

**MURRAY STATE UNIVERSITY ARCHAEOLOGY
LABORATORY**

PROCEDURES MANUAL

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Introduction

MSU Archaeology Laboratory (MSUAL) procedures are designed around the principle that field and laboratory documentation must be one integrated system. Procedures in the field and in the lab are coordinated, so that all information—artifacts, records, photographs, reports—are cross-referenced and accessible. The reliability of project reports and future analyses, and the scholarly reputation of the laboratory, rest in large part on the thoroughness of our documentation and the maintenance of a comprehensive system.

1. Arrival from the field

Artifacts bagged in the field should have the following information on them, usually in the form

SITE # _____ SQUARE _____
 LEVEL _____ DEPTH _____
 REMARKS _____

 DATE _____ EXCAVATOR _____
 CATALOG NO. _____

Generally, in the field, excavation units are boxed separately. The boxes should be accompanied by Field Inventory forms (see Appendix). Field Inventory forms are filled out by unit, usually the excavation square (except that features often are boxed separately), with box numbers noted in the left hand margin. The Field Inventory form allows the progress of a set of bags to be traced through the laboratory process.

Field boxes are labeled with white cards. The cards contain a box number and a provenience label. Field boxes are stored in order of box number until they enter the washing lab. Field Inventory forms are kept with the field notes until laboratory processing begins, and then are placed in a notebook in the lab.

Artifact processing has three major steps: washing; sorting and inventory, including assignment of catalogue numbers; and labeling and storage. It is best to organize these steps in spatially discrete work stations. Washing is done most conveniently at the sink, with drying racks nearby. Sorting/cataloguing and labeling stations are set up at separate tables. Organization of single-task stations allows lab workers to fit into the process at any point as needed, to maintain smooth operation of the system.

2. Washing

The washer should receive boxes and bags directly from the field. S/he should first check the bags present against the field inventory, initialing and dating the "checked" column on the Field Inventory form. Bagged artifacts are then washed, dried, and returned to their bags. Bags are replaced NEATLY in the box. On completing a provenience unit (level, feature, etc.) the washer dates and initials the "washed" column on the Field Inventory form.

Washing is done with clean water and brush. All materials should be rinsed thoroughly in clean water, to avoid a film left by drying with dirty water still on them. Generally, artifacts that are smaller than about half an inch square are rinsed thoroughly, until the water runs clean; these smaller pieces are too small and too numerous to repay the time investment in scrubbing them individually.

All artifacts should be handled carefully, but several types of materials demand special handling. Bone is often fragile, and may need careful brushing with a soft toothbrush or paintbrush, rinsing without brushing, or even no washing at all, depending on condition. The washer should be alert for red slip on prehistoric potsherds, and for charred material on sherds or pipe bowls, which are also fragile and must not be brushed away. Soil and radiocarbon samples (charcoal wrapped in foil) are not washed.

Newly washed artifacts are placed in the drying rack with their collection bags or other label with the same provenience information. No artifact should be separated from a provenience label. The next person in the lab may not be the same washer, and any lab worker must be able to re-bag artifacts without mixing or confusing bag contents.

3. Flotation

The MSUAL flotation tank is based on a design published by the Arkansas Archaeological Survey (Waddell et al. 1986). The system is portable, and can be hooked up with a garden hose. The designers provide the following notes for best use:

The tank should be placed on a wooden pallet. Both drain caps should be tight before filling the tank. The tank is filled by turning on the intake valve. The soil sample is placed on the screen while the tank is filling. The designers recommend paint filter bags, with mesh in the 0.25 to 0.4 mm range, to catch the floated sample as it comes out of the sluice. I have not figured out what they are talking about, so we use fine-mesh nylon netting in a bucket with a screened bottom as an expedient pseudobag. The bags (with provenience labels attached) can be hung to dry the samples.

The soil sample may require additional agitation in the sample chamber to aid separation of soil. Agitation should be done with a hose and pressure nozzle rather than by hand.

Flotation is complete when the water running through the sample bag is clear. The water supply is turned off, and the drain pipes are opened to drain the tank. The sample chamber is removed and the heavy fraction is washed from the screen into a container, such as a large square of netting. The heavy fraction, properly labeled, is hung to dry.

The sludge from the bottom of the main barrel is then washed out. The tank *must not be tipped over* while full of water because the weight of the water will bend the barrel rim and ruin the seal. The tank must be drained before it can be tipped over.

Dried samples are removed from the netting and stored in properly labeled containers. We usually use glass containers, but other labs use small metal containers.

The full flotation protocol is as follows:

1. Measure the sample volume, in liters.
2. Label two strips of survey tape with the sample's provenience information.
3. Record provenience, catalogue number if catalogued yet, and volume on the Flotation Record form.
4. Pour the soil sample into the float chamber.
5. Hang the bucket with netting on the float spout.
6. Float the sample until the water runs clear.
7. Gather the netting into a bag, tie closed with wire twist tie; tie one of the survey tape provenience labels with it.
8. Rinse the heavy fraction into another section of netting, and tie with label.
9. Hang the net-bagged samples to dry.
10. Rinse out the float chamber and drain the tank. Dump the sludge and rinse the tank *after* most of the water has drained out.

The Flotation Record form has a column for "Remarks," in case of any unusual occurrence or observation during flotation.

After drying, the next step to prepare for analysis is to separate the sample into size categories. The following procedure was used in Richard Yarnell's archaeobotany lab in the 1970s:

Each sample is weighed. Then it is divided into 11 parts by careful sifting through a series of 10 standard laboratory screens graded in millimeters as follows: 6.35, 4.00, 2.83, 2.38, 2.00, 1.41, 1.00, 0.71, 0.42, 0.21. (This screening probably causes moderate additional damage to the delicate carbonized materials beyond that already caused by the site's inhabitants, natural forces, excavation, flotation, transportation and handling.) Each resulting sample fraction is composed of particles of approximately equal size. This greatly facilitates the separation of various components that is required for quantification.

Each fraction is weighed and examined under low magnification (7X to 30X), but ordinarily only the fractions with particles retained above the 2 mm screen are entirely sorted and quantified by weight. There is little point to counting nutshell fragments, but otherwise seeds are counted by genus or species. All seeds are weighed together as one component, because their weight is ordinarily quite low. The vast majority of seeds pass through the 2 mm screen but not

through the 0.7 mm screen. These seeds are counted and weighed, but the quantities of other plant remains in the 0.7 to 2 mm range are calculated on the basis of quantities not passing through the 2 mm screen. Otherwise quantity determinations would be vastly more time consuming, even if nutshell and other fragments of this size could be identified with adequate confidence. Ordinarily the materials passing through the 0.7 mm screen are low in quantity (ca. 8%) and largely unrecognizable, though a few very small recognizable seeds are sometimes recovered.

The sample weight is revised to include only the total quantified material not passing through the screen with 0.7 mm openings. Quantities are expressed as percentage of total plant food remains by weight. Seeds of each genus or species are expressed as number per gram of plant food remains.

For more information about the methods of archaeobotany, consult Greig (1989) and Pearsall (1989) and their references.

References

Greig, James

1989 Archaeobotany. Handbooks for Archaeologists No. 4. European Science Foundation Strasbourg.

Pearsall, Deborah M.

1989 Paleoethnobotany, A Handbook of Procedures. Academic Press, New York.

Waddell, David B., Henry McKelway, and Randall L. Guendling

1986 Construction and Use of a Pressurized Water Flotation Device. Arkansas Archaeological Survey Technical Paper No. 5a. Fayetteville.

4. Cataloguing

Washed artifacts and associated field inventory forms arrive next at the cataloguing station. The cataloguer first arranges the bags in order of cataloguing (see below), then proceeds by provenience lot to assign the catalogue number, sort artifacts by material category, count, weigh, and record all specimens on the working catalogue sheet (see Appendix).

MSUAL catalogue numbers are tripartite, with a two-digit accession year, a sequential accession number, and a provenience lot number (e.g. 84-30.123 = 1984 - 30th accession . 123rd provenience lot). Year 2000 accessions began a 3-digit prefix format: 000-1, 001-1, etc.

If there are no artifacts in a bag, the cataloguer records "---" under catalogue number, the proper location, and "NO MATERIAL" under the description column. Otherwise, every provenience lot receives a catalogue number, even if all specimens are discarded after recording. This practice reflects the needs of the computer catalogue.

4.A.. Order of cataloguing

Field units are to be catalogued in numerical order if possible, with numerical designations preceding special designations (e.g., 29-30S 4-6E, 29-30S 6-8E, then Mound A Test I, Mound A Test II).

Within larger units, provenience lots will be catalogued in order of excavation (Level 1, Level 1 mapped artifacts, Level 1 toweling, Level 2, etc.). Mapped artifacts within a level or feature are catalogued individually, directly following the general provenience lot. Postholes are numbered within a square, and should be catalogued in numerical order following the square. Features, however, are numbered serially within the site (because they often overlap squares), and usually are numbered in sequence at the end of the catalogue.

Each provenience unit (zone, level, mapped artifact, posthole, feature/feature section, etc.) receives a unique catalogue number, in sequence following the preceding provenience lot. If a provenience lot is inadvertently skipped in cataloguing, there are two options. A small unit, such as a posthole, may be inserted in its proper sequence with a /1 suffix (e.g., 86-1.201/1). A large unit with subdivided provenience lots, such as an excavation square with several levels, should be added to the end of the catalogue, with a notation made on the catalogue sheet where the unit should have been placed.

4.B. Sorting

Sorting for the catalogue is normally done on a ½" screen, since pieces of pottery, fire-cracked rock, daub, etc. that fall through this screen are so small that further sorting requires more time than analytical returns justify. The small fraction is sorted by hand for chipping debris, faunal material, ethnobotanical material in undisturbed and unmixed provenience lots, and small identifiable artifacts such as beads. The remainder of the small fraction is re-bagged and labeled "½" screenings." For historic sites, small sherds, glass and nails are also removed from the ½" screenings and bagged.

All specimens are counted and weighed by category. That is, all sherds are weighed together, all projectile points, all daub, etc. Most bulk materials are counted, weighed and discarded, and marked "(disc.)" on the catalogue sheet. Materials to be discarded after weighing include fire-cracked rock, unmodified gravel, brick, concrete, roofing tile, and historic coal. Individual specimens with makers marks or other unusual features should be kept. Daub and fired clay are not discarded. This discard procedure may be varied depending on the site and the needs of the project, or for other reasons at the discretion of the Director.

Within a provenience lot, all of whose artifacts are assigned the same catalogue number, it is most convenient to record the inventory in roughly the same order. This order follows the order of fields in the computer entry forms. There are two catalogue data base formats, one for historic sites, the other for prehistoric sites.

ORDER OF CATALOGUING
PREHISTORIC SITES

Ceramic artifacts

Sherds
Effigies

Lithic artifacts

CSPP	= chipped stone projectile points
Bifaces	= bifacial tools other than cspps
Utilized flakes	= retouched flakes
Debitage	= flakes
Cores	
Ground stone	
Cobble tools	= hammerstones, abraders, grinders
Other lithics	

Historic materials

Historic sherds	
Glass	
Nails	
Roofing tile	
Cement/concrete	
Other historic	brick, coal/cinders, other

Organic remains

Bone tools	
Faunal	= animal bones
Other bone	(beads, etc.)
Human remains	
Plant remains	= loose charcoal
Charcoal samples	=14C samples, wrapped in foil
Shell tools	
Shell	
other shell	(beads, etc.)

Bulk materials

Daub	
Fired clay	
FCR	= fire-cracked rock
Ferrous sandstone	
Gravel	
Soil samples	(counted by bag)
Half-inch screenings	(counted by bag)

BLUE = COUNT, WEIGH AND DISCARD

ORDER OF CATALOGUING
HISTORIC SITES

Kitchen group

Ceramics
Colonoware
Curved glass
Other kitchen items

Architecture group

Flat glass
Nails
Spikes
Other architecture items

Furniture group

Furniture items

Arms group

Bullets
Gunflints
Other arms items

Clothing group

Buttons
Other clothing items

Personal group

Beads
Coins
Keys
Other personal items

Tobacco group

Ball clay pipes
Stub-stem pipes

Activities groups

(Specify artifacts)

Organic remains

Faunal
Botanical
Shell

loose charcoal

Bulk materials

Cement/concrete
 Brick
 Coal/cinders
 Gravel
 Roofing tile
 Scrap metal

Prehistoric

Sherds
 Lithics specify flakes, bifaces, etc.
 Other prehistoric items

BLUE = COUNT, WEIGH AND DISCARD

NOTE: This is an inventory, not an analysis. Accurate counts and weights are necessary for the catalogue, but there is too little time in laboratory processing to identify pottery or lithic types, glass colors, etc. This will be left to the analyst.

Standard abbreviations used in the field and lab include:

PH post hole (excavated in situ)
 TPH test post hole
 STP shovel test pit
 Z zone
 L level
 disc. discarded
 frag fragment
 CSPP chipped stone projectile point

Sorted artifact categories are bagged separately, in new bags unless the field bag is in very good shape. Information from the field label is copied directly onto the new bag, with additions. "Remarks" contains information on the contents of the bag--sherds, bifaces, etc. The tripartite catalogue number is recorded in "catalog no." Under the stamped label, the bag is numbered within the provenience lot series (1 of 10, 2 of 10, etc.). The completed bags are placed NEATLY, in order by catalogue number then bag number, in the permanent storage box, usually in two layers separated by newspaper, each layer beginning in the front left corner and ending in the back right corner of the box.

NOTES:

1. Use pen, not pencil, for all records.
2. Do not throw away the paper bag until you have transferred all information to the plastic bags (including date and excavators' initials, and any notes).

Artifacts should be placed in plastic bags, or in plastic or glass vials if particularly fragile. Plastic bags for permanent storage should be placed in self-sealing ("Zip-loc"-type) bags at least

4 mils in thickness. Artifacts must be completely dry before final packaging. They are then placed in acid-free boxes. MSUAL standard boxes are Stone Container Corporation boxes 11½” tall, 9 7/8 ” wide, and 15½” long, with lids. Standard acid-free, Hollinger brand (or equivalent) record storage boxes, with dimensions of 10 x 12.5 x 15 inches are also acceptable.

Artifact bags are placed in the boxes in order of catalog number, beginning at the front left corner, creating no more than two layers of bags. Whole pots will be placed in boxes with packing material to hold them firmly inside the container. In the case of survey projects or small collections, several accessions may be placed within the same box.

The permanent storage box is labeled with a blue card, with the beginning and ending catalogue number of the materials included within it. In the storage rooms, while awaiting labeling and afterward, boxes are stored in order of catalogue number.

The catalogue number of each provenience lot is recorded on the Field Inventory Form. When the collection is completely catalogued, the Field Inventory Forms are returned to the field notes archive.

The greatest part of the collections (ceramics, lithics, faunal) is quite stable and will not be adversely affected by climatic conditions. The MSUAL is still working towards a climate-controlled curation facility and archival-quality storage, as time and budget allow. We are also planning a small electrolysis facility for the stabilization of important metal artifacts.

The final product will be the accessible, archival-quality storage and fully computerized catalogue of the MSUAL collection, The research value of the collection, already demonstrated by several studies, will be significantly enhanced by insuring a fully coordinated and comprehensive curation system.

5. Labeling

The labeler receives the boxes of catalogued artifacts. S/he should arrange the bags in order of catalogue number, and proceed through the series, replacing the bags in order NEATLY in the box as described above.

The labeler inks the catalogue number (recorded on the bag) on each artifact, if possible. Labels should be small and legible. In general, labels are placed on a side that is less likely to be photographed: inside a sherd, or on an undecorated side of a decorated sherd, on an unmarked side of a makers-marked artifact, etc.

For artifacts that are too small to contain labels, such as beads, screenings, charcoal fragments, etc., a label on the vial or plastic bag, or a label on a small card inside the bag, is sufficient. Under time pressure, bulk items like daub and faunal remains may not be labeled individually, but should have an extra label card placed with them.

6. Computer catalogue

The MSUAL collection catalogue is maintained both on handwritten catalogue sheets and on a computer database. The database program is Microsoft Access. Although no one should attempt to use the computer database without familiarity with Access, the following comments are provided for general orientation.

The collections data are entered on a screen designed to follow closely the format of the working catalogue sheets as presented above. There are two different database designs, one for historic sites and one for prehistoric sites. The entry screen is programmed to allow only numerals in the "accession number" and "catalogue number" entries, already formatted, and also in the count and weight columns.

The programmed entry categories are a compromise between detailed specification and database space limitations. Inventoried artifacts that do not fit into the standard categories, for instance ceramic discoidals, stone ear plugs, historic utensils or marbles, can be recorded in memo fields under the "other" entries. These records cannot be summed or otherwise manipulated by the database program, but can be printed out through standard or custom reports.

The provenience data are listed twice, once in a text field and again in separate fields for Northing (north is +, south is -) Easting (east is +, west is -), Level, and Additional (for additional data also listed in the text field). For the Northing and Easting coordinates, we use the southwest corner of the square.

In the Access catalogue, an entry for "Museum Quality File?" is checked ("Y") if an artifact from this provenience lot is cross-listed in the Museum Quality File. This is an artifact of an earlier cataloguing strategy designed for Wickliffe Mounds, and can be ignored. Also, entries for "Period" and "Deposit type" are added later, after analysis.

For reasons of computer space and speed of handling, each year's collection catalogue is maintained in a separate database file.

7. Special note on human remains

(Much of this section is taken from notes on a presentation by Hugh Matternes, summer of 1994.)

First, a reminder: human remains are to be treated with respect. Professional handling of human remains demands sensitivity to what these bones represent to all observers, including the modern descendants.

7.A. Curatorial

1. In the field.

Human bone is fragile: remains should be handled so as to minimize damage. Long bones are dense in the center, but fragile at the ends--and the ends are critical.

In the field and for short term storage (up to 2 years), specimens should be wrapped in newspaper. Newspaper helps draw moisture out. Specimens should be wrapped well for padding. Highly fragmented bone may be wrapped in the pedestal for complete exposure in the lab.

2. In the lab.

First, let them dry. Let them sit in the newspaper for a week or more.

Unwrap specimens with as little agitation as possible: on a soft surface or in the air (in your hands) rather than on a hard table, or by cutting the paper rather than unwrapping it.

While washing, do not soak. Do not use soap; there are special solvents for use in rare and specific lab situations. Wash with water and a soft brush, such a soft toothbrush. Dirt should not be forced off. Bones in poor shape may be "dry cleaned," for instance, with a bamboo scraper.

Avoid immersing teeth. Teeth are best cleaned with a dry toothbrush. For teeth in a regular level bag: separate them as soon as you recognize them. Avoid dental picks for cleaning teeth (roots and pulp cavities are easily damaged).

For all human remains: keep them dry!! Mildew is bad for bone.

7.B. Storage

How the specimens are stored depends on a major decision: whether to plan for permanent or temporary storage. Human remains intended for reburial need not, and should not, be altered any more than analytically necessary.

1. Permanent storage.

Once thoroughly clean and dry, bones intended for permanent curation are treated with PVA. The PVA is prepared in a thin solution. It should not be brushed or sprayed on. The specimen is immersed in the solution until it stops bubbling. The preparer then takes the specimen out of the solution and keeps turning it in the air until it stops dripping.

The next step after PVA treatment is reassembly. Specimens should not be reassembled past the point of stability--don't risk re-breakage. Duco cement is the most common glue for joining broken pieces.

The specimens are then numbered according to the catalogue system. The labeler may need to create a numbering surface with nail polish or white-out with nail polish on top.

The field bag probably will need to be replaced with a clean, new container. To pack specimens, the preparer should use acid-free soft tissues, unbleached cotton or linen. Avoid plastic bags, which trap moisture. Acid-free bags are expensive, so bags may not be used.

Acid-free long boxes are available that will hold human long bones. Boxes may be subdivided by burial if the samples are small, but use one box per burial if for larger samples.

Bones treated with PVA may not need to be bagged or wrapped.

2. Temporary storage.

For specimens intended for temporary storage, laboratories usually do not take time to treat with PVA or to reassemble. Analysts generally do only the reconstruction necessary for analysis, e.g. to measure lengths, widths, diameters. Specimens may be labeled with pencil, with minimum information as needed.

7.C. Analytical

Note that the term "burial" means a burial episode or an assemblage, not an individual. For instance, a bundle burial may have elements of several individuals, but is a single burial.

Minimal analysis for MNI is part of inventory sheet, which includes elements and condition.

For more information about the study of human remains, consult these texts:

Bass, William M.

1987 *Human Osteology, A Laboratory and Field Manual*. Third edition. Missouri Archaeological Society Special Publication No.2. Columbia.

Ubelaker, Douglas H.

1978 *Human Skeletal Remains: Excavation, Analysis, Interpretation*. Aldine Publishing Company, Chicago.

8. Digitization of data

The archaeological collections include not only the artifacts and collections catalogue, but also all documentation from field work and laboratory analysis and all interpretive reports. Current trends in archaeology suggest that demands for accessibility and long-term curation of these data will become increasingly important. Accessibility, basically, means posting of digital archives on the internet. Digital data, however, are fragile, vulnerable to the shelf-life of the storage media, outdated of software, computer power interruptions and hard drive crashes. Therefore hard copies of all data must be printed, when the original data are digital, while archived data need to be digitized.

Archaeology is supported as a public trust, because our Federal and state governments value the preservation and investigation of our common heritage. Universities such as MSU derive much of their funding from public funds. Archaeological ethics emphasize stewardship, in the preservation of sites or collections from sites, the publication of reports, and, increasingly, the further dissemination of results in forms accessible to the general public (termed "public archaeology"). We recognize that the collections that we manage in laboratories or museums include artifacts and also the systematic information that places the artifacts in context. The field and laboratory records that document the artifacts give them meaning.

The ethical principles of archaeology should promote the preservation of and access to our raw data as well as interpretive publications. However, the raw records are generally not

accessible to the public, and are available only to those fellow researchers who make the journey to the archives and gain physical access to them. We publish reports, but have not attempted to publish all the data, or all of the field documentation, for several reasons. First, many archaeologists see the raw data as proprietary, even when supported by public funds. This view may relate to a sense that the analysis is never truly finished, but that the researcher intends to finish it some day (and will not share credit with potential follow-up researchers). Second, much of the raw data is seen as too technical to be understood by a lay reader, and perhaps too messy (or too slipshod?) to acknowledge. Third, the cost of publishing all of the notes, data tables, drawings and photos has simply been prohibitive in a hard copy format.

The first two objections can be met with a simple formula: public funding of research results in records held in public trust, and therefore should be open to public scrutiny (with some safeguards for site location and ownership data, to protect sites). The third objection can be met by posting the data on the internet, which is free to users (although, significantly, not to the host institution).

The MSUAL has begun an effort to make the records of our investigations available for public inspection by posting full field and laboratory documentation, as well as interpretive reports, on the internet. This effort has very little precedent in archaeology. Total-data reporting simply has not been feasible until now. By taking advantage of widely readable file formats, file-sharing software, and a university server as host, the MSUAL will demonstrate that full publication of all project documentation is feasible and useful.

We have developed digital versions of all field recording forms used in MSUAL research (see Appendix). These forms include (with their digitized format in parentheses): Daily Log (Microsoft Word), Square Sheet (the excavation unit map, MS Access; this form has a reverse with data on individually-mapped artifacts, also translated to MS Access), Profile Elevation form (MS Access), Elevation record (MS Excel), Shovel/Posthole Test data (MS Word), Field Inventory (MS Word), and Photo Data (MS Word). A formerly-used record form, the Feature Data form, has been replaced with a newly-designed Context form reflecting the needs of Harris-style recording (Harris 1989), which has become standard in Europe but has yet to be adopted generally in the United States. The Context form, Square Sheet, and Profile Elevation form incorporate field drawings in Windows bitmap or other graphic formats and may be hyperlinked to photos.

Additional digital files that form the corpus of documentation for the project are the artifact catalogue (MS Access), field and periodic reports (MS Word), and analytical databases (MS Access or Excel, depending on the needs of the project). All of these databases and files utilize standard software, compatible with web browsing and/or download. Text files created in MS Word will be printed to Adobe .pdf format for posting on the web.

The digital recording forms have been designed with two processes in mind: first, digitizing of archived records by scanning of graphics and keyboard entry of other data, and second, direct entry via tablet laptop computer in the field.

The MSUAL is committed to full disclosure of its data through digital formats. Current research will include digitization as the research progresses. As time and support permit, the MSUAL will bring archived data on-line as well.

9. Final note

The integrity of the collections as a scientific database, and of the research program in general, depends on the commitment of the entire staff to the consistency and thorough application of the laboratory system. This is not to say that the system is either perfect or inflexible. Without maintenance of the system, however, information is lost, often irretrievably. As long as the system flows smoothly, and all stages of the process are double-checked and cross-referenced, the MSUAL collections will be protected as an invaluable resource.

APPENDIX

1. Duties of the Director of the MSU Archaeology Laboratory
2. MSUAL Standards and Guidelines for Deposited Collections
3. Forms used by MSUAL
 - Collection Catalogue
 - Collection Checkout
 - Daily Report
 - Square Sheet (front and back)
 - Context form
 - Feature form
 - Burial form (front and back)
 - Profile Elevation form
 - Posthole/Shovel Test Data form
 - Photo log
 - Field Inventory form

DUTIES OF THE DIRECTOR OF THE MSU ARCHAEOLOGY LABORATORY

The Director of the MSU Archaeology Laboratory (MSUAL) administers all research, curatorial, and student training functions of the Laboratory. The Director reports to the Dean of the College of Science, Mathematics, Engineering and Technology through the Chair of the Department of Geosciences, of which the Director is a member of faculty.

1. The Director manages all funds and budgets relating to laboratory operations.
2. The Director maintains a curation system that allows safe and accessible storage of MSUAL archaeological collections (collections to include artifacts, field notes, photographs, site files, reports, library holdings, and all other documentation regarding archaeological sites and materials that may be accessioned into the laboratory). The Director will maintain liaison with the Director of the Wickliffe Mounds Research Center to assure compatibility of the MSUAL and WMRC cataloging and accession systems.
3. The Director receives appropriate curation fees for collections deposited for curation, and ensures that the fees are credited to the proper fund according to University accounting procedures. At his/her discretion, the Director may waive such fees for small collections or for scientifically significant collections created by academic research activities for which curation funds are unavailable.
4. The Director supervises students, student workers, and visiting scholars using laboratory facilities.
5. The Director maintains MSUAL equipment.
6. The Director monitors compliance with all laws and regulations pertaining to archaeological collections.
7. The Director reviews all applications for access to the collections for research or exhibit. The Director may approve or deny such requests according to his/her professional evaluation of the credentials of the applicant, the scientific appropriateness of the proposed research design, or the conditions of proposed exhibit.
8. The Director may conduct research or supervise student research on any part of the MSUAL collection.

MURRAY STATE UNIVERSITY ARCHAEOLOGY LABORATORY
STANDARDS AND GUIDELINES FOR DEPOSITED COLLECTIONS
revised November 2003

The Murray State University Archaeology Laboratory (MSUAL) houses collections from MSU archaeological projects and accepts collections for long-term curation. In order to permit accessibility for researchers and to hold down costs (and therefore fees) involved in long-term curation, we require minimal standards for the organization and packaging of collections deposited by professional archaeologists. Private collections may be accepted on a case-by-case basis, providing that they offer a resource for research and teaching and that we can assure adequate resources for their curation and protection. No collection will be accepted with any provisions regarding display, financial evaluation of individual specimens, or penalties for future unanticipated events. The determination of what will be accepted rests with the Director of the MSUAL.

These procedures should be followed in preparing artifact collections and documentation for submission to the MSUAL. The cleaning, sorting, cataloging, documenting, conserving, and packaging of archaeological materials are the responsibilities of the depositor. Please note that requirements apply equally to artifact collections and to related records such as field notes, drawings, maps, photographs, artifact inventories and similar forms of documentation.

1. All artifacts should be cleaned and stabilized prior to shipment to the MSUAL, except in instances where an uncleaned condition would facilitate a particular form of analysis. Items requiring specialized conservation measures cannot be accepted at this time.
2. Artifacts should be catalogued in a systematic manner, with catalogue numbers marked on the exterior of boxes, bags, and other containers in permanent ink. MSUAL will assign accession numbers upon arrival of the collection. MSUAL cataloguing guidelines are available on request if the depositor does not have a standard procedure.
3. Artifacts must be packaged by provenience. Each package must be labeled with at least the site number(s), project name, and date.
4. Artifact packages must be of a size which will fit standard storage boxes (see #5 below). It is preferable to use additional boxes rather than exceed these measurements. Oversized artifacts must be securely tagged with appropriate information. All artifacts should be placed in plastic bags, or in plastic or glass vials if particularly fragile. Plastic bags for permanent storage must be at least 4 mils in thickness. Self-sealing ("Zip-loc"-type) bags are preferred. Artifacts must be completely dry before final packaging.
5. Place all artifacts submitted for permanent storage in acid-free boxes. MSUAL standard boxes are Stone Container Corporation boxes 11½" tall, 9 7/8" wide, and 15½" long, with lids. Standard acid-free, Hollinger brand (or equivalent) record storage boxes, with dimensions of 10 x 12.5 x 15 inches are also acceptable.

Multiple provenience numbers may be grouped within exterior boxes provided they are from the same site (or--in the case of survey-level, surface-collected materials--from the same project). Multiple boxes containing materials from a single site or project should be numbered sequentially ("Box 1 of 3, 2 of 3," etc.) on the outside with permanent marker, and all inventory records must reference those numbers. The weight of boxed collections should be distributed as evenly as possible.

6. All shipments to the MSUAL must be accompanied by a packing list, which provides the project name, county, site number(s), catalogue numbers and number of containers for each project. A complete accession catalog or artifact inventory must also be included.

7. Either (1) at least one photocopy--on stable, acid-free paper--of all original field documentation, or (2) original notes, drawings, maps and other forms of documentation must accompany each collection submitted for curation.

All project field notes, correspondence, analysis sheets, feature records, etc. must be complete, organized and clearly labeled. The following information should be given on standard size, acid-free folders which contain documents: site number, site name/project name and date. If originals are not submitted, clear, readable copies may be substituted. Copies must be made on archival quality paper (xerographic process). Field notebooks or other bound records may be labeled on the exterior cover in permanent marker with the same information. Maps, large drawings and charts should be either rolled or folded with a proper outer label. Adhesive labels must be archivally stable.

8. A representative set of photographic slides and B/W photographs documenting the site, or sites, should accompany each archaeological site collection. A digital photo archive on CD-ROM is an acceptable alternative. Prepare and submit a catalog of all photographic documentation with an explanation of the labeling information. Photographs and negatives should be stored in acid-free photographic envelopes, which can be purchased from photography and archival supply catalogs.

Project and provenience information must be marked on storage envelopes. Photographic slides must be individually marked and identified.

9. **Fees.** We charge \$150 per standard box (per #5, above), or \$50 for collections requiring less than one-half of a box. Please make checks payable to "MSU Archaeology Laboratory."

For additional information regarding these standards and guidelines, or for consultation on preparation or shipping of archaeological collections, contact:

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 270-762-3457
kit.wesler@murraystate.edu

MURRAY STATE UNIVERSITY
ARCHAEOLOGY LABORATORY

COLLECTION CATALOGUE

SITE NO. _____
ACCESSION NO. _____

CAT. #	LOCATION	QTY	DESCRIPTION

**ARCHAEOLOGY LAB
COLLECTION CHECKOUT**

Name and phone or email	Box content (site #, cat. #, any other identifying information)	Date out	Date in
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MURRAY STATE UNIVERSITY
ARCHAEOLOGY LABORATORY

DAILY REPORT LOG

Supervisor _____

Site _____

Date _____

Total staff reported _____ x total hours worked _____ = man-hours _____

Total volunteers _____ x total hours worked _____ = man-hours _____

Primary excavation:

Unit

Comment

Secondary excavation (features, burials):

Unit

Comment

Backfill:

General:

Weather:

Photos: Black and white roll no. _____ Color roll no. _____

Murray State University
Archeological Program
SQUARE SHEET

Page No. _____

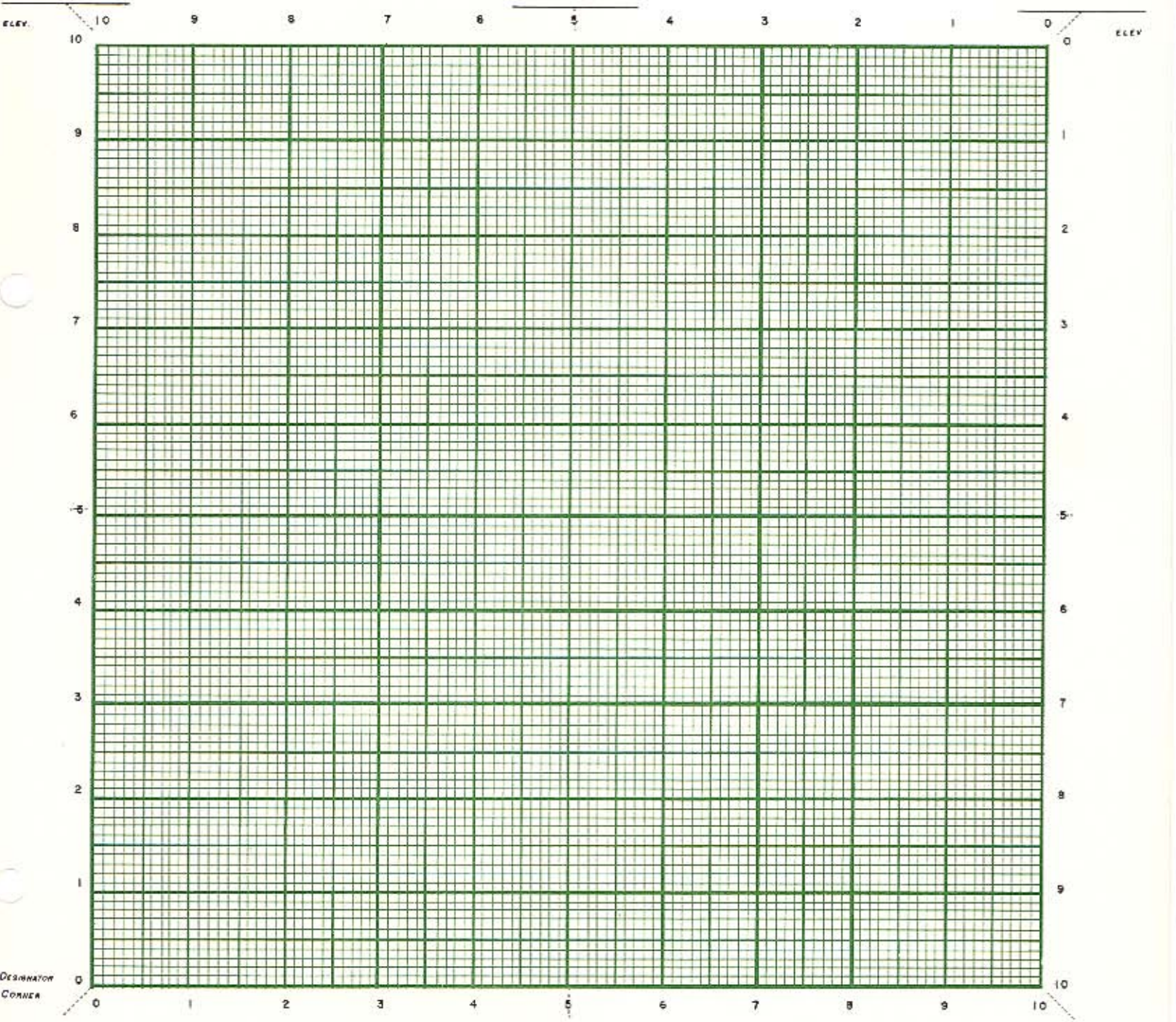
Photo Numbers _____ B&W _____ Color _____

Site _____ Square _____

Date _____ Observer _____

Nature of the floor _____

Refer to _____



SCALE - 1 in. = 10 cm.

WRITE NOTES ON REVERSE

ELEV.

ELEV.

DESIGNATOR
CORNER

MURRAY STATE UNIVERSITY ARCHAEOLOGY LABORATORY
CONTEXT RECORD FORM

Context No. _____ Site No. _____ Unit _____ Level(s) _____

Date _____ Observer _____ Other provenience _____

Northing: min. _____ max. _____ center _____

Easting: min. _____ max. _____ center _____

Elevations: top _____ bottom _____ other 1 _____ 2 _____ 3 _____ 4 _____

Context type: topsoil/PZ _____ midden _____ mound fill _____ feature fill _____ interface _____

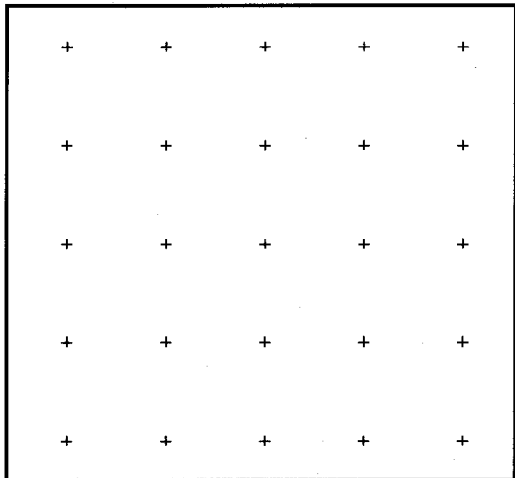
alluvial/colluvial _____ disturbed/mixed _____ redeposit/pile _____ wall _____

Relationships: above _____ below _____ equivalent to/continuous with _____

intrudes _____ intruded by _____ abuts _____ fills _____

Sketch:

NORTH



For scale drawing see: _____

Observations on back: Yes No

FEATURE DATA FORMMURRAY STATE UNIVERSITY
ARCHAEOLOGY LABORATORY

Date

Site Number

Observer

Feature Number

Category

Photo Number

Placement:

Horizontal: location of center (absolute from 0)

Vertical: at R.P. B.S. is + R.P.A.E. =H.I.

H.I. —Reading at =A.E.

H.I. —Reading at =A.E.

H.I. —Reading at =A.E.

H.I. —Reading at =A.E.

Sketch**Measurements:**

Max. length

Max. width

Vertical thickness

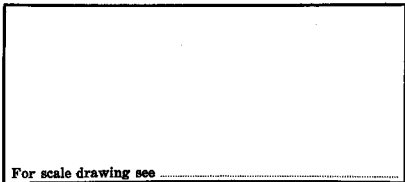
Interior depth

.....

.....

.....

.....

**Associated objects:**

Description	Location	Cat. No.

Relationships of feature:**Additional observations:**

Burial No.

Site No.

Skeleton (or Skull) No.

Age Sex Preservation

Bones Taken :

Cranial: Calva Teeth: ^U 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Calvaria

Calvarium

Cranium Degree of Attrition:

Post-Cranial:

Ribs Scapula Femur

Sternum Clavicle Patella

Vertebrae Humerus Tibia

Sacrum Radius Fibula

Innominate Ulna Foot

Hand

Posthumous Deformations:

Posthumous Disturbances:

Relationships of Burial:

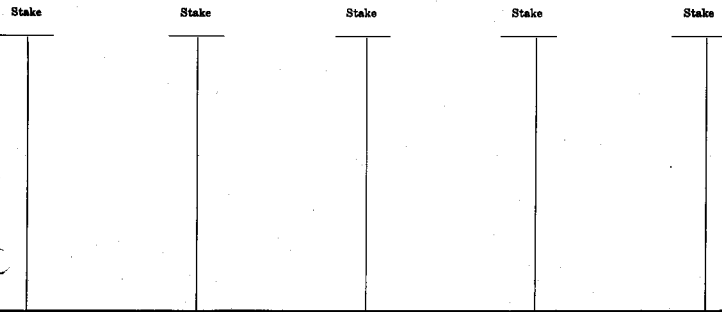
PROFILE ELEVATION FORM

MURRAY STATE UNIVERSITY
ARCHAEOLOGY LABORATORY

Date _____
Observer _____

Site Number _____
Profile Number _____
Photo Number _____

Sketch:



At R. P. _____ B. S. is _____ + R. P. A. E. _____ = H. I. _____

Point	H. I.	—	Reading	=	Pt. A. E.	Point	H. I.	—	Reading	=	Pt. A. E.
1						11					
2						12					
3						13					
4						14					
5						15					
6						16					
7						17					
8						18					
9						19					
10						20					

MURRAY STATE UNIVERSITY
ARCHAEOLOGY LABORATORY

PHOTOGRAPHIC DATA

Roll Number _____
Film Type _____ ASA _____

Site Number _____
Accession Number _____

Field No.	File No.	Subject	Date	Direction	Comments

