (Davis and Shutler 1969; Rondeau 2001). Four others have been found to the south in Baja California (Don Laylander, pers. comm. 2006).

The Lost Valley fluted point was recovered by excavation at CA-SDi-2506 (Appendix A) in the northeast corner of San Diego County. This site, just under 5000 feet in elevation, is located in Lost Valley near Shingle Spring that drains into Auga Caliente Creek. Excavations at the site, conducted from 1997 through 2003, were under the direction of Larry Leach, professor emeritus at San Diego State University. Discovered in 2002, the point was found in unit 20S-6W at a depth of 103 cm. The deposit was thought to be culturally sterile at this depth. The deposit was defined as a sandy-silty sediment containing decomposed granite related to nearby hillsides. Bioturbation present in the unit was caused by roots and rodents.

No other artifacts directly relatable to the fluted point were recovered. The cultural deposit at CA-SDi-2506 ranged in depth from 40 to 50 cm (Geo Kline, pers. comm. 2006). Habitation at CA-SDi-2506 is generally attributed to the late prehistoric as evidenced by the presence of Cottonwood and Desert Side-notched projectile points as well as shards of Tizon Brown and Colorado Buff Ware. A late assignment is also supported by the presence of numerous other artifact types and bedrock mortars on a nearby granite outcrop.

Thanks goes to Lynn Gamble for her encouragement and support of this effort. Special appreciation goes George Kline for freely sharing his information on this artifact and for providing the opportunity to study the Lost Valley specimen as part of the CalFLUTED project.

## ANALYTICAL OBSERVATIONS

Artifact descriptions are made with reference mainly to either Face 1 (F1) or Face 2 (F2) of the specimen. Descriptions referencing locations to the left or right on either face are made with the distal end oriented to the top of the page (Fig. 1). The observations were made using a 16X hand lens and direct incandescent light.

Specimen 4408 (Fig. 1) is a fluted point made of black, opaque obsidian with white inclusions. This volcanic glass has been identified by Richard Hughes as the Lookout Mountain variety of Casa Diablo obsidian (Geo Kline, pers. comm. 2006). A hydration band width measurement of the specimen was not attempted due to the weathered condition of the point which seriously limited the chances for a useful result. This decision was advised, based on an inspection of the artifact by Tom Origer.

Protein residue analysis of the artifact has been conducted by the Paleoresearch Institute of Golden, Colorado. The analysis found a positive reaction only for Cervidae, the deer family, which includes deer, elk and moose (Geo Kline, pers. comm. 2006).

The specimen has maximum dimensions of 65.3x36.79x9.7 mm in length, width and thickness. It weighs 25.7 g. The maximum width of this piece is close to the base while the thickest portion is found on the distal third of the artifact. The base is irregular in outline, but retains a fluting platform remnant from an unsuccessful attempt to flute F2. This platform remnant was broken in an unfortunate curation event (Appendix B). The basal cross-section of 4408 is concave-convex. There is no evidence of edge grinding. The lateral margins of this base fragment diverge towards the proximal end of the artifact.

The flake scars on both faces are mainly soft hammer percussion biface thinning scars with limited pressure flaking just along both lateral margins of both faces. This pressure flaking is edge retouch and quite uniform in size and spacing of the scars. This retouch may have served to serrate both blade edges. While the past presence of serrated blade edges may be suggested, the eroded condition of this biface precludes a clear identification of this attribute. In addition, the distal most portion of both blade edges appears to have been reflaked, resulting in an inset margin for the tip portion of both edges (Fig. 1).

No attributes indicating thermal alteration or use wear were observed. However, weathering of the specimen is extensive and precludes the identification of nearly all flake scar attributes requiring magnification.

**Face 1** has the only flute scar (Fig. 1). It ends in a feather termination. The surviving maximum dimensions of that scar measured 32.48 mm long by 17.35 mm wide. Intentional scratching of the flute scar was not identified. Weathering may have precluded this identification, although some obsidian fluted points do not exhibit flute scratching. It appears that scratching was most likely a finishing technique and the failure to complete this specimen might also have played a role.

What appears to be a guide scar parallels the left side of the flute scar. Several remnants of what may be secondary flake scars overlapping the guide scar from the channel flute are suggested by magnified inspection, but this is less certain than desired. No pressure flute, end thinning, intentional ridge removal or platform preparation scars were identified along the basal margin of F1. One small, ridge removal-like pressure flake scar was found following the right ridge of the flute scar, but is interpreted to be part of a pressure sequence from basal margin edge retouch. This sequence appears to have provided a somewhat shallow beveling of the basal edge as part of the preparation for fluting F2.

Due to the weathered nature of the artifact, the exact relationship of various flake scars to one another on F1 could not be determined. Even so, it appears that three flake scars from the left lateral margin were truncated by the guide scar. Also, what appears to be a remnant of a soft hammer, percussion biface thinning flake scar appears to reach the midline of the artifact, but none were identified that extended further.

**Face 2** of artifact 4408 is identified by the lack of a flute scar or any other end thinning from the basal margin. Again, weathering limited the number of accurate readings of flake scar relationships that could be made. F2 lacks any evidence of percussion or pressure flutes, end thinning scars, platform preparation scars or pronounced edge retouch along the basal margin.

Three biface thinning scars, appearing to be the result of soft hammer percussion, cross the midline of the artifact. These longer scars fit well with the known Clovis technology of overshot and nearly overshot biface thinning flake scars. Two other scars reach the midline.

Two short, but pronounced step scars from the basal margin appear to have resulted from a collapsed fluting platform. This evidence of a failed attempt to flute F2 suggests why only one side was fluted and the specimen never finished.

## CONCLUSIONS

Five elements of the Lost Valley point are reviewed below. These are the guide scar, the basal margin beveling, the morphological elements suggesting that it had been a part of a larger biface, the biface thinning scars and the reflaked tip as it may relate to protein residue analysis.

Guide scars on fluted bifaces have been recognized elsewhere in the Far West including California (Rondeau 2004c, 2004d, 2005a, 2006c, 2006d) and Nevada (Rondeau 2006e, 2006f). Most identified guide scars have been pressure flake scars associated with late stage fluting of points. The notable exception to this is the Tosawihi biface (Rondeau 2006e) which exhibits soft hammer percussion guide scars on the fluted face of that large, unfinished artifact.

Basal margin beveling is recognized as an edge treatment prior to the fluting of unfinished Clovis bifaces such as those at the Gault site in Texas (Michael Collins, pers. comm. 2006). Large, fluted, but nonetheless unfinished bifaces have also been recognized in California (Rondeau 2006b) and Nevada (Rondeau 2006e).

The thickness of the Lost Valley specimen and the fact that the lateral margins are continuing to diverging away from each other at the base both suggest that this artifact was once part of a larger biface. The reworking of larger biface fragments into fluted points has been recognized at other sites in North America (Ellis and Payne 1995).

The three biface thinning scars that cross the midline of the biface are clearly suggestive of a Clovis era biface thinning technique. No overshots were identified, but these extended thinning scars are suggestive of that approach.

Use wear has been identified on a few fluted specimens in the Far West. An obsidian fluted point base from the Volcanic Tableland (Rondeau 2004d) of California and another from Nevada (Rondeau 2006f) are highly comparable. Both have quite similar rounded snap margins and associated striations. A scraping function for these may be inferred. An obsidian specimen from the Southern Sierra Nevada (Rondeau 2004e) is relatively complete and appears to have been used as a knife while still in the haft. Evidence may also suggest that a large, apparently unfinished fluted biface from Southern California was also used as a tool. However, the evidence for use on that Monterey Chert specimen was not conclusive (Rondeau 2006b).

Refurbishing the tip of this specimen may have been to repair use wear, although this remains unconfirmed. A hypothetical use of the this specimen or as an earlier, larger biface could have involved deer or some other Cervidae. The presence of bison protein residue on large fluted bifaces from the Richey Clovis Cache in Washington state may suggest a similar circumstance (Gramley 1993). Regardless, it is important to point out that the presence of Cervidae protein may be a better fit with the Far Western Prearchaic subsistence model as opposed to the Paleoindian, big game hunting model of the Plains (Elston and Zeanah 2002).

Regardless, there now exists limited evidence that Far Western fluted bifaces were not only used as weapon tips, but also as knives and scrapers. Identification of additional uses to which they were put remains a subject for future research.

To conclude, the flute scar, the basally beveled edge, the biface thinning scars that cross the midline of the biface, the apparent guide scar and the fluting platform remnant clearly identify the Paleoamerican origin of this artifact. Analysis of this specimen has added another variation to the growing body of information on the manufacture of Far Western fluted bifaces, their characteristics and potential uses.

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