LITHIC RESOURCE PROCUREMENT AT OBSIDIAN CLIFFS, OREGON: A COMPARATIVE STUDY

by
Barry South

Accepted in Partial Completion of the Requirements for the Degree
Master of Arts

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MASTERS THESIS

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M E M O R A N D U M

To: Craig Skinner

From: Catherine Lindberg

Date: January 26, 2000

Subject: Obsidian Cliffs Masters Thesis

Enclosed you will find the recently completed Masters thesis of Barry South, a longtime seasonal employee on the McKenzie Ranger District of the Willamette National Forest. Barry's work describes a comparative lithic analysis between the assemblages of lithic quarry sites and four other local site types. Knowing your interest in Oregone obsidian, I thought that you would enjoy seeing this. We hope that you find his work interesting and informative.

Hope all is well with you!

Sincerely,

Catherine Lindberg, Forest Archaeologist

Willamette National Forest

Eugene, Oregon

541.465.6641

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A Thesis Presented to
The Faculty of
Western Washington University

In Partial Fulfillment
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May 1999

ABSTRACT

Lithic resource procurement sites are an important component of the culture of people who rely on stone tools. Obsidian obtained prehistorically from Obsidian Cliffs in the Cascade mountains of Oregon was a major lithic resource locally and has been identified as far away as Eastern Washington and Southwestern British Columbia. Despite this fact the quarries at Obsidian Cliffs remain undescribed in the literature.

Quarry sites are often described as locations where early-stage lithic reduction, particularly biface preparation, occurred. The presence of previously investigated sites in the vicinity which represent various site types offers an opportunity to test whether this reduction strategy was predominant at Obsidian Cliffs.

In the summer of 1995 the lithic resource procurement areas at Obsidian Cliffs (35LA172) were systematically sampled. A total of 3877 pieces of debitage and 31 modified lithic artifacts from 13 sample units were analyzed and recorded in the field. The data were compared to four other sites in the vicinity: a summer hunting and resource procurement site (35LA392), a base camp and resource processing site (35LA1176), a winter village site (35LA321), and a rockshelter (35LA907).

Based on a comparative analysis of the lithic assemblages of the four sites with Obsidian Cliffs, it is evident that the quarry was used for the production of biface blanks. This

conclusion is supported by data from debitage and modified lithic artifacts. The artifacts from Obsidian Cliffs had significantly higher proportions of large size flakes, flakes exhibiting cortex, debris, biface reduction flakes, and early stage bifaces and cores when compared with other site types in the region.

ACKNOWLEDGMENTS

I would like to express my appreciation and gratitude to the members of my advisory committee, Dr. Sarah Campbell, Dr. Dan Boxberger, and Dr. Joan Stevenson. Dr. Campbell was instrumental in assisting with the completion of this project, and for that I am indeed grateful.

The data for the work presented here was provided by the Central Zone of the Willamette National Forest, and I wish to thank the District Rangers and staff of the McKenzie and Blue River Ranger District offices. A very special thanks goes to Central Zone Archaeologist Eric Bergland without whom this project would not have been possible. Thanks also to McKenzie District Archaeological Volunteer Michael Wilder who helped with survey and analysis under difficult conditions in the field.

Lastly I would like to thank my wife, Gail Lazaras, who contributed her professional expertise to every phase of this project, from hiking to the site to assist with the analysis of artifacts in the field, to the production of this manuscript.

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CHAPTER 1: INTRODUCTION

Prehistoric lithic resource procurement at quarry sites received little attention in the archaeological literature prior to the 1980s. While some advances have been made in the last two decades, these studies do not reflect the number and variety of quarries in the Western United States. Oregon, for example, has over 100 obsidian sources (Skinner 1983), yet only recently have archaeologists begun any systematic investigation (see Connelly and Musil (1994) for a recent example). Archaeologists routinely excavate and analyze prehistoric lithic artifacts in an attempt to interpret the behaviors of prehistoric inhabitants. To leave unanalyzed the procurement and manufacturing activities of a stone tool using people is to leave a considerable portion of their behavior unaccounted for. If archaeology is to attain its processualist goals then all types of sites in a region must be analyzed, not just habitation and subsistence sites.

Obsidian Cliffs is a major prehistoric lithic procurement and reduction site in the central Cascades of Oregon. Scattered over an area almost two miles in length are literally millions of flakes. Flake density varies from less than one per square meter to concentrations of several thousand per square meter. These concentrations are often greater than ten meters across. Obsidian from Obsidian Cliffs was used extensively in the McKenzie River valley and has been reported in the Willamette valley (Wilson 1994) and as far away as eastern Washington (Morgan 1993) and British Columbia (Carlson 1994). Inspite of its obvious importance as a resource to regional societies, prior to this study

Obsidian Cliffs has had no systematic archaeological data recovery, or even a cursory description in the archaeological literature.

The current literature on reduction activities at quarry sites emphasizes prehistoric biface reduction and the production of "blanks" for export. This activity undoubtedly occurred at Obsidian Cliffs, as evidenced by the discovery of biface caches in the McKenzie and Santiam River drainages (Bergland 1995). However it has not been documented by collection of technological data at the quarry site itself. This thesis tests the applicability of the general model of biface reduction to this major quarry site.

Models of lithic reduction cannot specify absolute parameters of biface reduction in terms of expected percentages of artifacts, because these vary with material type and form. Only by comparison with nearby assemblages can an assessment be made. Therefore the method of testing whether biface production was the primary activity at Obsidian Cliffs, or perhaps just one of a diverse suite of activities, is to compare the artifacts at Obsidian Cliffs with different site types in the McKenzie River drainage system. If different lithic reduction activities occurred at different site types, than it should be reflected in the archaeological assemblages.

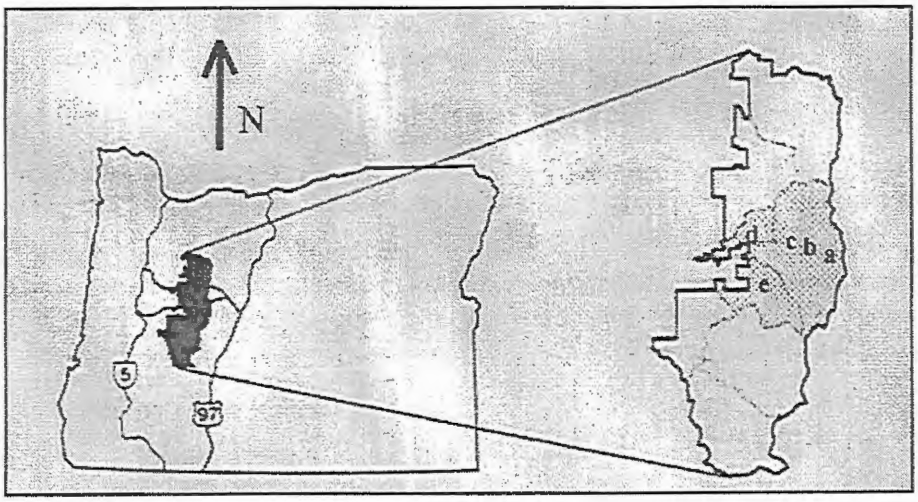
This thesis is the result of such a study. Field work was undertaken at Obsidian Cliffs to characterize the lithic artifacts. The data collected from these efforts were compared with data from four other sites in the McKenzie River drainage system: a high elevation summer hunting and resource procurement site on the Scott Mountain Plateau (Irish Camp Lake site), a low elevation base camp and resource processing site at the confluence of Scott Creek and the McKenzie River (Martin's Trippy site), a low elevation winter village site in the McKenzie River valley (Scout Creek site) and a low elevation rockshelter in the valley of the South Fork of the McKenzie River (South Fork Rockshelter site). These represent all the sites within 25 miles of Obsidian Cliffs with substantial lithic assemblages which had been analyzed and were available for comparison.

The context of the Obsidian Cliffs and the four other sites are outlined in Chapter 2. A review of the literature on prehistoric quarries may be found in Chapter 3. Chapter 4 details the methods used to collect data for this study, and describes the coding form used and the types of attributes recorded. The results and findings of the study are in Chapter 5, and Chapter 6 contains the summary and concluding remarks.

CHAPTER 2: CONTEXT

The Obsidian Cliffs quarry and the four comparative sites are located in the upper McKenzie drainage basin in the central Cascade Mountains of Oregon (Figure 1). The upper McKenzie River valley is relatively narrow with high, steep ridges. In the eastern region of the McKenzie drainage is the Scott Mountain Plateau. The Scott Mountain Plateau is a relatively flat, broad area bounded on the west by the McKenzie River, and on the east by the Cascade Mountain range. Three of the sites discussed here lie in the valleys near the river, one lies at the eastern edge of the Scott Mountain Plateau, and the last (Obsidian Cliffs) is at the base of the Cascade mountains. The upper Mckenzie area is heavily forested and resources are abundant. Large game include deer, elk, and bear. Cougar, bobcat, coyote and a number of other small mammals inhabit the region. The rivers and streams provide salmon and trout, and forest resources include huckleberry, camas, beargrass, and cedar.

The Obsidian Cliffs lithic procurement areas are located in the Central Cascades at the western base of the North Sister in Lane County, Oregon (Figure 2). The area is in a sub-alpine zone of meadows and open forests of hemlock and fir (Figure 3). Several small snow-melt lakes are present in the vicinity, and there are two springs which form the headwaters of two creeks. These creeks are tributaries of the McKenzie River. The name Obsidian Cliffs refers to the 300 foot cliffs at the termination of a 1.5 mile long obsidian-rhyolite flow. The flow itself forms a broad plateau, ranging in elevation between 6000



KEY TO SITES

a	Obsidian Cliffs
b	Irish Camp Lake
c	Martin's Trippy Site
d	Scout Creek
e	South Fork Rockshelter

Figure 1. Map showing Wilamette National Forest within Oregon state and location of prehistoric sites referenced in text.

Figure 2. View of Obsidian Cliffs Site Area with the Three Sisters Mountains in the Background.

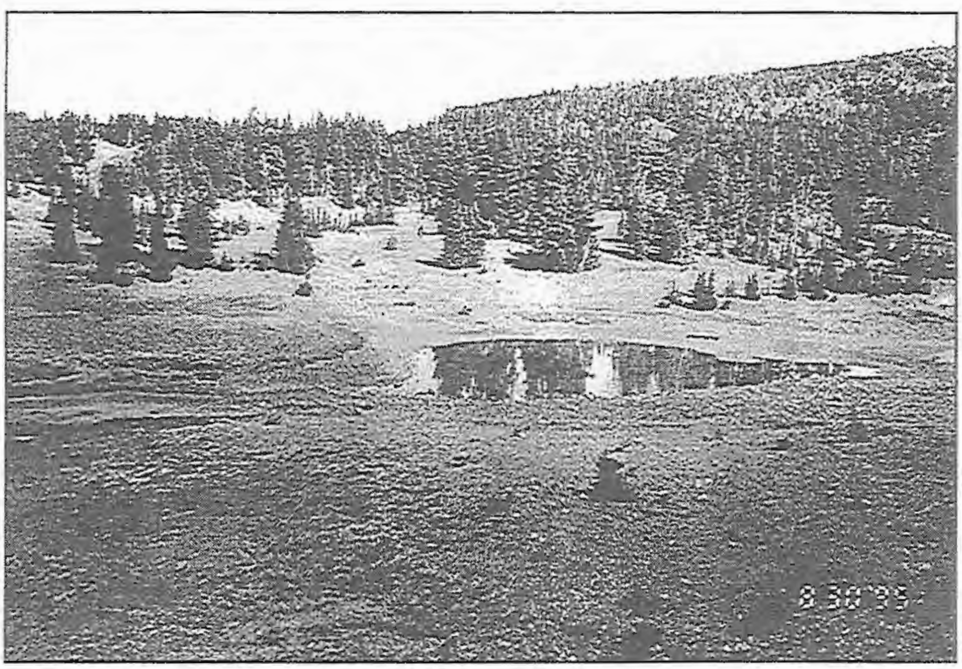


Figure 3. Obsidian Cliffs Site Area.

and 6600 feet, upon which occur numerous outcroppings of obsidian (Figure 4), and stream or glacially transported obsidian nodules. Also upon the flow are approximately 60 dense concentrations of obsidian artifacts (Figure 5). In some areas these concentrations are contiguous, with lower density areas separating those of higher density.

Obsidian Cliffs Obsidian is the predominant lithic raw material in lithic sites in the portion of the McKenzie River valley which lies within the Willamette National Forest, and often makes up over 90% of the lithic raw material at these sites. Obsidian from Obsidian Cliffs was obviously a very important resource locally, and there is evidence that it was traded regionally as it has been reported in the Willamette valley, Eastern Washington and British Columbia (Carlson 1994, Morgan 1993, and Wilson 1994).

ETHNOHISTORIC INTERPRETATION

Regular use of montane resources by native American groups in recent times is indicated but not described to a great degree in the relevant ethnohistoric literature. According to Aikens, (1993) the Upper Santiam band of the Molala inhabited the upper McKenzie region and were the closest to Obsidian Cliffs at the time of Euro-American contact. These people were foragers who wintered in small villages in the valleys and exploited resources in the upper elevations during the summer months. This "seasonal round" would presumably have taken people from villages along the McKenzie River to forage in the areas to the west of Obsidian Cliffs. They would have undoubtedly set up base camps

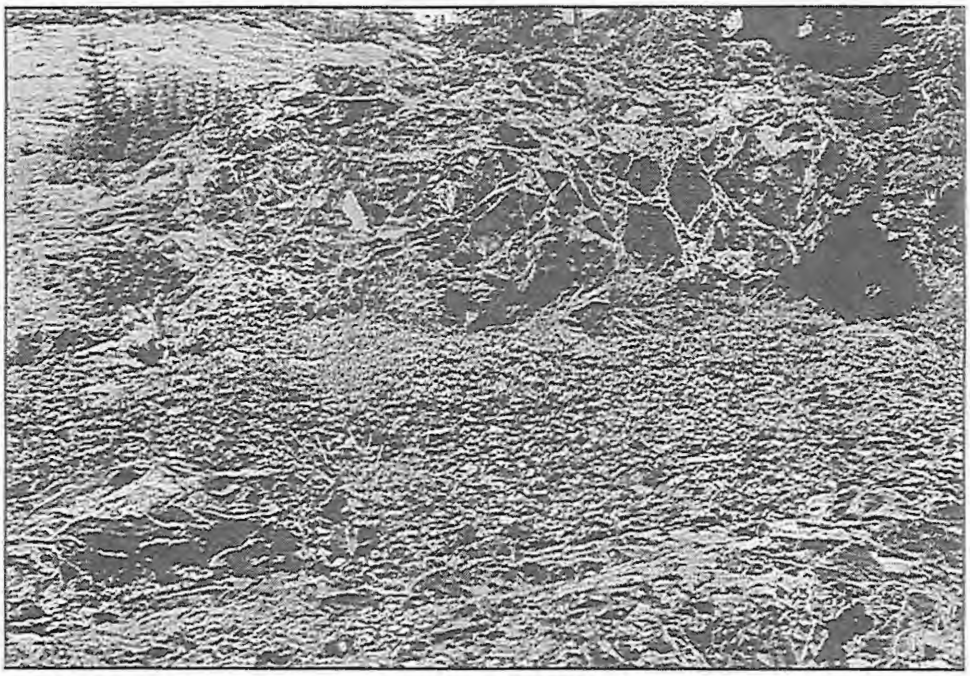


Figure 4. Obsidian Outcrop.

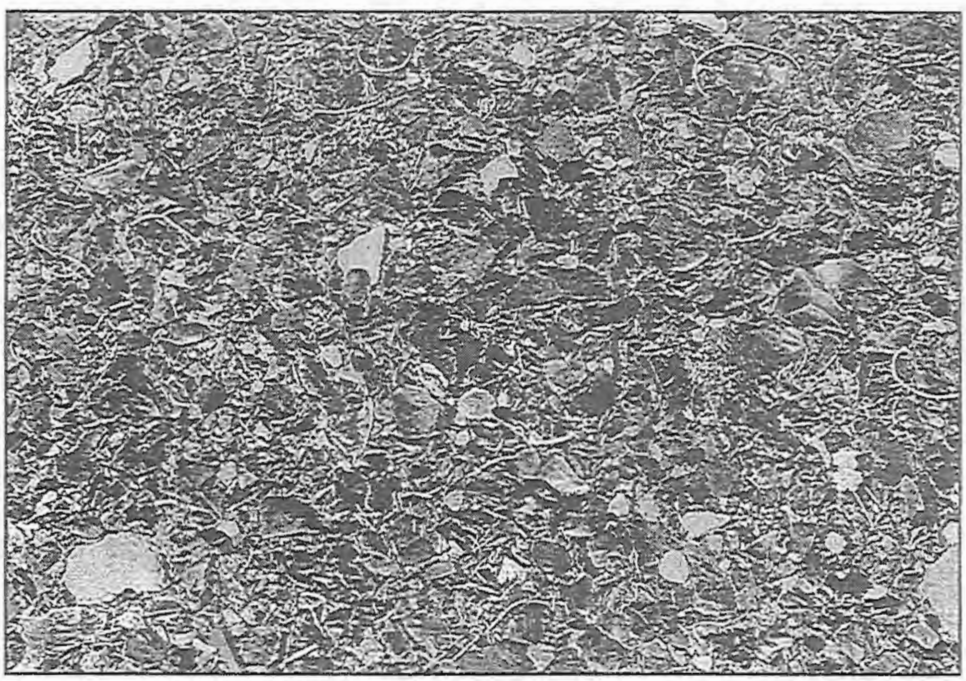


Figure 5. Artifact Concentration. Area shown is roughly 1 meter wide and contains several thousand flakes.

near water and may have traveled to procure obsidian from base camps such as these. Other adjacent groups such as the Kalapuya used the area as well, although the descriptions are vague as to specific areas. A number of trails are noted, indicating regular travel and use through this zone.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Following is a brief summary of archaeological investigations undertaken at Obsidian Cliffs and the four other sites used in the comparison: Irish Camp Lake, Martins Trippy Site, Scout Creek and the South Fork Rockshelter. All are located in the McKenzie and Blue River Ranger Districts of the Willamette National Forest. Investigations were undertaken as part of management of cultural resources in compliance with Section 106 of the National Historic Preservation Act (King 1998). The descriptions of field methods at these four sites presented here are derived from site files maintained at the McKenzie and Blue River Ranger District offices and include information from the original field notes when these were available. The sites are summarized in Table 1.

Table 1. Summary of Sites.

SITE NUMBER	35LA172	35LA392	35LA1176	35LA321	35LA907
SITE NAME	Obsidian Cliffs	Irish Camp Lake	Martin's Trippy Site	Scout Creek	South Fork Rockshelter
SITE TYPE	quarry	foraging camp	base camp	Village	base camp
BASIS FOR INTERPRETATION	lithic source	location	location, artifacts	location, artifacts	location, artifacts
ELEVATION IN FEET	6000-6900	4800	1680	1350	2000
DISTANCE FROM SOURCE	0 miles	5 miles	11 miles	25 miles	25 miles
DIRECTION FROM SOURCE		west	west	west	southwest
ARTIFACT TOTALS	3908	4302	554	1280	952

OBSIDIAN CLIFFS

The archaeological remains at Obsidian Cliffs were originally recorded in September 1969 by C. T. Sheldon, who described a large scatter of obsidian flakes measuring 150 by 400 meters on the plateau above the cliffs (Sheldon 1969). A site form was completed at that time and a Smithsonian trinomial was issued by the Oregon State Historic Preservation Officer (35LA172). The area was revisited by Willamette National Forest District archaeologist Jon Silvermoon in 1985 and 1987 as part of a Three Sisters Wilderness survey. Silvermoon's survey efforts resulted in the discovery of an additional 57 lithic scatters in the Obsidian Cliffs area, and increased the size to 900 by 3000 meters. Silvermoon recorded each of these scatters as an individual site, and completed a site form for each of the 57 scatters. None of these 57 site forms were formally recorded with the Oregon State Historic Preservation Officer, and no Smithsonian trinomials were issued for these sites. Silvermoon collected a number of artifacts and raw material samples from the site, and a trace element analysis on the obsidian was completed by Dr. Richard Hughes (Hughes 1989, 1993).

In 1988, Silvermoon presented the findings from his survey of the Obsidian Cliffs area at the 41st annual Northwest Anthropological Conference (Silvermoon 1988a). He also began a paper (presumably for publication) which was never completed (Silvermoon 1988b). Both of these manuscripts give a description of the lithic procurement sites at Obsidian Cliffs, but neither give more than a cursory description of the artifacts.

The Obsidian Cliffs area was revisited in 1989, 1992, and 1993 by various Forest Service archaeologists for the purpose of monitoring the site. In 1992 an obsidian hydration rate was developed for the Obsidian Cliffs glass, and the results were presented at the 45th annual Northwest Anthropological Conference, Burnaby, British Columbia (Bergland *et al*. 1992). No other archaeological investigations were undertaken prior to the present study.

IRISH CAMP LAKE

The Irish Camp Lake site (35LA392) is located approximately 5 air miles west of Obsidian Cliffs on the southern margin of Irish Camp Lake. The lake is located at 4800 feet elevation on the Scott Mountain Plateau, and is under snow for much of the year. Irish Camp Lake is fed by snow melt and is surrounded by a open forest of mountain hemlock, true firs, huckleberry and bear grass. Site 35LA392 is thought to be a summer hunting and resource procurement site based on its location (Bergland 1994). The lake is situated on the historic Scott trail which was undoubtedly also a prehistoric route between Obsidian Cliffs and the McKenzie River, and would be an ideal foraging camp location for people traveling to or from Obsidian Cliffs.

Archaeological investigations took place at Irish Camp Lake in September of 1987 and October of 1988 with Jon Silvermoon acting as principal investigator (Silvermoon *et al* 1988). The testing was necessary to justify closing an access road that was damaging the site. Ten 50 by 50 centimeter units and a single 1 by 1 meter unit were excavated to various depths. No report of these efforts was produced and the above information comes directly from notes taken in the field. The analysis of lithic artifacts recovered during subsurface testing was conducted a number of years later by Jeff McAlister and Glen Walters (Bergland 1999).

MARTIN'S TRIPPY SITE

Martin's Trippy Site (35LA1176) is approximately 11 air miles west of Obsidian Cliffs and is located at 1680 feet elevation on an old river terrace at the confluence of the McKenzie River and Scott Creek. It is also where the previously mentioned Scott trail meets the McKenzie River. Martin's Trippy Site is in an area forested with Douglas firs and western red cedar. The underbrush is dense in places and consists primarily of Oregon grape, salal, vine maple and rhododendron and sword fern.

The site was discovered during survey prior to the installation of an underground phone line. In 1998 the site was determined to be within a timber sale unit, and subsurface testing was undertaken to determine the site boundaries and the nature of the deposits. Excavation took place in the summer of 1998, with Eric Bergland as principal investigator (South and Bergland 1998). A total of sixty 50 by 50 centimeter test units of varying depth were excavated. I was involved in investigations at this site as crew leader during the 1998 survey and test excavation. I also supervised the analysis of the lithic assemblage. Based on the diversity of the lithic assemblage, which included non-local materials, exhausted cores, and retouched flakes, and the location at a low elevation near the river and the Scott Trail, this site is believed to be a long term base camp.

SCOUT CREEK

The Scout Creek site (35LA321) is located approximately 25 air miles west of Obsidian Cliffs at the confluence of Scout Creek and the Blue River near the town of Blue River in Lane County, Oregon. The site is in the drawdown zone of the Blue River Reservoir and is under the reservoir in the spring and summer months. The elevation of the site is 1350 feet.

Subsurface archaeological investigations at Scout Creek were undertaken by the Forest Service in 1992 with Eric Bergland acting as Principal Investigator, and in 1994 by Heritage Research Associates Incorporated. Fieldwork accomplished during 1992 was initiated because of erosion by reservoir wave action and damage due to illegal artifact collection activities, and consisted of 15 excavation units each measuring a meter square. Data on artifacts recovered during these efforts are used in the research. The 1994 Heritage Research Associates testing was undertaken at the request of the Army Corp of Engineers, and consisted of 13 units each measuring 50 by 50 centimeters. Data on artifacts recovered in 1994 were not available to use in this comparison.

The Scout Creek site has been described as a winter village site (Bergland 1994), or a "long-term seasonal base camp" (Oetting 1994). This assessment is due to its low elevation on the north side of the McKenzie River valley, and to the diversity of the lithic assemblage recovered during excavations, which included a high percentage of tools.

SOUTH FORK ROCKSHELTER

The South Fork Rock Shelter (35LA907) is located at an elevation of 2000 feet and is approximately 25 air miles southwest of Obsidian Cliffs. The site is in a rock overhang on a steep slope above the South fork of the McKenzie River. The area is forested with Douglas fir, pine, cedar, and vine maple. Due to the potential for impacts to the site from illegal artifact collecting, four test units were excavated in 1990 with Eric Bergland acting as principal investigator. This site may represent a base camp, or it could be a specialized activity location (Bergland 1994). This interpretation is based on the location near the river and an artifact assemblage with a high percentage of utilized and retouched flakes.

CHAPTER 3: ARCHAEOLOGICAL INVESTIGATION OF QUARRY SITES

Archaeological investigations involving lithic quarries may be of considerable value to our understanding of prehistory (Ericson 1984; Gramly 1984; Purdy 1984; Torrence 1986). Although studies of the prehistoric use of quarry sites go back over 100 years (e.g. Holmes 1890a, b), research at quarry sites is not well represented in the archaeological literature (Ericson 1984; Singer 1984). The basis for this under-representation is both methodological and theoretical. The goals and methods of the culture history paradigm (which fostered little interest in studying quarry sites), along with problems inherent in analyzing quarries are likely to blame for the lack of quarry research. With the shift to processualism in the 1960s quarries became an appropriate research domain. This, along with advances in techniques and methods of data recovery, has sparked a new interest in quarry research. In this chapter I describe the nature of quarry sites, summarize the theoretical frameworks of culture history and processualism and how they have been applied to quarry research, and describe the types of research undertaken recently at quarry sites.

DEFINITION OF THE QUARRY SITE

A quarry, in the most general sense, is a location where people have gone for the purpose of obtaining stone. The definition of a quarry as "an extractive location that was demonstrably the scene of long term or intensive activity" (Lesser 1988 p.31) is useful here. Thus the term "quarry" can be used to indicate a location where the extensive procurement of lithic resources took place prehistorically. A prehistoric quarry can be described as a extensive site or complex of activity areas where procurement and reduction of lithic resources took place over time. A quarry may exhibit any or all of the following features: mines, pits or other evidence of lithic extraction; differential use areas; and workshop areas exhibiting the primary stages of lithic reduction.

JUSTIFICATION FOR THE STUDY OF QUARRY SITES

Several authors have argued in favor of the need for further study of quarry sites. Ericson states that the quarry is "the most important site and component" of the lithic production system (Ericson 1984 p.1). Purdy argues that "a significant dimension of a culture is missing if a peoples' stone working technology, including quarry-site behavior is ignored" (Purdy 1984 p.119). Torrence (1984, 1986) and Arnold (1984, 1987) have both stressed the importance of quarry sites in understanding prehistoric economic systems. Quarries offer an opportunity to examine aspects of behaviors which would otherwise be missed. For example, Snarskis (1979) has proposed that the Turrialba quarry in eastern Costa Rica can be used to test hypotheses concerning the diffusion of typologically sensitive fluted points. Gramly asserts "that the logical place to begin an investigation of a stone-tool-using culture is at lithic sources" (Gramly 1984 p.21). He suggests that research at quarry sites can yield information on the proportions of a prehistoric lithic industry, on the amount of human activity in an area, as well as information concerning prehistoric economic systems. Gramly has defined a class of artifacts which are unreported outside of quarry sites (Gramly 1980). Working at a lithic quarry and workshop site in the White

Mountains of New Hampshire, Gramly has identified what he calls "rejectamenta" (1980 p.830). Rejectamenta are the worn out and discarded tools of exotic (non-local) material which were replaced at the quarry.

PROBLEMS WITH THE STUDY OF QUARRIES

Mierendorf (1993) in his investigation of the Desolation chert quarry in the North Cascades of Washington State has made a list of salient characteristics of quarries. Although they are characterized by evidence of large scale selection, reduction, and removal of lithic raw material, with vast amounts of quarrying debris and relatively few finished tool forms, there is considerable variation in other attributes. Quarry sites often consist of a complex of related location areas, such as extraction areas and workshops, and different activities take place at different locations. As well, quarry sites exhibit varying degrees of use over time. In his summary of pragmatic difficulties presented by quarry sites, Ericson (1984) notes the problems caused by some of these traits, such as the vast quantities of material and the problem of overlapping use areas. And he also notes that the specialized nature of the activity creates a narrow range of artifact types so that many of the data categories useful for relating sites to regional settlement patterns are absent.

THEORETICAL ORIENTATIONS

The theoretical orientations of quarry studies follow those of Americanist archaeology in general. The two most prominent theoretical orientations that have guided quarry studies are culture history and processualism.

CULTURE HISTORY

The reconstruction of culture history was the main focus of Americanist archaeology prior to the 1960s (Willey and Sabloff 1974; Trigger 1989). This approach concentrates on construction of chronological sequences and the description of artifacts in an attempt to reconstruct ancient lifeways. The main goals of the culture history method are to establish dates of site use and to describe the primary artifacts and their function. Little attention is given to debitage, food remains, or horizontal artifact patterning. A number of criticisms have been raised concerning culture history: it is description for the sake of description; it is not scientific; it is not anthropology; it ignores a considerable portion of the archaeological record; and it focuses on objects rather than behavior. The application of this approach to the study of quarries has been criticized as being sterile (Torrence 1984), and this may be the primary reason for the lack of investigation at quarry sites prior to the 1960s. Due to the problems outlined above, (lack of stratigraphic sequences, lack of typologically datable artifacts, lack of habitation areas, and relatively limited activities) quarry sites were undoubtedly viewed as a less than optimal area of study under the culture history paradigm.

Virtually all quarry studies done prior to the 1970s focus on culture history (Bryan 1950; Coe and Flannery 1964; Phillips 1900; Shaefer 1958; Spence and Parsons 1967). Holmes (1890a, 1890b, 1891, 1919) predates the culture history paradigm and his work is an exception to it. Of the studies involving quarries undertaken during this period, (most of which are little more than artifact lists) the work of Holmes and Bryan had the greatest impact.

Holmes (1890a. 1890b, 1891, 1919) studied quarries in various locations in the United States and Mexico, and developed interpretations of quarry artifacts which are still considered valid. Holmes' assertion was that people at quarries were reducing the lithic resources into bifacially worked "blanks" which were subsequently transported to other locations for final working into finished forms (Holmes 1919). Holmes based this interpretation on several factors: the absence of finished tool forms, the presence of broken biface fragments and partially worked and rejected bifaces, the occurrence of buried biface caches in non-quarry locations, and the relative lack of bifaces at quarries approaching the size and thickness of those found in the caches.

After visiting a number of quarries in the United States, Bryan (1950) rejected Holmes conclusions and proposed his own interpretations for the function of quarry sites. Bryan felt that the quarries were not merely extractive locations, but also were processing stations, where materials such as wood were brought for processing. Bryan suggested that the broken and rejected bifaces found at quarries were not rejects and failures, as Holmes believed, but were actually hafted axes and hoes. Bryan felt that the use of hafted flint axes would produce the large number of broken bifaces found at the quarries. Bryan also criticized Holmes for his lack of attention to the abundant waste flakes at the sites. Bryan felt that the flakes held a high potential for utilization, and that Holmes had ignored that possibility.

In retrospect Holmes' ideas seem to have been accepted as accurately reflecting processes which contribute to the formation of quarry sites. Holmes is frequently cited in the literature on quarry sites (Amick 1985; Arnold 1987; Coe and Flannery 1964; Ericson 1984; Gramly 1980; Lesser 1988; Losey 1971; Mierendorf 1993; Purdy 1984; Singer 1984; Spence and Parsons 1967; Stewart 1987; Torrence 1984) and his theory of the blank is well represented. Experimental studies have demonstrated that the incidence of failures due to breakage is a common occurrence in biface blank manufacture (Callahan 1979; Johnson 1979; 1981; Rondeau 1981). In contrast there is no evidence in the literature to support Bryan's claim for the wide spread axe manufacture and material processing at quarry sites. Bryan did, however, accurately assess the importance of quarry debitage and the utilization of flakes.

PROCESSUALISM

Processualism, or the "new archaeology" that developed in the late 1960s and 1970s (Trigger1989; Willey and Sabloff 1974) stresses the understanding of cultural processes and is usually associated with an attempt to bring archaeology into line with the goals of anthropology. The salient features of processual archaeology are: the formation of an explicit hypothesis to guide research, the placing of sites into a regional context with other sites, the development of a cultural systems model and a focus on the behaviors behind the artifacts. Archaeologists following processualism are interested in aspects of cultural systems pertaining to subsistence, settlement patterns, trade and regional exchange networks, economics, craft specialization and social organization. Under the processual paradigm researchers have taken a renewed interest in the study of quarry sites and their role in regional prehistory. Processual approaches to the study of quarry sites follow these general themes: manufacturing technology, subsistence systems, economic systems, and craft specialization. These are not discrete, mutually exclusive topical areas. Invariably the studies of lithic technology try to place their sites within economic, subsistence, and specialization systems, and studies on subsistence, economics, and craft specialization are drawing conclusions based on an analysis of lithic materials.

Manufacturing Technology

Manufacturing technology is perhaps the most studied aspect of lithic quarry sites (Ahler and Vannest 1984, Amick 1985; Brumback 1987; Chance 1981; Funk *et al.* 1989; Gibson 1984; Hatch and Miller 1985; Leach 1984, Lesser 1988; Lloyd *et al.* 1983; Losey 1971; Purdy 1975, 1981; Snarskis 1979). Research analyzing the production technology of people exploiting a lithic resource are especially relevant at quarry sites. The study of lithic manufacturing technology goes beyond the analysis of finished tools to look at intermediate forms, debitage, and processing tools. Lithic technologists study flake morphology (Gibson 1984), lithic heat treatment (Amick 1985, Hatch and Miller 1985; Purdy 1975, 1981), striking platform preparation (Gibson 1984; Leach 1984), and flake scars (Amick 1985) in an attempt to discover the nature of the lithic reduction processes being practiced. The ultimate goal of these studies (which is implicit in the processual paradigm) is to understand the behaviors represented in the manufacturing remains.

A number of researchers have undertaken the analysis of debitage from quarry sites (Brumbach 1987; Gibson 1984; Hatch and Miller 1985; Lesser 1988; Lloyd *et al* 1983). Debitage is counted, weighed, measured categorized and analyzed. Topics researchers address in these studies include type of reduction, manufacturing stages, pressure versus percussion flaking, hammer composition and hardness, flake utilization, heat treatment, platform preparation, and knapping skill. Using debitage as a means of analyzing prehistoric manufacturing systems at quarry sites has three advantages: debitage is often plentiful; debitage is not subject to impact by collectors; and debitage may give a more accurate representation of manufacturing sequences, since the end product of quarry production is usually exported from the site and is therefore unavailable for analysis (Shott 1994).

Gibson (1984) conducted an analysis of the lithic assemblage from a paleolithic quarry site at Corbiac, France. Examining blades and flakes, Gibson recorded measurements such as length, width, thickness, size and angle of the striking platform, amount of cortex present, and percussion bulb attributes. The overall uniformity of the assemblage led Gibson to conclude that there were "strong typological norms in the society" of the flintknappers (1984 p.144). He further suggested that based on the size and uniformity of the assemblage production by specialized craftsmen was likely.

The analysis of biface reduction is a method for understanding prehistoric manufacturing processes which has received considerable attention from lithic analysts and experimental archaeologists. The primary concept for biface reduction analysis is the notion of biface reduction occurring along a "trajectory" or a "biface manufacturing continuum" (Callahan 1979; Johnson 1979). Biface manufacture is perceived as a subtractive process which, beginning with the raw material and ending with the finished product, has discrete stages. By taking measurements of bifaces and determining "thinning indexes" the lithic analyst can place the biface or fragment on the production continuum. Ahler and Vannest (1984), Amick (1985), and Funk *et al.* (1989) have applied biface analysis to lithic procurement sites. Ahler and Vannest evaluated the stages of bifaces found at the Knife River flint quarry in North Dakota as well as performing an analysis of reduction debitage and reduction techniques and were able to discern a change in reduction strategies over time (Ahler and Vannest 1984). Amick placed bifaces from the Topsy site in Tennessee on a biface trajectory and analyzed the biface reduction debitage. His results indicated that the bifaces represented the late stages of the trajectory which is uncommon at procurement sites. Using regional data concerning settlement and technology Amick has interpreted the analysis to be indicative of a developing craft specialization by a foraging population (Amick 1985).

The Relationship Of Lithic Procurement To Other Activities

The function of a lithic resource procurement location in a foraging subsistence system has been addressed by several researchers (Fladmark 1984; Gramly 1980; McClure 1989; Mierendorf 1993; Stewart 1987). Central to these studies is Binford's concept of "embeddedness". Binford (1979) has proposed, based on his ethno-archaeological studies of the Nunamiut, that the procurement of lithic resources is often "embedded" in other activities, such as hunting. The idea is that people in a foraging economy may not be making special trips to visit a lithic source but do so in conjunction with the procurement of other resources. McClure (1989) has suggested this model is applicable to the Elk Pass obsidian quarry in the Washington Cascades, based the high cost of obtaining obsidian at Elk Pass verses the quality of the resource, and the presence of rejectamenta which reflect hunting and game processing. McClure suggests that the obsidian was obtained in conjunction with goat hunting in the area. Mierendorf (1993) is more cautious in applying the embeddedness model to the Desolation chert quarry (also in the Washington Cascades). Whether quarrying at that location was incidental to other pursuits or not probably has varied through time. Other factors that need to be taken into account include the duration of stay at seasonal base camps in the vicinity, existence of alternative sources for the same material outside the quarry, and the economic value of the resource as a trade item.

The role of a quarry in prehistoric economic, trade, exchange, and production systems has been investigated by Luedtke (1984), Findlow and Bolognese (1984), Terrence (1979, 1984, 1986), Richie and Gould (1985), Singer (1984), Singer and Ericson (1977). Researchers focusing on the economics of a lithic resource typically examine cost/benefit relationships and optimization strategies (Findlow and Bolognese 1984), lithic demand and the magnitude of production (Luedke 1984; Singer and Ericson 1977; Terrence 1979, 1984, 1986), and the regional distribution of quarry stone (Singer 1984).

One of the more interesting questions researchers are addressing is that of craft specialization. Quarry research involving craft specialization have been performed by Arnold (1985, 1987), Cleghorn (1986), and Shafer and Hester (1983). Arnold (1984, 1987) has developed a set of diagnostic indicators for examining prehistoric craft specialization in large lithic industries. These indicators are a high volume of tool production, a degree of standardization, well defined craft workshops, evidence of control over lithic resources, and the presence of specialists' tools in burials (Arnold 1984 p.37). Arnold subsequently generated case-specific hypotheses for each of the indicators and applied the data from quarries, workshops, and villages on the Channel Islands of California and found a high degree of specialization. Implementation of this model requires data from sites not immediately associated with quarries, but it stands as an excellent example of the potential for quarry research.

DISCUSSION

Quarry research has the potential to increase our understanding of prehistoric human behavior. Quarries contain the material remains of behaviors which have implications far beyond the limits of the quarry site. The archaeological record exists in copious amounts at quarries. It falls upon the researchers, whatever their individual theoretical viewpoints may be, to develop meaningful questions and develop methods of addressing the data at quarries.

The culture history approach was roundly criticized during the 1960s and is no longer considered a valid theoretical framework. Holmes' work itself, not typical of the culture history approach, still retains much of its utility. Processualism, the primary theoretical framework behind current quarry research, has been criticized in general (Hodder 1985), but postprocessualism and its approaches have yet to be applied to quarry sites.

The role quarry research can play in fulfilling the goals of processualism is important, but it is only one of many parts. In order to generate a coherent, regional representation of prehistory, data must be available from all site types and activity areas. Researchers often do a tremendous amount of analysis but relatively little interpretation because the data from other sites in the region are unavailable. Almost every report ends with the call for "more research" or a "long-term study" to be done at a site or in a region. The problem is due in part to the manner in which archaeology is funded in the United States. The nature of contract archaeology and the fact that many studies are driven by the need for salvage archaeology, along with an overall lack of funding for archaeological projects, results in a situation which is less than optimum. A more preferable (if not practical) situation would involve the development of regional research designs and goals which could direct the systemic sampling of regional archaeological sites and implement uniform recovery and analysis of archaeological data.

The work presented here was designed to achieve the processualist goal of developing an understanding of prehistoric behavior on a regional basis. The expectation is that this research will add to our knowledge of prehistory locally as well as regionally.

CHAPTER 4: METHODS

The data for this research came from the five previously mentioned sites: Obsidian Cliffs, (35LA172), Martins Trippy Site (35LA1176), Scout Creek (35LA321), Irish Camp Lake (35LA392), and South Fork Rockshelter (35LA907). When I began my comparative analysis in 1995, data collected by other researchers on assemblages at 35LA321, 35LA392, and 35LA907 was available. The data used here were taken from their original coding forms. Data from Martins Trippy site (35LA1176) (the collection of which I supervised as part of my duties as a Forest Service employee in the summer of 1998) were added to the analysis when they became available. No systematic data collection had been done at Obsidian Cliffs prior to the present study. For this reason I systematically collected data on flake size and morphology as well as analyzing modified lithic artifacts to facilitate the interpretation of reduction sequences present at Obsidian Cliffs, to allow for comparison with other sites in the region. Due to the remote location of the site and the need to leave the artifacts in place at the site, all data collection and lithic analysis was undertaken on site as part of the fieldwork.

LITHIC ANALYSIS

Lithic artifacts from all five sites were analyzed and categorized using the same coding forms which are described below. Lithic artifacts were classified using a format developed by Willamette National Forest personnel for use with a forest-wide computer database

(ORACLE). The classification is based on the model developed by Sullivan and Rozen (1985) in which flakes are categorized into one of three categories based on the integrity of the flake. Using this method allowed comparisons between the obsidian source at Obsidian Cliffs and previously analyzed collections from other sites within the McKenzie River drainage system, which would presumably yield information about the stone tool using component of the people inhabiting the area prehistorically. The data collection method uses a coding sheet for recording debitage (Appendix A). A separate form is used for the analysis of modified lithic artifacts (Appendix B). Terms used in the analysis were defined by Bergland (1991).

DEBITAGE CLASSIFICATION

A single debitage coding form (Appendix A) was used for each analytical unit. An analytical unit is a single level of an excavation pit or a specific surface area from which artifacts were collected. In some cases the number of flakes in an analytical unit makes the use of more than one coding form necessary. The debitage coding form contains multiple lines with which to record the various flake attributes. The upper portion of the form is used to record morphological attributes, and the lower portion is used to record any technologically diagnostic attributes noted on the flakes during the analysis. Morphological attributes are flake characteristics which relate to size, integrity and amount of cortex. Technologically diagnostic attributes are related to specific approaches to lithic reduction.

The first step in flake analysis was to sort the flakes based on raw material type. The raw material types used on the debitage form are shown in Table 2. After the flakes have been sorted by raw material they are sorted by size and type.

Table 2. Raw Material Analysis Types.

RAW MATERIAL TYPE	DESCRIPTION
BASALT	Dark igneous rock with variable textures (Crabtree 1972:36); "dark gray to balack, dense fine grained extrusive igneous rock" (Legard and Meyer 1973:161).
CCS	Abbreviation for undifferentiated cryptocrystalline silicates: includes cherts, jaspers and chalcedonies.
CHALCEDONY	A cryptocrystalline variety of quartz, predominantly silica and having the near luster of paraffin wax. May be transparent or translucent and of various tints (Crabtree: 1972:51).
CHERT	An opaque form of microcrystalline, chemically-precipitated quartz composed of numerous grains that form a granular crystalline structure; ranges in color from white to light gray and black (Markos 1990).
JASPER	An opaque, chemically-precipitated mycrocrystalline quartz, distinguished from chert by its red, yellow, green, or brown color (Markos 1990).
OBSIDIAN	An igneous glass with marked conchoidal properties, often black, although some deposits are gray, red, green, purple, brown or combinations thereof. If is often banded and of different degrees of transparency (Crabtree 1972:79).
PETRIFIED WOOD	Siliceous stone formed by fossil replacement of wood fiber by silica suspended in ground water.
PUMICE	An excessively cellular, light colored, volcanic, ejecta, that is often lighter than water (Legard and Meyer 1973:165).
QUARTZITE	A metamorphosed sandstone, very hard, of variable texture.
UNKNOWN IGNEOUS	Rock formed by solidification of volcanic material, such as rhyolite, basalt, andesite, or welded tuff.
UNKNOWN SEDIMENTARY	A fine grained sedimentary stone not otherwise classifiable as CCS, Chert, Chalcedony, or Jasper.

The debitage coding sheet is used in conjunction with a "template" which facilitates grouping the flakes by size, amount of cortex, and integrity. The template is divided into eleven sections which correspond to the different flake integrity categories, and has a series of concentric rings which correspond to seven size ranges on the coding form. Placing the flake in the center of these concentric rings allows the analyst to quickly assign a size range to a flake. The size ranges are shown in Table 3.

Table 3. Debitage Size Classes (all measurements are in millimeters).

CLASS	SIZE	CLASS	SIZE	CLASS	SIZE	CLASS	SIZE
1	1-4 mm	2	5-9 mm	3	10-19 mm	4	20-29 mm
5	30-39 mm	6	40-49 mm	7	50 + mm		

After the flakes have been assigned a size range the flakes are classified into one of eleven groups based on amount of cortex and flake integrity (denoted on the form as "flake type"). The amount of cortex present is classified as either primary, secondary, or interior (tertiary). A primary flake is one which exhibits cortex over 90% or more of the dorsal surface. A secondary flake exhibits cortex over less than 90% but more the 0% of the dorsal surface. An interior flake exhibits no cortex at all.

Flake integrity is grouped into three main classes, complete, broken, and fragment. A complete flake displays at least 50% of the striking platform, and at least 50% of a feather or hinge termination. A step termination is not considered here since it is indistinguishable from a broken termination. A broken flake displays at least 50% of the striking platform, and less than 50% of the termination. A flake fragment has less than 50% of the striking platform, and the termination is not considered in the classification.

For debitage which does not fit into the above categories, there is the additional classification of debris (or shatter). The debris class uses a different approach to recording cortex. Rather than use the three classes outlined above, debris is classified into two groups using simple presence or absence of cortex. The result of the above classification scheme is the following eleven flake categories shown in Table 4.

Having sorted all of the flakes into groups of like raw material, size, and type, these attributes and the number of flakes which exhibit them were then recorded on the form. The form contains spaces for three additional attributes which were not used in this analysis and therefore are not described here.

After recording all of the morphological attributes, any technologically diagnostic attributes encountered during the analysis can be recorded. The technologically diagnostic attributes recognized on the form are shown in Table 5.

Table 4. Flake Types Used In The Debitage Analysis.

FLAKE TYPE	DEFINITIONS
COMPLETE INTERIOR FLAKE	A flake with at least 50% of its platform intact, with a recognizable point of applied force, and showing a recognizable portion of either a hinge or feather termination and showing no cortex on its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
COMPLETE PRIMARY CORTEX FLAKE	A flake with at least 50% of its platform intact, with a recognizable point of applied force, and showing a recognizable portion of either a hinge or feather termination and showing >90% cortex on its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
COMPLETE SECONDARY CORTEX FLAKE	A flake with at least 50% of its platform intact, with a recognizable point of applied force, and showing a recognizable portion of either a hinge or feather termination and showing <90% cortex on its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
BROKEN INTERIOR FLAKE	A flake with at least 50% of its platform intact, showing a recognizable point of applied force, but missing its distal end (i.e., having neither a hinge or feather termination) and showing no cortex on its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
BROKEN PRIMARY CORTEX FLAKE	A flake with at least 50% of its platform intact, showing a recognizable point of applied force, but missing its distal end (ie, having neither a hinge or feather termination) and showing cortex on >90% of its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
BROKEN SECONDARY CORTEX FLAKE	A flake with at least 50% of its platform intact, showing a recognizable point of applied force, but missing its distal end (ie, having neither a hinge or feather termination) and showing cortex on <90% of its dorsal surface (after Sullivan and Rozen 1985, Bergland 1987:2).
INTERIOR FLAKE FRAGMENT	A flake without complete proximal area, or without at least 50% of the platform area and without a recognizable point of applied force, a flake midsection or flake distal fragment, and which shows no cortex (Sullivan and Rozen 1985; Bergland 1987:2).
PRIMARY CORTEX FLAKE FRAGMENT	A flake without complete proximal area, without at least 50% of the platform area and without a recognizable point of applied force, a flake midsection or flake distal fragment, and which shows cortex over >90 of its dorsal surface (Sullivan and Rozen 1985; Bergland 1987:2).
SECONDARY CORTEX FLAKE FRAGMENT	A flake without complete proximal area, without at least 50% of the platform area and without a recognizable point of applied force, a flake midsection or flake distal fragment, and which shows cortex over >90 of its dorsal surface (Sullivan and Rozen 1985; Bergland 1987:2).
CORTICAL DEBRIS	Chipped lithic material showing no clearly identifiable detachment surface, with cortex present (Bergland 1987:2).
INTERIOR DEBRIS	Chipped lithic material showing no clearly identifiable detachment surface, with cortex absent (Bergland 1987:2).

Table 5. Technologically Diagnostic Flake Types Used In The Debitage Analysis.

TECHNOLOGICALLY DIAGNOSTIC FLAKE TYPE	DEFINITIONS
BIFACE REDUCTION FLAKE	A flake with a multifaceted, bifacial platform (indicating removal from a biface or bifacial core) and usually showing contrastingly oriented negative flake scars on its dorsal (non-detachment) surface.
BIPOLAR FLAKE OR FRAGMENT	Flake or fragment with "pronounced compression ring..flat in long section.. with at least one sharp, uninterrupted edge" (Flenniken et al 1990:69); "cone of force..is sometimes sheared" (Crabtree 1972:42)
BLADE FLAKE	"Specialized flake with parallel or subparallel lateral edges.. associated with prepared core and blade technique" (Crabtree 1972:42); must be twice as long as it is wide.
BULB OR VENTRAL SURFACE REMOVAL FLAKE	A flake whose dorsal surface shows a distinctly convex surface which exhibits ripples or concentric rings (Bergland 1989:2); "..a thinning flake removed from the proximal end of the ventral surface of a flake blank" (Flenniken et al 1990:242).
COBBLE TOOL OR GROUND STONE TOOL	Flake off a cobble tool or ground stone artifact, with evidence of battering on the platform. Raw material types include basalt, rhyolites and other igneous or sedimentary materials that do not produce pronounced conchodial fractures like those of cryptocrystalline silicates and obsidian.
EDGE REMOVAL FLAKE	"Half-moon-shaped fragments of a bifacial edge" of a bifacial artifact (Flenniken et al 1990:245); the ventral surface of these flakes will show concentric rings arcing around the former biface edge.
MICROBLADE	"Diminuitive blade generally made by pressure technique" (Crabtree 1972:76); "Small blades produced by pressure from a microblade core" (Flenniken et al 1990:245). See blade definition above; care must be taken to distinguish microblades from normal pressure flakes – they should be found in association with microblade cores to be so defined.
NOTCH FLAKE	"A pressure flake whose platform is situated in a depression and is fan-shaped in plan view" (Flenniken et al 1990:245).
OUTREPASSE FLAKE (COMPLETE)	"Over and beyond the opposite margin" (Crabtree 1972:80); "a long, transverse thinning flake which passed across the biface and took out a portion of the opposite margin" (Bergland 1986: 17-18); "Flakes that have their platform as one edge of the biface and the other edge of the flake is the opposite margin of the flake is the opposite marginof the biface" (Flenniken et al 1990:245); complete outrepasse flakes exhibit both the platform area and termination.
OUTREPASSE FLAKE (DISTAL FRAGMENT)	As above, but missing the platform area; compression rings on the flake ventral surface arc toward the fragment of the bifacial edge (rather than around it, as in the similarly shaped edge removal flake).
PRESSURE FLAKE	Small, parallel-sided flakes with abraded, mulifaceted platforms (Flenniken et al 1990:245); platform should be very localized and small.

MODIFIED ARTIFACT CLASSIFICATION

Modified lithic artifacts are recorded using the lithic tool coding forms (Appendix B). A modified lithic artifact is a stone object which exhibits evidence of alteration by some form of reduction. Debitage is a product of reduction, whereas a modified lithic artifact is the entity being reduced. As used here a modified lithic artifact is a stone object from which someone has removed material in the form of flakes. A single coding form is used for each individual artifact. All data collected for a particular modified lithic artifact are recorded on this form. As with the debitage coding form a number of attributes were not used in this analysis and will not be described here.

Modified lithics are categorized as to type and raw material, measured in three dimensions, assigned an integrity classification (broken or complete), and examined for use wear. The same raw material classifications as used for debitage are used to analyze the modified lithic artifacts, and all measurements are in millimeters. The various classifications are listed in Table 6. Bifacially worked artifacts were assigned a form and stage classification (Tables 7 and 8) and cores were assigned a core type (Table 9).

Table 6. Modified Artifact Types.

ARTIFACT TYPE	DESCRIPTION
BIFACE OR BIFACE FRAGMENT	"Any lithic material that has been flaked on both or two surfaces" (Flenniken et l 1990:242); "Artifact bearing flake scars on both faces" (Crabtree 1972:38); "A tool or preform with an edge formed by retouch along both sides of the same portin of an edge. These scars may be confined to the edge or may travel completely across the surface of an artifact" (Spencer 1989:128).
COBBLE TOOL OR FRAGMENT	Flake off a cobble tool or ground stone artifact, with evidence of battering on the platform. Raw material types include basalt, rhyolites and other igneous or sedimentary materials that do not produce pronounced conchodial fractures like those of cryptocrystalline silicates and obsidian.
CORE OR CORE FRAGMENT	Tool stone mass with one or more negative flake scars
PROJECTILE POINT OR FRAGMENT	A hafted projectile point arming element as in a spear point, dart point, or arrow point
MICROBLADE	"Diminuitive blade generally made by pressure technique" (Crabtree 1972:76); "Small blades produced by pressure from a microblade core" (Flenniken et al 1990:245). See blade definition above; care must be taken to distinguish microblades from normal pressure flakes – they should be found in association with microblade cores to be so defined.
RETOUCHED FLAKE	Patterned negative flake scars (n=5 or more adjacent scars, length >2mm) along the edge of a flake or tool; the patterning should suggest purposive, rather than accidental, modification of an edge. A unifacial tool with a convex edge would be a retouched flake.
UTILIZED FLAKE	Flakes or fragments over 1.5cm in length which exhibit patterned microflaking, striations, crushing or polish along reasonable working edges (not the platform area, since such morphology can result from platform preparation; Bergland 1989:2)
GROUND STONE OR FRAGMENT	Stone with evidence of grinding such as striations of planar surfaces.

Table 7. . Biface Forms

BIFACE FORM	DEFINITIONS
BASE FRAGMENT, KNIFE	A biface base fragment exhibiting pronounced basal grinding and small projections (ears) at the basal corners (Bergland 1987:11). This stemmed biface is >2 cm across the narrowest portion of the stem.
BASE FRAGMENT, PROJECTILE POINT	The proximal end of a projectile arming element; this should show hafting preparation such as notching or stemming, or in the case of a foliate projectile point fragment, lateral margin serrations.
BIFACIAL BLANK	A bifacial object in the early stages of manufacture, with irregular margins (Bergland 1989:13) and without evidence for pressure flaking.
BIFACIAL CORE	A toolstone nucleus in the shape of a heavy, thick, early-stage biface (Bergland 1989:14).
BIFACIAL KNIFE	Wide-stemmed biface (>2 cm across the narrowest portion of the stem) exhibiting pronounced basal grinding and small "ear" projections at the basal corners (as described for the discarded base in Bergland 1987:11). To be interpreted as a knife blade, it cannot show an impact fracture, which would indicate use as a spearpoint.
BIFACIAL PREFORM	Unfinished form of a bifacial blade, "both percussion and pressure flaked" (Flenniken et al 1990:246); intermediate stage biface; an artifact with "no means for hafting" (Crabtree 1972:85).
DRILL	A bifacially flaked tool with a functional point of tip that exhibits use-wear. The tips are generally diamond shaped in cross section.
MARGIN FRAGMENT, BIFACE	A fragment of a biface from along a single margin of the tool.
MIDSECTION, BIFACE	Fragment of a biface exhibiting both margins, and fractures which have removed both the basal area and the tip.
MIDSECTION, PROJECTILE POINT	Fragment of a projectile point exhibiting both margins, and fractures which have removed both the basal area and the tip. To differentiate it from the more generically-described biface midsection above, it must show something to indicate use as a projectile arming element, such as an impact fracture or serrations, or be very small and thin, indicating use as an arrowpoint.
PROJECTILE POINT	A hafted projectile point arming element as in a spear point, dart point, or arrow point.
TIP, BIFACE	The pointed end of a biface.
TIP, PROJECTILE POINT	To differentiate it from the more generically-described biface tip above, it must show something to indicate use as a projectile arming element, such as an impact fracture or serrations, or be very small and thin, indicating use as an arrowpoint.
UNDIAGNOSTIC BIFACE FRAGMENT	A biface fragment which cannot be classified as either a lateral margin, tip, base or midsection.

Table 8. Biface Stages

BIFACE STAGE	DEFINITIONS
EARLY	Irregular margins, random flaking, unrefined shape.
INTERMEDIATE	Regular margins, patterned flake scars.
LATE	Regular margins, patterned flake scars, hafting area retouch, pressure flaked surfaced, resharpening evidence.
UNKNOWN	Stage cannot be determined.

Table 9. Core Types.

CORE TYPE	DEFINITIONS
AMORPHOUS	Toolstone nucleus "without classifiable shape, especially with reference to some cores" (Crabtree 1972:33).
BIDIRECTIONAL	"Nuclei which bear scars resulting from flakes or blades having been detached from two directions" (Crabtree 1972:38).
BIFACIAL	A toolstone nucleus in the shape of a heavy, thick, early-stage biface (Bergland 1989:14).
BIPOLAR	Toolstone core exhibiting "crushed platforms, flat flake scars with pronounced compression rings, and bidirectional flake scars" (Markos 1990:41); "absence of distinctive bulbs or cones of force" (Flenniken et al 1990:68); bidirectional flake scars should be adjacent and opposite.
MICROBLADE	"Any small piece of lithic material from which microblades are produced by pressure. Cores may have a single or multiple platforms" (Flenniken et al 1990:245).
UNIDIRECTIONAL	"Core showing that flakes or blades were removed from one platform surface and in only one direction" (Crabtree 1972:97).

FIELD WORK

Field work at 35LA172 was undertaken during the summer of 1995. Due to the remote nature of Obsidian Cliffs which is located in the Three Sisters Wilderness approximately seven miles from the nearest road it was necessary to hike in and camp for four days while surveying and recording data. The field crew consisted of myself, Gail Lazaras and Michael Wilder. Gail was present at 35LA172 for four days, Michael for eight days and I was at the site 16 days for a total of 28 person days worked. We worked 10 hour days and traveling to and from the site took 10 hours per week. Total person hours spent actually working were 210. As previously mentioned, 35LA172 is approximately 1.7 kilometers in length, so the first priority was to determine the site boundaries. Michael and I spent a total of 90 hours toward this end. The remaining hours were spent selecting and laying out sampling units and analyzing and recording artifacts.

SURVEY RESULTS

The initial stage of field work was survey to better re-define site boundaries and to better understand site structure for purposes of developing a sampling design. I was reasonably certain from a visit the previous season that Silvermoon's separately defined concentrations could be considered denser concentrations within a single, continuous, site area. His notes indicated that he drew site boundaries where artifact densities dropped below an estimated 50 artifact per square meters adjacent to areas with estimated artifact densities exceeding 250 artifacts per square meter. This was a far more liberal criteria for distinguishing sites than the standard used currently within the Forest. According to the latter criteria artifact scatters are not defined as individual sites unless they are separated by an area at least 50 meters wide that is void of cultural materials.

Eric Bergland, Zone Archaeologist, felt that a redefinition of site boundaries was critical for effective management of the site. Silvermoon had defined 63 separate concentrations within a relatively small area with extensive areas of artifacts surrounding them, but not included in any recorded site. Further, these concentrations did not have Smithsonian trinomial designations of their own, nor had the earlier trinomial designation for Obsidian Cliffs been updated to reflect the more extensive material. A simpler, more inclusive boundary that recognized lower concentrations as having cultural significance would be more appropriate. Redefinition of the site boundaries was also an important step for my thesis research in order to more effectively sample this site.

As a result of our survey 57 of Silvermoon's concentrations were collapsed into a single site (Figure 7) to which is applied the Smithsonian trinomial 35LA172. In order to maintain continuity in records, we gave loci numbers to each of Silvermoon's concentrations. We did not want to retain his initial numbering system, because these were actually Forest Service site #s. These loci numbers apply to his original concentration as well as to adjacent lower density areas which he had excluded. The dimensions of the redefined site are 3,000 m by 900 m. A few concentrations of artifacts noted by Silvermoon or other workers do qualify as individual sites (they are not shown on the map).

I had also observed the previous season that obsidian occurred not only in the bedrock outcrops for which Obsidian Cliffs is named, but also in the form of stream or glacially transported cobbles and boulders away from the cliff. It seemed that reduction strategies might vary depending on which source was being used. Therefore, another purpose of survey was to observe the association of the artifact scatters with the different kinds of obsidian sources. We did in fact observe artifact concentrations associated (roughly within 100 m, although this was not quantified) with both discrete outcrops and alluvial deposits, as well as concentrations in areas where there was no obvious source of obsidian nearby. We did not quantify the distance, but by associated I mean roughly within 100 meters.

SAMPLING DESIGN

The sampling design was developed to insure sampling of all three types of artifact concentrations described above. Using the topographic map, we initially chose two non-parallel transects or sampling corridors. Transect #1, roughly 2 miles along the eastern side of the site, crossed several bedrock outcrops with associated artifact concentrations as well as concentrations with no obvious obsidian source at the northern end (Figure 6). Transect # 2, extending 1.25 miles along the west side crossed several small streams with alluvial obsidian deposits, as well as concentrations associated with no obvious sources at the northern end. Sampling was to take place at 25 meter intervals along these lines, and the sampling areas were to be 50 by 50 centimeters.

The collection of data at 35LA172 was to proceed as follows: we would measure a 50 by 50 centimeter square in the appropriate location and remove all artifacts down to the mineral surface. Analysis would then proceed using sheets of paper to sort the flakes on (Figure 7).

No subsurface investigations were undertaken Obsidian Cliffs; all sampling data are from surface artifacts. This was done to minimize impact of archaeological data recovery at a non-renewable resource in a designated National Wilderness. All artifacts were returned to the sampling plots after analysis, and no artifacts were collected or otherwise removed from 35LA172 during the 1995 field season.

SAMPLING DESIGN MODIFICATIONS

It became apparent from the first sample plot that a change in strategy would be necessary. The first 50 by 50 centimeter plot contained over 1100 flakes, not including the two smallest size classes. It took two of us 12 hours to sort and analyze all the flakes in the plot. After spending 12 hours analyzing the first plot we came to the conclusion that we would not be able to sample as many plots in the same way as we had hoped to. If we had actually tried to sample the 200+ units along the full length of the two transects it could have taken us as much as 4800 hours or 480 10-hr days! We made two decisions: the first was to forego the analysis of the two smallest flake classes and the second was to reduce the sample plot area and increase the interval between plots.

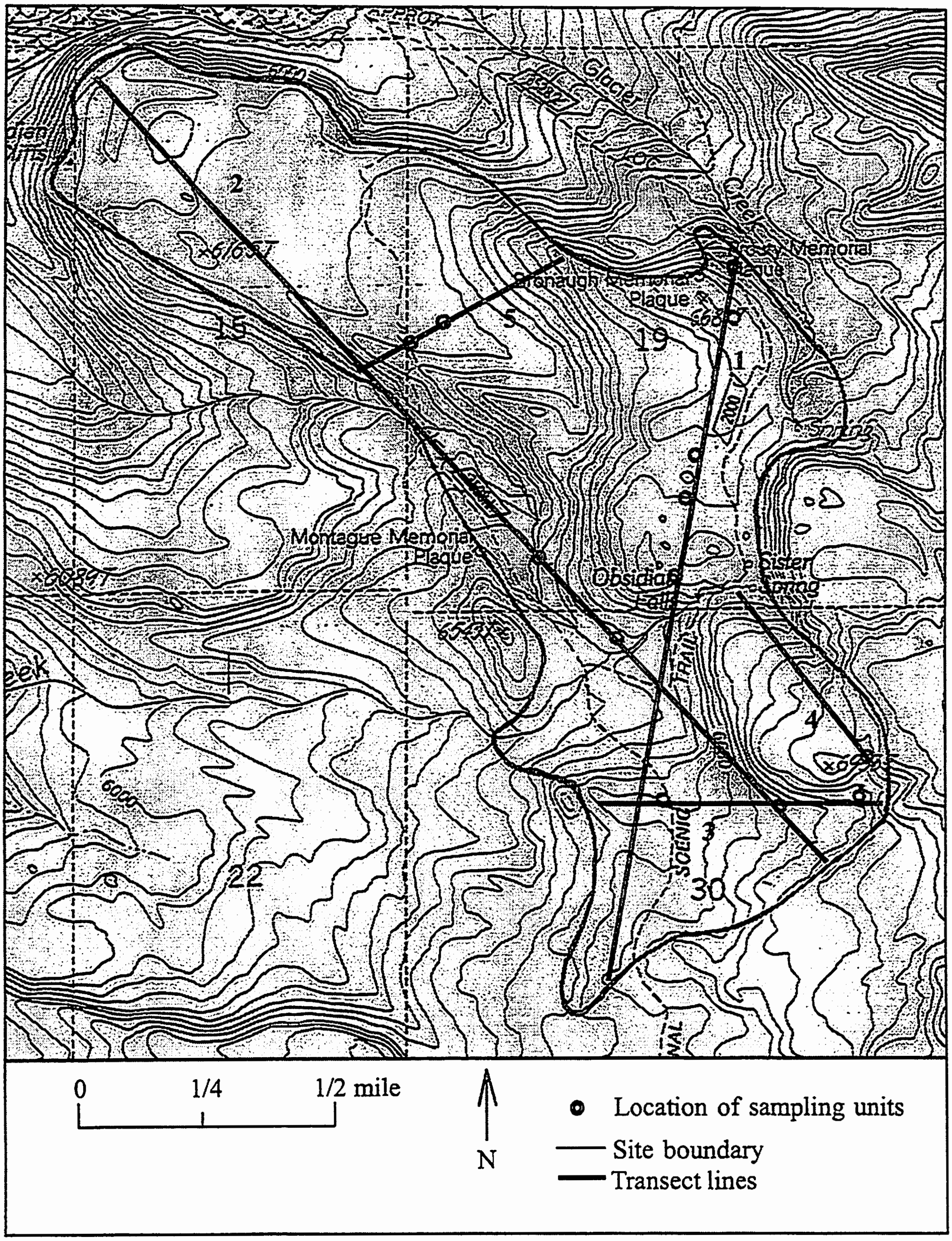


Figure 6. Map of Obsidian Cliffs showing location of site and sampling units (USGS quad map North Sister, Oregon, 7.5" Series, 1988).

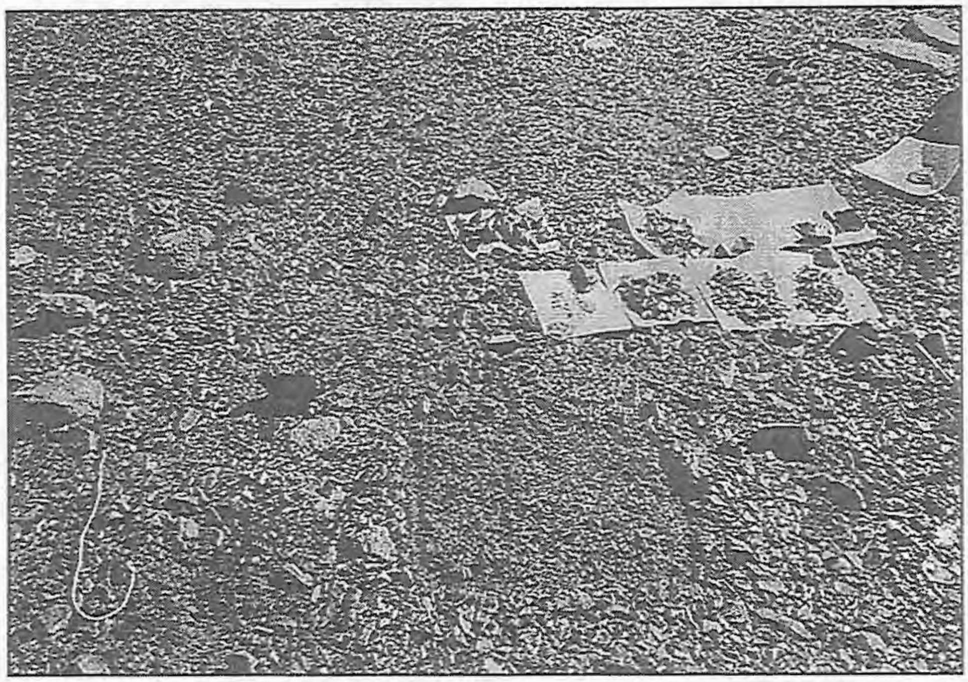


Figure 7. Lithic Analysis in the Field.

Of the possible ways to reduce the analytic effort, it seemed best to exclude the two smallest size classes (0-4 mm and 5-9 mm) not only because of the substantial time investment involved, but also because we found we were unable to collect the smallest flakes without disturbing the ground surface. While the loss of the data on flakes under 1 centimeter is unfortunate, other researchers (for example, Singer and Ericson 1977) also have chosen to ignore flakes in that size range.

In order to be able to maintain a wide geographic dispersal of sampling units but still be able to complete the sample, we increased the interval between plots from 25 m to 100 m. Based on rough calculations, we felt we still needed to reduce the sample plot area to 25 by 25 centimeters. Later, we increased the interval yet again to 200 meters between units.

After sampling several plots on the first line, it became apparent that some of the areas we had planned to sample had been heavily impacted by recreational use associated with the Pacific Crest trail. The impacts of hikers is not limited to the trail itself, but also occurs off trail in select areas favored for rest stops, viewpoints, and campsites. It should be noted that the degree of impact associated with trail use is not simply a function of distance from the trail. Some sections of the trail are seldom used for stop-offs because of their proximity to more favorable camping or staging areas. Even given the identical amount of traffic, the trail corridor receives less impact. The Wilderness guards are provisioned by mule pack teams, which stay largely on the trail, but leave it to reach the Wilderness guard campsites. The association of the transects and the trail impact areas cannot be readily judged from the USGS map used as the base map for Figure 6. Trail locations tend to be imprecise at this scale, and the route of the trail has been changed since the map was drawn. In the field, we used a combination of aerial photgraphs and the USGS quadrangle maps to pinpoint the location of the transects.

To avoid heavily impacted areas we omitted large sections of the first two transects, particularly the southern end of Transect #1 and the northern end of Transect #2. We identified areas that appeared to have less impact by recreational users, and drew three additional transect lines (Figure 6). Transect #3 and Transect #4 were chosen because they were located to the south of the site in areas not heavily visited by recreational users, and included areas associated with outcrops and areas with no obvious source. Transect #5 was located to the north and west and was selected because it traversed areas not heavily impacted by recreational users. It included areas with no obvious source association.

One further pragmatic consideration affected the final location and distribution of sampling units. When sampling units coincided with physical obstacles such as ponds or cliffs we adjusted the location slightly, rather than skipping the unit and moving to the next one. Several plots were moved by 10-25 meters along the transect from the intended location.

In spite of the large number of modifications made, the sampling design achieved the goal of incorporating into the sample diverse areas of the site that reflect areas of both high and low artifact density and areas both adjacent to obsidian outcrops or alluvial deposits and away from outcrops in meadows. Most plots were also located away from high use recreational areas, in an attempt to minimize the potentially negative effect of recreational impact on the artifacts. A total of 13 sample plots were analyzed, 12 of which were 25 by 25 centimeters with the remaining plot measuring 50 by 50 centimeters.

DATA COLLECTION RESULTS

The results of the data collection efforts at Obsidian Cliffs are as follows: a total of 3877 flakes and 31 modified lithic artifacts were analyzed from a surface area of 1.0625 meters square in 13 sample units (Table 10). Extrapolating this figure gives a density of 3678 total artifacts per square meter on the surface. Artifact density varied from a low of 432 per square meter to 12880 per square meter. While these figures represent the extremes encountered in the sampling units, areas of both higher and lower density were observed during survey.

The plots are numbered by the loci numbers (described above), which provided a unique identifier for each plot. Some of the sampling units fell within areas originally defined by Silvermoon as concentrations, while others fell outside.

Table 10. Obsidian Cliffs Sampling Results.

LOCI NUMBER	TOTAL FLAKES	DIAGNOSTIC FLAKES	MODIFIED ARTIFACTS
1	1103	5	1
(1)*	(276)	(1)	(0)
5	101	2	6
11	203	2	2
14	285	0	0
21	93	1	4
23	87	0	2
24	175	2	1
26	373	0	0
38	259	0	4
44	32	2	7
46	336	2	2
48	804	4	1
53	26	0	1
TOTALS	3877	20	31

(*) Shows data from loci 1 adjusted to correspond to the 25 by 25 cm units.

The single 50 by 50 centimeter sample plot was located in loci number 1; the remainder of the plots were 25 by 25 centimeters. As the table shows, there is considerable variability in artifact density between the sample plots. The variation in flake density gives an indication of the variation in the level of activity represented by the artifact concentrations. The plot in loci 44 had the second lowest flake density and the highest modified artifact density, while some of the plots with a much higher flake density had no modified artifacts at all. This appears to indicate differential use areas at the quarry where different aspects of reduction took place in different areas.

CHAPTER 5: RESULTS

The data recovery efforts at Obsidian Cliffs resulted in a total of 3877 flakes being analyzed. Of these 3877 flakes, 20 exhibited technologically diagnostic attributes. In addition to the debitage, 31 modified lithic artifacts were analyzed. The debitage and modified artifact totals for Obsidian Cliffs and the other four sites are listed in Table 11.

Table 11. Artifact totals and percentages by site.

Artifact type	Site				
	35LA172	35LA392	35LA1176	35LA321	35LA907
Debitage totals	3877	4252	541	1128	882
Technologically diagnostic debitage (n) Percentage of debitage totals (%)	20 0.5%	73 1.7%	22 4.0%	73 6.5%	80 9.0%
Artifact totals	3908	4302	554	1280	952
Modified Artifacts (n) Percentage of artifact totals (%)	31 0.8%	50 1.1%	13 2.3%	153 11.9%	70 7.3%
Distance from source in miles	0	5	11	25	25

It may be useful to note the particularly high percentage of modified lithics at Scout Creek, since this was one of the reasons for determining the site type. Note also that the percentage of modified artifacts and technological debitage increase with distance from the lithic source, although this could be attributable to site function rather than distance.

The premise of comparing these five sites is that there will be some discernible difference in the lithic assemblages, based on the activities which were responsible for creating the sites. While each type of site should have a different assemblage, the concern here is how each site differs from the source. If the primary activity at Obsidian Cliffs was the production of biface blanks for export, we can expect to see specific differences between the assemblages. These differences should be manifested in the debitage as well as the modified lithic artifacts. Therefore the production of bifacial blanks should generate lithic assemblages for which we can generate the following expectations. Note that all are comparisons to other site types.

1. Debitage should have a greater percentage of debris.
2. Debitage should have a greater percentage of large flakes.
3. Debitage should have a greater percentage of flakes exhibiting cortex.
4. Raw material should be less diverse.
5. Debitage should have a greater percentage biface reduction flakes and a lower percentage of pressure flakes.
6. Modified lithic assemblage should consist of mainly and early stage large bifaces and cores which were discarded due to failure
7. Exhausted tools will be rare

DEBITAGE ANALYSIS

The debitage is categorized by flake morphology, amount of cortex, size and raw material type. Flakes exhibiting technological attributes are further categorized as previously outlined. Some of the attributes recorded in the analysis were not used in this comparison. These include the recording of heat treatment, heat damage and arris abrasion. Since the smallest two size classes were not recorded at the Obsidian Cliffs site, the data for these two size classes were omitted from the analysis for the other four sites.

FLAKE MORPHOLOGY: EXPECTATION #1

Analysis of flake morphology follows the model of Sullivan and Rozen (1985) and uses the categories of complete flake, broken flake, flake fragment, and debris. The flake morphological data for the five sites are tabulated in Table 12.

Table 12. Flake morphological data in percentages by site.

	Site				
Morphological type	**35LA172**	**35LA392**	**35LA1176**	**35LA321**	**35LA907**
Complete	14.1%	15.3%	12.0%	16.0%	19.3%
Broken	13.6%	23.7%	19.2%	27.5%	23.6%
Fragment	58.8%	60.5%	66.9%	54.0%	55.1%
Debris	15.5%	0.6%	1.8%	2.6%	2.0%
TOTAL N	3877	4252	541	1128	882

The table shows that the debris category is more abundant at Obsidian Cliffs than at the other sites. Sullivan and Rozen attribute large amounts of debris to intensive core reduction, rather than tool production. In their study of several sites in east-central Arizona they saw a pattern of a high percentage of complete flakes and a low percentage of broken flakes and fragments at core reduction sites. While the debitage from none of the sites in this study fit their model for core reduction sites exactly, the data from the Scout Creek site and the South Fork Rock Shelter are a fairly close fit (in all morphological debitage categories) to Sullivan and Rozen's tool manufacturing sites.

DEBITAGE SIZE: EXPECTATION #2

As previously outlined the size ranges are categorized using the numbers one through seven. The first two size classes (those flakes measuring less than 1 centimeter) were not used in this analysis, leaving the classes two through seven. The debitage size data are listed in Table 13. Looking at the percentages for the smallest size, class 3, it is apparent that the percentage of this size flake (which constitutes the bulk of the assemblage) is considerably lower at Obsidian Cliffs than at all the other sites (which are all within ten percentage points of each other). This trend is carried out in the other size classes: the percentage of flakes in the larger size ranges is greater at Obsidian Cliffs.

Table 13. Size Data By Site Showing Numbers And Percentages.

	Site				
Size Range	**35LA172**	**35LA392**	**35LA1176**	**35LA321**	**35LA907**
3 (10-19 mm)	2249	3563	428	991	761
percentage	58.0%	83.8%	79.1%	87.9%	86.3%
4 (20-29 mm)	977	579	82	115	109
percentage	25.2%	13.6%	15.2%	10.2%	12.4%
5 (30-39 mm)	359	87	20	21	11
percentage	9.3%	2.0%	3.7%	1.9%	1.2%
6 (40-49 mm)	168	21	10	1	1
percentage	4.3%	0.5%	1.8%	0.1%	0.1%
7 (50+ mm)	124	2	1	0	0
percentage	3.2%	0.0%	0.2%	0.0%	0.0%
TOTAL N	3877	4252	541	1128	882

The size data appear to support the hypothesis of flakes at the lithic source having a greater percentage of large flakes. We can use the chi square test to test this hypothesis. The null hypothesis can be stated as: debitage size proportions are the same between sites. The alternative hypothesis becomes: debitage size proportions are not the same between sites (they come from different populations). Using a significance level of 0.001 and 16 degrees of freedom, the critical region becomes 39.252 (Thomas 1986). A computer and statistical software package (SPSS) was used to generate a chi statistic of 1141.085, which is well outside of the critical region. The null hypothesis is therefore rejected, and the alternative hypothesis, that the distribution of debitage size classes are not the same between sites, is accepted.

While the chi square test is used to support the hypothesis that there is a difference between the sites, it does not show how or in what way they are different. It is used merely to demonstrate that the degree of difference between the sites is indeed significant.

CORTEX: EXPECTATION #3

The flake cortex data (primary, secondary, interior) are coded on the form with flake integrity (complete, broken, fragment, debris). In order to isolate the amount of cortex present, it was necessary to collapse the data into categories which relate only to cortex. The problem with this lies in the fact that the flakes are grouped into the three above classes, while the debris is grouped into two classes (presence or absence of cortex). One approach to dealing with this problem is to group the flakes into three classes (primary, secondary, tertiary), and the debris into two (presence or absence). Table 14 shows the result of grouping the data using this approach.

Table 14. Cortex categories for all sites shown in percentages.

		Site				
Cortex		35LA172	35LA392	35LA1176	35LA321	35LA907
Presence	Primary flake	3.4%	0.3%	0.7%	0.1%	0.6%
	Secondary flake	6.8%	3.3%	0.2%	2.3%	2.9%
	Cortical Debris	4.0%	0.2%	0.9%	0.4%	0.2%
	Presence total	14.1%	3.8%	1.8%	2.8%	6.7%
Absence	Tertiary flake	74.4%	95.8%	97.2%	95.0%	94.4%
	Interior Debris	11.5%	0.4%	0.9%	2.1%	1.8%
	Absence total	85.9%	96.2%	98.2%	97.2%	96.3%
Total n		3877	4252	541	1128	882

As the table shows, the data for Obsidian Cliffs are quite different from all of the other sites, which are relatively similar to each other. Obsidian Cliffs has a considerably lower percentage of tertiary flakes than the other four sites. This seems to support the notion that debitage at the lithic source will exhibit greater amounts of cortex. As before, the chi square statistic can be used to test the significance of this difference. The null hypothesis can be stated as: debitage cortex amounts do not vary between sites. The alternative hypothesis becomes: debitage cortex amounts vary between sites. Using a significance level of 0.001 and 16 degrees of freedom the critical region becomes 39.252 . The computer-generated chi square statistic is 1189.569, which is again well out of the critical region, thus the null hypothesis is rejected.

RAW MATERIAL TYPE: EXPECTATION #4

The data on raw material type clearly meets the stated expectations. Obsidian (presumably from Obsidian Cliffs) is the overwhelmingly predominant raw material type at all five sites (Table 15). Although non-obsidian artifacts were observed during survey at

Obsidian Cliffs, none were present in any of the sampling units, and all the non-obsidian artifacts observed were modified. No non-local debitage was observed during survey, and it is very likely that unmodified debitage of non-local origin is nonexistent at Obsidian Cliffs.

Table 15. Debitage Raw Material Percentages.

	Site				
	35LA172	35LA392	35LA1176	35LA321	35LA907
Obsidian	3877	4242	528	1083	850
Percentage	100.0%	99.8%	97.6%	96.0%	96.4%
Basalt	0	3	7	20	15
Percentage	0.0%	0.1%	1.3%	1.8%	1.7%
CCS	0	7	6	25	17
Percentage	0.0%	0.2%	1.1%	2.2%	1.9%
TOTAL N	3877	4252	541	1128	882

TECHNOLOGICAL ATTRIBUTES: EXPECTATION #5

At least some of the debitage at all sites exhibited technologically diagnostic attributes. However no site had debitage with attributes from all categories (Table 16). The two categories which may be the most useful here are the biface reduction flake and pressure flake categories. The table shows that biface reduction flakes make up most of the technologically diagnostic debitage at Obsidian Cliffs, but are relatively rare at the other sites. Conversely, pressure flakes are the predominant category at all sites except Obsidian Cliffs, where they make up only 5 percent of the assemblage. It is possible that a greater percentage of pressure flakes would be observed in the Obsidian Cliffs assemblage had the two smallest size classes been analyzed, but since the two smallest size classes were not analyzed at any of the other sites, all of which have a considerable percentage of pressure flakes, it would likely have little impact on the discussion presented here.

Table 16. Technologically diagnostic attributes of debitage shown as percentages by site.

	Site				
	35LA172	35LA392	35LA1176	35LA321	35LA907
Biface reduction flake	70%	7%	23%	1%	14%
Bipolor flake	5%	0%	0%	1%	4%
Blade flake	0%	0%	0%	0%	4%
Ventral surface removal Flake	10%	1%	0%	4%	18%
Cobble tool	0%	0%	0%	0%	1%
Edge removal flake	0%	30%	0%	30%	6%
Microblade	0%	0%	0%	0%	0%
Notch flake	0%	4%	0%	1%	6%
Outrepasse flake (complete)	5%	0%	0%	0%	0%
Outrepasse flake (distal fragment)	5%	0%	0%	0%	0%
Pressure flake	5%	58%	77%	58%	48%
TOTAL N	20	73	22	73	80

MODIFIED LITHIC ARTIFACT ANALYSIS

Of the data collected in the analysis of the modified lithic artifacts, several categories are useful here: artifact type, biface form, biface stage, and raw material type. Table 17 shows the percentages of the types of modified artifacts present at all five site. All sites have some bifaces present, but the percentage decreases with distance from the obsidian source. The data on bifaces are further refined below.

Table 17. Modified Artifact Percentages By Site.

	Site				
	35LA172	35LA392	35LA1176	35LA321	35LA907
Biface or biface fragment	48%	44%	31%	20%	11%
Cobble tool or fragment	0%	0%	0%	3%	0%
Core or core fragment	23%	0%	23%	3%	4%
Projectile point or fragment	0%	0%	15%	31%	3%
Retouched flake	26%	8%	23%	12%	13%
Utilized flake	3%	48%	8%	23%	69%
Ground stone or fragment	0%	0%	0%	2%	0%
Total n	31	50	13	153	70

CORES: EXPECTATION #6

Both Obsidian Cliffs and Martin's Trippy Site have assemblages consisting of 23 % cores. A high percentage of cores might be expected at a lithic source, but the cores at Martin's Trippy Site are likely not the result of the same mechanisms. The cores at Obsidian Cliffs are larger on average then those at Martin's Trippy Site. This, combined with the fact that the Obsidian Cliffs cores are all broken suggests that the cores from Martin's Trippy Site are exhausted remnants, while the cores from Obsidian Cliffs are failures.

Table 18. Mean Core Dimensions.

	Site				
	35LA172	35LA392	35LA117	35LA321	35LA907
Mean core length (mm)	63	0	29	66	33
Mean core width (mm)	44	0	23	51	22
Mean core thickness (mm)	26	0	12	37	11
TOTAL N	7	0	3	5	3

BIFACE STAGE AND SIZE: EXPECTATION #7

Biface fragments make up a large percentage of the assemblage at all sites except Scout Creek (Table 19). Bifacial blanks are the predominant form of biface at Obsidian Cliffs, while blanks are considerably fewer at all other sites. Projectile points are absent at Obsidian Cliffs, but make up over half of the biface assemblage at Scout Creek.

Table 19. Biface Categories Shown As Percentages By Site.

	Site				
	35LA172	35LA392	35LA1176	35LA321	35LA907
Biface fragment	60%	82%	50%	23%	70%
Bifacial blank	40%	9%	17%	4%	0%
Core or core fragment	0%	5%	0%	0%	0%
Knife or knife fragment	0%	0%	0%	5%	10%
Projectile point or fragment	0%	0%	33%	64%	20%
Bifacial preform	0%	5%	0%	4%	0%
TOTAL N	15	22	4	31	8

The biface stages are categorized as early, intermediate, late and unknown (Table 20). Assigning the bifaces to stages of manufacture can shed some light on the behaviors represented by an assemblage. The bifaces at Obsidian Cliffs are predominantly early stage, while the assemblage from Scout Creek is made up predominantly of late stage bifaces, and over 90% of the bifaces from Irish Camp Lake are intermediate stage.

Table 20. Biface Stage Percentages By Site.

	Site				
Biface Stage	**35LA172**	**35LA392**	**35LA1176**	**35LA321**	**35LA907**
Early	86.7%	0.0%	66.7%	9.1%	37.5%
Intermediate	6.7%	90.9%	0.0%	11.7%	0.0%
Late	0.0%	9.1%	33.3%	75.3%	25.0%
Unknown	6.7%	0.0%	0.0%	3.9%	37.5%
TOTAL N	15	22	4	31	8

The mean biface measurements are tabulated in Table 21. The biface measurements at Obsidian Cliffs are considerably greater than all of the other sites. Presumably as a biface undergoes reduction the thickness will decrease. If the assumption that blanks are thicker than finished tools holds true, the data here would indicate that something other than finished tool manufacture was occurring at Obsidian Cliffs, presumably the manufacture of blanks for export.

Table 21. Mean Biface Measurements By Site.

	Site				
	35LA172	**35LA392**	**35LA1176**	**35LA321**	**35LA907**
Mean biface length (mm)	57	26	38	28	25
Mean bifacial width (mm)	35	17	21	19	17
Mean biface thickness (mm)	17	7	12	7	7
TOTAL N	15	22	4	31	8

MODIFIED LITHIC RAW MATERIAL TYPES: EXPECTATION #4

Obsidian is the predominant modified lithic artifact raw material type at all of the sites. Raw material types for the modified lithic artifacts are shown in Table 22. Only Scout

Creek and the South Fork Rock Shelter had modified lithics made from with raw materials other than obsidian.

Table 22. Modified Lithic Artifact Raw Material Type Percentages By Site.

	Site				
Raw Material	35LA172	35LA392	35LA1176	35LA321	35LA907
Obsidian	31	50	13	133	66
Percentage	100.0%	100.0%	100.0%	86.9%	94.3%
Basalt	0	0	0	4	1
Percentage	0.0%	0.0%	0.0%	2.6%	1.4%
CCS	0	0	0	9	3
Percentage	0.0%	0.0%	0.0%	6.0%	4.3%
Other	0	0	0	7	0
Percentage	0.0%	0.0%	0.0%	4.6%	0.0%
TOTAL N	31	50	13	153	70

CHAPTER 6: DISCUSSION AND CONCLUSION

Obsidian Cliffs, a major obsidian source in the Oregon Cascades, is an important lithic resource procurement site both locally and regionally and holds the potential for substantial behavioral inferences. Lithic procurement activities undoubtedly account for a considerable portion of the behaviors exhibited by the prehistoric inhabitants of the area. The work presented here is designed to fulfill the processualist goal of examining different site types in a regional context. Specifically, the purpose of this study was to determine the extent to which biface blank manufacture was a predominant activity at Obsidian Cliffs. It is believed that this work will be of value to future researchers interested in studying lithic procurement strategies in the Pacific Northwest.

Previous models of quarry activity have emphasized the production of bifacial blanks for export to other locations. These models appear to be applicable to Obsidian Cliffs. The results presented here indicate primary reduction and biface blank production were the principal activities there. My method of demonstrating that the primary reduction strategy at Obsidian Cliffs is biface blank production was to compare diagnostic artifact categories at Obsidian Cliffs to other sites within the region. Of the seven expectations tested as being indicative of primary stage biface blank production, all were substantiated by the data. These findings are based on the comparisons of debitage and modified lithic artifacts. Debitage size, presence of cortex, flake morphology, raw material type, and the presence of technologically diagnostic flake attributes characterize the debitage comparisons. Comparisons of modified lithic artifacts were based on type, size, stage, form and raw material type. One of the greatest strengths of my conclusion is that is it based on almost every aspect of the comparison.

The strongest support for biface blank production is found in the data on flake morphology flake, size and amount of cortex. The expectations for debitage posited earlier in this study were that biface blank manufacturing at the lithic source would produce a higher percentage of flakes exhibiting cortex, and a higher percentage of flakes in the larger size ranges, when compared to other site types. The debitage in the assemblage at Obsidian Cliffs is unquestionably different from the rest of the sites in this study, and fits the foregoing expectations. The chi square statistic values used to test the validity of the difference are considerably outside the critical range.

The technologically diagnostic debitage at Obsidian Cliffs, with its lack of pressure flakes, (which make up most of the assemblage at the other sites) also fits the expectation of biface blank production. The predominant technologically diagnostic debitage type at Obsidian Cliffs is the biface reduction flake. While the biface reduction flake is not necessarily indicative of blank production, the lack of pressure flakes and the overall lack of diversity in the assemblage when compared to other sites suggests that early stage biface reduction was the primary activity there. The fact that technologically diagnostic debitage makes up only one half of one percent of the debitage assemblage at Obsidian

Cliffs is telling in itself: early stage biface production does not produce large amounts of technologically diagnostic debitage.

Considerable evidence supporting the conclusion that biface blank production was the primary activity at Obsidian Cliffs is provided by the modified artifact data as well. The high percentage of bifaces and bifaces fragments at Obsidian Cliffs is not especially compelling when compared to the other sites, which all have relatively high percentages of bifaces and fragments, but the lack of projectile points at Obsidian Cliffs may be an indication that retooling was not a major activity there. One potential problem with using surface data on modified artifacts, particularly projectile points, is the possibility that artifact collectors may have biased the sample. The data on biface stages and mean size are perhaps more useful than that on biface form. The greater percentage of early stage bifaces and greater mean size at Obsidian Cliffs is indicative of primary reduction.

Although my goal did not include functional interpretation of the comparative sites, it is interesting to note the pattern of biface types at the other sites. The data from Irish Camp Lake, which show primarily intermediate stage bifaces, agrees with the notion that this was a place visited on the return trip from the lithic source. The high percentage of late stage bifaces at Scout Creek also fits well with the village site designation. The remaining sites, Martin's Trippy Site, and the South Fork Rock Shelter, do not fit into neat categories. Both sites have large percentages of both early and late stage bifaces, but no intermediate stage bifaces. Overall, the mean biface sizes do not decrease as a function of distance from Obsidian Cliffs as might be expected, but at least the bifaces are smaller in all dimensions at all of the other sites.

In retrospect the diversity in raw material types does little to support the hypothesis. It seems reasonable that there would be a difference in the types of raw materials present at these different sites regardless of the types of artifacts being produced at the source. The diversity in raw material types between sites is more likely related to location and site function, than to reduction strategy. The lack of raw material diversity in modified lithic artifacts at Obsidian Cliffs does not directly support the notion of biface blank production there. It does, however, suggest that retooling or replacement of finished tools of non-local materials was a relatively minor activity. As stated above, the potential exists for bias induced by artifact collectors. It could in fact be greater with modified artifacts of non-local materials, since they might be more visible among the obsidian, and might seem more exotic, and therefore more collectable.

METHODOLOGICAL ISSUES

The methods used in this study bear some discussion. By using previously analyzed data, I was constrained to using the specific data categories used in the previous analysis. While this presented no overwhelming problems, it precluded the inclusion of other aspects in the comparison. Conversely, using previously analyzed data is what made the comparison possible in the first place.

One methodological issue concerning the data collected from Obsidian Cliffs which was not addressed is the internal heterogeneity of the sample. It would have been useful to have analyzed the degree of variation prior to pooling the units into a single sample.

Several problems occurred while collecting data in the field at Obsidian Cliffs, all of which stemmed from trying to deal with the enormous amount of artifacts present in a limited time. The decision to omit the two smallest size classes might have been avoided by using screens, however even with screens, analyzing flakes measuring less than 5 millimeters in the field would have been challenging. Certainly if we had been able to bring the artifacts out of the field for analysis these size classes could have been included.

The other problems encountered while collecting data involved avoiding heavily impacted areas and finding a plot size that was large enough to be meaningful but would still allow sampling of enough units to achieve a dispersed spatial coverage. I could have avoided the heavily impacted area in the original sampling design had any thought been given to this issue beforehand. The second issue was harder to anticipate since I had no idea how long it would take to analyze the units.

IMPLICATIONS FOR FURTHER RESEARCH

The quarrying areas at Obsidian Cliffs hold the potential for considerable future research. As mentioned before, lithic procurement and production areas are a significant component of the behavior of people who rely stone tools. With this in mind the following research avenues could advance our understanding of regional prehistory in the Pacific Northwest.

It was beyond the scope of this project to determine the period of site use although this is clearly an important issue. A hydration rate for Obsidian Cliffs obsidian has been established (Bergland *et al.* 1992), so a chronology of site use could be developed using hydration dates. Research along these lines could be designed to address questions of differential use at different areas over time.

Aspects of lithic technology other than those addressed here could be studied at Obsidian Cliffs. Research involving flake striking platform preparation, number of facets, hard verses soft hammer percussion, and overall uniformity (standardization of forms) of the assemblage could be addressed. Researchers have previously utilized such data to answer questions about stone working skills and craft specialization.

Intra-site analysis to determine whether noticeably different reduction strategies were employed at different locations would be of considerable value at Obsidian Cliffs. Analysis of artifacts from outcrops versus alluvial sources as well as those with no obvious association would be useful for determining the nature of activities occurring at different locations.

The issue of embeddedness is of considerable interest to researchers seeking to understand prehistoric economic and subsistence systems on a regional basis. Although the quality of the obsidian available at Obsidian Cliffs is high and the value of the resource would have been fairly high for a population relying on tool stone, these activities were most likely embedded in other resource procurement strategies. The remote nature of the source would necessitate a considerable journey from winter habitation areas and the procurement of plant and animal resources would have undoubtedly occurred in conjunction with obsidian procurement, however, the extent to which this is true is unknown. Research in this domain would focus on habitation remains and non-quarrying related artifacts.

Determining the lithic source locations for non-local material is another potential approach to research at Obsidian Cliffs. Although non-local material is relatively rare at Obsidian Cliffs, what does exist there holds considerable value for understanding regional trade interactions. Another related question would be to map the distribution of Obsidian Cliffs obsidian across the Pacific Northwest. These approaches could be of considerable value in elucidating our understanding of regional trade networks in the Pacific northwest.

REFERENCES CITED

Ahler, Stanley A. and Julieann Vannest

1984 Temporal Changes in Knife River Flint Reduction Strategies, Quarries: Excavations at Site 32DU508. In Lithic Resource Procurement: Proceedings From the Second Conference on Prehistoric Chert Exploitation, edited by Susan Vehik, pp. 183-198. Center for Archaeological Investigations, Occasional Paper No. 4, Southern Illinois University, Carbondale.

Aikens, Melvin C.

1993 Archaeology of Oregon. Portland: Department of the Interior, Bureau of Land Management.

Amick, Daniel S.

1985 Late Archaic Fort Payne Biface Manufacture at the Topsy Site (40WY204) Buffalo River Basin, Tennessee. Southeastern Archaeology 4(2):134-151.

Arnold, Jeanne. E.

1984 Economic Specialization in Prehistory: Methods of Documenting the Rise of Lithic Craft Specialization. In Lithic Resource Procurement: Proceedings From the Second Conference on Prehistoric Chert Exploitation, edited by Susan Vehik, pp. 37-58. Center for Archaeological Investigations, Occasional Paper No. 4, Southern Illinois University, Carbondale.

1987 Craft Specialization in the Prehistoric Channel Islands, California. Berkeley: University of California Press.

Bergland, Eric O.

1986 Lithic Analysis of Collections from the Scott Site (35 LA 430) and the Boundary Rockpit Site (07-109), McKenzie Ranger District, Willamette National Forest, Oregon. Contract report by Eric O. Bergland, Consulting Archaeologist, Eugene, Oregon to Willamette National Forest, Eugene, Oregon.

1987 Lithic Analysis of Collections from the Monument Peak Trail One Site (18-03-184) and the Chimney Peak One Site (18-03-126), Sweet Home Ranger District, Willamette National Forest. Contract report by Eric O. Bergland, Consulting Archeologist, Eugene, Oregon to Willamette National Forest, Eugene, Oregon.

1989 Kafka Site (35 LA 120) Lithic Analysis. M.S. on file, USDA Forest Service, Pacific Northwest Region, Willamette National forest, McKenzie Ranger District, McKenzie Bridge, Oregon.

1991 Lithic Artifact Analysis Glossary for the Cultural Resources ORACLE Database. M.S. on file at U.S.F.S. McKenzie Bridge, OR.

1994 Personal communication to the author.

1995 Emergency Salvage Excavation of Cached Obsidian Artifacts at Heritage Resources Site # 01-207. M.S. on file at U.S.F.S. Blue River, OR.

1999 Personal communication to the author.

Bergland, Eric O., Jeff McAlister, and Christopher Stevenson
1992 A Comparison of Hydration Rates for Obsidian Cliffs Glass. Paper presented at the 45th annual Northwest Anthropological Conference, Burnaby, British Columbia.

Binford, Lewis R.
1979 Organization and Formation Processes: Looking at Curated Technologies. Journal of Anthropological Research 35(3):261-273.

Brumbach, Hetty Jo
1987 A Quarry/Workshop and Processing Station on the Hudson River in Pleasantdale, New York. Archaeology of Eastern North America 15:59-83.

Bryan, Kirk
1950 Flint Quarries—The Source of Tools and, at the Same Time, the Factories of the American Indian. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. XVII, No. 3. Cambridge, Massachusetts.

Callahan, Errett
1979 The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts. Archaeology of Eastern North America 7:1-180.

Carlson, Roy L.
1994 Trade and Exchange in British Columbia. In Prehistoric Exchange Systems in North America, edited by Timothy G. Baugh and Jonathon E. Ericson, pp. 307-361. New York: Plenum Press.

Chance, Marsha A.
1981 Wetherington Island: An Archaic Lithic Procurement Site in Hillsborough County. Florida Anthropologist 34(2):109-119.

Cleghorn, Paul L.
1986 Organizational Structure at the Mauna Kea Adze Quarry Complex, Hawaii. Journal of Archaeological Science 13:375-387.

Coe, Michael and Kent Flannery
1964 The Pre-columbian Obsidian Industry of El Chayal, Guatemala. American Antiquity 30(1):43-49.

Connolly, Thomas J. and Robert R. Musil
1994 Patterns of Lithic Procurement and Reduction at the Newberry Crater Obsidian Quarries. In Contributions to the Archaeology Of Oregon, edited by Paul Baxter. Eugene: Association of Oregon Archaeologists

Crabtree, Don E.
1972 An Introduction to Flintworking. Occasional Papers of the Idaho State Museum Number 28. Pocatello, Idaho.

Ericson, Jonathon E.
1984 Toward the Analysis of Lithic Production Systems. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 1-9. Cambridge: Cambridge University Press.

Finlow, Frank J. and Marisa Bolognese
1984 Economic Aspects of Prehistoric Quarry Use: a Case Study in the American Southwest. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 77-82. Cambridge: Cambridge University Press.

Fladmark, Knut
1984 Mountain of Glass: Archaeology of Mount Edziza Obsidian Source, British Columbia. World Archaeology 16(2)139-156.

Flenniken, J. Jeffrey, Terry L. Ozbun, A. Catherine Fulkerson, and Carol J. Winkler
1990 The Diamond Lil Deer Kill Site: a Data Recovery Project in the Western Oregon Cascade Mountains. Lithic Analysts Research Report No. 11, Pullman, Washington.

Funk, Robert E., Beth Wellman, and Rebecca Elliot
1989 A Major Quarry-Workshop Site near Cherry Valley, New York. Pennsylvania Archaeologist 59(2):22-45

Gibson, Eric C.
1984 Reconstructing Corbiac: The context of Manufacturing at an Upper Paleolithic Quarry. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 139-146. Cambridge: Cambridge University Press.

Gramly Richard Michael
1980 Raw Materials Source Areas and "Curated" Tool Assemblages. American Antiquity 45(4):823-833.

1984 Mount Jasper: a Direct-Access Lithic Source in the White Mountains of New Hampshire. In Prehistoric Quarries and Lithic Reduction, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 11-21. Cambridge: Cambridge University Press.

Hatch, J. W. and Patricia E. Miller
1985 Procurement , Tool Production and Sourcing Research at the Vara Cruz Jasper Quarry in Pennsylvania. Journal of Field Archaeology 12(2):219-230.

Holmes, W. H.
1890a A Quarry Workshop of the Flaked-Stone Implement Makers in the District of Columbia. American Anthropologist 3(O. S.):1-26.

1890b Recent Work in the Quarry Workshops of the District of Columbia. American Anthropologist 3(O. S.):224-225.

1891 Aboriginal Novaculite Quarries in Garland County, Arkansas. American Anthropologist 4(O. S.):313-315.

1919 Handbook of Aboriginal American Antiquities, Part 1: Introductory - The Lithic Industries. Bureau of American Ethnology, Bulletin 69, Smithsonian Institution, Washington, D. C.

Hughes, R. E.
1989 Trace Element Geochemistry of Volcanic Glass from the Obsidian Cliffs Flow, Three Sisters Wilderness, Oregon. Unpublished manuscript in possession of the author.

Hughes, R. E.
1993 Trace Element Geochemistry of Volcanic Glass from the Obsidian Cliffs Flow, Three Sisters Wilderness, Oregon. Northwest Science 67(3):199-207.

Johnson, Jay K.
1979 Archaic Biface Manufacture: Production Failures, a Chronicle of the Misbegotten. Lithic Technology 8(2):25-35.

1981 Further Additional Biface Production Failures. Lithic Technology 10(2-3):26-28.

King, Thomas
1998 Cultural Resource Laws and Practice An Introductory Guide. Walnut Creek: AltaMira Press.

Leach, Helen M.
1984 Jigsaw: Reconstructive Lithic Technology. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 107-118. Cambridge: Cambridge University Press.

Legard, Harold L. and LeRoy C. Meyer
1973 Willamette National Forest Soil Resource Inventory. USDA Forest Service, Pacific Northwest Region, Portland, Oregon.

Lesser, W. H.
1988 Preliminary Investigations at Files Run Quarry (46RD114): Lithic Procurement and Reduction at the Tygart Valley Uplands. West Virginia Archaeologist 40(2):24-39.

Lloyd, J. R., J. A. Bense, and J. L. Davis, Jr.
1983 Tallahatta Quartzite Quarries in the Escambia River Drainage. Journal of Alabama Archaeology. 29(2):125-142.

Losey, Timothy C.
1971 Stony Plain Quarry Site. Plains Anthropologist 16(52):138-154.

Luedtke, Barbara E.
1984 Lithic Material Demand and Quarry Production. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 65-76. Cambridge: Cambridge University Press.

Markos, Jeffrey A.
1990 Packwood Lake: The Lithic Technology of a Multi-resource Acquisition Site in Southwestern Washington. USDA Forest Service, Pacific Northwest Region, Gifford Pinchot National Forest, Packwood Ranger District, Randle, Washington.

McClure, Richard H., Jr.
1989 Alpine Obsidian Procurement in the Southern Washington Cascades, Preliminary Research. In Archaeology In Washington Vol. 1, pp. 59-69.

Mierendorf, Robert R.
1993 Chert Procurement in the Upper Skagit River Valley of the Northern Cascade Range, Ross Lake National Recreation Area, Washington. North Cascades National Park, Pacific Northwest Region, Seattle.

Morgan, Vera
1993 Cultural Resource Investigations at 45AD104, an Upland Bison Site, Adams County, Washington. Eastern Washington University Reports in Archaeology and History 100-81, Eastern Washington University.

Oetting, Albert C.
1994 Archaeological Testing and Evaluation at Sites in Blue Rive and Cougar Reservoirs, Lane County, Oregon. Heritage Research Associates Report No. 172

Phillips, W. A.
1900 Aboriginal Quarries and Shops at Mill Creek, Illinois. American Anthropologist 2(N. S.):37.

Purdy, Barbara A.
1975 The Senator Edwards Chipped Stone Workshop Site (MR-122), Marion County, Florida: A Preliminary Report of Investigations. Florida Anthropologist 28(4):178-189.

1981 An Investigation into the Use of chert Outcrops by Prehistoric Floridians: The Container Corporation of America Site. Florida Anthropologist 34(2):90-108.

1984 Quarry Studies: Technological and Chronological Significance. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 119-127. Cambridge: Cambridge University Press.

Ritchie, Duncan and Richard A. Gould
1985 Back to the Source: A Preliminary Account of the Massachusetts Hill Quarry Complex. In *Stone Tool Analysis*, edited by Mark G. Plew et al., pp 35-53. Albuquerque: University of New Mexico Press.

Shaeffer, James B.
1958 The Alibates Flint Quarry, Texas. *American Antiquity* 24(2):189-191.

Shafer, Harry J. and Thomas R. Hester
1983 Ancient Maya Chert Workshops in Northern Belize, Central America. *American Antiquity* 48(3):519-543.

Sheldon, C. T.
1969 Site report, 35LA172, on file USDA Willamette National Forest, McKenzie Ranger District, McKenzie Bridge, Oregon.

Silvermoon, Jon M.
1988a *The Obsidian Cliffs Quarries of the Three Sisters Wilderness*. Paper presented at the 47th annual Northwest Anthropological Conference, Tacoma, Washington. Unpublished manuscript in possession of the author.

1988b *The Obsidian Cliffs Quarries of the Three Sisters Wilderness*. Unpublished manuscript in possession of the author.

Singer, Clay A.
1984 The 63-Kilometer Fit. In *Prehistoric Quarries and Lithic Production,* edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 35-48. Cambridge: Cambridge University Press.

Singer, Clay A. and Jonathon E. Ericson
1977 Quarry Analysis at Bodie Hills, Mono County, California: A Case Study. In *Exchange Systems in Prehistory*, edited by Timothy K. Earle and Jonathon E. Ericson, pp. 171-188, New York: Academic Press

Skinner, Craig.
1983 *Obsidian Studies in Oregon: An Introduction to Obsidian and an Investigation of Selected Methods of Obsidian Characterization Utilizing Obsidian Collected at Prehistoric Quarry Sites in Oregon*. M.A thesis in Interdisciplanary Studies, University of Oregon, Eugene.

Shott, Michael J.
1994 Size and Form in the Analysis of Flaked Debris: Review and Recent Approaches. *Journal of Archaeological Method and Theory* 1(1):69-110.

Snarskis, Michael J.
1979 Turrialba: a Paleo-Indian Quarry and Workshop site in Eastern Costa Rica. American Antiquity 44(1):125-138.

South, Barry and Eric O. Bergland
1998 Phase I Test Evaluation 35-LA-1176 HR# 07-417 (Martin's Trippy Site) Central Zone, Willamette National Forest. Unpublished manuscript in possession of the author.

Spence, Michael W. and Jeffery Parsons
1967 Prehispanic Obsidian Mines in Southern Hidalgo. American Antiquity 32(4):542-543.

Spencer, Lee
1989 Archaeological Testing of the Dale Beam Site 35 LA 793 on the McKenzie Ranger District of the Willamette National Forest, Lane County, Oregon. Lee Spencer Archaeology Paper No. 1989-3, Eugene, Oregon.

Sullivan, Alan P. and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Inference. American Antiquity 50(4):775-779.

Stewart, R. Michael
1987 Rhyolite Quarry and Quarry-Related Sites in Maryland and Pennslyvania. Archaeology of Eastern Northamerica 15:47-57.

Thomas, David Hurst
1986 Refiguring Anthropology. Prospect Heights: Waveland Press, Inc.

Torrence, Robin
1979 Macrocore Production at the Melos Obsidian Quarries. Lithic Technology 8(3):51-60.

1984 Monopoly or Direct Access? Industrial Organization at the Melos Obsidian Quarries. In Prehistoric Quarries and Lithic Production, edited by Jonathon E. Ericson and Barbara A. Purdy, pp. 49-64. Cambridge: Cambridge University Press.

1986 Production and Exchange of Stone Tools. Cambridge: Cambridge University Press.

Trigger, Bruce
1989 A History of Archaeological Thought. Cambridge: Cambridge University Press.

Willey, Gordon and Jeremy Sabloff
1974 A History of American Archaeology. London: Thames and Hudson.

Wilson, Douglas C.
1994 Obsidian Procurement and Use in the Willamette Valley, Oregon. Paper presented at the 47th annual Northwest Anthropological Conference, Spokane, Washington.

APPENDIX A: DEBITAGE CODING FORM

WILLAMETTE NATIONAL FOREST - CULTURAL RESOURCES ORACLE DATABASE
DEBITAGE CODING SHEET (1 PER LEVEL OR ANALYTICAL UNIT)
(left justify entries)

District
Site Number: 07 -- 4 1 7 __ Collect. Method: 3 Repository: 0 1
Provenience: TP7 ____________
Ex Level: 1 ________ Catalog No: 0 7 4 1 7 - 3 0 - ___

MORPHOLOGICAL ATTRIBUTES:

Att	Raw Material	Debitage Type	Debitage Size	Quantity Debitage	Quantity Heat Treat	Quantity Heat Damage	Q Ar Abr.
M	OBS	IFF	3	1			
M							
M							
M							
M							
M							
M							
M							
M							
M							
M							
M							
M							
M							

TECHNOLOGICAL ATTRIBUTES:

Att	Raw Material	Debitage Type	Debitage Size	Quantity Debitage	Quantity Heat Treat	Quantity Heat Damage	Qu Arri Abra
T							
T							
T							
T							
T							
T							
T							

Attribute: M - Morphological T - Technological

Raw Material

BAS - Basalt
CCS - CCS
CHAL - Chalcedony
CHRT - Chert
JSPR - Jasper
OBS - Obsidian
PEW - Petrified wood
PUM - Pumice
QRTZ - Quartzite
UIGN - Unknown igneous
USED - Unknown sedimentary

Debitage Size

1 - 0-4 mm
2 - 5-9 mm
3 - 10-19 mm
4 - 20-29 mm
5 - 30-39
6 - 40-49
7 - 50 mm

MORPHOLOGICAL Debitage Types

BIF - Broken Interior Flake
BPCF - Broken Primary Cortex Flake
BSCF - Broken Secondary Cortex Flake
CIF - Complete Interior Flake
CPCF - Complete Primary Cortex Flake
CSCF - Complete Secondary Cortex Flake
CDEB - Cortical Debris
IDEB - Interior Debris
IFF - Interior Flake Fragment
PCFF - Primary Cortex Flake Fragment
SCFF - Secondary Cortex Flake Fragment

TECHNOLOGICAL Debitage Types

21 - Biface reduction flake
22 - Bipolar flake or fragment
23 - Blade flake
24 - Bulb or ventral surface removal f
25 - Cobble tool or ground stone tool
26 - Edge removal flake
27 - Microblade
28 - Notch flake
29 - Outrepasse flake (complete)
30 - Outrepasse flake (distal fragment
31 - Pressure flake

APPENDIX B: MODIFIED LITHIC ARTIFACT CODING FORM AND KEY

KEY:

Artifact integrity:
1 = broken
2 = complete

Biface form:
01 = Base fragment, knife
02 = Base fragment, projectile point
03 = Bifacial blank
04 = Bifacial core
05 = Bifacial knife
06 = Bifacial preform
07 = Drill
08 = Margin fragment, Biface
09 = Midsection, Biface
10 = Midsection, projectile point
11 = Projectile point
12 = Tip, Biface
13 = Tip, projectile point
14 = Undiagnostic biface fragment

Biface stage:
0 = Unknown
1 = Early
2 = Intermediate
3 = Late

Core type:
1 = Amorphous
2 = Bidirectional
3 = Bifacial
4 = Bipolar
5 = Microblade
6 = Unidirectonal

WILLAMETTE NATIONAL FOREST
CULTURAL RESOURCES ORACLE DATABASE
LITHIC TOOL CODING FORM (1 PER TOOL)
(left justify entries)

District
Site Number: 07-417
Collect. Method: 3
Repository: 01
Provenience: ±P19
Ex Level: 5
Catalog No: 07417-99

Catalog Type: 11
Raw Material: OBS
Raw Material Color: 07

Artifact Integrity: 2

Length: 43
Width: 37
Thickness: 17

Heat Treatment: __
* Heat Damage: __, __, __, __, __

* Edge Shape: __, __, __, __

* Use Wear: __, __, __, __

Obsidian Source: 08
Mean Hydration: ____

Biface Form: __
Biface Stage: __

Projectile Point:
Form: __
Base: __, __
* Margin: __, __, __, __

Core Type: 1
Groundstone Type: __
Groundstone Wear: __

Parent Artifact: ____________________

* multiple responses possible

Catalog Type:
02 - Biface/biface fragment
09 - Cobble tool/fragment
11 - Core/fragment
12 - Debitage
26 - Projectile point/fragment
28 - Retouched flake
34 - Utilized flake
35 - Groundstone/fragment
36 - Fire-cracked rock

Raw Material Type:
BAS - Basalt
CCS - CCS
CHAL - Chalcedony
CHRT - Chert
JSPR - Jasper
OBS - Obsidian
PEW - Petrified wood
PUM - Pumice
QRTZ - Quartzite
UIGN - Unknown igneous
USED - Unknown sedimentary

Raw Material Color:
01 - Beige or tan
02 - Black
03 - Blue
04 - Brown
05 - Green
06 - Greenish black
07 - Grey
08 - Pink
09 - Purple
10 - Red
11 - Reddish brown
12 - Varied/multiple
13 - White
14 - Yellow
99 - Other

Use Wear:
1 - Arriss abrasion
2 - Crushing
3 - Microflaking
4 - Polish
5 - Sheen
6 - Striations
7 - Impact fracture
8 - Block fracture

Obsidian Source:
01 - Cougar Mtn.
02 - Devil Point
03 - Glass Buttes
04 - Inman Creek Gravels-A
05 - Inman Creek Gravels-B
06 - McKay Butte
07 - Newberry Volcano
08 - Obsidian Cliffs
09 - Quartz Mountain
10 - Silver Lake/Sycan
11 - Spodue Mountain
12 - Winberry Creek
99 - Unknown

Appendix C: Morphological Flake Data

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-1	0	OBS	CSCF	7	2
35/LA/172	L-1	0	OBS	CIF	7	10
35/LA/172	L-1	0	OBS	BPCF	7	1
35/LA/172	L-1	0	OBS	BIF	7	7
35/LA/172	L-1	0	OBS	CDEB	7	6
35/LA/172	L-1	0	OBS	IDEB	7	9
35/LA/172	L-1	0	OBS	CPCF	6	1
35/LA/172	L-1	0	OBS	BPCF	6	2
35/LA/172	L-1	0	OBS	SCFF	6	6
35/LA/172	L-1	0	OBS	CIF	6	6
35/LA/172	L-1	0	OBS	BIF	6	5
35/LA/172	L-1	0	OBS	IFF	6	14
35/LA/172	L-1	0	OBS	CDEB	6	6
35/LA/172	L-1	0	OBS	IDEB	6	17
35/LA/172	L-1	0	OBS	PCFF	5	1
35/LA/172	L-1	0	OBS	BPCF	5	2
35/LA/172	L-1	0	OBS	CPCF	5	3
35/LA/172	L-1	0	OBS	SCFF	5	10
35/LA/172	L-1	0	OBS	BSCF	5	6
35/LA/172	L-1	0	OBS	CSCF	5	7
35/LA/172	L-1	0	OBS	CIF	5	24
35/LA/172	L-1	0	OBS	BIF	5	14
35/LA/172	L-1	0	OBS	IFF	5	32
35/LA/172	L-1	0	OBS	CDEB	5	12
35/LA/172	L-1	0	OBS	IDEB	5	14
35/LA/172	L-1	0	OBS	CPCF	4	1
35/LA/172	L-1	0	OBS	BPCF	4	3
35/LA/172	L-1	0	OBS	PCFF	4	15
35/LA/172	L-1	0	OBS	CSCF	4	8
35/LA/172	L-1	0	OBS	BSCF	4	5
35/LA/172	L-1	0	OBS	SCFF	4	10
35/LA/172	L-1	0	OBS	CDEB	4	18
35/LA/172	L-1	0	OBS	IDEB	4	35
35/LA/172	L-1	0	OBS	CIF	4	47
35/LA/172	L-1	0	OBS	BIF	4	47
35/LA/172	L-1	0	OBS	IFF	4	153
35/LA/172	L-1	0	OBS	CIF	3	40
35/LA/172	L-1	0	OBS	BIF	3	58
35/LA/172	L-1	0	OBS	CSCF	3	1
35/LA/172	L-1	0	OBS	BSCF	3	3
35/LA/172	L-1	0	OBS	SCFF	3	20
35/LA/172	L-1	0	OBS	IDEB	3	37
35/LA/172	L-1	0	OBS	CDEB	3	25
35/LA/172	L-1	0	OBS	CPCF	3	2
35/LA/172	L-1	0	OBS	BPCF	3	4
35/LA/172	L-1	0	OBS	PCFF	3	10
35/LA/172	L-1	0	OBS	IFF	3	344
35/LA/172	L-5	0	OBS	IDEB	6	6
35/LA/172	L-5	0	OBS	PCFF	5	1
35/LA/172	L-5	0	OBS	CSCF	5	1
35/LA/172	L-5	0	OBS	SCFF	5	1
35/LA/172	L-5	0	OBS	CIF	5	6
35/LA/172	L-5	0	OBS	BIF	5	3
35/LA/172	L-5	0	OBS	IFF	5	20
35/LA/172	L-5	0	OBS	CDEB	5	3
35/LA/172	L-5	0	OBS	IDEB	5	26
35/LA/172	L-5	0	OBS	PCFF	4	7
35/LA/172	L-5	0	OBS	CIF	4	14
35/LA/172	L-5	0	OBS	BIF	4	2
35/LA/172	L-5	0	OBS	CDEB	4	6
35/LA/172	L-5	0	OBS	IDEB	4	59
35/LA/172	L-5	0	OBS	CPCF	7	1
35/LA/172	L-5	0	OBS	CSCF	7	3
35/LA/172	L-5	0	OBS	SCFF	7	2

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-5	0	OBS	CIF	7	3
35/LA/172	L-5	0	OBS	IFF	7	2
35/LA/172	L-5	0	OBS	CDEB	7	1
35/LA/172	L-5	0	OBS	IDEB	7	1
35/LA/172	L-5	0	OBS	PCFF	6	1
35/LA/172	L-5	0	OBS	CSCF	6	2
35/LA/172	L-5	0	OBS	SCFF	6	1
35/LA/172	L-5	0	OBS	CIF	6	2
35/LA/172	L-5	0	OBS	BIF	6	1
35/LA/172	L-5	0	OBS	IFF	6	8
35/LA/172	L-5	0	OBS	CDEB	6	3
35/LA/172	L-5	0	OBS	IFF	4	76
35/LA/172	L-5	0	OBS	CPCF	3	1
35/LA/172	L-5	0	OBS	BPCF	3	1
35/LA/172	L-5	0	OBS	PCFF	3	8
35/LA/172	L-5	0	OBS	CSCF	3	1
35/LA/172	L-5	0	OBS	SCFF	3	2
35/LA/172	L-5	0	OBS	CIF	3	19
35/LA/172	L-5	0	OBS	BIF	3	22
35/LA/172	L-5	0	OBS	CDEB	3	6
35/LA/172	L-5	0	OBS	IDEB	3	82
35/LA/172	L-5	0	OBS	IFF	3	400
35/LA/172	L-11	0	OBS	CIF	7	2
35/LA/172	L-11	0	OBS	CIF	6	1
35/LA/172	L-11	0	OBS	CPCF	6	1
35/LA/172	L-11	0	OBS	IDEB	6	1
35/LA/172	L-11	0	OBS	CIF	5	3
35/LA/172	L-11	0	OBS	CSCF	5	1
35/LA/172	L-11	0	OBS	SCFF	5	1
35/LA/172	L-11	0	OBS	CSCF	4	2
35/LA/172	L-11	0	OBS	SCFF	4	1
35/LA/172	L-11	0	OBS	CIF	4	1
35/LA/172	L-11	0	OBS	BIF	4	1
35/LA/172	L-11	0	OBS	IDEB	4	1
35/LA/172	L-11	0	OBS	IFF	4	14
35/LA/172	L-11	0	OBS	PCFF	3	4
35/LA/172	L-11	0	OBS	CIF	3	12
35/LA/172	L-11	0	OBS	BIF	3	9
35/LA/172	L-11	0	OBS	CDEB	3	1
35/LA/172	L-11	0	OBS	IDEB	3	5
35/LA/172	L-11	0	OBS	IFF	3	40
35/LA/172	L-14	0	OBS	PCFF	7	2
35/LA/172	L-14	0	OBS	CSCF	7	2
35/LA/172	L-14	0	OBS	SCFF	7	2
35/LA/172	L-14	0	OBS	IFF	7	1
35/LA/172	L-14	0	OBS	CDEB	7	11
35/LA/172	L-14	0	OBS	IDEB	7	1
35/LA/172	L-14	0	OBS	CPCF	6	1
35/LA/172	L-14	0	OBS	CSCF	6	1
35/LA/172	L-14	0	OBS	SCFF	6	1
35/LA/172	L-14	0	OBS	IFF	6	3
35/LA/172	L-14	0	OBS	CDEB	6	4
35/LA/172	L-14	0	OBS	IDEB	6	1
35/LA/172	L-14	0	OBS	BPCF	5	1
35/LA/172	L-14	0	OBS	SCFF	5	8
35/LA/172	L-14	0	OBS	CIF	5	2
35/LA/172	L-14	0	OBS	BIF	5	2
35/LA/172	L-14	0	OBS	IFF	5	9
35/LA/172	L-14	0	OBS	CDEB	5	3
35/LA/172	L-14	0	OBS	IDEB	5	6
35/LA/172	L-14	0	OBS	PCFF	4	3
35/LA/172	L-14	0	OBS	CSCF	4	1
35/LA/172	L-14	0	OBS	BSCF	4	2
35/LA/172	L-14	0	OBS	SCFF	4	6
35/LA/172	L-14	0	OBS	CIF	4	3
35/LA/172	L-14	0	OBS	BIF	4	4

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-14	0	OBS	IFF	4	18
35/LA/172	L-14	0	OBS	CDEB	4	8
35/LA/172	L-14	0	OBS	IDEB	4	6
35/LA/172	L-14	0	OBS	CPCF	3	1
35/LA/172	L-14	0	OBS	BPCF	3	1
35/LA/172	L-14	0	OBS	PCFF	3	2
35/LA/172	L-14	0	OBS	BSCF	3	1
35/LA/172	L-14	0	OBS	SCFF	3	2
35/LA/172	L-14	0	OBS	CIF	3	7
35/LA/172	L-14	0	OBS	BIF	3	7
35/LA/172	L-14	0	OBS	IFF	3	42
35/LA/172	L-14	0	OBS	CDEB	3	11
35/LA/172	L-14	0	OBS	IDEB	3	17
35/LA/172	L-21	0	OBS	CSCF	7	2
35/LA/172	L-21	0	OBS	CIF	7	2
35/LA/172	L-21	0	OBS	BIF	7	1
35/LA/172	L-21	0	OBS	IDEB	7	1
35/LA/172	L-21	0	OBS	PCFF	6	2
35/LA/172	L-21	0	OBS	SCFF	6	1
35/LA/172	L-21	0	OBS	BIF	6	3
35/LA/172	L-21	0	OBS	IFF	6	4
35/LA/172	L-21	0	OBS	CDEB	6	3
35/LA/172	L-21	0	OBS	CPCF	5	1
35/LA/172	L-21	0	OBS	CSCF	5	3
35/LA/172	L-21	0	OBS	BSCF	5	1
35/LA/172	L-21	0	OBS	SCFF	5	3
35/LA/172	L-21	0	OBS	CIF	5	5
35/LA/172	L-21	0	OBS	BIF	5	3
35/LA/172	L-21	0	OBS	IFF	5	5
35/LA/172	L-21	0	OBS	CDEB	5	1
35/LA/172	L-21	0	OBS	PCFF	4	2
35/LA/172	L-21	0	OBS	CSCF	4	1
35/LA/172	L-21	0	OBS	BSCF	4	1
35/LA/172	L-21	0	OBS	SCFF	4	4
35/LA/172	L-21	0	OBS	CIF	4	12
35/LA/172	L-21	0	OBS	BIF	4	18
35/LA/172	L-21	0	OBS	IFF	4	27
35/LA/172	L-21	0	OBS	IDEB	4	3
35/LA/172	L-21	0	OBS	BPCF	3	1
35/LA/172	L-21	0	OBS	BSCF	3	3
35/LA/172	L-21	0	OBS	CIF	3	19
35/LA/172	L-21	0	OBS	BIF	3	34
35/LA/172	L-21	0	OBS	IFF	3	98
35/LA/172	L-21	0	OBS	CDEB	3	1
35/LA/172	L-21	0	OBS	IDEB	3	20
35/LA/172	L-23	0	OBS	BIF	7	3
35/LA/172	L-23	0	OBS	IFF	7	1
35/LA/172	L-23	0	OBS	BIF	6	1
35/LA/172	L-23	0	OBS	IFF	6	2
35/LA/172	L-23	0	OBS	BSCF	5	1
35/LA/172	L-23	0	OBS	SCFF	5	1
35/LA/172	L-23	0	OBS	CIF	5	3
35/LA/172	L-23	0	OBS	IFF	5	6
35/LA/172	L-23	0	OBS	PCFF	4	1
35/LA/172	L-23	0	OBS	SCFF	4	3
35/LA/172	L-23	0	OBS	CIF	4	5
35/LA/172	L-23	0	OBS	BIF	4	2
35/LA/172	L-23	0	OBS	IFF	4	6
35/LA/172	L-23	0	OBS	SCFF	3	1
35/LA/172	L-23	0	OBS	CIF	3	13
35/LA/172	L-23	0	OBS	BIF	3	9
35/LA/172	L-23	0	OBS	IFF	3	33
35/LA/172	L-23	0	OBS	IDEB	3	2
35/LA/172	L-24	0	OBS	CSCF	7	2
35/LA/172	L-24	0	OBS	CIF	7	2
35/LA/172	L-24	0	OBS	BIF	7	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-24	0	OBS	IFF	7	2
35/LA/172	L-24	0	OBS	CSCF	6	1
35/LA/172	L-24	0	OBS	CIF	6	1
35/LA/172	L-24	0	OBS	BIF	6	1
35/LA/172	L-24	0	OBS	IFF	6	2
35/LA/172	L-24	0	OBS	CSCF	5	3
35/LA/172	L-24	0	OBS	CIF	5	2
35/LA/172	L-24	0	OBS	BIF	5	3
35/LA/172	L-24	0	OBS	IFF	5	6
35/LA/172	L-24	0	OBS	IDEB	5	1
35/LA/172	L-24	0	OBS	CSCF	4	1
35/LA/172	L-24	0	OBS	CIF	4	7
35/LA/172	L-24	0	OBS	BIF	4	5
35/LA/172	L-24	0	OBS	IFF	4	7
35/LA/172	L-24	0	OBS	CDEB	4	2
35/LA/172	L-24	0	OBS	IDEB	4	1
35/LA/172	L-24	0	OBS	BSCF	3	1
35/LA/172	L-24	0	OBS	SCFF	3	2
35/LA/172	L-24	0	OBS	CIF	3	5
35/LA/172	L-24	0	OBS	BIF	3	7
35/LA/172	L-24	0	OBS	IFF	3	22
35/LA/172	L-26	0	OBS	CSCF	7	2
35/LA/172	L-26	0	OBS	CIF	7	2
35/LA/172	L-26	0	OBS	IFF	7	2
35/LA/172	L-26	0	OBS	BSCF	6	1
35/LA/172	L-26	0	OBS	SCFF	6	1
35/LA/172	L-26	0	OBS	BIF	6	1
35/LA/172	L-26	0	OBS	IFF	6	2
35/LA/172	L-26	0	OBS	CDEB	6	1
35/LA/172	L-26	0	OBS	IDEB	6	1
35/LA/172	L-26	0	OBS	CPCF	5	1
35/LA/172	L-26	0	OBS	CSCF	5	1
35/LA/172	L-26	0	OBS	CIF	5	5
35/LA/172	L-26	0	OBS	BIF	5	1
35/LA/172	L-26	0	OBS	IFF	5	8
35/LA/172	L-26	0	OBS	CPCF	4	1
35/LA/172	L-26	0	OBS	PCFF	4	2
35/LA/172	L-26	0	OBS	CSCF	4	2
35/LA/172	L-26	0	OBS	BSCF	4	1
35/LA/172	L-26	0	OBS	SCFF	4	5
35/LA/172	L-26	0	OBS	CIF	4	6
35/LA/172	L-26	0	OBS	BIF	4	6
35/LA/172	L-26	0	OBS	IFF	4	23
35/LA/172	L-26	0	OBS	IDEB	4	3
35/LA/172	L-26	0	OBS	PCFF	3	1
35/LA/172	L-26	0	OBS	CSCF	3	1
35/LA/172	L-26	0	OBS	BSCF	3	1
35/LA/172	L-26	0	OBS	SCFF	3	2
35/LA/172	L-26	0	OBS	CIF	3	14
35/LA/172	L-26	0	OBS	BIF	3	14
35/LA/172	L-26	0	OBS	IFF	3	57
35/LA/172	L-26	0	OBS	CDEB	3	1
35/LA/172	L-26	0	OBS	IDEB	3	6
35/LA/172	L-38	0	OBS	CSCF	7	1
35/LA/172	L-38	0	OBS	BSCF	7	2
35/LA/172	L-38	0	OBS	IFF	7	1
35/LA/172	L-38	0	OBS	CDEB	7	1
35/LA/172	L-38	0	OBS	IDEB	7	1
35/LA/172	L-38	0	OBS	CSCF	6	1
35/LA/172	L-38	0	OBS	BSCF	6	1
35/LA/172	L-38	0	OBS	SCFF	6	1
35/LA/172	L-38	0	OBS	CIF	6	2
35/LA/172	L-38	0	OBS	BIF	6	2
35/LA/172	L-38	0	OBS	IFF	6	3
35/LA/172	L-38	0	OBS	CDEB	6	1
35/LA/172	L-38	0	OBS	IDEB	6	2

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-38	0	OBS	BPCF	5	1
35/LA/172	L-38	0	OBS	PCFF	5	1
35/LA/172	L-38	0	OBS	CSCF	5	3
35/LA/172	L-38	0	OBS	SCFF	5	1
35/LA/172	L-38	0	OBS	CIF	5	1
35/LA/172	L-38	0	OBS	BIF	5	5
35/LA/172	L-38	0	OBS	IFF	5	7
35/LA/172	L-38	0	OBS	CDEB	5	3
35/LA/172	L-38	0	OBS	IDEB	5	5
35/LA/172	L-38	0	OBS	CSCF	4	2
35/LA/172	L-38	0	OBS	BSCF	4	12
35/LA/172	L-38	0	OBS	SCFF	4	7
35/LA/172	L-38	0	OBS	CIF	4	10
35/LA/172	L-38	0	OBS	BIF	4	21
35/LA/172	L-38	0	OBS	IFF	4	25
35/LA/172	L-38	0	OBS	CDEB	4	4
35/LA/172	L-38	0	OBS	IDEB	4	7
35/LA/172	L-38	0	OBS	PCFF	3	1
35/LA/172	L-38	0	OBS	BSCF	3	9
35/LA/172	L-38	0	OBS	SCFF	3	10
35/LA/172	L-38	0	OBS	CIF	3	11
35/LA/172	L-38	0	OBS	BIF	3	59
35/LA/172	L-38	0	OBS	IFF	3	133
35/LA/172	L-38	0	OBS	CDEB	3	1
35/LA/172	L-38	0	OBS	IDEB	3	15
35/LA/172	L-44	0	OBS	CPCF	7	1
35/LA/172	L-44	0	OBS	PCFF	7	1
35/LA/172	L-44	0	OBS	SCFF	7	1
35/LA/172	L-44	0	OBS	CIF	7	5
35/LA/172	L-44	0	OBS	IFF	7	2
35/LA/172	L-44	0	OBS	IDEB	7	3
35/LA/172	L-44	0	OBS	CPCF	6	3
35/LA/172	L-44	0	OBS	CSCF	6	2
35/LA/172	L-44	0	OBS	SCFF	6	2
35/LA/172	L-44	0	OBS	CIF	6	4
35/LA/172	L-44	0	OBS	BIF	6	1
35/LA/172	L-44	0	OBS	IFF	6	3
35/LA/172	L-44	0	OBS	CDEB	6	1
35/LA/172	L-44	0	OBS	IDEB	6	4
35/LA/172	L-44	0	OBS	CPCF	5	1
35/LA/172	L-44	0	OBS	BPCF	5	2
35/LA/172	L-44	0	OBS	PCFF	5	2
35/LA/172	L-44	0	OBS	SCFF	5	1
35/LA/172	L-44	0	OBS	CIF	5	12
35/LA/172	L-44	0	OBS	BIF	5	3
35/LA/172	L-44	0	OBS	IFF	5	6
35/LA/172	L-44	0	OBS	CPCF	4	2
35/LA/172	L-44	0	OBS	PCFF	4	8
35/LA/172	L-44	0	OBS	SCFF	4	2
35/LA/172	L-44	0	OBS	BSCF	4	1
35/LA/172	L-44	0	OBS	CSCF	4	2
35/LA/172	L-44	0	OBS	CIF	4	14
35/LA/172	L-44	0	OBS	IDEB	4	2
35/LA/172	L-44	0	OBS	BIF	4	8
35/LA/172	L-44	0	OBS	IFF	4	13
35/LA/172	L-44	0	OBS	CPCF	4	3
35/LA/172	L-44	0	OBS	BPCF	3	1
35/LA/172	L-44	0	OBS	PCFF	3	8
35/LA/172	L-44	0	OBS	CSCF	3	1
35/LA/172	L-44	0	OBS	BSCF	3	1
35/LA/172	L-44	0	OBS	SCFF	3	5
35/LA/172	L-44	0	OBS	BIF	3	12
35/LA/172	L-44	0	OBS	CDEB	3	2
35/LA/172	L-44	0	OBS	IDEB	3	4
35/LA/172	L-44	0	OBS	IFF	3	71
35/LA/172	L-44	0	OBS	CIF	3	39

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-46	0	OBS	CIF	7	3
35/LA/172	L-46	0	OBS	CIF	6	1
35/LA/172	L-46	0	OBS	IFF	5	2
35/LA/172	L-46	0	OBS	CIF	4	1
35/LA/172	L-46	0	OBS	BIF	4	1
35/LA/172	L-46	0	OBS	IFF	4	5
35/LA/172	L-46	0	OBS	IDEB	4	1
35/LA/172	L-46	0	OBS	CIF	3	1
35/LA/172	L-46	0	OBS	BIF	3	3
35/LA/172	L-46	0	OBS	IFF	3	14
35/LA/172	L-48	0	OBS	PCFF	7	2
35/LA/172	L-48	0	OBS	SCFF	7	1
35/LA/172	L-48	0	OBS	IDEB	7	3
35/LA/172	L-48	0	OBS	CDEB	7	1
35/LA/172	L-48	0	OBS	CSCF	6	1
35/LA/172	L-48	0	OBS	BSCF	6	1
35/LA/172	L-48	0	OBS	SCFF	6	1
35/LA/172	L-48	0	OBS	CIF	6	1
35/LA/172	L-48	0	OBS	BIF	6	1
35/LA/172	L-48	0	OBS	IFF	6	3
35/LA/172	L-48	0	OBS	CDEB	6	1
35/LA/172	L-48	0	OBS	CSCF	5	2
35/LA/172	L-48	0	OBS	BSCF	5	2
35/LA/172	L-48	0	OBS	SCFF	5	1
35/LA/172	L-48	0	OBS	CIF	5	2
35/LA/172	L-48	0	OBS	BIF	5	2
35/LA/172	L-48	0	OBS	IFF	5	2
35/LA/172	L-48	0	OBS	CDEB	5	1
35/LA/172	L-48	0	OBS	IDEB	5	3
35/LA/172	L-48	0	OBS	CPCF	4	1
35/LA/172	L-48	0	OBS	PCFF	4	1
35/LA/172	L-48	0	OBS	SCFF	4	3
35/LA/172	L-48	0	OBS	BSCF	4	2
35/LA/172	L-48	0	OBS	CIF	4	16
35/LA/172	L-48	0	OBS	BIF	4	11
35/LA/172	L-48	0	OBS	IFF	4	34
35/LA/172	L-48	0	OBS	CDEB	4	2
35/LA/172	L-48	0	OBS	IDEB	4	15
35/LA/172	L-48	0	OBS	CSCF	3	1
35/LA/172	L-48	0	OBS	BSCF	3	1
35/LA/172	L-48	0	OBS	SCFF	3	3
35/LA/172	L-48	0	OBS	CIF	3	21
35/LA/172	L-48	0	OBS	BIF	3	23
35/LA/172	L-48	0	OBS	CDEB	3	3
35/LA/172	L-48	0	OBS	IDEB	3	19
35/LA/172	L-48	0	OBS	IFF	3	149
35/LA/172	L-53	0	OBS	CIF	7	2
35/LA/172	L-53	0	OBS	IFF	7	1
35/LA/172	L-53	0	OBS	CIF	6	1
35/LA/172	L-53	0	OBS	IFF	6	1
35/LA/172	L-53	0	OBS	CSCF	5	1
35/LA/172	L-53	0	OBS	IFF	5	1
35/LA/172	L-53	0	OBS	CIF	4	2
35/LA/172	L-53	0	OBS	BIF	4	1
35/LA/172	L-53	0	OBS	IFF	4	4
35/LA/172	L-53	0	OBS	IFF	3	3
35/LA/172	L-53	0	OBS	BIF	3	1
35/LA/172	L-53	0	OBS	IFF	3	8
35/LA/392	8S/5W	1	CCS	CIF	4	1
35/LA/392	8S/5W	1	OBS	CSCF	3	2
35/LA/392	8S/5W	1	OBS	CIF	3	53
35/LA/392	8S/5W	1	OBS	CIF	4	9
35/LA/392	8S/5W	1	OBS	CIF	5	2
35/LA/392	8S/5W	1	OBS	CIF	6	1
35/LA/392	8S/5W	1	OBS	BIF	3	65
35/LA/392	8S/5W	1	OBS	BIF	4	10

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	8S/5W	1	OBS	IFF	3	82
35/LA/392	8S/5W	1	OBS	IFF	4	8
35/LA/392	8S/5W	1	OBS	IFF	5	2
35/LA/392	8S/5W	1	OBS	BIF	6	1
35/LA/392	8S/5W	1	OBS	SCFF	3	1
35/LA/392	8S/5W	1	OBS	CIF	3	1
35/LA/392	8S/5W	1	OBS	IFF	3	43
35/LA/392	8S/5W	1	OBS	BIF	3	10
35/LA/392	8S/5W	1	CCS	IFF	3	1
35/LA/392	8S/5W	1	OBS	IDEB	3	1
35/LA/392	8S/5W	1	OBS	CSCF	5	1
35/LA/392	8S/5W	1	OBS	BSCF	3	3
35/LA/392	8S/5W	1	OBS	SCFF	3	7
35/LA/392	8S/5W	1	OBS	CIF	3	33
35/LA/392	8S/5W	1	OBS	CIF	4	6
35/LA/392	8S/5W	1	OBS	BIF	3	62
35/LA/392	8S/5W	1	OBS	BIF	4	10
35/LA/392	8S/5W	1	OBS	IFF	3	148
35/LA/392	8S/5W	1	OBS	IFF	4	14
35/LA/392	8S/5W	2	OBS	PCFF	3	1
35/LA/392	8S/5W	2	OBS	CSCF	4	1
35/LA/392	8S/5W	2	OBS	BSCF	3	2
35/LA/392	8S/5W	2	OBS	SCFF	3	8
35/LA/392	8S/5W	2	OBS	SCFF	4	3
35/LA/392	8S/5W	2	OBS	CDEB	3	1
35/LA/392	8S/5W	2	OBS	IDEB	3	5
35/LA/392	8S/5W	2	OBS	CIF	3	90
35/LA/392	8S/5W	2	OBS	CIF	4	27
35/LA/392	8S/5W	2	OBS	CIF	5	6
35/LA/392	8S/5W	2	OBS	CIF	6	3
35/LA/392	8S/5W	2	OBS	BPCF	3	1
35/LA/392	8S/5W	2	OBS	BIF	3	143
35/LA/392	8S/5W	2	OBS	BIF	4	23
35/LA/392	8S/5W	2	OBS	BIF	5	2
35/LA/392	8S/5W	2	OBS	IFF	3	459
35/LA/392	8S/5W	2	OBS	IFF	4	64
35/LA/392	8S/5W	2	OBS	IFF	5	9
35/LA/392	8S/5W	2	OBS	IFF	6	2
35/LA/392	8S/5W	1	OBS	CDEB	3	1
35/LA/392	8S/5W	1	OBS	SCFF	3	1
35/LA/392	8S/5W	1	OBS	CSCF	4	1
35/LA/392	8S/5W	1	OBS	CSCF	3	1
35/LA/392	8S/5W	1	OBS	CIF	3	39
35/LA/392	8S/5W	1	OBS	CIF	4	11
35/LA/392	8S/5W	1	OBS	CIF	5	4
35/LA/392	8S/5W	1	OBS	BIF	3	46
35/LA/392	8S/5W	1	OBS	BIF	4	8
35/LA/392	8S/5W	1	OBS	BIF	5	2
35/LA/392	8S/5W	1	OBS	IFF	3	127
35/LA/392	8S/5W	1	OBS	IFF	4	25
35/LA/392	8S/5W	1	OBS	IFF	5	4
35/LA/392	8S/5W	1	OBS	CIF	3	1
35/LA/392	8S/5W	1	OBS	CDEB	3	1
35/LA/392	8S/5W	2	OBS	IDEB	3	5
35/LA/392	8S/5W	2	OBS	SCFF	3	3
35/LA/392	8S/5W	2	OBS	CSCF	3	1
35/LA/392	8S/5W	2	OBS	CSCF	4	1
35/LA/392	8S/5W	2	OBS	CIF	3	65
35/LA/392	8S/5W	2	OBS	CIF	4	26
35/LA/392	8S/5W	2	OBS	CIF	5	4
35/LA/392	8S/5W	2	OBS	CIF	6	1
35/LA/392	8S/5W	2	OBS	CIF	7	1
35/LA/392	8S/5W	2	OBS	BIF	3	90
35/LA/392	8S/5W	2	OBS	BIF	4	28
35/LA/392	8S/5W	2	OBS	BIF	5	2
35/LA/392	8S/5W	2	OBS	IFF	3	246

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	8S/5W	2	OBS	IFF	4	24
35/LA/392	8S/5W	2	OBS	IFF	5	3
35/LA/392	8S/5W	1	OBS	CSCF	3	1
35/LA/392	8S/5W	1	OBS	SCFF	5	1
35/LA/392	8S/5W	1	OBS	SCFF	3	4
35/LA/392	8S/5W	1	OBS	CIF	3	26
35/LA/392	8S/5W	1	OBS	CIF	4	16
35/LA/392	8S/5W	1	OBS	CIF	5	1
35/LA/392	8S/5W	1	OBS	CIF	6	1
35/LA/392	8S/5W	1	OBS	BIF	3	80
35/LA/392	8S/5W	1	OBS	BIF	4	13
35/LA/392	8S/5W	1	OBS	BIF	5	5
35/LA/392	8S/5W	1	OBS	BIF	6	1
35/LA/392	8S/5W	1	OBS	IDEB	3	1
35/LA/392	8S/5W	1	OBS	IFF	3	176
35/LA/392	8S/5W	1	OBS	IFF	4	29
35/LA/392	8S/5W	1	OBS	IFF	5	2
35/LA/392	8S/5W	2	OBS	PCFF	3	1
35/LA/392	8S/5W	2	OBS	CSCF	3	1
35/LA/392	8S/5W	2	OBS	BSCF	3	1
35/LA/392	8S/5W	2	OBS	SCFF	3	2
35/LA/392	8S/5W	2	OBS	CDEB	3	2
35/LA/392	8S/5W	2	OBS	CIF	3	56
35/LA/392	8S/5W	2	OBS	CIF	4	12
35/LA/392	8S/5W	2	OBS	CIF	5	3
35/LA/392	8S/5W	2	OBS	BIF	3	85
35/LA/392	8S/5W	2	OBS	BIF	4	14
35/LA/392	8S/5W	2	OBS	IFF	3	270
35/LA/392	8S/5W	2	OBS	IFF	4	15
35/LA/392	8S/5W	2	OBS	IFF	5	4
35/LA/392	8S/5W	3	OBS	BSCF	3	1
35/LA/392	8S/5W	3	OBS	CIF	3	18
35/LA/392	8S/5W	3	OBS	CIF	4	1
35/LA/392	8S/5W	3	OBS	CIF	5	1
35/LA/392	8S/5W	3	OBS	BIF	3	26
35/LA/392	8S/5W	3	OBS	BIF	4	6
35/LA/392	8S/5W	3	OBS	IFF	3	69
35/LA/392	8S/5W	3	OBS	IFF	4	13
35/LA/392	8S/5W	3	OBS	IFF	5	1
35/LA/392	8S/5W	3	OBS	PCFF	3	3
35/LA/392	8S/5W	3	OBS	BSCF	3	2
35/LA/392	8S/5W	3	OBS	CSCF	3	2
35/LA/392	8S/5W	3	OBS	SCFF	3	6
35/LA/392	8S/5W	3	OBS	SCFF	4	1
35/LA/392	8S/5W	3	OBS	CIF	3	37
35/LA/392	8S/5W	3	OBS	CIF	4	5
35/LA/392	8S/5W	3	OBS	CIF	5	3
35/LA/392	8S/5W	3	OBS	BIF	3	75
35/LA/392	8S/5W	3	OBS	BIF	4	9
35/LA/392	8S/5W	3	OBS	IFF	3	197
35/LA/392	8S/5W	3	OBS	IFF	4	16
35/LA/392	8S/5W	4	OBS	CSCF	3	1
35/LA/392	8S/5W	4	OBS	BSCF	3	2
35/LA/392	8S/5W	4	OBS	SCFF	3	1
35/LA/392	8S/5W	4	OBS	CIF	3	4
35/LA/392	8S/5W	4	OBS	BIF	3	7
35/LA/392	8S/5W	4	OBS	BIF	4	1
35/LA/392	8S/5W	4	OBS	IFF	3	11
35/LA/392	8S/5W	4	OBS	IFF	4	6
35/LA/392	8S/5W	4	OBS	IFF	5	2
35/LA/392	8S/5W	4	BAS	IFF	4	1
35/LA/392	8S/5W	4	OBS	SCFF	3	1
35/LA/392	8S/5W	4	OBS	CIF	3	1
35/LA/392	8S/5W	4	OBS	CIF	4	4
35/LA/392	8S/5W	4	OBS	BIF	3	5
35/LA/392	8S/5W	4	OBS	BIF	6	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	8S/5W	4	OBS	IFF	3	18
35/LA/392	8S/5W	4	OBS	IFF	4	3
35/LA/392	8S/5W	5	OBS	BIF	3	4
35/LA/392	8S/5W	5	OBS	IFF	3	3
35/LA/392	8S/5W	5	OBS	CIF	3	1
35/LA/392	8S/5W	5	OBS	BIF	6	1
35/LA/392	8S/5W	6	OBS	SCFF	6	1
35/LA/392	8S/5W	6	OBS	CIF	4	1
35/LA/392	8S/5W	6	OBS	BIF	3	4
35/LA/392	8S/5W	6	OBS	IFF	3	4
35/LA/392	8S/5W	6	OBS	IFF	4	1
35/LA/392	8S/5W	6	OBS	IFF	6	1
35/LA/392	8S/5W	6	OBS	PCFF	6	1
35/LA/392	8S/5W	6	OBS	CIF	3	2
35/LA/392	8S/5W	6	OBS	BIF	4	1
35/LA/392	8S/5W	6	OBS	CIF	3	4
35/LA/392	8S/5W	6	OBS	CIF	6	1
35/LA/392	8S/5W	6	OBS	BIF	3	2
35/LA/392	8S/5W	6	OBS	BIF	4	1
35/LA/392	8S/5W	6	OBS	BIF	5	1
35/LA/392	8S/5W	6	OBS	IFF	3	5
35/LA/392	8S/5W	6	OBS	IFF	4	5
35/LA/392	8S/5W	6	CCS	IFF	4	1
35/LA/392	8S/5W	7	OBS	CIF	3	3
35/LA/392	8S/5W	7	OBS	BIF	3	1
35/LA/392	8S/5W	7	OBS	IFF	3	7
35/LA/392	8S/5W	7	OBS	CIF	3	3
35/LA/392	8S/5W	7	OBS	IDEB	3	1
35/LA/392	8S/5W	7	OBS	SCFF	4	1
35/LA/392	8S/5W	7	OBS	BIF	3	2
35/LA/392	8S/5W	7	OBS	IFF	3	8
35/LA/392	8S/5W	8	OBS	CIF	3	1
35/LA/392	8S/5W	8	OBS	IFF	3	2
35/LA/392	8S/5W	8	OBS	CIF	3	4
35/LA/392	8S/5W	8	OBS	CIF	4	1
35/LA/392	8S/5W	8	OBS	BIF	3	1
35/LA/392	8S/5W	8	OBS	IFF	3	3
35/LA/392	15S/10W	1	OBS	CSCF	3	1
35/LA/392	15S/10W	1	OBS	BSCF	3	1
35/LA/392	15S/10W	1	OBS	SCFF	4	2
35/LA/392	15S/10W	1	OBS	SCFF	3	2
35/LA/392	15S/10W	1	OBS	CIF	3	1
35/LA/392	15S/10W	1	OBS	BIF	3	2
35/LA/392	15S/10W	1	OBS	IFF	3	3
35/LA/392	15S/10W	1	OBS	IFF	4	1
35/LA/392	15S/10W	2	OBS	SCFF	3	1
35/LA/392	15S/10W	2	OBS	IFF	3	4
35/LA/392	15S/10W	2	OBS	SCFF	3	1
35/LA/392	15S/10W	2	OBS	IFF	3	3
35/LA/392	15S/10W	2	OBS	IFF	4	2
35/LA/392	15S/10W	3	OBS	IFF	3	2
35/LA/392	15S/10W	4	OBS	IFF	3	1
35/LA/392	15S/10W	5	OBS	IFF	3	1
35/LA/392	15S/10W	6	OBS	BSCF	3	1
35/LA/392	15S/10W	6	OBS	BIF	3	1
35/LA/392	15S/10W	6	OBS	BIF	6	1
35/LA/392	15S/10W	6	OBS	IFF	3	1
35/LA/392	15S/10W	7	OBS	CIF	3	1
35/LA/392	15S/10W	7	OBS	BIF	3	2
35/LA/392	15S/10W	7	OBS	IFF	3	5
35/LA/392	10S/0EW	1	OBS	SCFF	6	1
35/LA/392	10S/0EW	1	OBS	CIF	3	1
35/LA/392	10S/0EW	1	OBS	IFF	3	9
35/LA/392	10S/0EW	1	JSPR	IFF	3	1
35/LA/392	10S/0EW	2	OBS	BIF	3	2
35/LA/392	10S/0EW	2	OBS	IFF	3	9

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	10S/0EW	2	OBS	IFF	4	1
35/LA/392	10S/0EW	3	OBS	CIF	4	3
35/LA/392	10S/0EW	3	OBS	BIF	3	7
35/LA/392	10S/0EW	3	OBS	BIF	4	1
35/LA/392	10S/0EW	3	OBS	IFF	3	13
35/LA/392	10S/0EW	3	OBS	PCFF	3	1
35/LA/392	10S/0EW	3	OBS	BSCF	3	1
35/LA/392	10S/0EW	3	OBS	IFF	3	8
35/LA/392	10S/0EW	3	OBS	IFF	4	2
35/LA/392	10S/0EW	3	OBS	CIF	3	1
35/LA/392	10S/0EW	4	OBS	SCFF	3	2
35/LA/392	10S/0EW	4	OBS	CIF	3	4
35/LA/392	10S/0EW	4	OBS	BIF	3	2
35/LA/392	10S/0EW	4	OBS	BIF	4	1
35/LA/392	10S/0EW	4	OBS	IFF	3	7
35/LA/392	10S/0EW	4	OBS	IFF	4	1
35/LA/392	10S/0EW	5	OBS	CSCF	6	1
35/LA/392	10S/0EW	5	OBS	SCFF	3	1
35/LA/392	10S/0EW	5	OBS	SCFF	4	1
35/LA/392	10S/0EW	5	OBS	CDEB	4	1
35/LA/392	10S/0EW	5	OBS	BIF	3	5
35/LA/392	10S/0EW	5	OBS	BIF	4	1
35/LA/392	10S/0EW	5	OBS	IFF	3	5
35/LA/392	10S/0EW	5	CCS	IFF	3	2
35/LA/392	30S/20E	1	OBS	SCFF	3	1
35/LA/392	30S/20E	1	OBS	BSCF	3	2
35/LA/392	30S/20E	1	OBS	BSCF	4	1
35/LA/392	30S/20E	1	OBS	BSCF	5	1
35/LA/392	30S/20E	1	OBS	BIF	3	9
35/LA/392	30S/20E	1	OBS	BIF	4	1
35/LA/392	30S/20E	1	OBS	IFF	3	15
35/LA/392	30S/20E	1	OBS	IFF	4	3
35/LA/392	30S/20E	2	OBS	CSCF	4	1
35/LA/392	30S/20E	2	OBS	CIF	3	1
35/LA/392	30S/20E	2	OBS	BIF	3	2
35/LA/392	30S/20E	2	OBS	BIF	4	3
35/LA/392	30S/20E	2	OBS	IFF	3	5
35/LA/392	30S/20E	2	OBS	IFF	4	1
35/LA/392	30S/20E	3	OBS	BSCF	3	3
35/LA/392	30S/20E	3	OBS	BIF	3	1
35/LA/392	30S/20E	3	OBS	IFF	3	3
35/LA/392	30S/20E	4	OBS	CIF	4	1
35/LA/392	30S/20E	4	OBS	IFF	3	1
35/LA/392	30S/20E	5	OBS	SCFF	3	1
35/LA/392	30S/20E	5	OBS	CIF	4	1
35/LA/392	30S/20E	5	OBS	BIF	3	2
35/LA/392	30S/20E	5	OBS	IFF	3	3
35/LA/392	0N/0W	1	OBS	PCFF	3	1
35/LA/392	0N/0W	1	OBS	CSCF	4	1
35/LA/392	0N/0W	1	OBS	BSCF	3	1
35/LA/392	0N/0W	1	OBS	BSCF	4	1
35/LA/392	0N/0W	1	OBS	SCFF	3	5
35/LA/392	0N/0W	1	OBS	SCFF	4	3
35/LA/392	0N/0W	1	OBS	CIF	3	1
35/LA/392	0N/0W	1	OBS	CIF	4	1
35/LA/392	0N/0W	1	OBS	CDEB	3	1
35/LA/392	0N/0W	1	OBS	BIF	3	6
35/LA/392	0N/0W	1	OBS	BIF	4	1
35/LA/392	0N/0W	1	OBS	IFF	3	26
35/LA/392	0N/0W	1	OBS	IFF	4	3
35/LA/392	0N/0W	1	OBS	IFF	5	2
35/LA/392	0N/0W	1	BAS	IFF	3	1
35/LA/392	0N/0W	2	OBS	CIF	3	1
35/LA/392	0N/0W	2	CCS	IFF	3	1
35/LA/392	0N/0W	2	OBS	BSCF	3	1
35/LA/392	0N/0W	2	OBS	SCFF	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	ON/OW	2	OBS	SCFF	4	2
35/LA/392	ON/OW	2	OBS	SCFF	5	1
35/LA/392	ON/OW	2	OBS	CIF	4	1
35/LA/392	ON/OW	2	OBS	BIF	3	11
35/LA/392	ON/OW	2	OBS	BIF	4	2
35/LA/392	ON/OW	2	OBS	IFF	3	15
35/LA/392	ON/OW	2	OBS	IFF	4	4
35/LA/392	ON/OW	2	OBS	PCFF	3	1
35/LA/392	ON/OW	2	OBS	BSCF	3	2
35/LA/392	ON/OW	2	OBS	SCFF	3	3
35/LA/392	ON/OW	2	OBS	CIF	3	1
35/LA/392	ON/OW	2	OBS	CIF	4	1
35/LA/392	ON/OW	2	OBS	BIF	3	5
35/LA/392	ON/OW	2	OBS	BIF	4	4
35/LA/392	ON/OW	2	OBS	IFF	3	26
35/LA/392	ON/OW	2	OBS	IFF	4	3
35/LA/392	ON/OW	3	OBS	BIF	3	1
35/LA/392	ON/OW	3	OBS	BIF	4	2
35/LA/392	ON/OW	3	OBS	BIF	5	1
35/LA/392	ON/OW	3	OBS	IFF	3	4
35/LA/392	ON/OW	3	OBS	IFF	4	2
35/LA/392	ON/OW	3	OBS	IFF	5	1
35/LA/392	ON/OW	4	OBS	PCFF	3	1
35/LA/392	ON/OW	4	OBS	CSCF	4	2
35/LA/392	ON/OW	4	OBS	BSCF	3	3
35/LA/392	ON/OW	4	OBS	SCFF	3	3
35/LA/392	ON/OW	4	OBS	SCFF	4	2
35/LA/392	ON/OW	4	OBS	CIF	3	2
35/LA/392	ON/OW	4	OBS	CIF	5	1
35/LA/392	ON/OW	4	OBS	BIF	3	12
35/LA/392	ON/OW	4	OBS	BIF	4	2
35/LA/392	ON/OW	4	OBS	IFF	3	32
35/LA/392	ON/OW	4	OBS	IFF	4	2
35/LA/392	ON/OW	4	OBS	IFF	5	1
35/LA/392	ON/OW	5	OBS	BSCF	3	5
35/LA/392	ON/OW	5	OBS	SCFF	3	8
35/LA/392	ON/OW	5	OBS	BIF	3	20
35/LA/392	ON/OW	5	OBS	IFF	3	61
35/LA/392	ON/OW	5	OBS	BPCF	5	1
35/LA/392	ON/OW	5	OBS	PCFF	4	1
35/LA/392	ON/OW	5	OBS	CSCF	3	1
35/LA/392	ON/OW	5	OBS	CSCF	4	1
35/LA/392	ON/OW	5	OBS	SCFF	5	1
35/LA/392	ON/OW	5	OBS	IDEB	3	3
35/LA/392	ON/OW	5	OBS	CIF	3	3
35/LA/392	ON/OW	5	OBS	CIF	6	1
35/LA/392	ON/OW	5	OBS	CIF	7	1
35/LA/392	ON/OW	5	OBS	BIF	4	3
35/LA/392	ON/OW	5	OBS	BIF	5	1
35/LA/392	ON/OW	5	OBS	IFF	4	15
35/LA/392	ON/OW	5	OBS	IFF	5	3
35/LA/392	ON/OW	5	OBS	IFF	6	1
35/LA/392	30S/82E	1	OBS	CIF	4	1
35/LA/392	30S/82E	1	OBS	BIF	3	2
35/LA/392	30S/82E	1	OBS	IFF	3	5
35/LA/392	30S/82E	1	OBS	IFF	4	3
35/LA/392	30S/82E	2	OBS	BIF	3	1
35/LA/392	5S/50E	1	OBS	IFF	4	1
35/LA/392	5S/50E	3	OBS	BIF	3	1
35/LA/392	UNKNOWN	0	OBS	IDEB	4	1
35/LA/392	UNKNOWN	0	OBS	CIF	3	1
35/LA/392	UNKNOWN	0	OBS	CIF	4	3
35/LA/392	UNKNOWN	0	OBS	CIF	5	1
35/LA/392	UNKNOWN	0	OBS	BIF	3	1
35/LA/392	UNKNOWN	0	OBS	BIF	4	3
35/LA/392	UNKNOWN	0	OBS	BIF	5	2

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/392	UNKNOWN	0	OBS	IFF	3	11
35/LA/392	UNKNOWN	0	OBS	IFF	4	2
35/LA/392	UNKNOWN	0	OBS	IFF	5	3
35/LA/392	UNKNOWN	0	OBS	SCFF	5	2
35/LA/392	UNKNOWN	0	BAS	IFF	3	1
35/LA/321	6S/4E	1	OBS	CIF	3	1
35/LA/321	6S/4E	1	OBS	BIF	4	1
35/LA/321	6S/4E	1	OBS	BIF	3	2
35/LA/321	6S/4E	1	OBS	IFF	3	14
35/LA/321	6S/4E	2	OBS	CSCF	4	1
35/LA/321	6S/4E	2	OBS	IDEB	3	1
35/LA/321	6S/4E	2	OBS	CIF	3	1
35/LA/321	6S/4E	2	OBS	BIF	3	3
35/LA/321	6S/4E	2	OBS	IFF	4	1
35/LA/321	6S/4E	2	OBS	IFF	3	16
35/LA/321	6S/4E	3	OBS	CIF	3	1
35/LA/321	6S/4E	3	OBS	BIF	3	1
35/LA/321	6S/4E	3	OBS	IFF	3	10
35/LA/321	6S/4E	3	OBS	BIF	6	1
35/LA/321	6S/4E	3	OBS	IFF	3	2
35/LA/321	6S/4E	4	OBS	CIF	3	1
35/LA/321	6S/4E	4	OBS	BIF	3	3
35/LA/321	6S/4E	4	OBS	BIF	4	1
35/LA/321	6S/4E	4	OBS	IFF	3	3
35/LA/321	6S/4E	5	OBS	IFF	4	1
35/LA/321	10N/15E	1	OBS	CSCF	3	1
35/LA/321	10N/15E	1	OBS	IDEB	3	3
35/LA/321	10N/15E	1	OBS	CIF	3	1
35/LA/321	10N/15E	1	BAS	BIF	3	1
35/LA/321	10N/15E	1	OBS	BIF	4	1
35/LA/321	10N/15E	1	OBS	BIF	3	6
35/LA/321	10N/15E	1	OBS	IFF	3	12
35/LA/321	10N/15E	1	OBS	IFF	4	1
35/LA/321	10N/15E	2	OBS	BSCF	4	1
35/LA/321	10N/15E	2	OBS	BSCF	3	1
35/LA/321	10N/15E	2	OBS	IDEB	4	1
35/LA/321	10N/15E	2	OBS	CIF	3	2
35/LA/321	10N/15E	2	OBS	BIF	3	15
35/LA/321	10N/15E	2	OBS	IFF	4	4
35/LA/321	10N/15E	2	OBS	IFF	3	16
35/LA/321	10N/15E	3	OBS	IDEB	3	1
35/LA/321	10N/15E	3	OBS	CIF	4	1
35/LA/321	10N/15E	3	BAS	CIF	3	1
35/LA/321	10N/15E	3	OBS	BIF	4	1
35/LA/321	10N/15E	3	OBS	BIF	3	2
35/LA/321	10N/15E	3	OBS	IFF	5	1
35/LA/321	10N/15E	3	OBS	IFF	4	1
35/LA/321	10N/15E	3	OBS	IFF	3	4
35/LA/321	10N/15E	3	OBS	CIF	3	2
35/LA/321	10N/15E	3	BAS	BIF	3	1
35/LA/321	10N/15E	3	OBS	IFF	3	1
35/LA/321	10N/15E	4	OBS	CIF	5	1
35/LA/321	10N/15E	4	OBS	BIF	3	4
35/LA/321	10N/15E	4	OBS	IFF	4	1
35/LA/321	10N/15E	4	OBS	IFF	3	5
35/LA/321	10N/15E	5	OBS	IFF	3	6
35/LA/321	10N/15E	5	OBS	CDEB	5	1
35/LA/321	10N/15E	5	OBS	CIF	4	1
35/LA/321	10N/15E	5	OBS	CIF	3	1
35/LA/321	10N/15E	5	BAS	CIF	3	1
35/LA/321	10N/15E	5	CCS	CIF	3	1
35/LA/321	10N/15E	5	CCS	BIF	5	1
35/LA/321	10N/15E	5	BAS	BIF	3	1
35/LA/321	10N/15E	5	OBS	BIF	3	5
35/LA/321	10N/15E	5	CCS	IFF	3	1
35/LA/321	10N/15E	5	BAS	IFF	3	2

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	10N/15E	6	OBS	SCFF	3	1
35/LA/321	10N/15E	6	OBS	SCFF	4	1
35/LA/321	10N/15E	6	OBS	CIF	5	1
35/LA/321	10N/15E	6	OBS	CIF	3	2
35/LA/321	10N/15E	6	OBS	BIF	3	6
35/LA/321	10N/15E	6	CCS	IFF	3	1
35/LA/321	10N/15E	6	OBS	IFF	4	2
35/LA/321	10N/15E	6	OBS	IFF	3	11
35/LA/321	10N/15E	7	OBS	CDEB	3	1
35/LA/321	10N/15E	7	OBS	CIF	4	1
35/LA/321	10N/15E	7	OBS	CIF	3	1
35/LA/321	10N/15E	7	OBS	BIF	4	1
35/LA/321	10N/15E	7	OBS	BIF	3	4
35/LA/321	10N/15E	7	OBS	IFF	4	1
35/LA/321	10N/15E	7	OBS	IFF	3	4
35/LA/321	10N/15E	7	BAS	IFF	3	2
35/LA/321	10N/15E	8	OBS	CIF	3	2
35/LA/321	10N/15E	8	OBS	BIF	3	1
35/LA/321	10N/15E	8	OBS	IFF	4	1
35/LA/321	10N/15E	8	OBS	IFF	3	1
35/LA/321	10N/15E	9	OBS	CIF	3	4
35/LA/321	10N/15E	9	OBS	CIF	4	1
35/LA/321	10N/15E	9	OBS	BIF	3	1
35/LA/321	10N/15E	9	OBS	IFF	3	2
35/LA/321	10N/15E	10	OBS	CIF	3	1
35/LA/321	10N/15E	10	OBS	BIF	4	1
35/LA/321	10N/15E	10	OBS	BIF	3	3
35/LA/321	10N/15E	10	OBS	IFF	4	1
35/LA/321	10N/15E	10	OBS	IFF	3	5
35/LA/321	10N/15E	11	OBS	CIF	3	2
35/LA/321	10N/15E	11	OBS	BIF	3	3
35/LA/321	10N/15E	11	BAS	BIF	4	1
35/LA/321	10N/15E	11	BAS	IDEB	3	1
35/LA/321	10N/15E	11	BAS	IFF	3	1
35/LA/321	10N/15E	11	OBS	IFF	3	4
35/LA/321	10N/15E	11	OBS	IFF	4	1
35/LA/321	10N/15E	12	OBS	CIF	3	1
35/LA/321	10N/15E	12	OBS	BIF	4	1
35/LA/321	10N/15E	12	OBS	BIF	3	9
35/LA/321	10N/15E	13	OBS	SCFF	3	1
35/LA/321	10N/15E	13	OBS	CIF	4	1
35/LA/321	10N/15E	13	OBS	CIF	3	3
35/LA/321	10N/15E	13	OBS	BIF	3	3
35/LA/321	10N/15E	13	BAS	IFF	3	1
35/LA/321	10N/15E	13	OBS	IFF	3	2
35/LA/321	10N/15E	14	OBS	CIF	4	1
35/LA/321	10N/15E	14	OBS	CIF	3	1
35/LA/321	10N/15E	14	OBS	BIF	5	1
35/LA/321	10N/15E	14	OBS	BIF	3	5
35/LA/321	10N/15E	14	OBS	IDEB	3	1
35/LA/321	10N/15E	14	OBS	IFF	5	1
35/LA/321	10N/15E	14	OBS	IFF	3	4
35/LA/321	10N/15E	14	CCS	IFF	3	2
35/LA/321	10N/15E	15	OBS	BSCF	4	1
35/LA/321	10N/15E	15	OBS	SCFF	3	1
35/LA/321	10N/15E	15	OBS	CIF	4	1
35/LA/321	10N/15E	15	OBS	CIF	3	1
35/LA/321	10N/15E	15	OBS	BIF	3	2
35/LA/321	10N/15E	15	OBS	IFF	4	1
35/LA/321	10N/15E	15	OBS	IFF	3	6
35/LA/321	10N/15E	16	OBS	CIF	3	2
35/LA/321	10N/15E	16	OBS	BIF	4	1
35/LA/321	10N/15E	16	OBS	BIF	3	3
35/LA/321	10N/15E	16	OBS	IFF	3	4
35/LA/321	10N/15E	17	OBS	BIF	3	2
35/LA/321	10N/15E	17	OBS	IFF	3	2

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	3N/5E	1	OBS	CDEB	3	1
35/LA/321	3N/5E	1	OBS	IFF	4	3
35/LA/321	3N/5E	1	OBS	IFF	3	13
35/LA/321	3N/5E	1	OBS	BIF	4	1
35/LA/321	3N/5E	1	OBS	BIF	3	3
35/LA/321	3N/5E	1	OBS	CIF	3	6
35/LA/321	3N/5E	2	OBS	IFF	3	11
35/LA/321	3N/5E	2	OBS	BIF	3	4
35/LA/321	3N/5E	2	OBS	CIF	3	3
35/LA/321	3N/5E	3	OBS	IFF	3	4
35/LA/321	3N/5E	3	OBS	BIF	4	1
35/LA/321	3N/5E	3	OBS	BIF	3	3
35/LA/321	3N/5E	3	OBS	CIF	3	2
35/LA/321	3N/5E	3	OBS	IDEB	3	1
35/LA/321	3N/5E	3	CCS	IFF	3	1
35/LA/321	3N/5E	3	OBS	IFF	3	15
35/LA/321	3N/5E	3	OBS	BIF	4	1
35/LA/321	3N/5E	3	OBS	BIF	3	10
35/LA/321	3N/5E	3	OBS	CIF	4	1
35/LA/321	3N/5E	3	OBS	CIF	3	6
35/LA/321	3N/5E	4	OBS	IFF	4	1
35/LA/321	3N/5E	4	OBS	IFF	3	13
35/LA/321	3N/5E	4	OBS	CIF	3	8
35/LA/321	3N/5E	4	OBS	BIF	4	1
35/LA/321	3N/5E	4	OBS	BIF	3	6
35/LA/321	3N/5E	4	OBS	CIF	4	1
35/LA/321	3N/5E	5	OBS	IFF	4	1
35/LA/321	3N/5E	5	OBS	IFF	3	6
35/LA/321	3N/5E	5	OBS	BIF	3	1
35/LA/321	3N/5E	5	OBS	CIF	3	1
35/LA/321	3N/5E	6	OBS	IFF	3	1
35/LA/321	3N/5E	6	OBS	CIF	3	1
35/LA/321	3N/5E	6	CCS	CIF	3	1
35/LA/321	3S/3W	1	OBS	CIF	3	2
35/LA/321	3S/3W	1	OBS	BIF	3	5
35/LA/321	3S/3W	1	OBS	IFF	3	4
35/LA/321	3S/3W	1	OBS	IFF	4	2
35/LA/321	3S/3W	2	OBS	CIF	3	1
35/LA/321	3S/3W	2	OBS	BIF	3	1
35/LA/321	3S/3W	2	OBS	IFF	3	4
35/LA/321	3S/3W	3	OBS	CIF	3	3
35/LA/321	3S/3W	3	OBS	IDEB	3	1
35/LA/321	3S/3W	3	OBS	IDEB	4	1
35/LA/321	3S/3W	3	OBS	BIF	3	2
35/LA/321	3S/3W	3	OBS	IFF	4	2
35/LA/321	3S/3W	3	OBS	IFF	5	1
35/LA/321	3S/3W	3	OBS	IFF	3	3
35/LA/321	3S/3W	3	BAS	IDEB	3	1
35/LA/321	3S/3W	3	OBS	CIF	3	1
35/LA/321	3S/3W	3	OBS	BIF	4	1
35/LA/321	3S/3W	3	OBS	BIF	3	3
35/LA/321	3S/3W	3	OBS	IFF	3	4
35/LA/321	3S/3W	3	OBS	IFF	5	2
35/LA/321	3S/3W	4	OBS	BIF	3	4
35/LA/321	3S/3W	4	OBS	IFF	3	2
35/LA/321	3S/3W	5	OBS	IFF	3	3
35/LA/321	3S/27E	1	OBS	BIF	3	3
35/LA/321	3S/27E	1	OBS	IFF	3	2
35/LA/321	3S/27E	1	CCS	IDEB	3	1
35/LA/321	3S/27E	2	OBS	CIF	3	1
35/LA/321	3S/27E	2	OBS	BIF	3	3
35/LA/321	3S/27E	2	OBS	IFF	3	3
35/LA/321	3S/27E	3	OBS	BIF	3	1
35/LA/321	3S/27E	3	CCS	IDEB	4	1
35/LA/321	3S/27E	3	OBS	IFF	4	1
35/LA/321	3S/27E	3	OBS	IFF	3	6

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	3S/27E	4	OBS	CIF	3	1
35/LA/321	3S/27E	4	OBS	BIF	3	6
35/LA/321	3S/27E	4	OBS	IFF	3	4
35/LA/321	3S/27E	5	OBS	BIF	3	1
35/LA/321	3S/27E	5	OBS	IFF	4	1
35/LA/321	3S/27E	5	OBS	IFF	3	3
35/LA/321	3S/27E	6	OBS	CIF	3	1
35/LA/321	3S/27E	6	OBS	CIF	4	1
35/LA/321	3S/27E	7	OBS	CIF	3	2
35/LA/321	3S/27E	7	OBS	BIF	3	4
35/LA/321	3S/27E	8	OBS	IFF	3	1
35/LA/321	3S/27E	9	OBS	CIF	3	1
35/LA/321	3S/27E	9	OBS	BIF	3	1
35/LA/321	3S/27E	9	OBS	IFF	3	2
35/LA/321	3S/27E	10	OBS	IFF	3	1
35/LA/321	7S/2E	1	OBS	IFF	3	1
35/LA/321	7S/2E	2	OBS	CIF	4	1
35/LA/321	7S/2E	2	OBS	BIF	3	2
35/LA/321	7S/2E	2	OBS	IFF	3	4
35/LA/321	7S/2E	3	OBS	BIF	3	8
35/LA/321	7S/2E	3	OBS	IFF	4	1
35/LA/321	7S/2E	3	OBS	IFF	3	9
35/LA/321	7S/2E	4	OBS	SCFF	3	1
35/LA/321	7S/2E	4	OBS	BIF	3	5
35/LA/321	7S/2E	4	OBS	IFF	3	2
35/LA/321	7S/2E	4	BAS	IFF	4	1
35/LA/321	7S/2E	5	OBS	CIF	5	1
35/LA/321	7S/2E	5	OBS	IFF	3	2
35/LA/321	7S/2E	5	OBS	IFF	3	1
35/LA/321	7S/2E	6	OBS	IFF	4	1
35/LA/321	7S/2E	6	OBS	BIF	3	1
35/LA/321	5S/11W	1	OBS	BSCF	3	1
35/LA/321	5S/11W	1	OBS	CIF	3	5
35/LA/321	5S/11W	1	OBS	BIF	4	1
35/LA/321	5S/11W	1	OBS	BIF	3	6
35/LA/321	5S/11W	1	OBS	IFF	3	8
35/LA/321	5S/11W	2	OBS	SCFF	3	1
35/LA/321	5S/11W	2	OBS	IDEB	3	1
35/LA/321	5S/11W	2	CCS	IFF	3	1
35/LA/321	5S/11W	2	CCS	CIF	3	1
35/LA/321	5S/11W	2	OBS	CIF	3	2
35/LA/321	5S/11W	2	OBS	BIF	3	5
35/LA/321	5S/11W	2	OBS	IFF	5	1
35/LA/321	5S/11W	2	OBS	IFF	3	13
35/LA/321	5S/11W	3	OBS	PCFF	3	1
35/LA/321	5S/11W	3	OBS	IFF	5	1
35/LA/321	5S/11W	3	OBS	IFF	4	2
35/LA/321	5S/11W	3	OBS	IFF	3	11
35/LA/321	5S/11W	3	OBS	BIF	5	1
35/LA/321	5S/11W	3	OBS	BIF	4	1
35/LA/321	5S/11W	3	OBS	BIF	3	3
35/LA/321	5S/11W	3	OBS	CIF	4	1
35/LA/321	5S/11W	3	OBS	CIF	3	3
35/LA/321	5S/11W	4	OBS	IDEB	3	1
35/LA/321	5S/11W	4	BAS	BIF	4	1
35/LA/321	5S/11W	4	OBS	IFF	4	2
35/LA/321	5S/11W	4	OBS	IFF	3	5
35/LA/321	5S/11W	4	OBS	BIF	3	2
35/LA/321	5S/11W	4	OBS	CIF	3	2
35/LA/321	5S/11W	5	OBS	BIF	3	1
35/LA/321	5S/11W	5	OBS	CIF	3	1
35/LA/321	17N/16E	1	OBS	SCFF	3	1
35/LA/321	17N/16E	1	CCS	CDEB	3	1
35/LA/321	17N/16E	1	CCS	IDEB	3	1
35/LA/321	17N/16E	1	CCS	IFF	3	2
35/LA/321	17N/16E	1	OBS	IFF	4	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	17N/16E	1	OBS	IFF	3	14
35/LA/321	17N/16E	1	OBS	BIF	3	6
35/LA/321	17N/16E	1	OBS	CIF	3	7
35/LA/321	17N/16E	2	OBS	SCFF	3	2
35/LA/321	17N/16E	2	OBS	IFF	4	2
35/LA/321	17N/16E	2	OBS	IFF	3	14
35/LA/321	17N/16E	2	CCS	IFF	3	1
35/LA/321	17N/16E	2	OBS	BIF	3	9
35/LA/321	17N/16E	2	OBS	CIF	3	3
35/LA/321	17N/16E	3	CCS	IFF	3	1
35/LA/321	17N/16E	3	OBS	IFF	4	1
35/LA/321	17N/16E	3	OBS	IFF	3	4
35/LA/321	17N/16E	3	OBS	BIF	3	1
35/LA/321	17N/16E	3	OBS	CIF	4	1
35/LA/321	17N/16E	3	OBS	CIF	3	3
35/LA/321	17N/16E	3	OBS	CSCF	3	1
35/LA/321	17N/16E	3	OBS	IFF	4	1
35/LA/321	17N/16E	3	OBS	IFF	3	8
35/LA/321	17N/16E	3	OBS	BIF	3	3
35/LA/321	17N/16E	4	BAS	IFF	3	1
35/LA/321	17N/16E	4	OBS	IFF	3	10
35/LA/321	17N/16E	4	OBS	BIF	3	3
35/LA/321	17N/16E	4	OBS	CIF	5	1
35/LA/321	17N/16E	4	OBS	CIF	3	3
35/LA/321	17N/16E	5	OBS	SCFF	3	1
35/LA/321	17N/16E	5	OBS	IFF	3	5
35/LA/321	17N/16E	5	OBS	BIF	4	1
35/LA/321	17N/16E	5	OBS	BIF	3	1
35/LA/321	17N/16E	5	OBS	CIF	5	1
35/LA/321	17N/16E	5	OBS	CIF	4	1
35/LA/321	17N/16E	5	OBS	CIF	3	1
35/LA/321	17N/16E	5	OBS	CIF	3	2
35/LA/321	17N/16E	5	OBS	BIF	4	1
35/LA/321	17N/16E	5	OBS	IFF	3	1
35/LA/321	17N/16E	6	OBS	SCFF	3	1
35/LA/321	17N/16E	6	OBS	IFF	4	1
35/LA/321	17N/16E	6	OBS	IFF	3	3
35/LA/321	17N/16E	6	OBS	BIF	3	5
35/LA/321	17N/16E	6	OBS	CIF	5	1
35/LA/321	17N/16E	6	OBS	CIF	4	1
35/LA/321	17N/16E	6	OBS	CIF	3	1
35/LA/321	17N/16E	7	OBS	IFF	4	3
35/LA/321	17N/16E	7	OBS	IFF	3	9
35/LA/321	17N/16E	7	OBS	SCFF	3	1
35/LA/321	17N/16E	7	OBS	IDEB	4	1
35/LA/321	17N/16E	7	OBS	CIF	4	1
35/LA/321	17N/16E	7	OBS	BIF	3	1
35/LA/321	17N/16E	8	OBS	CIF	4	2
35/LA/321	17N/16E	8	OBS	CIF	3	1
35/LA/321	17N/16E	8	OBS	BIF	3	3
35/LA/321	17N/16E	8	OBS	IFF	3	3
35/LA/321	17N/16E	9	OBS	IFF	3	4
35/LA/321	17N/16E	9	OBS	BIF	3	1
35/LA/321	16N/2W	1	OBS	BIF	4	1
35/LA/321	16N/2W	1	OBS	BIF	3	3
35/LA/321	16N/2W	1	OBS	IFF	3	6
35/LA/321	16N/2W	2	OBS	CIF	3	1
35/LA/321	16N/2W	2	OBS	BIF	5	1
35/LA/321	16N/2W	2	OBS	BIF	3	1
35/LA/321	16N/2W	2	OBS	IFF	3	6
35/LA/321	16N/2W	3	OBS	CIF	3	1
35/LA/321	16N/2W	3	OBS	BIF	3	3
35/LA/321	16N/2W	3	OBS	IFF	3	3
35/LA/321	16N/2W	4	OBS	CIF	4	1
35/LA/321	16N/2W	4	OBS	IFF	3	4
35/LA/321	16N/2W	5	OBS	IFF	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	12N/4E	1	OBS	SCFF	3	1
35/LA/321	12N/4E	1	OBS	CIF	3	1
35/LA/321	12N/4E	1	OBS	BIF	3	7
35/LA/321	12N/4E	1	BAS	BIF	4	1
35/LA/321	12N/4E	1	OBS	IFF	4	1
35/LA/321	12N/4E	1	OBS	IFF	3	5
35/LA/321	12N/4E	1	CCS	IFF	3	1
35/LA/321	12N/4E	1	BAS	IFF	3	1
35/LA/321	12N/4E	1	OBS	IDEB	3	1
35/LA/321	12N/4E	1	OBS	IDEB	4	1
35/LA/321	12N/4E	1	CCS	IDEB	3	1
35/LA/321	12N/4E	2	OBS	BIF	3	1
35/LA/321	12N/4E	2	OBS	IFF	3	4
35/LA/321	12N/4E	3	OBS	CIF	3	2
35/LA/321	12N/4E	3	OBS	BIF	3	8
35/LA/321	12N/4E	3	OBS	IFF	3	3
35/LA/321	12N/4E	4	OBS	CIF	3	1
35/LA/321	12N/4E	4	OBS	BIF	3	3
35/LA/321	12N/4E	4	OBS	IFF	3	5
35/LA/321	12N/4E	5	OBS	CDEB	3	1
35/LA/321	12N/4E	5	OBS	CIF	3	2
35/LA/321	12N/4E	5	BAS	CIF	3	1
35/LA/321	12N/4E	5	OBS	IFF	3	3
35/LA/321	12N/4E	6	OBS	IDEB	3	1
35/LA/321	12N/4E	6	OBS	IFF	3	1
35/LA/321	18N/6W	1	OBS	IDEB	4	1
35/LA/321	18N/6W	1	OBS	BIF	3	7
35/LA/321	18N/6W	1	OBS	IFF	5	1
35/LA/321	18N/6W	1	OBS	IFF	3	17
35/LA/321	18N/6W	2	OBS	CIF	4	1
35/LA/321	18N/6W	2	OBS	CIF	3	1
35/LA/321	18N/6W	2	OBS	BIF	4	1
35/LA/321	18N/6W	2	OBS	BIF	3	2
35/LA/321	18N/6W	2	OBS	IFF	4	3
35/LA/321	18N/6W	2	OBS	IFF	3	4
35/LA/321	18N/6W	3	OBS	BIF	3	1
35/LA/321	18N/6W	3	OBS	IFF	3	1
35/LA/321	18N/6W	3	OBS	IFF	4	1
35/LA/321	18N/6W	4	OBS	BIF	3	2
35/LA/321	18N/6W	4	OBS	IFF	3	2
35/LA/321	18N/6W	5	OBS	BIF	3	1
35/LA/321	7S/12W	1	OBS	SCFF	3	1
35/LA/321	7S/12W	1	CCS	IFF	3	1
35/LA/321	7S/12W	1	OBS	IFF	3	9
35/LA/321	7S/12W	1	OBS	CIF	4	2
35/LA/321	7S/12W	1	OBS	CIF	3	6
35/LA/321	7S/12W	1	OBS	BIF	3	3
35/LA/321	7S/12W	2	OBS	CSCF	3	1
35/LA/321	7S/12W	2	OBS	SCFF	3	1
35/LA/321	7S/12W	2	CCS	IFF	3	1
35/LA/321	7S/12W	2	OBS	IFF	4	2
35/LA/321	7S/12W	2	OBS	IFF	3	26
35/LA/321	7S/12W	2	OBS	CIF	4	1
35/LA/321	7S/12W	2	OBS	CIF	3	11
35/LA/321	7S/12W	2	OBS	BIF	4	1
35/LA/321	7S/12W	2	OBS	BIF	3	7
35/LA/321	7S/12W	3	OBS	BSCF	4	1
35/LA/321	7S/12W	3	OBS	SCFF	5	1
35/LA/321	7S/12W	3	CCS	BIF	4	1
35/LA/321	7S/12W	3	OBS	IFF	4	2
35/LA/321	7S/12W	3	OBS	IFF	3	13
35/LA/321	7S/12W	3	OBS	CIF	4	2
35/LA/321	7S/12W	3	OBS	CIF	3	4
35/LA/321	7S/12W	3	OBS	BIF	5	1
35/LA/321	7S/12W	3	OBS	BIF	3	2
35/LA/321	7S/12W	3	OBS	IFF	3	9

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	7S/12W	3	OBS	BIF	3	3
35/LA/321	7S/12W	3	OBS	CIF	3	4
35/LA/321	7S/12W	5	OBS	IFF	3	5
35/LA/321	7S/12W	5	OBS	BIF	4	1
35/LA/321	7S/12W	5	OBS	BIF	3	2
35/LA/321	7S/12W	6	OBS	SCFF	3	1
35/LA/321	7S/12W	6	OBS	IFF	3	1
35/LA/321	7S/12W	6	OBS	CIF	3	1
35/LA/321	27N/4E	1	CCS	IDEB	4	1
35/LA/321	27N/4E	1	CCS	BIF	3	1
35/LA/321	27N/4E	1	OBS	IFF	3	3
35/LA/321	27N/4E	2	OBS	BIF	4	1
35/LA/321	27N/4E	3	OBS	IFF	3	1
35/LA/321	20N/40E	1	OBS	IFF	3	1
35/LA/321	6S/34W	1	OBS	IFF	3	1
35/LA/321	12N/2W	2	OBS	BIF	3	3
35/LA/321	12N/2W	2	OBS	IFF	3	6
35/LA/907	TU1	1	BAS	IFF	3	1
35/LA/907	TU1	1	BAS	IFF	4	2
35/LA/907	TU1	1	OBS	IFF	3	1
35/LA/907	TU1	1	OBS	BIF	3	2
35/LA/907	TU1	1	OBS	CIF	5	1
35/LA/907	TU1	1	CCS	BIF	3	1
35/LA/907	TU1	1	CCS	IFF	3	3
35/LA/907	TU1	1	CCS	CDEB	3	1
35/LA/907	TU1	1	CCS	IDEB	3	2
35/LA/907	TU1	1	CCS	IFF	3	1
35/LA/907	TU1	1	OBS	CDEB	3	1
35/LA/907	TU1	1	OBS	IDEB	3	2
35/LA/907	TU1	1	OBS	IDEB	4	1
35/LA/907	TU1	1	OBS	IDEB	5	1
35/LA/907	TU1	1	OBS	SCFF	5	1
35/LA/907	TU1	1	OBS	SCFF	3	1
35/LA/907	TU1	1	OBS	IFF	3	98
35/LA/907	TU1	1	OBS	IFF	4	5
35/LA/907	TU1	1	OBS	BIF	3	30
35/LA/907	TU1	1	OBS	BIF	4	5
35/LA/907	TU1	1	OBS	CIF	3	29
35/LA/907	TU1	1	OBS	CIF	4	5
35/LA/907	TU1	2	OBS	PCFF	3	1
35/LA/907	TU1	2	OBS	SCFF	3	1
35/LA/907	TU1	2	OBS	BSCF	4	2
35/LA/907	TU1	2	OBS	IFF	3	55
35/LA/907	TU1	2	OBS	IFF	4	7
35/LA/907	TU1	2	OBS	BIF	3	30
35/LA/907	TU1	2	OBS	BIF	4	7
35/LA/907	TU1	2	OBS	CIF	3	17
35/LA/907	TU1	2	OBS	CIF	4	7
35/LA/907	TU1	2	CCS	IFF	3	2
35/LA/907	TU1	2	CCS	IFF	5	1
35/LA/907	TU1	2	BAS	IFF	3	1
35/LA/907	TU1	2	BAS	CSCF	4	1
35/LA/907	TU1	2	BAS	BIF	4	1
35/LA/907	TU1	3	OBS	IDEB	3	1
35/LA/907	TU1	3	OBS	SCFF	3	2
35/LA/907	TU1	3	OBS	BSCF	3	1
35/LA/907	TU1	3	OBS	IFF	3	38
35/LA/907	TU1	3	OBS	IFF	4	9
35/LA/907	TU1	3	OBS	BIF	3	17
35/LA/907	TU1	3	OBS	BIF	4	1
35/LA/907	TU1	3	OBS	CIF	3	23
35/LA/907	TU1	3	OBS	CIF	4	1
35/LA/907	TU1	3	OBS	IFF	3	1
35/LA/907	TU1	4	OBS	BSCF	3	1
35/LA/907	TU1	4	OBS	SCFF	3	2
35/LA/907	TU1	4	OBS	IFF	3	5

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/907	TU1	4	OBS	BIF	3	3
35/LA/907	TU1	4	OBS	CIF	3	1
35/LA/907	TU2	1	CCS	BIF	3	1
35/LA/907	TU2	1	CCS	CIF	3	1
35/LA/907	TU2	1	CCS	IDEB	3	1
35/LA/907	TU2	1	CCS	IFF	3	1
35/LA/907	TU2	1	OBS	BIF	3	5
35/LA/907	TU2	1	OBS	BIF	4	1
35/LA/907	TU2	1	OBS	BIF	5	1
35/LA/907	TU2	1	OBS	IFF	3	5
35/LA/907	TU2	1	OBS	IFF	4	1
35/LA/907	TU2	1	OBS	CIF	3	5
35/LA/907	TU2	1	OBS	CIF	4	2
35/LA/907	TU2	2	OBS	CPCF	3	1
35/LA/907	TU2	2	OBS	IFF	3	31
35/LA/907	TU2	2	OBS	IFF	4	2
35/LA/907	TU2	2	OBS	BIF	3	10
35/LA/907	TU2	2	OBS	BIF	4	1
35/LA/907	TU2	2	OBS	CIF	3	10
35/LA/907	TU2	2	BAS	IDEB	4	1
35/LA/907	TU2	3	OBS	SCFF	3	1
35/LA/907	TU2	3	OBS	CSCF	3	1
35/LA/907	TU2	3	OBS	IDEB	3	1
35/LA/907	TU2	3	OBS	BIF	3	10
35/LA/907	TU2	3	OBS	IFF	3	20
35/LA/907	TU2	3	OBS	IFF	4	1
35/LA/907	TU2	3	OBS	CIF	3	11
35/LA/907	TU2	3	OBS	CIF	4	2
35/LA/907	TU2	4	OBS	IFF	3	4
35/LA/907	TU2	4	OBS	BIF	3	1
35/LA/907	TU2	4	OBS	CIF	3	1
35/LA/907	TU2	4	OBS	CSCF	4	1
35/LA/907	TU2	4	OBS	CSCF	3	1
35/LA/907	TU2	4	OBS	IFF	3	1
35/LA/907	TU2	4	OBS	CIF	3	1
35/LA/907	TU2	5	OBS	CIF	3	1
35/LA/907	TU4	2	OBS	BPCF	3	1
35/LA/907	TU4	2	CCS	IDEB	3	1
35/LA/907	TU4	2	OBS	IFF	3	2
35/LA/907	TU4	2	OBS	CIF	3	3
35/LA/907	TU4	2	OBS	SCFF	3	1
35/LA/907	TU4	2	OBS	IFF	3	1
35/LA/907	TU4	2	OBS	IFF	3	1
35/LA/907	TU4	2	OBS	IFF	3	1
35/LA/907	TU4	2	OBS	CIF	3	1
35/LA/907	TU4	2	OBS	IFF	3	1
35/LA/907	TU4	3	OBS	IFF	4	1
35/LA/907	TU4	3	OBS	IFF	3	1
35/LA/907	TU4	3	OBS	CIF	4	1
35/LA/907	TU4	3	OBS	CIF	4	1
35/LA/907	TU4	3	OBS	IFF	4	1
35/LA/907	TU4	3	OBS	IFF	4	1
35/LA/907	TU4	3	OBS	BIF	3	1
35/LA/907	TU4	4	OBS	IFF	3	1
35/LA/907	TU4	4	OBS	IFF	3	1
35/LA/907	TU4	4	OBS	IFF	3	1
35/LA/907	TU5	1	BAS	CSCF	3	1
35/LA/907	TU5	1	BAS	IFF	4	1
35/LA/907	TU5	1	OBS	CIF	3	1
35/LA/907	TU5	1	OBS	BIF	4	1
35/LA/907	TU5	1	OBS	IFF	3	1
35/LA/907	TU5	2	OBS	IFF	3	42
35/LA/907	TU5	2	OBS	CPCF	3	1
35/LA/907	TU5	2	OBS	CSCF	3	1
35/LA/907	TU5	2	OBS	IDEB	3	3
35/LA/907	TU5	2	OBS	IFF	4	5

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/907	TU5	2	OBS	BIF	3	21
35/LA/907	TU5	2	OBS	BIF	4	1
35/LA/907	TU5	2	OBS	CIF	3	9
35/LA/907	TU5	2	OBS	CIF	5	1
35/LA/907	TU5	2	OBS	IDEB	5	1
35/LA/907	TU5	2	BAS	IFF	3	1
35/LA/907	TU5	2	BAS	SCFF	4	1
35/LA/907	TU5	2	BAS	SCFF	3	2
35/LA/907	TU5	3	OBS	PCFF	3	1
35/LA/907	TU5	3	OBS	SCFF	3	2
35/LA/907	TU5	3	OBS	IFF	3	32
35/LA/907	TU5	3	OBS	IFF	4	2
35/LA/907	TU5	3	OBS	BIF	3	26
35/LA/907	TU5	3	OBS	CIF	3	10
35/LA/907	TU5	3	OBS	IFF	4	1
35/LA/907	TU5	3	OBS	IFF	3	1
35/LA/907	TU5	3	OBS	BIF	3	1
35/LA/907	TU5	3	OBS	CIF	3	1
35/LA/907	TU5	3	OBS	CIF	3	1
35/LA/907	TU5	4	BAS	SCFF	4	1
35/LA/907	TU5	4	OBS	IFF	3	5
35/LA/907	TU5	4	OBS	BIF	3	1
35/LA/907	TU5	4	OBS	CIF	3	1
35/LA/907	TU5	4	OBS	IFF	3	1
35/LA/907	TU5	4	OBS	IFF	3	1
35/LA/907	TU5	4	OBS	BIF	3	1
35/LA/907	TU5	4	OBS	IDEB	3	1
35/LA/907	TU5	5	OBS	CIF	3	1
35/LA/907	TU4	2	OBS	CIF	4	1
35/LA/907	TU4	2	OBS	BIF	4	1
35/LA/907	TU4	3	OBS	BIF	3	1
35/LA/907	TU4	3	OBS	IFF	3	1
35/LA/907	SCU-W	0	OBS	IFF	3	13
35/LA/907	SCU-W	0	OBS	IFF	4	1
35/LA/907	SCU-W	0	OBS	IFF	5	2
35/LA/907	SCU-W	0	OBS	BIF	3	4
35/LA/907	SCU-W	0	OBS	BIF	4	2
35/LA/907	SCU-W	0	OBS	BIF	5	1
35/LA/907	SCU-W	0	OBS	CIF	3	2
35/LA/907	SCU-W	0	OBS	CIF	4	2
35/LA/907	SCU-W	0	BAS	SCFF	6	1
35/LA/907	SCU-E	0	CCS	IFF	3	1
35/LA/907	SCU-E	0	OBS	IFF	3	34
35/LA/907	SCU-E	0	OBS	IFF	4	14
35/LA/907	SCU-E	0	OBS	BIF	3	10
35/LA/907	SCU-E	0	OBS	BIF	4	3
35/LA/907	SCU-E	0	OBS	BIF	5	1
35/LA/907	SCU-E	0	OBS	CIF	3	7
35/LA/907	SCU-E	0	OBS	CIF	4	1
35/LA/1176	TP1	2	OBS	BIF	3	1
35/LA/1176	TP1	2	BAS	IFF	4	1
35/LA/1176	TP1	2	OBS	IFF	6	1
35/LA/1176	TP1	3	OBS	BIF	3	2
35/LA/1176	TP1	3	OBS	CIF	6	1
35/LA/1176	TP1	3	OBS	IFF	3	1
35/LA/1176	TP1	5	OBS	IFF	3	1
35/LA/1176	TP2	1	OBS	IFF	3	1
35/LA/1176	TP2	2	BAS	PCFF	3	1
35/LA/1176	TP3	2	OBS	IFF	3	1
35/LA/1176	TP3	3	OBS	IFF	3	1
35/LA/1176	TP3	4	OBS	IFF	3	2
35/LA/1176	TP3	4	OBS	BIF	3	1
35/LA/1176	TP3	5	OBS	CIF	3	1
35/LA/1176	TP4	1	OBS	CIF	5	1
35/LA/1176	TP4	2	OBS	BIF	4	1
35/LA/1176	TP4	2	OBS	IFF	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/1176	TP4	3	OBS	IFF	3	1
35/LA/1176	TP4	3	OBS	BIF	3	1
35/LA/1176	TP4	3	OBS	CIF	3	2
35/LA/1176	TP4	4	OBS	BIF	6	1
35/LA/1176	TP4	4	JSPR	CIF	3	1
35/LA/1176	TP4	4	OBS	BIF	4	1
35/LA/1176	TP4	4	OBS	BIF	3	1
35/LA/1176	TP4	4	OBS	IFF	3	2
35/LA/1176	TP4	5	OBS	BSCF	5	1
35/LA/1176	TP4	5	OBS	CIF	3	2
35/LA/1176	TP4	5	OBS	BIF	3	2
35/LA/1176	TP4	5	OBS	IFF	3	4
35/LA/1176	TP5	1	OBS	BIF	3	1
35/LA/1176	TP5	2	OBS	IFF	3	2
35/LA/1176	TP5	2	OBS	BIF	4	1
35/LA/1176	TP5	2	BAS	BIF	3	1
35/LA/1176	TP5	2	OBS	BIF	3	1
35/LA/1176	TP5	3	OBS	BIF	3	1
35/LA/1176	TP5	3	OBS	IFF	4	1
35/LA/1176	TP5	3	OBS	IFF	3	3
35/LA/1176	TP5	4	OBS	IFF	5	1
35/LA/1176	TP5	4	OBS	IFF	3	5
35/LA/1176	TP5	4	OBS	CIF	3	1
35/LA/1176	TP5	4	OBS	BIF	3	1
35/LA/1176	TP5	5	OBS	CIF	4	1
35/LA/1176	TP5	5	OBS	BIF	3	1
35/LA/1176	TP5	5	OBS	BIF	4	2
35/LA/1176	TP5	5	OBS	IFF	4	1
35/LA/1176	TP5	5	OBS	IFF	3	2
35/LA/1176	TP6	1	OBS	BIF	4	1
35/LA/1176	TP6	1	OBS	IFF	3	1
35/LA/1176	TP6	2	OBS	CIF	5	1
35/LA/1176	TP6	2	OBS	CIF	3	1
35/LA/1176	TP6	2	OBS	CIF	4	1
35/LA/1176	TP6	2	OBS	BIF	3	3
35/LA/1176	TP6	2	OBS	IFF	4	1
35/LA/1176	TP6	2	OBS	IFF	3	7
35/LA/1176	TP6	3	OBS	CIF	3	3
35/LA/1176	TP6	3	OBS	CIF	4	1
35/LA/1176	TP6	3	OBS	BIF	3	1
35/LA/1176	TP6	3	OBS	BIF	4	1
35/LA/1176	TP6	3	OBS	IFF	3	10
35/LA/1176	TP6	3	OBS	IFF	4	2
35/LA/1176	TP6	4	OBS	CPCF	6	1
35/LA/1176	TP6	4	OBS	CIF	3	2
35/LA/1176	TP6	4	OBS	BIF	3	1
35/LA/1176	TP6	4	OBS	BIF	4	1
35/LA/1176	TP6	4	OBS	BIF	5	1
35/LA/1176	TP6	4	OBS	IFF	4	1
35/LA/1176	TP6	4	OBS	IFF	3	5
35/LA/1176	TP6	5	OBS	CIF	3	4
35/LA/1176	TP6	5	OBS	IFF	3	9
35/LA/1176	TP7	1	OBS	IFF	3	1
35/LA/1176	TP7	2	OBS	BIF	3	1
35/LA/1176	TP7	3	OBS	IFF	5	1
35/LA/1176	TP7	3	OBS	BIF	4	1
35/LA/1176	TP7	3	OBS	IFF	3	2
35/LA/1176	TP7	4	OBS	IFF	3	2
35/LA/1176	TP7	4	OBS	CIF	3	1
35/LA/1176	TP7	4	OBS	BIF	3	1
35/LA/1176	TP7	5	OBS	IFF	3	3
35/LA/1176	TP8	3	OBS	IFF	3	1
35/LA/1176	TP8	4	OBS	IFF	3	2
35/LA/1176	TP8	4	OBS	CIF	3	1
35/LA/1176	TP8	5	OBS	BIF	3	1
35/LA/1176	TP9	1	OBS	BIF	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/1176	TP9	2	OBS	IFF	3	4
35/LA/1176	TP9	2	OBS	BIF	4	1
35/LA/1176	TP9	2	OBS	IFF	4	1
35/LA/1176	TP9	3	OBS	IFF	3	1
35/LA/1176	TP9	4	OBS	IFF	4	1
35/LA/1176	TP9	4	OBS	IFF	3	1
35/LA/1176	TP9	5	OBS	BIF	4	1
35/LA/1176	TP9	5	OBS	BIF	3	1
35/LA/1176	TP9	5	OBS	IFF	3	2
35/LA/1176	TP10	3	0BS	IFF	3	2
35/LA/1176	TP10	3	0BS	BIF	3	1
35/LA/1176	TP10	4	0BS	IFF	3	3
35/LA/1176	TP10	5	0BS	BIF	4	1
35/LA/1176	TP10	5	0BS	IFF	3	2
35/LA/1176	TP11	2	OBS	IFF	4	1
35/LA/1176	TP11	4	OBS	IFF	3	1
35/LA/1176	TP11	5	OBS	IFF	3	1
35/LA/1176	TP12	2	OBS	CIF	3	1
35/LA/1176	TP12	2	CCS	CIF	3	1
35/LA/1176	TP12	3	CCS	BIF	3	1
35/LA/1176	TP12	4	OBS	BIF	3	2
35/LA/1176	TP12	4	OBS	IFF	3	2
35/LA/1176	TP12	5	OBS	IFF	3	2
35/LA/1176	TP13	3	OBS	BIF	3	1
35/LA/1176	TP13	3	OBS	BIF	4	1
35/LA/1176	TP13	4	CCS	IFF	3	1
35/LA/1176	TP13	5	OBS	IFF	3	1
35/LA/1176	TP14	3	OBS	BIF	4	1
35/LA/1176	TP14	3	OBS	BIF	3	2
35/LA/1176	TP14	3	OBS	IFF	4	2
35/LA/1176	TP14	3	OBS	IFF	3	2
35/LA/1176	TP14	3	OBS	CDEB	4	1
35/LA/1176	TP14	4	OBS	IFF	4	1
35/LA/1176	TP14	4	OBS	IFF	3	2
35/LA/1176	TP14	4	OBS	CDEB	4	1
35/LA/1176	TP14	5	OBS	IFF	4	1
35/LA/1176	TP14	5	OBS	IFF	3	1
35/LA/1176	TP15	3	OBS	IFF	4	1
35/LA/1176	TP15	3	OBS	IFF	3	1
35/LA/1176	TP15	3	OBS	CIF	3	1
35/LA/1176	TP15	4	OBS	IFF	3	3
35/LA/1176	TP15	5	OBS	IFF	3	1
35/LA/1176	TP16	1	OBS	CIF	3	1
35/LA/1176	TP16	2	OBS	BIF	3	2
35/LA/1176	TP16	2	OBS	IFF	3	1
35/LA/1176	TP16	3	OBS	CIF	3	1
35/LA/1176	TP16	3	OBS	BIF	3	2
35/LA/1176	TP16	3	OBS	IFF	3	7
35/LA/1176	TP16	4	OBS	IFF	3	3
35/LA/1176	TP16	5	OBS	IFF	5	1
35/LA/1176	TP16	5	OBS	IFF	4	1
35/LA/1176	TP16	5	OBS	BIF	3	2
35/LA/1176	TP18	2	OBS	BIF	3	1
35/LA/1176	TP18	2	OBS	IFF	3	1
35/LA/1176	TP18	4	OBS	IFF	4	1
35/LA/1176	TP18	4	OBS	IDEB	3	1
35/LA/1176	TP19	2	OBS	IFF	3	1
35/LA/1176	TP19	3	OBS	IFF	3	9
35/LA/1176	TP19	4	OBS	CIF	3	1
35/LA/1176	TP19	4	OBS	BIF	3	2
35/LA/1176	TP19	4	OBS	IFF	5	1
35/LA/1176	TP19	4	OBS	IFF	4	1
35/LA/1176	TP19	4	OBS	IFF	3	4
35/LA/1176	TP19	4	OBS	PCFF	5	1
35/LA/1176	TP19	5	OBS	BIF	4	1
35/LA/1176	TP19	5	OBS	BIF	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/1176	TP19	5	OBS	IFF	3	3
35/LA/1176	TP21	2	OBS	BIF	3	1
35/LA/1176	TP22	2	OBS	BIF	5	1
35/LA/1176	TP22	2	OBS	IFF	3	1
35/LA/1176	TP22	3	OBS	CIF	3	1
35/LA/1176	TP22	3	OBS	BIF	4	1
35/LA/1176	TP22	4	OBS	IDEB	3	1
35/LA/1176	TP23	1	OBS	BIF	3	1
35/LA/1176	TP23	2	OBS	IFF	3	1
35/LA/1176	TP23	4	OBS	CIF	3	1
35/LA/1176	TP23	4	OBS	IFF	3	1
35/LA/1176	TP23	5	OBS	BIF	3	2
35/LA/1176	TP23	5	OBS	IFF	3	3
35/LA/1176	TP24	2	OBS	IFF	3	1
35/LA/1176	TP24	4	OBS	IFF	3	1
35/LA/1176	TP24	5	OBS	IFF	3	1
35/LA/1176	TP25	3	OBS	BIF	4	1
35/LA/1176	TP26	2	OBS	CIF	4	1
35/LA/1176	TP26	4	OBS	BIF	3	1
35/LA/1176	TP26	5	OBS	IFF	3	2
35/LA/1176	TP27	1	OBS	IFF	3	1
35/LA/1176	TP27	2	OBS	IFF	3	1
35/LA/1176	TP27	3	BAS	IFF	3	1
35/LA/1176	TP27	4	OBS	IFF	3	1
35/LA/1176	TP27	5	OBS	IFF	4	1
35/LA/1176	TP28	4	OBS	IFF	3	1
35/LA/1176	TP29	3	OBS	BIF	3	1
35/LA/1176	TP29	5	OBS	IFF	3	1
35/LA/1176	TP32	2	OBS	CIF	3	1
35/LA/1176	TP32	3	OBS	CIF	3	2
35/LA/1176	TP32	3	OBS	BIF	4	1
35/LA/1176	TP32	3	OBS	IFF	3	3
35/LA/1176	TP32	4	OBS	CIF	4	1
35/LA/1176	TP32	4	OBS	CIF	3	1
35/LA/1176	TP32	4	OBS	BIF	3	1
35/LA/1176	TP32	4	OBS	IDEB	3	1
35/LA/1176	TP32	4	OBS	IFF	5	2
35/LA/1176	TP32	4	OBS	IFF	3	4
35/LA/1176	TP32	5	OBS	CIF	4	1
35/LA/1176	TP32	5	OBS	CIF	3	1
35/LA/1176	TP32	5	OBS	BIF	5	1
35/LA/1176	TP32	5	OBS	IFF	3	2
35/LA/1176	TP33	3	OBS	IFF	3	1
35/LA/1176	TP35	1	OBS	IFF	4	1
35/LA/1176	TP35	1	OBS	IFF	3	1
35/LA/1176	TP35	2	OBS	IFF	3	2
35/LA/1176	TP35	3	OBS	CIF	4	1
35/LA/1176	TP35	4	OBS	IFF	4	1
35/LA/1176	TP35	4	OBS	IFF	3	2
35/LA/1176	TP36	1	OBS	IFF	4	3
35/LA/1176	TP36	1	OBS	CIF	4	1
35/LA/1176	TP36	1	OBS	IFF	3	2
35/LA/1176	TP36	1	OBS	IDEB	4	1
35/LA/1176	TP36	2	OBS	CIF	7	1
35/LA/1176	TP36	2	OBS	BIF	6	1
35/LA/1176	TP36	2	OBS	IFF	5	1
35/LA/1176	TP36	2	OBS	CIF	3	2
35/LA/1176	TP36	2	OBS	BIF	3	2
35/LA/1176	TP36	2	OBS	IFF	3	4
35/LA/1176	TP36	3	OBS	CDEB	4	1
35/LA/1176	TP36	3	OBS	IFF	3	4
35/LA/1176	TP36	4	OBS	IFF	4	1
35/LA/1176	TP36	4	OBS	CIF	3	1
35/LA/1176	TP36	4	OBS	BIF	3	2
35/LA/1176	TP36	4	OBS	IFF	3	3
35/LA/1176	TP36	5	OBS	IFF	5	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/1176	TP36	5	OBS	BIF	3	3
35/LA/1176	TP36	5	OBS	IFF	3	6
35/LA/1176	TP37	1	OBS	BIF	3	2
35/LA/1176	TP37	1	OBS	IFF	4	1
35/LA/1176	TP37	3	OBS	IFF	5	1
35/LA/1176	TP37	3	OBS	IFF	3	2
35/LA/1176	TP37	4	OBS	CIF	3	1
35/LA/1176	TP37	4	OBS	IFF	3	2
35/LA/1176	TP35	5	OBS	IFF	3	1
35/LA/1176	TP38	3	OBS	CIF	6	1
35/LA/1176	TP38	3	OBS	IFF	3	1
35/LA/1176	TP39	5	OBS	CIF	6	1
35/LA/1176	TP39	5	OBS	IFF	3	3
35/LA/1176	TP39	1	OBS	IFF	3	1
35/LA/1176	TP39	2	OBS	IFF	3	1
35/LA/1176	TP39	4	OBS	BIF	3	1
35/LA/1176	TP39	4	OBS	IFF	4	1
35/LA/1176	TP39	4	OBS	IFF	3	1
35/LA/1176	TP39	5	OBS	IFF	3	1
35/LA/1176	TP42	2	OBS	BIF	4	1
35/LA/1176	TP42	2	OBS	IFF	4	1
35/LA/1176	TP42	2	OBS	BIF	3	1
35/LA/1176	TP42	2	OBS	IFF	3	1
35/LA/1176	TP42	3	OBS	IFF	3	2
35/LA/1176	TP42	4	OBS	IFF	3	1
35/LA/1176	TP42	5	OBS	IFF	3	1
35/LA/1176	TP43	1	OBS	IFF	3	2
35/LA/1176	TP43	1	OBS	IFF	4	1
35/LA/1176	TP43	2	OBS	BIF	5	1
35/LA/1176	TP43	2	OBS	BIF	3	2
35/LA/1176	TP43	2	OBS	IFF	3	2
35/LA/1176	TP43	3	OBS	IFF	5	1
35/LA/1176	TP43	3	OBS	IFF	3	7
35/LA/1176	TP43	4	OBS	BIF	3	2
35/LA/1176	TP43	4	OBS	IFF	3	1
35/LA/1176	TP43	5	OBS	CIF	3	1
35/LA/1176	TP43	5	OBS	IFF	3	1
35/LA/1176	TP44	1	OBS	BIF	4	1
35/LA/1176	TP44	1	OBS	IFF	4	1
35/LA/1176	TP44	1	OBS	IFF	3	2
35/LA/1176	TP44	1	OBS	CIF	3	1
35/LA/1176	TP44	2	OBS	IFF	4	2
35/LA/1176	TP44	2	OBS	IFF	3	4
35/LA/1176	TP44	2	OBS	BIF	3	1
35/LA/1176	TP44	3	OBS	IFF	4	1
35/LA/1176	TP44	3	OBS	CIF	3	3
35/LA/1176	TP44	3	OBS	BIF	3	1
35/LA/1176	TP44	3	OBS	IFF	3	4
35/LA/1176	TP44	4	OBS	BIF	3	1
35/LA/1176	TP44	4	OBS	IFF	3	4
35/LA/1176	TP44	5	OBS	CIF	3	1
35/LA/1176	TP44	5	OBS	IFF	3	2
35/LA/1176	TP45	1	OBS	CIF	6	1
35/LA/1176	TP45	1	OBS	IFF	3	4
35/LA/1176	TP45	2	OBS	BIF	3	1
35/LA/1176	TP45	2	OBS	IFF	4	3
35/LA/1176	TP45	2	OBS	IFF	3	10
35/LA/1176	TP45	3	OBS	IFF	3	1
35/LA/1176	TP45	3	OBS	CIF	3	1
35/LA/1176	TP45	3	OBS	IFF	4	2
35/LA/1176	TP45	3	OBS	IFF	3	7
35/LA/1176	TP45	3	OBS	IDEB	3	1
35/LA/1176	TP45	4	BAS	IFF	3	1
35/LA/1176	TP45	4	CHRT	IFF	3	1
35/LA/1176	TP45	4	OBS	PCFF	5	1
35/LA/1176	TP45	4	OBS	CIF	4	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/1176	TP45	4	OBS	IFF	5	1
35/LA/1176	TP45	4	OBS	IFF	4	1
35/LA/1176	TP45	4	OBS	IFF	3	9
35/LA/1176	TP45	5	OBS	BIF	4	1
35/LA/1176	TP45	5	OBS	IFF	6	1
35/LA/1176	TP45	5	OBS	IFF	4	3
35/LA/1176	TP45	5	OBS	IFF	3	5
35/LA/1176	TP45	5	CHRT	CDEB	3	1
35/LA/1176	TP46	5	OBS	IFF	3	1
35/LA/1176	TP49	2	OBS	BIF	3	1
35/LA/1176	TP49	3	OBS	IFF	3	1
35/LA/1176	TP50	2	OBS	IFF	3	1
35/LA/1176	TP50	2	OBS	CIF	3	1
35/LA/1176	TP50	4	OBS	BIF	3	1
35/LA/1176	TP50	5	OBS	IFF	3	1
35/LA/1176	TP52	1	OBS	BIF	6	1
35/LA/1176	TP52	1	OBS	IFF	3	1
35/LA/1176	TP52	2	OBS	IFF	3	3
35/LA/1176	TP52	3	OBS	IFF	3	1
35/LA/1176	TP40	2	OBS	IFF	4	3
35/LA/1176	TP40	2	BAS	IFF	4	1
35/LA/1176	TP40	2	BAS	BIF	4	1
35/LA/1176	TP54	2	OBS	BIF	3	1
35/LA/1176	TP54	3	OBS	IFF	3	2
35/LA/1176	TP54	3	OBS	CIF	3	1
35/LA/1176	TP55	1	OBS	IFF	3	1
35/LA/1176	TP55	2	OBS	IFF	3	3
35/LA/1176	TP55	3	OBS	IFF	3	2
35/LA/1176	TP55	3	OBS	CIF	3	2
35/LA/1176	TP55	4	OBS	BIF	3	1
35/LA/1176	TP55	4	OBS	IFF	3	3
35/LA/1176	TP56	2	OBS	BIF	3	1
35/LA/1176	TP56	2	OBS	IFF	3	1
35/LA/1176	TP58	2	OBS	IFF	3	4
35/LA/1176	TP58	3	OBS	IFF	4	1
35/LA/1176	TP58	3	OBS	IFF	3	3
35/LA/1176	TP58	4	OBS	IFF	3	1
35/LA/1176	TP57	4	OBS	CDEB	3	1
35/LA/1176	TP59	4	OBS	CIF	3	1
35/LA/1176	TP59	5	OBS	BIF	3	2
35/LA/1176	TP59	5	OBS	IFF	3	1
35/LA/1176	TP60	3	OBS	IFF	3	1

Appendix D: Technological Flake Data

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/172	L-1	0	OBS	22	7	1
35/LA/172	L-1	0	OBS	21	5	1
35/LA/172	L-1	0	OBS	21	4	1
35/LA/172	L-1	0	OBS	31	4	1
35/LA/172	L-1	0	OBS	24	4	1
35/LA/172	L-5	0	OBS	24	5	1
35/LA/172	L-5	0	OBS	21	6	1
35/LA/172	L-11	0	OBS	21	5	1
35/LA/172	L-11	0	OBS	21	4	1
35/LA/172	L-21	0	OBS	21	4	1
35/LA/172	L-24	0	OBS	21	4	1
35/LA/172	L-24	0	OBS	21	3	1
35/LA/172	L-44	0	OBS	21	3	2
35/LA/172	L-46	0	OBS	21	6	1
35/LA/172	L-46	0	OBS	21	3	1
35/LA/172	L-48	0	OBS	30	7	1
35/LA/172	L-48	0	OBS	29	6	1
35/LA/172	L-48	0	OBS	21	4	1
35/LA/172	L-48	0	OBS	21	3	1
35/LA/907	TU1	1	OBS	21	3	2
35/LA/907	TU1	1	OBS	28	3	2
35/LA/907	TU1	1	OBS	31	3	7
35/LA/907	TU1	2	OBS	31	4	1
35/LA/907	TU1	2	OBS	31	3	6
35/LA/907	TU1	2	OBS	26	4	1
35/LA/907	TU1	2	BAS	22	3	1
35/LA/907	TU1	3	OBS	31	3	4
35/LA/907	TU1	3	OBS	28	3	2
35/LA/907	TU1	3	OBS	24	3	2
35/LA/907	TU2	2	OBS	31	3	6
35/LA/907	TU2	2	OBS	21	4	1
35/LA/907	TU2	3	OBS	31	3	1
35/LA/907	TU2	4	OBS	31	3	1
35/LA/907	TU2	4	OBS	23	3	1
35/LA/907	TU4	2	OBS	24	3	1
35/LA/907	TU4	2	OBS	24	3	1
35/LA/907	TU4	2	OBS	21	3	1
35/LA/907	TU4	2	OBS	21	3	1
35/LA/907	TU4	3	OBS	23	4	1
35/LA/907	TU4	3	OBS	23	3	1
35/LA/907	TU4	3	OBS	24	4	1
35/LA/907	TU4	3	OBS	22	4	1
35/LA/907	TU4	3	OBS	22	4	1
35/LA/907	TU4	3	OBS	26	3	1
35/LA/907	TU4	4	OBS	26	3	1
35/LA/907	TU4	4	OBS	24	3	1
35/LA/907	TU5	1	OBS	21	4	1
35/LA/907	TU5	2	OBS	31	3	7
35/LA/907	TU5	2	OBS	26	3	1
35/LA/907	TU5	2	OBS	21	3	1
35/LA/907	TU5	3	OBS	31	3	5
35/LA/907	TU5	3	OBS	24	4	1
35/LA/907	TU5	3	OBS	24	3	1
35/LA/907	TU5	3	OBS	24	3	1
35/LA/907	TU5	3	OBS	26	3	1
35/LA/907	TU5	4	OBS	24	3	1
35/LA/907	TU5	4	OBS	24	3	1
35/LA/907	TU5	5	OBS	28	3	1
35/LA/907	TU4	2	OBS	24	4	1
35/LA/907	TU4	2	OBS	21	4	1
35/LA/907	SCU-W	0	OBS	21	4	1
35/LA/907	SCU-W	0	OBS	21	5	1
35/LA/907	SCU-W	0	OBS	24	4	1
35/LA/907	SCU-W	0	BAS	25	6	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/907	SCU-E	0	OBS	21	3	1
35/LA/907	SCU-E	0	OBS	24	4	1
35/LA/392	8S/5W	1	OBS	28	3	1
35/LA/392	8S/5W	1	CCS	31	3	1
35/LA/392	8S/5W	1	OBS	24	4	1
35/LA/392	8S/5W	1	OBS	31	3	8
35/LA/392	8S/5W	1	OBS	31	3	12
35/LA/392	8S/5W	1	CCS	31	3	1
35/LA/392	8S/5W	1	OBS	21	4	1
35/LA/392	8S/5W	1	OBS	31	3	3
35/LA/392	8S/5W	2	OBS	31	3	2
35/LA/392	8S/5W	2	OBS	26	4	1
35/LA/392	8S/5W	2	OBS	31	4	1
35/LA/392	8S/5W	2	OBS	26	3	1
35/LA/392	8S/5W	2	OBS	26	4	4
35/LA/392	8S/5W	2	OBS	28	3	1
35/LA/392	8S/5W	2	OBS	31	3	7
35/LA/392	8S/5W	2	OBS	31	3	2
35/LA/392	8S/5W	2	OBS	26	3	4
35/LA/392	8S/5W	2	OBS	26	4	4
35/LA/392	8S/5W	3	OBS	21	5	1
35/LA/392	8S/5W	3	OBS	26	3	2
35/LA/392	8S/5W	3	OBS	26	4	2
35/LA/392	8S/5W	3	OBS	31	3	3
35/LA/392	8S/5W	3	OBS	28	3	1
35/LA/392	10S/0EW	4	OBS	21	4	1
35/LA/392	30S/20E	1	OBS	26	3	1
35/LA/392	0N/0W	1	OBS	31	3	1
35/LA/392	0N/0W	1	OBS	26	3	1
35/LA/392	0N/0W	1	OBS	26	4	1
35/LA/392	0N/0W	4	OBS	26	3	1
35/LA/392	0N/0W	5	OBS	31	3	1
35/LA/392	unknown	0	OBS	21	5	2
35/LA/321	6S/4E	1	OBS	26	3	2
35/LA/321	6S/4E	2	OBS	31	3	1
35/LA/321	6S/4E	2	OBS	26	3	1
35/LA/321	6S/4E	4	OBS	31	3	1
35/LA/321	10N/15E	2	OBS	31	3	2
35/LA/321	10N/15E	4	OBS	31	3	1
35/LA/321	10N/15E	5	OBS	31	3	1
35/LA/321	10N/15E	5	BAS	31	3	1
35/LA/321	10N/15E	6	OBS	31	3	2
35/LA/321	10N/15E	7	OBS	31	3	2
35/LA/321	10N/15E	8	BAS	31	3	1
35/LA/321	10N/15E	9	OBS	31	3	5
35/LA/321	10N/15E	11	OBS	31	3	4
35/LA/321	10N/15E	12	OBS	31	3	2
35/LA/321	10N/15E	14	OBS	31	4	1
35/LA/321	10N/15E	14	OBS	31	3	2
35/LA/321	10N/15E	17	OBS	31	3	1
35/LA/321	3N/5E	1	OBS	31	3	1
35/LA/321	3N/5E	2	OBS	31	3	1
35/LA/321	3N/5E	3	OBS	31	3	1
35/LA/321	3N/5E	3	OBS	21	4	1
35/LA/321	3N/5E	4	OBS	31	3	2
35/LA/321	3N/5E	4	OBS	28	3	1
35/LA/321	3N/5E	5	OBS	31	3	2
35/LA/321	3S/3W	1	OBS	26	3	1
35/LA/321	3S/3W	3	OBS	26	4	1
35/LA/321	3S/3W	3	OBS	28	3	1
35/LA/321	3S/27E	4	OBS	31	3	1
35/LA/321	3S/27E	4	OBS	26	3	1
35/LA/321	3S/27E	7	OBS	31	3	2
35/LA/321	7S/2E	3	OBS	31	3	1
35/LA/321	7S/2E	4	OBS	26	3	2
35/LA/321	5S/11W	1	OBS	24	3	1

Site	Prov	Level	RM	Type	Size	Quantity
35/LA/321	5S/11W	1	OBS	31	3	3
35/LA/321	5S/11W	1	OBS	28	3	1
35/LA/321	5S/11W	2	OBS	31	3	1
35/LA/321	17N/16E	1	OBS	24	3	1
35/LA/321	17N/16E	4	BAS	31	3	1
35/LA/321	17N/16E	5	OBS	22	5	1
35/LA/321	17N/16E	5	OBS	24	3	1
35/LA/321	12N/4E	1	OBS	31	3	1
35/LA/321	12N/4E	3	OBS	31	3	2
35/LA/321	18N/6W	1	OBS	31	3	1
35/LA/321	7S/12W	1	OBS	31	3	1
35/LA/321	7S/12W	1	OBS	28	3	1
35/LA/321	7S/12W	2	OBS	31	3	1
35/LA/321	7S/12W	2	OBS	31	3	1
35/LA/321	7S/12W	3	OBS	31	3	2
35/LA/321	7S/12W	3	OBS	26	3	1
35/LA/321	7S/12W	5	OBS	31	3	2
35/LA/321	12N/2W	2	OBS	31	3	1
35/LA/1176	TP1	3	OBS	21	6	1
35/LA/1176	TP3	5	OBS	21	3	1
35/LA/1176	TP4	1	OBS	21	5	1
35/LA/1176	TP5	2	OBS	21	3	1
35/LA/1176	TP5	4	OBS	31	3	1
35/LA/1176	TP6	3	OBS	31	3	2
35/LA/1176	TP10	3	OBS	31	3	1
35/LA/1176	TP12	4	OBS	31	3	1
35/LA/1176	TP13	3	OBS	31	3	1
35/LA/1176	TP14	3	OBS	31	3	2
35/LA/1176	TP16	3	OBS	31	3	1
35/LA/1176	TP16	4	OBS	31	3	1
35/LA/1176	TP36	4	OBS	31	3	2
35/LA/1176	TP45	2	OBS	31	3	1
35/LA/1176	TP45	5	OBS	21	4	1
35/LA/1176	TP55	3	OBS	31	3	2
35/LA/1176	TP59	5	OBS	31	3	2

Appendix E: Modified Lithic Artifacts

site	cat	prov	level	type	rm	in	l	w	t	bf	bs	ct	gt
35/LA/907	35LA907/1	SCU-E	0	28	OBS	2	31	25	4				
35/LA/907	35LA907/2	SCU-E	0	2	OBS		44	20	11	8	1		
35/LA/907	35LA907/3	SCU-E	0	34	OBS	1	21	19	7				
35/LA/907	35LA907/4	SCU-E	0	34	OBS	2	33	22	6				
35/LA/907	35LA907/6	SCU-E	0	34	OBS	2	34	18	5				
35/LA/907	35LA907/8	SCU-E	0	34	OBS	2	21	18	3				
35/LA/907	35LA907/9	SCU-E	0	34	OBS	2	26	18	5				
35/LA/907	35LA907/10	SCU-E	0	34	OBS	2	36	26	10				
35/LA/907	35LA907/12	SCU-E	0	34	OBS	1	31	17	2				
35/LA/907	35LA907/14	SCU-W	0	34	OBS	1	27	24	2				
35/LA/907	35LA907/15	SCU-W	0	11	OBS		37	28	10			6	
35/LA/907	35LA907/16	SCU-W	0	34	OBS	1	30	27	6				
35/LA/907	35LA907/17	SCU-W	0	34	OBS	2	37	23	5				
35/LA/907	35LA907/18	SCU-W	0	11	OBS	1	29	18	12			4	
35/LA/907	35LA907/19	SCU-W	0	34	OBS	2	39	23	3				
35/LA/907	35LA907/20	SCU-W	0	34	OBS	2	23	15	7				
35/LA/907	35LA907/22	SCU-W	0	2	OBS	1	33	10	8	14	1		
35/LA/907	35LA907/24	TU1	1	28	OBS	2	34	19	6				
35/LA/907	35LA907/25	TU1	1	34	OBS	2	27	24	3				
35/LA/907	35LA907/26	TU1	1	28	OBS	1	20	17	3				
35/LA/907	35LA907/27	TU1	1	28	OBS	2	42	30	10				
35/LA/907	35LA907/28	TU1	1	34	OBS	2	27	18	6				
35/LA/907	35LA907/29	TU1	1	34	OBS	1	23	15	3				
35/LA/907	35LA907/30	TU1	1	28	OBS	1	20	12	3				
35/LA/907	35LA907/31	TU1	1	2	OBS	1	15	16	5	12	3		
35/LA/907	35LA907/32	TU1	1	26	OBS	1	13	19	6				
35/LA/907	35LA907/33	TU1	1	34	OBS	1	15	14	2				
35/LA/907	35LA907/34	TU1	1	34	OBS	1	18	14	6				
35/LA/907	35LA907/41	TU1	1	28	OBS	2	25	14	3				
35/LA/907	35LA907/42	TU1	1	34	OBS	1	11	9	2				
35/LA/907	35LA907/44	TU1	2	34	OBS	1	18	15	3				
35/LA/907	35LA907/46	TU1	2	34	OBS	1	20	16	2				
35/LA/907	35LA907/49	TU1	2	34	OBS	1	21	15	3				
35/LA/907	35LA907/50	TU1	2	34	OBS	1	24	12	2				
35/LA/907	35LA907/52	TU1	2	2	OBS		26	22	7	8	1		
35/LA/907	35LA907/53	TU1	2	34	OBS	1	21	15	5				
35/LA/907	35LA907/54	TU1	2	34	OBS	2	26	14	4				
35/LA/907	35LA907/55	TU1	2	34	CCS	1	14	9	2				
35/LA/907	35LA907/59	TU1	2	34	OBS	2	23	13	2				
35/LA/907	35LA907/60	TU1	2	34	OBS	2	24	13	3				
35/LA/907	35LA907/63	SCU-W	0	2	OBS	1	34	33	7	1	3		
35/LA/907	35LA907/65	TU1	4	28	OBS	1	26	6	6				
35/LA/907	35LA907/70	TU2	2	26	OBS	1	16	12	5				
35/LA/907	35LA907/71	TU2	2	2	OBS	1	26	19	7	14	0		
35/LA/907	35LA907/74	TU2	3	34	OBS	2	37	13	5				
35/LA/907	35LA907/75	TU2	3	11	OBS	1	25	21	12			2	
35/LA/907	35LA907/78C	TU4	2	34	OBS	2	17	14	5				
35/LA/907	35LA907/78D	TU4	2	2	OBS	2	11	9	6	14	0		
35/LA/907	35LA907/82A	TU4	3	34	OBS	1	20	13	2				
35/LA/907	35LA907/82B	TU4	3	34	OBS	1	18	12	4				
35/LA/907	35LA907/82E	TU4	3	28	OBS	1	15	9	5				
35/LA/907	35LA907/96	TU5	2	34	OBS	2	27	10	4				
35/LA/907	35LA907/97	TU5	2	28	OBS	1	15	10	4				
35/LA/907	35LA907/99	TU5	2	34	OBS	2	23	14	5				
35/LA/907	35LA907/100	TU5	2	34	OBS	2	27	13	8				
35/LA/907	35LA907/101	TU5	2	34	OBS	2	22	18	5				
35/LA/907	35LA907/102	TU5	2	34	OBS	2	19	18	4				
35/LA/907	35LA907/103	TU5	2	34	OBS	1	20	11	3				
35/LA/907	35LA907/104	TU5	2	34	OBS	1	23	13	2				
35/LA/907	35LA907/105	TU5	2	34	OBS	2	29	15	3				
35/LA/907	35LA907/106	TU5	2	34	OBS	2	24	12	4				
35/LA/907	35LA907/111E	TU5	3	34	OBS	2	16	11	4				
35/LA/907	35LA907/121	TU1	2	34	OBS	2	30	13	4				

site	cat	prov	level	type	rm	in	l	w	t	bf	bs	ct	gt
35/LA/907	35LA907/122	TU1	3	34	OBS	1	18	10	3				
35/LA/907	35LA907/123	TU1	3	34	PEW	1	18	13	6				
35/LA/907	35LA907/124	TU5	2	34	CCS	2	20	14	3				
35/LA/907	35LA907/125	TU5	3	34	BAS	1	14	11	3				
35/LA/907	35LA907/126	TU5	3	34	OBS	1	17	15	3				
35/LA/907	35LA907/127	TU2	3	34	OBS	2	21	17	5				
35/LA/907	35LA907/128	TU2	3	2	OBS	1	9	8	2	14	0		
35/LA/392	0711-47-1	8S/5W	0	2	OBS	1	45	30	7	3	2		
35/LA/392	0711-47-2	8S/5W	0	2	OBS	1	40	30	9	12	2		
35/LA/392	0711-53-1		0	28	OBS	1	34	12	6				
35/LA/392	0711-4-1	8S/5W	1	34	OBS	1	33	24	5				
35/LA/392	0711-3a-1	8S/5W	1	2	OBS	1	18	9	9	8	2		
35/LA/392	0711-3-1	8S/5W	1	34	OBS	1	21	20	3				
35/LA/392	0711-3-2	8S/5W	1	34	OBS	1	34	33	5				
35/LA/392	0711-2-1	8S/5W	1	2	OBS	1	30	11	6	8	2		
35/LA/392	0711-2-2	8S/5W	1	28	OBS	1	52	30	7				
35/LA/392	0711-2-3	8S/5W	1	34	OBS	2	17	12	2				
35/LA/392	0711-2-4	8S/5W	1	34	OBS	1	26	14	3				
35/LA/392	0711-2-5	8S/5W	1	2	OBS	1	14	13	4	12	2		
35/LA/392	0711-2-6	8S/5W	1	2	OBS	1	21	17	5	12	2		
35/LA/392	0711-1-1	8S/5W	1	34	OBS	1	30	24	8				
35/LA/392	0711-1-2	8S/5W	1	34	OBS	2	21	18	3				
35/LA/392	0711-1-3	8S/5W	1	34	OBS	1	16	10	3				
35/LA/392	0711-5-1	8S/5W	2	2	OBS	2	54	37	7	6	2		
35/LA/392	0711-5-2	8S/5W	2	2	OBS	1	28	12	8	8	2		
35/LA/392	0711-5-3	8S/5W	2	2	OBS	1	25	18	8	8	2		
35/LA/392	0711-5a-1	8S/5W	2	34	OBS	2	14	8	2				
35/LA/392	0711-5a-2	8S/5W	2	34	OBS	2	14	9	2				
35/LA/392	0711-5-3	8S/5W	2	34	OBS	2	21	19	3				
35/LA/392	0711-5a-4	8S/5W	2	34	OBS	2	22	19	2				
35/LA/392	0711-5a-5	8S/5W	2	2	OBS	1	13	9	4	8	2		
35/LA/392	0711-5a-6	8S/5W	2	2	OBS	1	22	16	5	8	2		
35/LA/392	0711-5a-7	8S/5W	2	2	OBS	1	21	15	6	8	2		
35/LA/392	0711-5a-8	8S/5W	2	2	OBS	1	24	12	6	8	2		
35/LA/392	0711-7-1	8S/5W	3	34	OBS	2	16	11	2				
35/LA/392	0711-7-2	8S/5W	3	34	OBS	1	22	14	3				
35/LA/392	0711-7-3	8S/5W	3	34	OBS	2	19	13	3				
35/LA/392	0711-7-4	8S/5W	3	34	OBS	2	14	13	3				
35/LA/392	0711-7-5	8S/5W	3	28	OBS	2	30	27	8				
35/LA/392	0711-8-1	8S/5W	3	2	OBS	1	14	9	4	12	2		
35/LA/392	0711-8-2	8S/5W	3	2	OBS	1	16	6	4	8	2		
35/LA/392	0711-8-3	8S/5W	3	2	OBS	1	26	11	7	8	2		
35/LA/392	0711-8-4	8S/5W	3	34	OBS	1	27	22	3				
35/LA/392	0711-9-1	8S/5W	4	2	OBS	1	39	34	15	4	2		
35/LA/392	0711-9-2	8S/5W	4	2	OBS	1	18	9	3	12	3		
35/LA/392	0711-10-1	8S/5W	4	34	OBS	1	36	33	13				
35/LA/392	0711-13-1	8S/5W	6	2	OBS	1	17	15	6	12	3		
35/LA/392	0711-23-1	15S/10W	3	34	OBS	1	24	13	4				
35/LA/392	0711-40-1	0N/0W	2	34	OBS	1	10	9	4				
35/LA/392	0711-42-1	0N/0W	2	2	OBS	2	49	32	8	3	2		
35/LA/392	0711-44-1	0N/0W	5	34	OBS	1	34	14	5				
35/LA/392	0711-44-2	0N/0W	5	34	OBS	1	17	11	3				
35/LA/392	0711-44-3	0N/0W	5	34	OBS	1	13	8	2				
35/LA/392	0711-44-4	0N/0W	5	34	OBS	1	25	21	6				
35/LA/392	0711-46-1	30S/82E	1	2	OBS	1	23	19	8	9	2		
35/LA/392	0711-46-2	30S/82E	1	2	OBS		23	11	7	8	2		
35/LA/392	0711--52	0N/30W	1	28	OBS	1	10	7	4				
35/LA/321	35LA321/1	6N/38E	0	26	OBS	1	10	9	4	13	3		
35/LA/321	35LA321/2	16N/18E	0	2	OBS	1	27	20	5	12	3		
35/LA/321	35LA321/3	6N/40E	0	26	OBS	1	40	14	5	11	3		
35/LA/321	35LA321/4	1N/2E	0	2	OBS	1	49	16	8	9	3		
35/LA/321	35LA321/5	3S/28W	0	26	OBS	1	37	18	8	11	3		
35/LA/321	35LA321/6	16N/7E	0	26	OBS	1	32	23	6	11	3		
35/LA/321	35LA321/7	16N/7E	0	34	OBS	1	21	16	2				
35/LA/321	35LA321/8	16N/7E	0	26	OBS	1	12	15	4	11	3		
35/LA/321	35LA321/9	16N/7E	0	2	OBS	1	15	9	6	14	3		

site	cat	prov	level	type	rm	in	l	w	t	bf	bs	ct	gt
35/LA/321	35LA321/10	1S/6W	0	2	OBS	1	59	33	9	5	3		
35/LA/321	35LA321/11	6N/3E	0	28	OBS	1	42	17	4				
35/LA/321	35LA321/12	21N/22E	0	26	OBS	1	20	14	5	13	3		
35/LA/321	35LA321/13	23S/8W	0	26	OBS	1	35	20	6	11	3		
35/LA/321	35LA321/14	31N/33E	0	26	OBS	2	32	13	4	11	3		
35/LA/321	35LA321/15	11N/2W	0	26	OBS	1	10	19	4	11	3		
35/LA/321	35LA321/16	1S/32W	0	2	OBS	1	33	17	7	8	2		
35/LA/321	35LA321/17	2S/2W	0	2	OBS	1	45	17	7	8	2		
35/LA/321	35LA321/18	1S/4W	0	26	OBS	1	22	17	6	11	3		
35/LA/321	35LA321/19	10N/9E	0	26	OBS	1	14	14	6	11	3		
35/LA/321	35LA321/20	14N/9E	0	28	OBS	1	28	26	7				
35/LA/321	35LA321/21	14N/9E	0	28	OBS	1	36	19	3				
35/LA/321	35LA321/22	3N/1E	0	26	OBS	1	45	22	9	11	3		
35/LA/321	35LA321/23	15N/5E	0	2	OBS	1	53	21	10	5	3		
35/LA/321	35LA321/24	0N/20E	0	28	OBS	2	31	22	9				
35/LA/321	35LA321/25	5N/14E	0	28	OBS	2	37	31	7				
35/LA/321	35LA321/26	0N/23E	0	26	OBS	1	36	23	6	11	3		
35/LA/321	35LA321/27	10N/23E	0	26	OBS	1	36	17	4	11	3		
35/LA/321	35LA321/28	17N/20E	0	26	OBS	1	30	23	6	11	3		
35/LA/321	35LA321/29	10N/12E	0	2	OBS	1	33	33	9	3	1		
35/LA/321	35LA321/30	11N/1W	0	34	OBS	1	30	27	10				
35/LA/321	35LA321/31	4N/37W	0	26	OBS	2	41	28	6	11	3		
35/LA/321	35LA321/32	8S/23W	0	26	OBS	1	25	17	5	2	3		
35/LA/321	35LA321/33	12S/15W	0	28	OBS	2	28	23	6				
35/LA/321	35LA321/34	12S/15W	0	26	OBS	1	10	24	5	2	3		
35/LA/321	35LA321/35	1S/16W	0	28	OBS	2	27	25	9				
35/LA/321	35LA321/36	1S/16W	0	34	OBS	2	42	26	11				
35/LA/321	35LA321/37	6S/15W	0	26	OBS	1	35	14	5	11	3		
35/LA/321	35LA321/38	9S/13W	0	28	JSPR	1	27	11	3				
35/LA/321	35LA321/39	10S/11W	0	26	OBS	2	24	22	4	11	3		
35/LA/321	35LA321/40	10S/10W	0	28	OBS	1	22	21	3				
35/LA/321	35LA321/41	1S/9E	0	34	OBS	2	42	22	5				
35/LA/321	35LA321/42	18N/12E	0	28	OBS	2	48	23	10				
35/LA/321	35LA321/43	24N/6E	0	2	BAS	1	76	67	25	3	1		
35/LA/321	35LA321/44	19N/15E	0	34	OBS	1	23	22	8				
35/LA/321	35LA321/45	21N/17E	0	9	BAS	2	104	83	38				
35/LA/321	35LA321/46	24N/24E	0	34	OBS	2	34	15	4				
35/LA/321	35LA321/47	19N/50W	0	26	OBS	2	49	24	6	11	3		
35/LA/321	35LA321/48	6N/4W	0	34	OBS	2	34	28	4				
35/LA/321	35LA321/49	23S/3W	0	2	OBS	1	24	23	7	8	1		
35/LA/321	35LA321/50	25N/2E	0	28	OBS	1	39	25	7				
35/LA/321	35LA321/51	28N/7E	0	2	OBS	1	19	7	7	8	2		
35/LA/321	35LA321/52	20N/11E	0	2	OBS	1	22	21	8	12	1		
35/LA/321	35LA321/53	6N/15E	0	26	OBS	2	43	23	6	11	3		
35/LA/321	35LA321/54	5N/13E	0	28	OBS	1	19	14	4				
35/LA/321	35LA321/55	16N/28E	0	2	OBS	1	18	28	7	1	2		
35/LA/321	35LA321/56	33E/6S	0	28	BAS	2	62	48	14				
35/LA/321	35LA321/57	8N/3W	0	35	UIGN	2	109	89	53				2
35/LA/321	35LA321/58	15N/3W	0	35	UIGN	2	135	71	52				4
35/LA/321	35LA321/59	1S/3E	0	34	OBS	1	48	18	6				
35/LA/321	35LA321/60	30N/2E	0	34	OBS	1	28	15	4				
35/LA/321	35LA321/61	30N/3E	0	2	CCS	1	25	20	6	6	2		
35/LA/321	35LA321/62	27N/2E	0	28	OBS	1	26	13	4				
35/LA/321	35LA321/63	10N/9W	0	26	OBS	1	11	20	4	2	3		
35/LA/321	35LA321/66	25N/44E	0	26	OBS	2	34	13	3	11	3		
35/LA/321	35LA321/67	22N/46E	0	26	OBS	1	38	18	5	11	3		
35/LA/321	35LA321/73	1N/2W	0	11	CCS	2	63	50	43			1	
35/LA/321	35LA321/76	5S/11W	2	34	OBS	2	44	30	8				
35/LA/321	35LA321/83	6S/4E	2	26	OBS	1	33	37	7	2	3		
35/LA/321	35LA321/94	7S/12W	2	34	OBS	2	38	25	4				
35/LA/321	35LA321/96	0N/79E	0	2	OBS	2	37	20	4	6	2		
35/LA/321	35LA321/104	16N/1W	0	26	OBS	1	31	23	6	11	3		
35/LA/321	35LA321/106	18N/7W	0	28	OBS	2	37	26	8				
35/LA/321	35LA321/108	18N/6W	1	26	OBS	1	28	23	5	2	3		
35/LA/321	35LA321/109	18N/6W	1	2	CCS	1	23	16	7	2	2		
35/LA/321	35LA321/112	10N/15E	1	2	OBS	1	29	23	7	3	1		

site	cat	prov	level	type	rm	in	l	w	t	bf	bs	ct	gt
35/LA/321	35LA321/113	10N/15E	1	26	OBS	2	38	16	6	11	3		
35/LA/321	35LA321/117	10N/15E	2	26	OBS	2	36	13	5	11	3		
35/LA/321	35LA321/119	20N/15E	0	34	OBS	1	24	20	3				
35/LA/321	35LA321/120	9S/8W	0	11	BAS	2	80	61	54			6	
35/LA/321	35LA321/124	5S/15W	0	26	OBS	1	10	29	5	2	3		
35/LA/321	35LA321/138	7S/2E	3	34	OBS	1	33	21	7				
35/LA/321	35LA321/141	7S/2E	4	2	OBS	1	21	14	5	14	0		
35/LA/321	35LA321/151	12N/3E	0	34	OBS	2	27	13	2				
35/LA/321	35LA321/152	0N/22W	0	34	OBS	1	36	26	4				
35/LA/321	35LA321/153	16N/3W	0	34	OBS	2	30	14	2				
35/LA/321	35LA321/154	12N/3E	0	2	OBS	1	17	19	6	14	3		
35/LA/321	35LA321/160	17N/16E	2	26	OBS	1	24	19	6	2	3		
35/LA/321	35LA321/163	5S/11W	4	28	OBS	1	34	20	3				
35/LA/321	35LA321/166	17N/16E	3	28	PEW	1	52	31	7				
35/LA/321	35LA321/174	17N/16E	3	34	OBS	2	36	24	6				
35/LA/321	35LA321/175	17N/16E	3	34	CCS	1	22	18	3				
35/LA/321	35LA321/182	17N/16E	4	28	OBS	1	29	14	10				
35/LA/321	35LA321/185	4N/35E	0	26	OBS	1	21	18	6	2	3		
35/LA/321	35LA321/188	10N/15W	4	34	OBS	2	41	19	4				
35/LA/321	35LA321/189	10N/15E	4	26	OBS	1	16	14	3	11	3		
35/LA/321	35LA321/197	3N/5E	4	11	OBS	2	45	29	15			6	
35/LA/321	35LA321/199	3N/5E	4	2	OBS	1	20	16	6	8	1		
35/LA/321	35LA321/204	10N/15E	5	26	OBS	2	30	15	4	11	3		
35/LA/321	35LA321/205	19N/10E	0	34	OBS	2	28	15	4				
35/LA/321	35LA321/206	2S/28W	0	28	OBS	1	35	20	5				
35/LA/321	35LA321/207	13N/8E	0	34	JSPR	1	43	26	9				
35/LA/321	35LA321/208	28N/13E	0	9	UIGN	2	135	10	58				
35/LA/321	35LA321/212	3S/27E	3	34	OBS	1	29	21	4				
35/LA/321	35LA321/215	10N/15E	6	26	OBS	2	38	15	4	11	3		
35/LA/321	35LA321/218	10N/15E	7	2	OBS	1	12	6	2	14	3		
35/LA/321	35LA321/225	10N/15E	8	2	OBS	1	26	31	8	6	2		
35/LA/321	35LA321/227	10N/15E	8	34	OBS	2	24	14	4				
35/LA/321	35LA321/228	10N/15E	8	28	OBS	1	15	6	4				
35/LA/321	35LA321/230	3S/27E	6	35	UIGN	2	94	84	66				4
35/LA/321	35LA321/231	15N/9W	0	9	UIGN	2	113	94	68				
35/LA/321	35LA321/232	20N/15E	0	9	UIGN	2	126	10	47				
35/LA/321	35LA321/235	3N/5E	0	9	USED	2	123	92	52				
35/LA/321	35LA321/236	3S/19E	0	11	CCS	1	74	64	34			1	
35/LA/321	35LA321/244	10N/15E	11	34	OBS	2	40	25	4				
35/LA/321	35LA321/245	10N/15E	11	2	OBS	1	8	11	4	2	3		
35/LA/321	35LA321/248	10N/15E	13	26	OBS	2	34	12	3	11	3		
35/LA/321	35LA321/249	10N/15E	13	28	OBS	2	26	27	6				
35/LA/321	35LA321/254	10N/15E	17	28	OBS	2	34	32	10				
35/LA/321	35LA321/258	3S/3W	3	2	OBS	1	37	21	6	1	3		
35/LA/321	35LA321/259	10N/15E	2	34	OBS	1	16	12	2				
35/LA/321	35LA321/260	10N/15E	2	2	OBS	1	37	15	12	14	1		
35/LA/321	35LA321/261	10N/15E	5	34	OBS	1	25	16	3				
35/LA/321	35LA321/262	10N/15E	5	26	OBS	1	5	15	5	2	3		
35/LA/321	35LA321/263	10N/15E	6	34	OBS	1	9	7	2				
35/LA/321	35LA321/264	10N/15E	6	26	OBS	1	10	15	4	2	3		
35/LA/321	35LA321/265	10N/15E	13	28	OBS	2	49	23	6				
35/LA/321	35LA321/266	10N/15E	15	34	OBS	2	39	24	5				
35/LA/321	35LA321/267	13N/4E	0	26	OBS	2	29	26	7	11	3		
35/LA/321	35LA321/268	5S/11W	1	2	OBS	1	8	7	2	14	0		
35/LA/321	35LA321/269	5S/11W	2	2	OBS	1	10	7	2	8	3		
35/LA/321	35LA321/270	5S/11W	3	34	OBS	1	20	9	2				
35/LA/321	35LA321/271	5S/11W	3	34	OBS	2	53	33	15				
35/LA/321	35LA321/272	1S/30W	0	28	OBS	2	55	26	5				
35/LA/321	35LA321/274	14N/0E	0	2	JSPR	1	19	13	5	12	3		
35/LA/321	35LA321/275	17N/16E	2	26	OBS	1	8	8	3	13	3		
35/LA/321	35LA321/276	17N/16E	3	34	OBS	1	23	23	4				
35/LA/321	35LA321/277	17N/16E	6	34	OBS	1	27	23	6				
35/LA/321	35LA321/278	17N/16E	6	34	OBS	2	23	9	5				
35/LA/321	35LA321/280	7S/12W	2	2	OBS	1	13	8	3	14	0		
35/LA/321	35LA321/281	3N/5E	1	26	OBS	1	23	15	5	2	3		
35/LA/321	35LA321/282	3S/3W	3	2	OBS	1	32	21	4	12	2		

site	cat	prov	level	type	rm	in	l	w	t	bf	bs	ct	gt
35/LA/321	35LA321/283	1N/9W	0	26	OBS	2	28	17	4	11	3		
35/LA/321	35LA321/284	1S/18W	0	26	OBS	1	25	23	5	2	3		
35/LA/321	35LA321/285	1S/48E	0	28	OBS	2	37	19	3				
35/LA/321	35LA321/286	21N/19E	0	28	OBS	2	28	25	4				
35/LA/321	35LA321/287	15N/1W	0	26	OBS	2	44	21	6	11	3		
35/LA/321	35LA321/288	18N/14E	0	28	OBS	1	39	30	5				
35/LA/321	35LA321/289	12N/26E	0	28	OBS	1	28	20	4				
35/LA/321	35LA321/290	3N/20E	0	34	OBS	1	32	19	7				
35/LA/321	35LA321/1-1	UNK	0	26	OBS	2	30	14	4	11	3		
35/LA/321	35LA321/1-2	UNK	0	26	OBS	1	32	15	5	11	3		
35/LA/321	35LA321/1-3	UNK	0	28	OBS	2	31	24	6				
35/LA/321	35LA321/1-113	UNK	0	34	OBS	2	67	31	14				
35/LA/172	0798L1/1	L-1	0	2	OBS	1	70	55	17	14	1		
35/LA/172	0798L5/1	L-5	0	2	OBS	1	48	41	15	3	1		
35/LA/172	0798L5/2	L-5	0	28	OBS	2	45	38	38				
35/LA/172	0798L5/3	L-5	0	28	OBS	2	44	19	10				
35/LA/172	0798L5/4	L-5	0	28	OBS	2	27	15	12				
35/LA/172	0798L5/5	L-5	0	28	OBS	2	18	15	4				
35/LA/172	0798L5/6	L-5	0	28	OBS	2	17	7	3				
35/LA/172	0798L11/1	L-11	0	28	OBS	2	55	25	29				
35/LA/172	0798L11/2	L-11	0	2	OBS	1	53	60	13	3	1		
35/LA/172	0798L21/1	L-21	0	11	OBS	2	72	43	30			1	
35/LA/172	0798L21/2	L-21	0	11	OBS	2	25	19	13			4	
35/LA/172	0798L21/3	L-21	0	28	OBS	2	26	19	6				
35/LA/172	0798L21/4	L-21	0	2	OBS	1	45	19	18	12	0		
35/LA/172	0798L23/1	L-23	0	2	OBS	1	73	20	11	8	1		
35/LA/172	0798L23/2	L-23	0	34	OBS	2	36	36	9				
35/LA/172	0798L24/2	L-24	0	11	OBS	2	74	67	25			1	
35/LA/172	0798L38/1	L-38	0	2	OBS	1	64	55	17	3	1		
35/LA/172	0798L38/2	L-38	0	2	OBS	1	75	51	17	3	1		
35/LA/172	0798L38/3	L-38	0	11	OBS	2	89	55	35			1	
35/LA/172	0798L38/4	L-38	0	2	OBS	1	49	24	18	12	1		
35/LA/172	0798L44/1	L-44	0	2	OBS	1	69	63	15	12	1		
35/LA/172	0798L44/2	L-44	0	2	OBS	1	55	26	11	14	1		
35/LA/172	0798L44/3	L-44	0	2	OBS	1	43	22	12	14	1		
35/LA/172	0798L44/4	L-44	0	2	OBS	1	43	17	15	14	1		
35/LA/172	0798L44/5	L-44	0	2	OBS	1	13	8	5	14	1		
35/LA/172	0798L44/6	L-44	0	11	OBS	2	77	51	35			1	
35/LA/172	0798L44/7	L-44	0	11	OBS	2	63	43	24			6	
35/LA/172	0798L46/1	L-46	0	2	OBS	2	72	33	14	3	2		
35/LA/172	0798L46/2	L-46	0	11	OBS	2	41	27	18			6	
35/LA/172	0798L48/1	L-48	0	2	OBS	2	69	35	17	3	1		
35/LA/172	0798L53/1	L-53	0	28	OBS	2	59	41	9				
35/LA/1176	07417-63	TP14	5	11	OBS	2	25	17	13			1	
35/LA/1176	07417-76	TP18	2	2	OBS	2	35	16	8	8	1		
35/LA/1176	07417-81	TP19	2	26	OBS	1	19	7	3	2	3		
35/LA/1176	07417-99	TP19	5	11	OBS	2	43	37	17			1	
35/LA/1176	07417-104	TP23	3	34	OBS	2	39	20	9				
35/LA/1176	07417-105	TP24	3	11	OBS	1	19	15	6			1	
35/LA/1176	07417-111	TP26	4	28	OBS	2	42	32	6				
35/LA/1176	07417-137	TP36	4	2	OBS	1	31	17	18	14	1		
35/LA/1176	07417-168	TP44	3	2	OBS	1	43	23	13	14	1		
35/LA/1176	07417-169	TP44	3	26	OBS	1	10	9	5	2	3		
35/LA/1176	07417-189	TP42	0	2	OBS	1	43	29	11	3	1		
35/LA/1176	07417-202	TP57	3	28	OBS	1	31	29	6				
35/LA/1176	07417-204	TP58	3	28	OBS	2	20	16	2				