

Ce. 11.1.23.1

PLEASE NOTE:

The first issue of the Lithic Source Notebook consists of the enclosed four sheets. In order to meet costs it is necessary to charge \$.75 for the packet. Please remit payment or return packet to:

Island Field Archaeological Museum and Research Center
R.D.# 2 Box 126
Milford, Delaware 19963

LITHIC SOURCE NOTEBOOK

The Lithic Source Notebook deals with the specific lithic materials utilized by prehistoric people of North America. Its main interest is in determining the nature of these materials, identifying the sources as used by prehistoric peoples, and disseminating information about the material. As such, the Notebook depends upon contributions by persons involved in lithic studies. All investigators are urged to contribute information.

In its present format, notebook sheets contain such basic information on the lithic material as the location of the geological source or outcrop, its geomorphological natures and the use and period of use of the material by prehistoric people. Certain sheets will contain data on trace element analysis when made available. Additional information on published lithic materials will be forwarded to recipients.

Notebook sheets will be issued periodically. The first mailing contains a map and a list of recorded sources from the files of the Section of Archaeology. It will be followed by additional sheets as they become available. The Section of Archaeology has lithic samples from various sources and they will be so designated on the listing. Persons wishing samples at cost should contact the Section of Archaeology.

The map locating lithic sources will not be reissued. Later source locations will be submitted to recipients in narrative form, indicating placement on the original map. Notebook sheets may be filed in any system preferred by the recipient. Therefore, no cover will be issued by the Section of Archaeology.

Comments or contributions are actively being solicited from numerous sources. Any interested investigator or person having knowledge of lithic materials is invited to submit data for publication in the Lithic Source Notebook.

Section of Archaeology
Island Field Archaeological Museum
and Research Center, R.D.#2, Box 126
Milford, Delaware 19963

Ronald A. Thomas
Archaeology Supervisor

Co. 11.1.23.2

Cep 38-97p3

LITHIC SOURCE SURVEY

NAME OF LITHIC MATERIAL: CRESCENT HILLS CHERT

CODE: C3

LOCATION OF SOURCE(S): southwestern St. Louis County and northern Jefferson County, Missouri.

GEOLOGICAL ASSOCIATION:

Nature of Deposit: a cryptocrystalline silicate occurring as nodules and blocks.

Stratigraphic Context: of a residual nature, parent rock is usually classified as "undifferentiated Mississippian" but is probably Burlington-Keokuk.

Geographical Distribution of Outcrops: concentrated along the lower Meramec River, the lower Big River, and their confluence; in St. Louis and Jefferson Counties.

SITE DESCRIPTION:

Location and Nature of Quarry Operations: the quarries cover an area of approximately 44 square miles and occur in both pit and trench form. The pits range from 1-7 feet in depth and from 3-50 feet in diameter. Although this area has not been subjected to a systematic survey, there are over 500 known pits, with an estimated total for the Crescent Hills of 4-8000. The material was quarried by digging into the ridge slopes, there being no soil overburden covering the residual chert.

Location and Nature of Workshops: workshops are located either within the quarry pits themselves, adjacent to them on the ridge slopes, or on adjacent stone terraces. Evidence seems to indicate that both finished tools and "preforms" were being made at these workshops. There is also evidence that the workshops were areas where non-lithic materials were being modified.

Description of Setting and Environment: The Crescent Hills area is sharply dissected with numerous perennial and intermittent streams penetrating the ridge system. The area is located adjacent to the confluence of the Big and Meramec Rivers and is divided by the Meramec. Modern vegetation is that of an oak-hickory forest although the ridges per se have little in the way of an understory.

DESCRIPTION OF MATERIAL:

Megascopic Description: The Crescent Hills material varies greatly in color; reds, grays, whites, browns, blues, purples, olives, and yellows. 74 different Munsell colors were present in one quarry pit alone. Some of the material is banded although this seems to occur relatively infrequently. Some chert conglomerate and druzy quartz occurs in the chert deposits although this is rare. The surface texture ranges from "vitreous" to "non-vitreous". Some crinoidal inclusions are present but not in every nodule or blocks, and, where they do occur, they are not abundant.

Elemental Analysis: Approximately 50 samples have been analyzed via neutron activation analysis. Some of this data will soon be published and will be forwarded when available.

Ce. 11.1.23.3

CULTURAL DATA:

Cultural Periods: Sites from Archaic through Mississippian time periods occur throughout the Crescent Hills. Local landowners have reported the occurrence of Paleo-Indian sites in the area but these have not been verified.

Artifacts made from this Material: projectile points, knives, drills, scrapers, adzes, and other flaked tools.

Geographical Range of Such Artifacts: eastern Missouri and western Illinois; reported from Cahokia and Kincaid but there is no objective data to support this. The actual range may be much greater.

Methods of Lithic Distribution: unknown at this time.

DISCUSSION:

It is difficult to impossible to differentiate Crescent Hills material from other local Burlington-Keokuk outcrops on a visual comparison basis; trace element or other objective analysis techniques being required.

INFORMANTS:

David J. Ives
Laboratory for Nuclear Archaeology
15 Switzler Hall
University of Missouri - Columbia
Columbia, Missouri 65201

PREPARED BY: David J. Ives

Ce. 11-1-23.4

Errata: Lithic Source Survey
Newark Jasper - N-3

Stratigraphic Context: should read "...is gabbro weathered during the
Cretaceous Period."

Magasopic Description: nodules are magnetite-chromite crystals not
goethite.

LITHIC SOURCE SURVEY

NAME OF LITHIC MATERIAL: NEWARK JASPER

CODE: N-3

LOCATION OF SOURCE(S):

Primary Source - west slope of Iron Hill, New Castle County, Delaware.

Secondary Sources - found on Red and Gray Hills and along the western side of Elk Creek in Cecil County, Maryland.

GEOLOGICAL ASSOCIATION:

Nature of Deposit: a lateritic cryptocrystalline silicate occurring as boulders and veins in other materials, deposited on, or in, slope wash from Iron Hill.

Stratigraphic Context: no natural context, parent rock of Iron Hill is gabbro from a Cretaceous deposit.

Geographical Distribution of Outcrops: known outcrops limited to southern edge of coastal piedmont in Cecil County, Maryland and New Castle County, Delaware.

SITE DESCRIPTION:

Location and Nature of Quarry Operations: quarries on Red and Gray Hills and on Heath Farm not investigated; Iron Hill quarry almost completely destroyed by later Iron mining industry; material mined from exposed boulders and by pitting in slope wash.

Location and Nature of Workshops: workshops located adjacent to source, consist of extensive beds of chippage and discarded jasper blocks, hot spots are definable; stratigraphy is present; workshop tools of gabbro and jasper blocks frequent.

Description of Setting and Environment: Sources are located on wooded hillsides adjacent to fresh-water streams; occupational sites in vicinity contain material from several activities; nearby coastal plain environment heavily occupied throughout prehistoric period; navigable waterways close to workshop/quarries.

DESCRIPTION OF MATERIAL:

Megascopic Description: brownish yellow to brown (10YR 6/6 to 10 YR 5/3); granular feeling material with dull luster except when heated or weathered; extensively veined with thin layers of chalcedony and/or quartz, blue/gray veins are particularly evident; diagnostic attribute is everpresent nodules of measuring 0.2 mm.; conchoidal fracture quite good on many specimens although many fractures are along natural zones of weakness; Newark Jasper together with Cecil Black Flint and Broad Run Chalcedony make up the Delaware Chalcedony Complex (Wilkins, 1967).

Petrographic Analysis: analysis attached;

Atomic Absorption: James Blackman, Newark, Delaware

Optical Emission Spectroscopy: Dr. Donald Wilkinson, Delaware State College, Dover, Delaware

Other Characteristics: material often has goethite encrustations on flaked blocks; color change from browns to reds caused by firing; firing also produces glossy surface; glossy surface may also be due to weathering.

Ce. 11.1.23.5

CULTURAL DATA:

Cultural Periods During Which Used: In varying degrees of intensiveness, the Newark Jasper was used during Paleo-Indian periods (quite widespread at this time) through Archaic period (heavy use in early stages) and into the Woodland periods.

Artifacts Made From this Material: projectile points, knives, drills, scrapers, choppers, gravers, burins, and other miscellaneous flaked tools.

Geographical Range of Such Artifacts: northern half on the Delmarva Peninsula and the Coastal Piedmont areas of Maryland, Pennsylvania, Delaware and New Jersey.

Methods of Lithic Distribution: no evidence of formal trade distribution routes.

DISCUSSION:

Artifacts of Newark Jasper are often misidentified with the much more widespread Pennsylvania Jasper. The latter is a better quality material which lends itself to the manufacture of large artifacts. Nevertheless, the Newark Jasper sphere is of some significance especially in the earlier occupational periods of the four State area. Newark Jasper grades into Cecil Black Flint and can be often found in the same outcrop. By far the greatest use of this material is within twenty miles of the sources.

REFERENCES: Wilkins, Elwood S. Problems in the Relation of "Flint" Tools to their Geological Place of Origin. Bulletin of the Archaeological Society of Delaware, #5 N.S., Wilmington, Delaware.
1967

INFORMANTS:

Elwood S. Wilkins
R.D. #2
Newark, Delaware

Elmer A. Jones
R.D. #2
Northeast, Maryland

George Reynolds
R.F.D. #4, Box 373
Elkton, Maryland

PREPARED BY: Section of Archaeology, Division of Historical and Cultural Affairs, Island Field Archaeological Museum and Research Center, R.D.#2, Box 126, Milford, Delaware.

44-3-98-3

PETROGRAPHIC ANALYSIS

CODE N3

TRACE ELEMENT: PPM	#1	#2	#3	#4*
1. Iron (Fe)	56,875	47,382	46,353	50,000
2. Nickel (Ni)	426.5	365.1	471.9	200
3. Chromium (Cr)	286.3	438.8	327.6	300
4. Rubidium (Rb)	230.5	205.4	201.4	
5. Magnesium (Mg)	182.5	167.5	208.0	1,000
6. Manganese (Mn)	171	111.3	126.9	100
7. Potassium (K)	135.2	196.4	182.1.	
8. Sodium (Na)	103.0	148.0	100.2	
9. Calcium (Ca)	99.6	101.4	99.5	100
10. Barium (Ba)	68.8	57.6	58.6	
11. Cobalt (Co)	27.2	32.6	30.3	
12. Zinc (Zn)	20.3	19.0	19.0	
13. Lithium (Li)	13.0	3.6	8.4	
14. Strontium (Sr)	5.7	4.8	4.8	
15. Copper (Cu)	5.2	8.2	5.1	50
16. Zirconium (Zr)				1,000
17. Vanadium (V)				100
18. Vanum				10
19. Boron (B)				10

* sample 4 run by optical emission spectroscopy

Cell 1.1.23.4

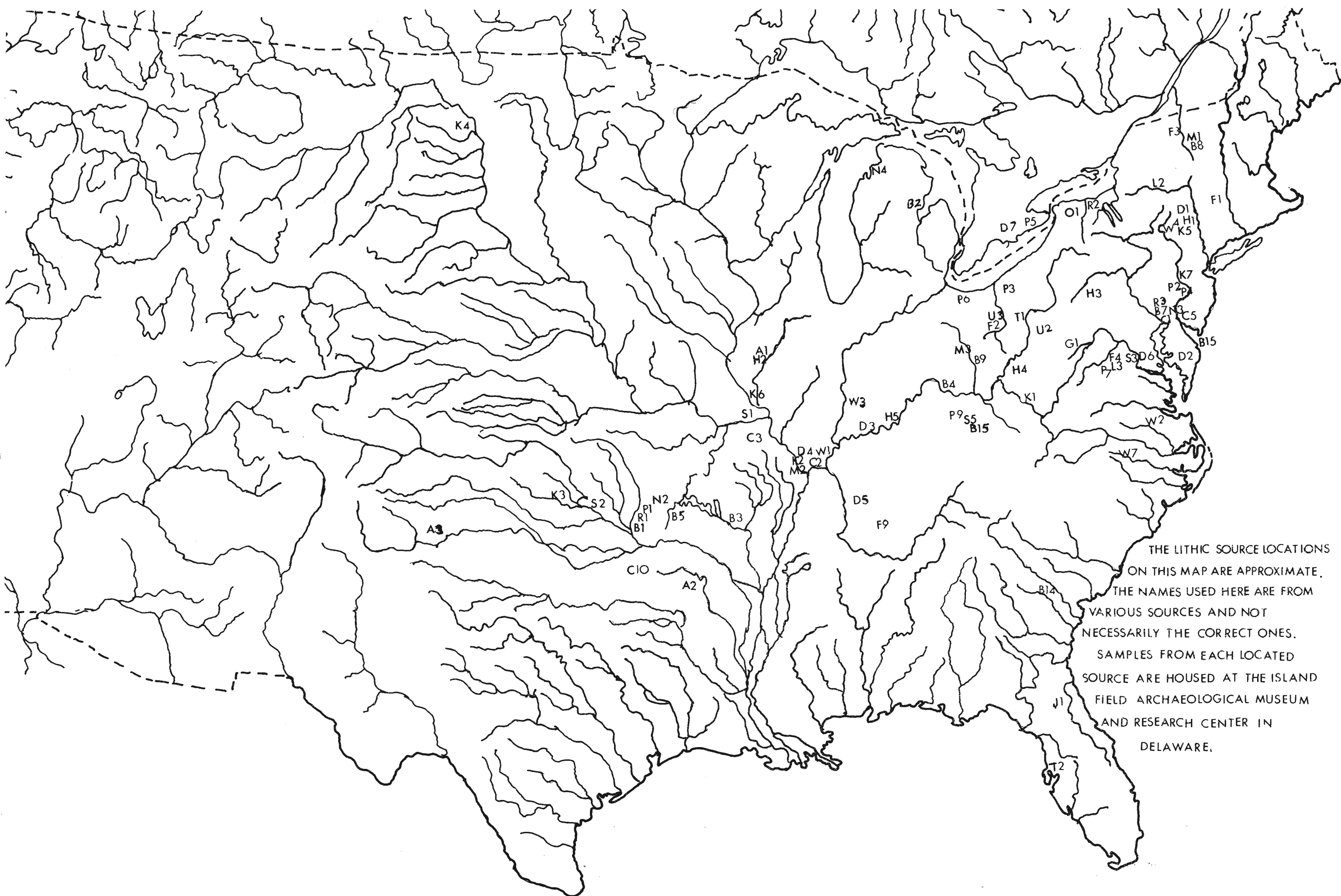
Ce. 11. 1. 23. 7

Errata: Lithic Map

Location of Bay Port Chert should be along Saginaw Bay in Michigan
not in Wisconsin.

LITHIC SOURCES - SAMPLES ON FILE AT ISLAND FIELD ARCHAEOLOGICAL MUSEUM & RESEARCH CENTER

CODE	NAME	LOCATION
A1	AVON CHERT	Fulton County, Illinois
A2	ARKANSAS NOVACULITE	Hot Springs, Arkansas (Montgomery County)
A3	ALIBATES CHALCEDONY	Texas
B1	BARREN FORK CHERT	Tenkiller Lake on the Illinois River near Talaquah, Oklahoma
B2	BAY PORT CHERT	Saginaw, Michigan
B3	BUFFALO RIVER FLINT	Buffalo River, Ozark Mts. Arkansas
B4	BISHER FLINT	Adams County, Ohio
B5	BOONE CHERT	Southwestern Ozarks, Mississippi
B6	BRASSFIELD CHERT	Adams County, Ohio
B7	BROAD RUN CHALCEDONY	Southeastern Pennsylvania
B8	BROOKS QUARRY FLINT	St. Albans Bay, Vermont
B9	BREMEN BLACK FLINT	North of Bremen, Ohio along Route 664
B14	BRIAR CREEK FLINT	Georgia
B15	BREATHITT CHERT	Magoffin County, Kentucky
B16	BELGIAN DRIFT FLINT	New Castle County, Delaware
C1	CECIL BLACK FLINT	Cecil County, Maryland
C2	CAVE-IN-ROCK CHERT	Cave in Chert State Park, Illinois
C3	CRESCENT CHERT	Crescent, Missouri
C4	CHESTER JASPER	Chester, Vermont
C5	COHANSEY QUARTZITE	Cohansey River, New Jersey
C7	CATOCTIN APORHYOLITE	Virginia
C9	CAROLINA APORHYOLITE	North Carolina
C10	CHICKAHOC CHERT	Latimer County, Oklahoma along Gaines Creek
D1	DEEPKILL FLINT	Flint Mine Hill about 2 miles south of West Coxsackie, New York
D2	DELMARVA PEBBLE JASPER	Delaware
D3	DERBY FLINT	Oil Creek and Ohio River at Derby, Indiana
D4	DONGOLA FLINT	3 miles south of Dongola in I57 roadcut, Illinois
D5	DOVER CHERT	Dover and Carlisle, Tennessee
D6	D.C. QUARTZITE	Washington, D.C.
D7	DELAWARE CHERT	Ontario, Canada
F1	FELSITE	Massachusetts
F2	FLINT RIDGE CHALCEDONY	Clarks Corner in Hopewell Township, Licking County, Ohio
F3	FORT ANN FLINT	Fort Ann, Lake Champlain, New York
F4	FRONT ROYAL JASPER	5 miles south of Front Royal, Virginia
F9	FORT PAYNE CHERT	Tennessee
G1	GARRET COUNTY FLINT	Garret County, Maryland (known as MORROW MOUNTAIN CHERT)
H1	HELDERBERG LIMESTONE FLINT	New York
H2	HONEY CREEK CHERT	Fulton County, Illinois
H3	HOUSERVILLE JASPER & FLINT	Bellefonte area, Pennsylvania
H4	HUGHES RIVER FLINT	Elizabeth, West Virginia
H5	HARRISON COUNTY FLINT	Harrison County, Indiana (also known as Indiana Hornstone)
J1	JOHNSON LAKE CHALCEDONY	Florida
K1	KANAWAHA BLACK FLINT	London, West Virginia
K2	KAOLIN NOVACULITE	Kaolin, Union County, Illinois
K3	KAY COUNTY FLINT	Kay County, Oklahoma
K4	KNIFE RIVER CHALCEDONY	Northwest of Bismarck, North Dakota
K5	KALKBERG FLINT	New York, formation of Helderberg variety
K6	KAMPSVILLE CHERT	Kampsville, Illinois
K7	KITTATINNY FLINT	Kittatinny Mountains, Delaware Water Gap, New Jersey
K8	KNAUDERACK FLINT	New York
L1	LAURENTIAN QUARTZITE	North Labrador
L2	LITTLE FALLS DOLOMITE FLINT	Little Falls, New York
L3	LURAY BLACK FLINT	Between Luray and Front Royal, Virginia
M1	MT. INDEPENDENCE FLINT	Orwell, Vermont
M2	MILL CREEK CHERT	Union County, Illinois
M3	MARBLE CLIFF FLINT	Columbus, Ohio
N2	NOEL FLINT	Noel, Missouri
N3	NEWARK JASPER	New Castle County, Delaware
N4	NORWOOD CHERT	Charlevoit County, Michigan
O1	ONONDAGA CHERT	Driver on Spirit Lake, New York
P1	PEORIA CHERT	Peoria, Oklahoma
P2	PENNSYLVANIA JASPER	Vera Cruz, Pennsylvania
P3	PLUM RUN FLINT	Northeast of Alliance, Ohio
P4	POINT PLEASANT ARGILLITE	Berk's County, Pennsylvania
P5	PORT ARTHUR JASPER	Port Arthur, Ontario
P6	PROUT CHERT	20 miles south of Port Clinton and close to Myland, Ohio on Lake Erie
P7	PAGE COUNTY CHERT	Comps Roosevelt, Massanutter Mts. North fork of Shenandoah River, Virginia
P9	PAOLI CHERT	West of Morehead, Kentucky (also known as ELKHORN FLINT)
R1	RED BIRD FLINT	Grand River, Eastern Oklahoma
R2	REYNALES LIMESTONE FLINT	New York
R3	ROCKSPRINGS STEATITE	Lancaster County, Pennsylvania
S1	ST. CHARLES CHERT	St. Charles County, Missouri
S2	SALT CREEK FLINT	Osage County, Oklahoma
S3	SPRING BRANCH QUARTZITE	Spring Branch Site, Arlington, Virginia
S5	ST. LOUIS CHERT	Powell County, Kentucky
T1	TUSCAWARAS PEBBLE FLINT	Along Tuscarawas River east of New Cumberland, Ohio
T2	TAMPA BAY SILICIFIED CORAL	Tampa Bay, Florida
U1	UPPER REPUBLICAN JASPER	Western Kansas-Nebraska
U2	UNIONTOWN FLINT	Washington County, Pennsylvania
U3	UPPER MERCER FLINT	Conshoctin County, Ohio, Jefferson Twp., (known as NELLIE CHERT and CHONSHOCTIN BLUE BLACK)
W1	WEST VIENNA BLACK FLINT	Highway 37 roadcut, West Vienna, Illinois
W2	WILLIAMSON CHERT	44DWL Dinwiddie County, Virginia
W3	WABASH FLINT	Central Indiana, Wabash River
W4	WALLHILL VALLEY FLINT	Wallhill River Valley of Northern New Jersey
W7	WAKE FOREST STEATITE	Northwest Wake County, southeast Granville County, North Carolina



THE LITHIC SOURCE LOCATIONS ON THIS MAP ARE APPROXIMATE. THE NAMES USED HERE ARE FROM VARIOUS SOURCES AND NOT NECESSARILY THE CORRECT ONES. SAMPLES FROM EACH LOCATED SOURCE ARE HOUSED AT THE ISLAND FIELD ARCHAEOLOGICAL MUSEUM AND RESEARCH CENTER IN DELAWARE.