GRANT 363
Chicago Office NEPA Tracking Number

U. S. DEPARTMENT OF ENERGY
OFFICE OF SCIENCE -- CHICAGO OFFICE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

To be completed by "financial assistance award" organization receiving Federal funding. For assistance (including a point of contact), see "Instructions for Preparing SC-CH F-560, Environmental Evaluation Notification Form".

Solicitation/Award No. (if applicable): DE-FG02-06ER64288

Organization Name: (SUNY Research Foundation on behalf of) SUNY Delhi

Title of Proposed Project/Research: Center of Excellence in WATER

Total DOE Funding/Total Project Funding: $722,000

I. Project Description (use additional pages as necessary):

A. Proposed Project/Action (delineate Federally funded/Non-Federally funded portions)
Project Description Attached.

B. Would the project proceed without Federal funding? Yes ☐ No ☒

If "yes", describe the impact to the scope:

II. Description of Affected Environment:
The Subsurface Disposal and Irrigation portion of the project will take place on the SUNY Delhi College Golf Course, owned by the SUNY Delhi College Foundation. The Biomass Gasification portion of the project involves the development of detailed engineering, and therefore involves no environmental impacts.

III. Preliminary Questions:

		Yes	No
A.	Is the DOE-funded work *entirely* a "paper study"?	☐	☒

If "Yes", ensure that the description in Section I reflects this and go directly to Section V.

B.	Will the work to be performed take place *entirely* in existing buildings?	☐	☒

*And **NOT**:*

1.	Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?	☒	☐
2.	Require the siting, construction or major expansion of waste treatment, storage, or disposal facilities?	☒	☐
3.	Disturb hazardous substances, pollutants, or contaminants preexisting in the environment?	☒	☐
4.	Adversely affect environmentally-sensitive resources identified in Section IV.A.?	☒	☐
5.	Be connected to another existing/proposed activity that could potentially create a cumulatively significant impact?	☒	☐
6.	Have an inherent *possibility* for high consequence impacts to human health or the environment (e.g., Biosafety Level 3-4 laboratories, activities involving high levels of radiation)?	☒	☐

If "Yes" to Question III.B. and ALL six subsequent questions, ensure the descriptions in Sections I and II reflect this and go directly to Section V.

IV. Potential Environmental Effects:

Attach/insert an explanation for each "Yes" response.

A. Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?

		Yes	No
1.	Threatened/Endangered Species and/or Critical Habitats	☐	☒
2.	Other Protected Species (e.g., Burros, Migratory Birds)	☐	☒
3.	Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests)	☐	☒
4.	Archaeological/Historic Resources	☒	☒
5.	Important Farmland	☐	☒
6.	Non-Attainment Areas for Ambient Air Quality Standards	☐	☒
7.	Class I Air Quality Control Region	☐	☒
8.	Special Sources of Groundwater (e.g. Sole Source Aquifer)	☐	☒
9.	Navigable Air Space	☐	☒
10.	Coastal Zones	☐	☒
11.	Areas with Special National Designation (e.g. National Forests, Parks, Trails)	☐	☒
12.	Floodplains and Wetlands	☒	☐

QS.

B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated items or activities?

		Yes	No
13.	Natural Resource Damage Assessments	☐	☒
14.	Exotic Organisms	☐	☒
15.	Noxious Weeds	☐	☒
16.	Clearing or Excavation (indicate if greater than one acre)	☒	☐
17.	Dredge or Fill (under Clean Water Act, Section 404, indicate if greater than ten acres)	☐	☒

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B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated items or activities? (continued)

		Yes	No
18.	Noise (in excess of regulations)	☐	☒
19.	Asbestos Removal	☐	☒
20.	PCB's	☐	☒
21.	Import, Manufacture, or Processing of Toxic Substances	☐	☒
22.	Chemical Storage/Use	☐	☒
23.	Pesticide Use	☐	☒
24.	Hazardous, Toxic, or Criteria Pollutant Air Emissions	☐	☒
25.	Liquid Effluents	☒	☐
26.	Underground Injection	☐	☒
27.	Hazardous Waste	☐	☒
28.	Underground Storage Tanks	☐	☒
29.	Radioactive Mixed Waste	☐	☒
30.	Radioactive Waste	☐	☒
31.	Radiation Exposure	☐	☒
32.	Surface Water Protection	☒	☐
33.	Pollution Prevention Act	☐	☒
34.	Ozone Depleting Substances	☐	☒
35.	Off-Road Vehicles	☐	☒
36.	Biosafety Level 3-4 Laboratory	☐	☒

C. Other Relevant Information: Will the proposed action involve the following?

		Yes	No
37.	Potential Violation of Environment, Safety, or Health Regulations/Permits	☐	☒
38.	Siting/Construction/Major Modification of Waste Recovery, or Waste Treatment, Storage, or Disposal Facilities	☐	☒
39.	Disturbance of Pre-existing Contamination	☐	☒
40.	New or Modified Federal/State Permits	☒	☐
41	Public Controversy	☐	☒
42.	Environmental Justice	☐	☒
43.	Action/Involvement of Another Federal Agency (e.g. license, funding, approval)	☐	☒
44.	Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act apply?)	☒	☐
45.	Public Utilities/Services	☐	☒
46.	Depletion of a Non-Renewable Resource	☐	☒
47.	Extraordinary Circumstances	☐	☒
48.	Connected Actions	☐	☒
49.	Exclusively Bench-top Research	☐	☒
50.	Only a Laboratory Setting	☐	☒

V. Financial Assistance Award Organization Concurrence:

A. Organization Official (Name and Title): Brian Hutzley, Operations manager

Signature: [signature] Date: 9-20-06

e-mail: hutzlebg@dalhi.edu Phone: (607) 746 4582

B. Optional Concurrence (Name and Title): _____

Signature: _____ Date: _____

e-mail: _____ Phone: _____

Chicago Office NEPA Tracking Number

Remainder to be completed by SC-CH

VI. SC-CH Concurrence/Recommendation/Determination:

A. SC-CH Office of Acquisition and Assistance or Office of Safety, Technical & Infrastructure Services:

~~Project Director~~ or Contract Specialist (Name and Title): Jill Junkowski Contract Specialist

Signature: [signature] Date: 10-21-10

B. SC-CH NEPA Team Review:

Is the project/activity appropriate for a determination or a recommendation to the Head of the Field Organization by the NEPA Compliance Officer (NCO) under Subpart D of the DOE NEPA Regulations?

Yes ☒ No ☐ B1.6, B1.15 & B5.1

Specific class(es) of action from Appendices A-D to Subpart D (10 CFR 1021):

Name and Title: James Oprzedek

Signature: [signature] Date: 10/6/10

C. SC-CH Counsel (if necessary):

Name and Title: Michelle McKown

Signature: Michelle McKown Date: 10/21/10

D. SC-CH NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR 1021.400.

☒ Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.

☐ Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.

☐ Action requires approval by Head of the Field Organization or a Secretarial Officer. Recommend preparation of an Environmental Impact Statement.

Comments/Limitations if necessary:
A memorandum of Agreement under the National Historic Preservation Act was executed on 9/29/2010

Signature: [signature] Date: 10/5/2010

Peter R. Siebach
SC-CH NEPA Compliance Officer

U.S. Department of Energy
Office of Science – Chicago Office

National Environmental Policy Act (NEPA)
Environmental Evaluation Notification Form

Explanations for "Yes" Responses
Award No. DE-FG02-06ER64288

IV. A. 12. – Floodplains and Wetlands
Portions of the Subsurface Disposal and Irrigation project are located in the 100-year floodplain of the Little Delaware River. The project will redirect post-process treated effluent from the Delhi Waste Water Treatment Plant, presently being introduced into the West Branch of the Delaware River into an infiltration and retention basin, to be applied and used to irrigate the SUNY Delhi College Golf Course, also located in the 100-year floodplain. The project will allow the golf course to cease its withdrawals of water from the Little Delaware River for irrigation purposes.

IV. B. 16. – Clearing or Excavation (indicate if greater than one acre)
The Subsurface Disposal and Irrigation project will require the building of access roads to the infiltration basins, as well as excavation of the basins themselves. Plans for these roads and the excavation of the infiltration basins are included in a feasibility study for the project, conducted in 2003.

IV. B. 25. – Liquid Effluents
The Subsurface Disposal and Irrigation project will redirect post-process treated effluent from the Delhi Waste Water Treatment Plant, presently being introduced into the West Branch of the Delaware River into an infiltration and retention basin, to be applied and used to irrigate the SUNY Delhi College Golf Course.

IV. C. 40. – New or Modified Federal/State Permits
The Village of Delhi Waste Water Treatment Plant and the SUNY Delhi College Golf Course will need to apply to the New York State Department of Environmental Conservation for revised permits for their activities. In addition, SUNY Delhi will apply to the appropriate authorities, including NYSDEC and New York City's Department of Environmental Protection (NYCDEP), for permits covering the work to be conducted in order to construct the project. These permitting activities are included in the project plan for the design phase of the project, funded separately.

IV. C. 44. – Action of a State Agency in a State with NEPA-type Law
This project will take place in New York State, which is subject to SEQR law. The project will be undertaken in consultation with local authorities, NYSDEC and NYCDEP, including application for all required permits.

U.S. Department of Energy
Office of Science – Chicago Office

National Environmental Policy Act (NEPA)
Environmental Evaluation Notification Form

Project Description
Award No. DE-FG02-06ER64288

The *Energy-Efficient Subsurface Disposal and Irrigation* component of the COE will use a high-efficiency pumping system to transfer water from the Village of Delhi's Waste Water Treatment Plant (WWTP) to infiltration and retention basins located on SUNY Delhi property, redirecting the discharge of post-process treated effluent presently introduced directly into the West Branch of the Delaware River, which forms part of the Catskill Watershed. The treated waste water will be applied to the SUNY Delhi Golf Course with optimal efficiency during times of irrigation need, since the infiltration basin network will be integrated with an advanced weather station and a sequential, synchronized application mechanism, resulting in a closed-loop system requiring little intervention or maintenance on the part of operators. As a result, less energy will be expended during second-phase processing by the WWTP – a savings which can be replicated at countless other such facilities. In addition, the installation of energy efficient solar-powered pumps and optimized transmission pathways will directly realize energy savings. The system will also provide design and installation experience for students in SUNY Delhi's Photovoltaic program, which trains installers of photovoltaic technology and is accredited by the Interstate Renewable Energy Council. Funding has been provided separately for an initial feasibility study, as well as for development of the initial design of the project.

The *Biomass Gasification* component of this project builds upon separately funded work to develop a preliminary design and engineering. During this phase, the project will move on to the detailed engineering necessary to develop the facility. The detailed engineering will encompass such considerations as part load, startup and shutdown procedures, upset conditions, variances in feedstocks, and seasonal loads and ambient effects, among others. Also included in the detailed engineering is the development of a Process Design Package, equipment specifications and detailed construction drawings. RFP preparation will flow from these drawings and specifications, and will result in the eventual bidding and selection of contractors. Also taking place in this step is application for necessary permits and the securing of final funding. Funding has been provided separately for the initial design work for this portion of the project.

MEMORANDUM OF AGREEMENT

BETWEEN THE

UNITED STATES DEPARTMENT OF ENERGY, CHICAGO OFFICE,

THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK AT STATE UNIVERSITY OF NEW YORK COLLEGE OF TECHNOLOGY AT DELHI

AND THE

THE NEW YORK STATE OFFICE OF PARKS, RECREATION, AND HISTORIC PRESERVATION, STATE HISTORIC PRESERVATION OFFICE

REGARDING THE STATE UNIVERSITY OF NEW YORK DELHI HOLDING POND PRECONTACT SITE (A02505.000073)

WHEREAS, the United States Department of Energy (DOE) intends to award a Fiscal Year 2010 construction grant to The Research Foundation of State University of New York at State University of New York College of Technology at Delhi (Grantee) for the partial funding of construction of a holding pond for irrigation water; and

WHEREAS, the Federal funding qualifies the project as a Federal Undertaking; and

WHEREAS, treated wastewater from the existing Village of Delhi Wastewater Treatment Plant would be diverted to the proposed holding pond, which would then be pumped to the Delhi Golf Course and used for irrigation; and

WHEREAS, the undertaking's Area of Potential Effect (APE), as defined in 36 Code of Federal Regulations (C.F.R.) § 800.16(d), is defined as all areas of direct ground disturbance to include the footprints of the holding pond, treated wastewater/irrigation water conveyance systems, and access road, as well as all areas of ground disturbance including temporary workspace, areas where construction vehicles may operate, and storage areas, for a total of approximately 20 acres as encompassed and contextualized in Attachment 1, Site Location and Preliminary Site Layout; and

WHEREAS, a Phase 1 Archaeological Survey was performed which identified an occurrence of prehistoric artifacts within the APE and recommended further site examination to determine National Register Eligibility[1]; and

WHEREAS, the Phase 2 Site Examination[2] concluded it was eligible for listing on the National Register of Historic Places; and

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1 Report of Field Reconnaissance, Phase 1 Archaeological Survey, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (July 5, 2007)

WHEREAS, the New York State Historic Preservation Officer (SHPO), in a letter dated September 14, 2007, has recommended to SUNY Delhi that the site is National Register-eligible and has designated it the Delhi Holding Pond Precontact Site (A02505.000073); and

WHEREAS, DOE has determined that the undertaking may have an adverse effect on the Delhi Holding Pond Precontact Site (A02505.000073), which is eligible for listing in the National Register of Historic Places, and has consulted with the New York SHPO pursuant to 36 C.F.R. Part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f); and

WHEREAS, the SHPO recommended preparation of a Phase 3 data recovery plan[3], which has been completed and reviewed and approved on November 19, 2008, by the SHPO, to be implemented if adverse effects to the Delhi Holding Pond Precontact Site cannot be avoided (see Attachment 2); and

WHEREAS, DOE believes that avoidance would create a significant impact to project cost and schedule; and

Whereas, DOE and the SHPO agree that the adverse effects to the Delhi Holding Pond Precontact Site may be mitigated by data recovery; and

WHEREAS, DOE has consulted with the Oneida Indian Nation, the St. Regis Mohawk Tribe, the Stockbridge-Munsee Tribe, and the Akwesasne Mohawk Tribe (Indian Nations) who attach religious and cultural significance to historic properties identified during the archaeological investigations, and invited the Indian Nations to participate in the consultation to develop this Memorandum of Agreement and has invited the Indian Nations to sign this Agreement as invited signatories; and

WHEREAS, the Oneida Indian Nation and the Stockbridge-Munsee Tribe responded to DOE's invitation; and

WHEREAS, the Oneida Indian Nation and the Stockbridge-Munsee Tribe indicated they do not wish to participate as invited signatories to this Memorandum of Agreement (MOA); and

WHEREAS, the Oneida Indian Nation and the Stockbridge-Munsee Tribe indicated they wish to receive copies of any archaeological surveys performed on the Delhi Holding Pond Precontact Site (A02505.000073) and any forms or reports generated as a result of the Data Recovery process; and

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2 Cultural Resources Management Report, Phase 2 site Examination, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (August 9, 2007)

3 Data Recovery Plan, Delhi Holding Pond Project (SUBi-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (October 23, 2007)

WHEREAS, the Oneida Indian Nation indicated it wishes to be notified of the commencement of Data Recovery and construction work and may wish to access the Delhi Holding Pond Precontact Site (A02505.000073) during that time; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), DOE has notified the Advisory Council on Historic Preservation (ACHP) and advised them of the potential of the Undertaking to effect historic properties and the ACHP has chosen not to participate in the consultation pursuant to 36 C.F.R § 800.6(a)(1)(iii); and

WHEREAS, the SHPO has determined that state agencies participating in the undertaking covered by this agreement will satisfy the requirements of consultation and review under New York State Parks, Recreation and Historic Preservation Law, Section 14.09, for this undertaking by adopting the terms and conditions of this agreement;

NOW, THEREFORE, DOE and the SHPO agree that the implementation of the undertaking covered by this agreement shall take into account effects on prehistoric and historic properties and that completion of the steps outlined in the data recovery plan will serve to mitigate the adverse effects of this project.

TERMS AND CONDITIONS:

1. SUNY Delhi shall follow the protocol outlined in this MOA to ensure that the construction will conform to the applicable requirements of this MOA. This includes marking out and clearly identifying any archeological areas prior to construction and ensuring that construction vehicles or directional drillings do not enter those areas until such time as the Data Recovery Plan field work (including any ancillary Phase 1A/1B and Phase 2 testing undertaken) has been completed and an end-of-field work letter has been reviewed and accepted by the SHPO. In addition, any temporary construction equipment, material or soil storage areas shall be protected by laying down geotextile fabric and gravel.

2. Within one week of completion of the Data Recovery fieldwork, SUNY Delhi will submit an end-of-field (EOF) letter prepared by their professional archaeological consultant to the SHPO to verify that the necessary fieldwork has been completed. If the SHPO concurs that all necessary fieldwork is finished, it will issue a letter to SUNY Delhi confirming that the field investigation portion of Data Recovery has been completed.

3. SUNY Delhi will ensure that construction will not occur in any of the archeological sites until such time as the Data Recovery fieldwork at all sites, as described above, has been completed and the SHPO has concurred with the findings.

4. The SHPO and Oneida Indian Nation may inspect activities carried out pursuant to this Agreement at their discretion. SUNY Delhi and its archaeologist, consultants, and/or contractors will cooperate with respect to inspection and monitoring activities. SUNY Delhi shall inform the SHPO and the Oneida Indian

Nation two weeks prior to the commencement of both Data Recovery and construction activities. The SHPO shall provide SUNY Delhi with notice of their presence on the site, preferably by visiting the construction trailer, before entering the work area. SUNY Delhi shall inform the Oneida Indian Nation of their need for similar notice, prior to their representatives entering the work area.

5. SUNY Delhi shall submit four copies each of a final technical report, as described in the Data Recovery Plan, to DOE, the SHPO, the Oneida Indian Nation, and the Stockbridge-Munsee Tribe, no later than one year after the date of concurrence with the EOF letter. Copies of the report shall not be distributed to local and regional repositories until the SHPO, in consultation with the Oneida Indian Nation, has reviewed the report according to the Data Recovery Plan. Copies of any other volumes that may be produced as part of the public program outlined in the Data Recovery Plan shall also be provided to the SHPO and the Oneida Indian Nation for review. SUNY Delhi shall also coordinate review of any other volumes with the SHPO and the Oneida Indian Nation. If amendments are made, SUNY Delhi shall provide copies of the final technical report and any other volumes directly to DOE, the SHPO, the Oneida Indian Nation, and the Stockbridge-Munsee Tribe.

6. To the extent practicable and to the extent authorized by law, DOE, the SHPO, and SUNY Delhi have complied with, and shall continue to comply with, Conditions 1 through 12 of the ACHP's "Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites," attached as Attachment 3 of this Agreement.

7. To the extent practicable, SUNY Delhi has complied with, and shall continue to comply with, the "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State" (NYAC, 1994).

8. The Unexpected Discovery Plan presented in Attachment 4 will remain in effect throughout the entire period of project construction. It will apply to all discoveries of cultural items outside the area designated for data recovery in the Data Recovery Plan. The Human Remains Discovery Protocol described in the Data Recovery Plan will remain in effect throughout the entire period of data recovery and project construction. DOE is the "involved agency" referenced in the Protocol.

DISPUTE RESOLUTION:

Should any signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, DOE will consult with such party to resolve the objection. If DOE determines that such objection cannot be resolved, DOE will:

A. Forward all documentation relevant to the dispute, including DOE's proposed resolution, to the ACHP. The ACHP, at its discretion, will provide DOE with its

advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, DOE will prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. DOE will then proceed according to its final decision.

B. If the ACHP does not provide its input regarding the dispute within the thirty (30) day time period, DOE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, DOE will prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

C. DOE's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

AMENDMENTS:

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

TERMINATION:

If any required signatory to this MOA determines that its terms will not or cannot be carried out, that party will immediately consult with the other parties to attempt to develop an amendment. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the Project, DOE will either (a) execute another MOA pursuant to 36 C.F.R. § 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 C.F.R. § 800.7. DOE will notify the signatories as to the course of action it will pursue.

ANTIDEFICIENCY ACT:

Nothing herein will be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. This agreement is neither a fiscal nor a funds obligation document. Nothing in this agreement authorizes or obligates DOE to expend, exchange, or reimburse funds, services or supplies, or to transfer or receive anything of value.

AUTHORITY:

The Department enters into this Agreement under the authority of: 1) section 646 of the Department of Energy Organization Act (Pub. L. 95-91, as amended; 42 U.S.C. sec. 7256); and 2) Policy 141.1, "Department of Energy Management of Cultural Resources," effective May 2, 2001.

NO RESTRICTION:

This agreement in no way restricts the parties from participating in any activity with other public or private agencies, organizations or individuals.

REQUIRED SIGNATORIES:

The signatories agree that execution and implementation of this agreement satisfies the Department of Energy's responsibilities under the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470f), in regards DOE's undertaking to partially fund construction of the subject SUNY Delhi Holding Pond.

NEW YORK STATE HISTORIC PRESERVATION OFFICE

Ruth A Pierpont DSHPO Date: 9/17/10

Ruth Pierpont, Director, Division for Historic Preservation

U.S. DEPARTMENT OF ENERGY

_____ Date: _____

Johnnie D. Greenwood, Deputy Manager, Chicago Office

THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK

_____ Date: _____

Justine R. Gordon, Contract & Grant Specialist

STATE UNIVERSITY OF NEW YORK, DELHI

_____ Date: _____

Joel Smith, Director, College Advancement/Executive Director College Foundation

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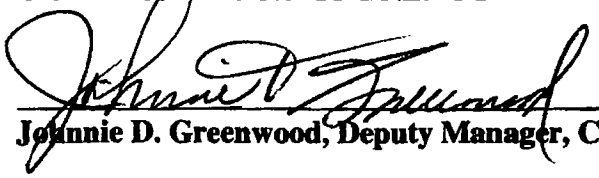
NEW YORK STATE HISTORIC PRESERVATION OFFICE

_____ Date: _____

Ruth Pierpont, Director, Division for Historic Preservation

U.S. DEPARTMENT OF ENERGY



_____ Date: 9/29/2010

Johnnie D. Greenwood, Deputy Manager, Chicago Office

THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK

_____ Date: _____

Justine R. Gordon, Contract & Grant Specialist

STATE UNIVERSITY OF NEW YORK, DELHI

_____ Date: _____

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_____ Date: _____
Ruth Pierpont, Director, Division for Historic Preservation

U.S. DEPARTMENT OF ENERGY

_____ Date: _____
Johnnie D. Greenwood, Deputy Manager, Chicago Office

THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK

Justine Gordon Date: 9-14-10
Justine R. Gordon, Contract & Grant Specialist

STATE UNIVERSITY OF NEW YORK, DELHI

_____ Date: _____
Joel Smith, Director, College Advancement/Executive Director College Foundation

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NEW YORK STATE HISTORIC PRESERVATION OFFICE

_____ Date: _____

Ruth Pierpont, Director, Division for Historic Preservation

U.S. DEPARTMENT OF ENERGY

_____ Date: _____

Johnnie D. Greenwood, Deputy Manager, Chicago Office

THE RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK

_____ Date: _____

Justine R. Gordon, Contract & Grant Specialist

STATE UNIVERSITY OF NEW YORK, DELHI

_____ Date: 09-15-2010

Joel Smith, Director, College Advancement/Executive Director College Foundation

Attachments:

Attachment 1: Site Location and Preliminary Site Layout.

Attachment 2: Data Recovery Plan, Delhi Holding Pond Site (SUBi-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505, 06PR06574, dated October 23, 2007 and November 19, 2008, SHPO Concurrence Letter

Attachment 3: Advisory Council on Historic Preservation Conditions: Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites

Attachment 4 Unanticipated Discovery Plan

Attachment 4
Unanticipated Discovery Plan
SUNY Delhi Holding Pond Project

Definition of Unanticipated Discovery

An unanticipated discovery which requires reporting to the Section 106 consulting parties includes but is not limited to: a) any human remains; b) any features (historic infrastructure, building vaults, soil stains); c) any artifacts (individual objects, specimens or physical evidence of prehistoric or historic human activity); or d) an unanticipated need to surface the boring activities, resulting in the need for additional review at that location. In the event of an unanticipated discovery, the following procedures will be implemented:

Procedures to Follow in the Event of an Unanticipated Discovery

A. The Contractor will immediately stop work and notify SUNY Delhi of the unanticipated discovery.

B. SUNY Delhi will direct the contractor to flag or fence off the archaeological discovery location and direct the contractor to take measures to ensure site security. Any discovery made on a weekend or holiday will be protected until all appropriate parties are notified of the discovery. The Contractor will not restart work in the area of the find until SUNY Delhi has granted clearance.

C. SUNY Delhi will contact the Public Archaeology Facility (PAF) at Binghamton University (aka, SUNY Binghamton). Monitoring and site assessment will be conducted by PAF (SUNY Binghamton) who will be brought to the project site to evaluate and assess the cultural resources in accordance with the standards established by the New York Archaeological Council (NYAC) and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 Fed. Reg. 44716).

D. The PAF (SUNY Binghamton) Archaeologist will indicate the location and date of the discovery on the project plans, and will make a more detailed assessment of the site's significance and potential project effects.

E. SUNY Delhi will immediately notify the consulting parties of the find. The notification will either explain why the PAF (SUNY Binghamton) Archaeologist believes the find not to be significant and request approval for construction to proceed, or describe a proposed scope of work for evaluating the significance of the find and evaluating project effects. All work to evaluate significance of the find would be confined to the project's APE. Prior to the implementation of any scope of work, DOE and SHPO concurrence would be required.

F. If the find is determined to be significant, and continuing construction may damage more of the site, then SUNY Delhi will request recommendations from the

consulting parties regarding the proper measures for site treatment. These measures may include:

i. Formal archaeological evaluation of the site;
ii. Visits to the site by the consulting parties or the Oneida Indian Nation, the Stockbridge-Munsee Tribe, and other parties;
iii. Preparation of a mitigation plan by the PAF (SUNY Binghamton) Archaeologist to be approved by the consulting parties as appropriate;
iv. Implementation of the mitigation plan; and
v. Approval to resume construction following completion of the fieldwork component of the mitigation plan and approval of an end-of-field letter by the consulting parties.

G. If the find is determined to be isolated, insignificant, or completely disturbed by prior construction activities, then SUNY Delhi will consult with the consulting parties and will request approval to resume construction, subject to any further mitigation required.

H. Any consultation with the Oneida Indian Nation and the Stockbridge-Munsee Tribe will be via DOE, which will notify them of the unanticipated discovery.

I. SUNY Delhi will notify the Contractor when there is clearance to resume work.

Procedures to Follow in the Event of an Unanticipated Discovery of Human Remains

A. According to the *Standards for Cultural Resource Investigations, Human Remains* (New York Archaeological Council 1994), the discovery of historic or precontact period human remains and/or objects of cultural patrimony[4] require special consideration and care. Likewise, funerary objects and sacred objects require special consideration and care per the *Native American Graves Protection and Repatriation Act of 1990* (Pub. L.101-601) (NAGPRA) and the NAGPRA Regulations (43 CFR Part 10). As such, in the event that such items are discovered during construction, they must at all times be treated with dignity and respect.

B. The procedures as set forth below will be followed in addition those procedures discussed above.

C. In addition to notifying DOE and the SHPO, and other appropriate parties, SUNY Delhi will immediately notify the local Police and the County Medical Examiner's Office of the find and cooperate with the coroner's office to notify, as required, the appropriate law enforcement agencies. If law enforcement agencies determine that the remains are not related to a criminal investigation, then a forensic or bio-

4 According to the Native American Graves and Repatriation Act (NAGPRA, Public Law 101-601; 25 U.S.C. 3001-3013), objects of cultural patrimony are defined as having "...ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual...(Sec. 2(3)(D)). The key provision in this definition is whether the property was of such central importance to the Tribe or group that it was owned communally.

archaeologist will be consulted to determine the potential for Native American ancestry.

D. If it is determined that interments are present and may be disturbed by continuing construction, then SUNY Delhi will ask that DOE consult with the next of kin or likely descendent community[5] (if known and following 43 C.F.R. Subtitle A, 10.5 – Consultation, if appropriate), and will also consult with SHPO regarding additional measures to avoid or mitigate further damage. These measures may include:
    i. Formal archaeological evaluation of the site;
    ii. Visits to the site by DOE, SHPO, the Oneida Indian Nation, the Stockbridge-Munsee Tribe, and other parties;
    iii. Preparation of a mitigation plan by the PAF (SUNY Binghamton) Archaeologist including procedures for avoidance or disinterment and reinterment, to be approved by DOE, the SHPO in consultation with the Oneida Indian Nation, the Stockbridge-Munsee Tribe, and others as appropriate;
    iv. Implementation of the mitigation plan; and
    v. Approval to resume construction following completion of the fieldwork component of the mitigation plan.

5 Any known lineal descendants of the individual whose remains, funerary objects, sacred objects, or objects of cultural patrimony have been or are likely to be excavated intentionally or discovered inadvertently; the Indian tribes or Native Hawaiian organizations that are likely to be culturally affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony that have been or are likely to be excavated intentionally or discovered inadvertently; the Indian tribes which aboriginally occupied the area in which the human remains, funerary objects, sacred objects, or objects of cultural patrimony have been or are likely to be excavated intentionally or discovered inadvertently; and the Indian tribes or Native Hawaiian organizations that have a demonstrated cultural relationship with the human remains, funerary objects, sacred objects, or objects of cultural patrimony that have been or are likely to be excavated intentionally or discovered inadvertently.

October 5, 2010

Mr. Raymond V. Wallace
Historic Preservation Technician
Federal Property Management Section
Office of Federal Agency Programs
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004

Dear Mr. Wallace:

SUBJECT: FINAL MEMORANDUM OF AGREEMENT (MOA) FOR THE STATE UNIVERSITY OF NEW YORK DELHI HOLDING POND PRECONTACT SITE (A02505.000073)

References:
1. Letter, Siebach to Klima dated June 16, 2009, Subject: "Department of Energy (DOE) Notification of Proposed Undertaking—Delhi Holding Pond, Town of Delhi, Delaware, County, New York"

2. Letter, Wallace to Siebach dated July 15, 2009, Subject: "Proposed Delhi Holding Pond Construction Project, Delhi, Delaware County, New York"

In accordance with your July 15, 2009, letter and pursuant to 36 CFR Section 800.6(b)(1)(iv), DOE is filing the enclosed MOA with you. In my June 16, 2009, letter, which notified you of our intent to develop an MOA, I included the background information required by 36 CFR Section 800.11(e). Per 36 CFR Section 800.11(f), there have been no substantive revisions or additions to that data, nor has our public participation process resulted in any new views not reflected in the MOA.

STS
Siebach
10/5/10
STS
Adachi
10/5/10
GL
McKown
10/5/10
GL
Donham
10/5/10

If you would like further information about the MOA, please contact me at 630-252-2007 or via e-mail at peter.siebach@ch.doe.gov.

Sincerely,

Peter R. Siebach, Team Leader
Environmental Protection and NEPA
Safety and Technical Services

Enclosures:
1. Reference 1
2. Reference 2
3. Memorandum of Agreement and associated attachments for the State University of New York Delhi Holding Pond Precontact Site (A02505.000073)

cc: Ruth Pierpont, New York State Historic Preservation Office, w/encl.
Justine Gordon, The Research Foundation of State University of New York, w/encl.
Joel Smith, State University of New York, Delhi, w/encl.

bc: M. McKown, GL, w/encls.
P. Brewington, PSS, w/encls.
J. Jonkouski, ACQ, w/encls.

GRANT 363

June 16, 2009

Mr. Donald Klima, Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, NW, Suite 803
Washington, D.C. 20004

Dear Mr. Klima:

SUBJECT: DEPARTMENT OF ENERGY (DOE) NOTIFICATION OF PROPOSED UNDERTAKING - DELHI HOLDING POND, TOWN OF DELHI, DELAWARE COUNTY, NEW YORK

I am writing to notify the Advisory Council on Historic Preservation (ACHP) of a DOE Undertaking to fund the construction of an approximately 200,000 square foot holding pond in the Town of Delhi, Delaware County, New York.

The State University of New York (SUNY) Delhi and DOE would be partners on this project. DOE's grant contribution would be $416,320 and would partially cover the cost of construction of the holding pond, which the University would use to stage treated wastewater for irrigation purposes. Because of the Federal funding, it qualifies as an "Undertaking" under the National Historic Preservation Act (NHPA) and is therefore subject to the requirements of ACHP regulations for Protection of Historic Properties (36 CFR § 800.1(a) and § 800.16(y)). The U. S. Army Corps of Engineers, New York District, advised us on March 5, 2009, that they believe existing Army Nationwide General Permit Number 12 applies. In follow-up, they indicated that hence they do not need to participate in DOE's NHPA consultation process.

SUNY Delhi had the following reports prepared:

1. Report of Field Reconnaissance, Phase 1 Archaeological Survey, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (July 5, 2007)

2. Cultural Resources Management Report, Phase 2 Site Examination, Delhi Holding Pond Project (SUBI-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (August 9, 2007)

3. Data Recovery Plan, Delhi Holding Pond Site (SUBi-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505, 06PR06574 (October 23, 2007)

The reports conclude that the site is potentially eligible for listing on the National Register of Historic Places, as a result of several pre-historical artifacts uncovered during archaeological surveys. DOE agrees. In consultation with the New York State Office of Parks, Recreation and Historic Preservation, State Historic Preservation Office and the Oneida Indian Nation, we have determined that the Undertaking will have an adverse effect and hence we intend to invite them to enter into a Memorandum of Agreement (MOA) with us. At this junction, DOE is notifying the ACHP of the adverse effect of the proposed undertaking pursuant to 36 CFR § 800.6(a)(1). We believe that the enclosures provide the documentation required by 36 CFR § 800.11(e).

STS
Siebach
6/16/09
STS
Zamirowski
6/16/09
ACQ
Phillips
6/24/09
GL
Prouty
6/22/09

If you require further information about this consultation process, I can be reached via telephone at 630-252-2007 or via e-mail at peter.siebach@ch.doe.gov. If you wish to discuss the specific technical details of the project, please contact the SUNY Delhi Grants Coordinator, Joel Smith, via telephone at 607-746-4522 or via e-mail at smithjm@delhi.edu.

Sincerely,

Peter Siebach, Team Leader
Environmental Protection and National
Environmental Policy Act

Enclosures:

1. Report of Field Reconnaissance, Phase 1 Archaeological Survey, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (July 5, 2007)
2. Cultural Resources Management Report, Phase 2 Site Examination, Delhi Holding Pond Project (SUBI-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505 (August 9, 2007)
3. Data Recovery Plan, Delhi Holding Pond Site (SUBi-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York, MCD 02505, 06PR06574 (October 23, 2007)

cc: P. Perazio, NY State Office of Parks, Recreation and Historic Preservation, w/o encls.
J. Smith, SUNY Delhi, Director of College Advancement, w/o encls.
J. Bergevin, Oneida Indian Nation, w/encls.
A. Dangler, USACE, New York District, w/o encls.

bc: V. Prouty, GL, w/o encls.
V. Phillips, ACQ, w/o encls.
B. Beall, The Chazen Companies, w/o encls.

Preserving America's Heritage

July 15, 2009

Mr. Peter Siebach
Department of Energy
Office of Science
Chicago Office
9800 South Cass Avenue
Argonne, IL 60439

REF: Proposed Delhi Holding Pond Construction Project
Delhi, Delaware County, New York

Dear Mr. Siebach:

On June 30, 2009, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the New York State Historic Preservation Office and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Tom McCulloch at 202-606-8554, or via email at tmcculloch@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Federal Property Management Section
Office of Federal Agency Programs

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Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites

Summary: In accordance with Secs. 800.5 and 800.6 of its revised regulations (36 CFR part 800, "Protection of Historic Properties," published [May 18, 1999]) implementing Section 106 of the National Historic Preservation Act of 1966, the Advisory Council on Historic Preservation is publishing a recommended approach for consultation by Federal agencies, State Historic Preservation Officers, Tribal Historic Preservation Officers, and others on the effects of Federal, federally assisted, and federally licensed or -permitted undertakings on archeological sites. ACHP has determined that issuance of this guidance is consistent with ACHP's revised regulations. The full text of the guidance is reproduced under the Supplementary Information section of this notice.

Dates: This guidance is effective on June 17, 1999.

Addresses: Those wishing to comment on this guidance should direct such comments to: Executive Director, Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Ave., NW, #809, Washington, DC 20004; Fax (202) 606-8647; e-mail achp@achp.gov.

For further information, contact: Ronald D. Anzalone, Assistant to the Executive Director, Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Ave., NW., # 809, Washington, DC 20004, (202) 606-8523.

Supplementary Information: The full text of the guidance, with the model Memorandum of Agreement, is reproduced below.

Background

Sections 800.5 and 800.6 of ACHP's revised regulations, "Protection of Historic Properties" (36 CFR part 800) detail the process by which Federal agencies determine whether their undertakings will adversely affect historic properties, and if they will, how they are to consult to avoid, minimize, or mitigate the adverse effects in order to meet the requirements of Section 106 to "take into account" the effects of their undertakings on historic properties.

One such category of historic properties is comprised of prehistoric or historic archeological resources. The National Register of Historic Places defines an archeological site as "the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains" (National Register Bulletin 36, "Guidelines for Evaluating and Registering Historical Archeological Sites and Districts," 1993, p. 2). Such properties may meet criteria for inclusion in the National Register of Historic Places for a variety of reasons, not the least of which may be because "they have yielded, or may be likely to yield, information important to prehistory or history" (*National Register Criteria for Evaluation,* 36 CFR 60.4).

In the context of taking into account the effects of a proposed Federal or federally assisted undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register, potential impacts to archeological sites often need to be considered. Appropriate treatments for affected archeological sites, or portions of archeological sites, may include active preservation in place for future study or other use, recovery or partial recovery of archeological data, public interpretive display, or any combination of these and other measures.

Archeological Sites and Their Treatment

The nature and scope of treatments for such properties should be determined in consultation with other parties, but in ACHP's experience they generally need to be guided by certain basic principles:

- The pursuit of knowledge about the past is in the public interest.
- An archeological site may have important values for living communities and cultural descendants in addition to its significance as a resource for learning about the past; its appropriate treatment depends on its research significance, weighed against these other public values.
- Not all information about the past is equally important; therefore,

not all archeological sites are equally important for research purposes.

- Methods for recovering information from archeological sites, particularly large-scale excavation, are by their nature destructive. The site is destroyed as it is excavated. Therefore management of archeological sites should be conducted in a spirit of stewardship for future generations, with full recognition of their non-renewable nature and their potential multiple uses and public values.

- Given the non-renewable nature of archeological sites, it follows that if an archeological site can be practically preserved in place for future study or other use, it usually should be (although there are exceptions). However, simple avoidance of a site is not the same as preservation.

- Recovery of significant archeological information through controlled excavation and other scientific recording methods, as well as destruction without data recovery, may both be appropriate treatments for certain archeological sites.

- Once a decision has been made to recover archeological information through the naturally destructive methods of excavation, a research design and data recovery plan based on firm background data, sound planning, and accepted archeological methods should be formulated and implemented. Data recovery and analysis should be accomplished in a thorough, efficient manner, using the most cost- effective techniques practicable. A responsible archeological data recovery plan should provide for reporting and dissemination of results, as well as interpretation of what has been learned so that it is understandable and accessible to the public. Appropriate arrangements for curation of archeological materials and records should be made. Adequate time and funds should be budgeted for fulfillment of the overall plan.

- Archeological data recovery plans and their research designs should be grounded in and related to the priorities established in regional, state, and local historic preservation plans, the needs of land and resource managers, academic research interests, and other legitimate public interests.

- Human remains and funerary objects deserve respect and should be treated appropriately. The presence of human remains in an archeological site usually gives the site an added importance as a burial site or cemetery, and the values associated with burial sites need to be fully considered in the consultation process.

- Large-scale, long-term archeological identification and

management programs require careful consideration of management needs, appreciation for the range of archeological values represented, periodic synthesis of research and other program results, and professional peer review and oversight.

Resolving Adverse Effects through Recovery of Significant Information from Archeological Sites

Under 36 CFR 800.5, archeological sites may be "adversely affected" when they are threatened with unavoidable physical destruction or damage. Based on the principles articulated above, ACHP recommends that the following issues be considered and addressed when archeological sites are so affected, and recovery of significant information from them through excavation and other scientific means is the most appropriate preservation outcome.

If this guidance is followed, it is highly unlikely that ACHP would decide to enter the consultation process under 36 CFR 800.6 or raise objections to the proposed resolution of adverse effects in a given case, unless it is informed of serious problems by a consulting party or a member of the public.

1. The archeological site should be significant and of value chiefly for the information on prehistory or history it is likely to yield through archeological, historical, and scientific methods of information recovery, including archeological excavation.

2. The archeological site should not contain or be likely to contain human remains, associated or unassociated funerary objects, sacred objects, or items of cultural patrimony as those terms are defined by the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001).

3. The archeological site should not have long-term preservation value, such as traditional cultural and religious importance to an Indian tribe or a Native Hawaiian organization.

4. The archeological site should not possess special significance to another ethnic group or community that historically ascribes cultural or symbolic value to the site and would object to the site's excavation and removal of its contents.

5. The archeological site should not be valuable for potential permanent in-situ display or public interpretation, although temporary public display and interpretation during the course of any excavations may be highly appropriate.

6. The Federal Agency Official should have prepared a data recovery plan with a research design in consultation with the

SHPO/THPO* and other stakeholders that is consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties,* the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, and the *Advisory Council on Historic Preservation's Treatment of Archeological Properties: A Handbook.* The plan should specify: (a) The results of previous research relevant to the project; (b) research problems or questions to be addressed with an explanation of their relevance and importance; (c) the field and laboratory analysis methods to be used with a justification of their cost-effectiveness and how they apply to this particular property and these research needs; (d) the methods to be used in artifact, data, and other records management; (e) explicit provisions for disseminating the research findings to professional peers in a timely manner; (f) arrangements for presenting what has been found and learned to the public, focusing particularly on the community or communities that may have interests in the results; (g) the curation of recovered materials and records resulting from the data recovery in accordance with 36 CFR part 79 (except in the case of unexpected discoveries that may need to be considered for repatriation pursuant to NAGPRA); and (h) procedures for evaluating and treating discoveries of unexpected remains or newly identified historic properties during the course of the project, including necessary consultation with other parties.

7. The Federal Agency Official should ensure that the data recovery plan is developed and will be implemented by or under the direct supervision of a person, or persons, meeting at a minimum the *Secretary of the Interior's Professional Qualifications Standards* (48 FR 44738- 44739).

8. The Federal Agency Official should ensure that adequate time and money to carry out all aspects of the plan are provided, and should ensure that all parties consulted in the development of the plan are kept informed of the status of its implementation.

9. The Federal Agency Official should ensure that a final archeological report resulting from the data recovery will be provided to the SHPO/THPO*. The Federal Agency Official should ensure that the final report is responsive to professional standards, and to the Department of the Interior's *Format Standards for Final Reports of Data Recovery Programs* (42 FR 5377-79).

10. Large, unusual, or complex projects should provide for special oversight, including professional peer review.

11. The Federal Agency Official should determine that there are no unresolved issues concerning the recovery of significant information with any Indian tribe or Native Hawaiian organization that may attach religious and cultural significance to

the affected property.

12. Federal Agency Officials should incorporate the terms and conditions of this recommended approach into a Memorandum of Agreement or Programmatic Agreement, file a copy with ACHP per Sec. 800.6(b)(iv), and implement the agreed plan. The agency should retain a copy of the agreement and supporting documentation in the project files.

Model Memorandum of Agreement

MEMORANDUM OF AGREEMENT FOR RECOVERY OF SIGNIFICANT INFORMATION

FROM ARCHEOLOGICAL SITE(S)
(list)
UNDERTAKING:
STATE:
AGENCY:

Whereas, in accordance with 36 CFR Part 800, the [Federal Agency] acknowledges and accepts the advice and conditions outlined in ACHP's "Recommended Approach for Consultation on the Recovery of Significant Information from Archeological Sites," published in the Federal Register on [date of publication]; and

Whereas, the consulting parties agree that recovery of significant information from the archeological site(s) listed above may be done in accordance with the published guidance; and

Whereas, the consulting parties agree that it is in the public interest to expand funds to implement this project through the recovery of significant information from archeological sites to mitigate the adverse effects of the project; and

Whereas, the consulting parties agree that Indian Tribes or Native Hawaiian organizations that may attach religious or cultural importance to the affected property(ies) have been consulted and have raised no objection to the work proposed; and

Whereas, to the best of our knowledge and belief, no human remains, associated or unassociated funerary objects or sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001), are expected to be encountered in the archeological work;

Now, therefore, the [Federal Agency] shall ensure that the following terms and conditions, including the appended Archeological Data Recovery Plan, will be implemented in a timely manner and with

Updated April 26, 2002

Return to Top

David A. Paterson
Governor

Carol Ash
Commissioner

New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

19 November 2008

Mr. Joel M. Smith
Director of College Advancement
SUNY Delhi
2 Main Street
Delhi, NY 13753

Re: DOE, SUNY
SUNY Delhi Holding Pond
Town of Delhi, Delaware County
06PR06574

Dear Mr. Smith:

The State Historic Preservation Office (SHPO) has reviewed the information submitted for this project (*Data Recovery Plan, Delhi Holding Pond Site (SUBi-2673), SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York*, October 2007, prepared by Public Archaeology Facility and an email from Ms. Tanja deMauro, SUNY Delhi, 19 November 2008). Our review has been in accordance with Section 106 of the National Historic Preservation Act and relevant implementing regulations.

SHPO concurs with the proposed data recovery plan. We look forward to receiving the resulting report.

If you have any questions please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, OPRHP
Phone: 518-237-8643 x3276; FAX: 518-233-9049
Email: Philip.Perazio@oprhp.state.ny.us

Cc: Nina Versaggi, PAF

DATA RECOVERY PLAN

DELHI HOLDING POND SITE (SUBi-2673)

SUNY DELHI HOLDING POND PROJECT
TOWN OF DELHI
DELAWARE COUNTY, NEW YORK
MCD 02505
06PR06574

PREPARED BY:

NINA M. VERSAGGI, PhD
AND
SAMUEL KUDRLE

THE PUBLIC ARCHAEOLOGY FACILITY
BINGHAMTON UNIVERSITY
BINGHAMTON, NEW YORK

SUBMITTED TO:

NEW YORK STATE OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION

SPONSOR:

SUNY DELHI
2 MAIN STREET
DELHI, NEW YORK 13753

OCTOBER 23, 2007

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I. INTRODUCTION

This document presents a Data Recovery Plan (DRP) for the Delhi Holding Pond site (SUBi-2673, USN A02505.000073), located in the Town of Delhi, Delaware County, New York (Figure 1). A Phase 1 reconnaissance survey conducted by the Public Archaeology Facility for the SUNY Delhi Holding Pond project identified this prehistoric site, and recommended a Phase 2 site examination to determine National Register Eligibility (Kudrle 2007a). The Phase 2 (Kudrle 2007b) determined that the Delhi Holding Pond site exhibited high research potential and was potentially eligible for the National Register of Historic Places. On September 14, 2007, the Office of Parks, Recreation and Historic Preservation concurred with this assessment and recommended a Phase 3 data recovery if impacts to the site could not be avoided. Since it is likely that the site extends outside the original project limits, exploring alternative holding pond locations was not feasible. Therefore, a data recovery was the option selected for this site.

1.1 Site Location

The site is situated on a portion of the floodplain east of the West Branch Delaware River at an elevation of approximately 421 m (1380 ft) ASL (Figures 2-3). Steep valley walls bound the floodplain and outwash terrace to the north and south. The confluence with the Little Delaware River is approximately 0.8 km (0.5 mi) to the northeast, and it appears that an old channel of either the Little Delaware or West Branch runs adjacent to the southern edge of the terrace.

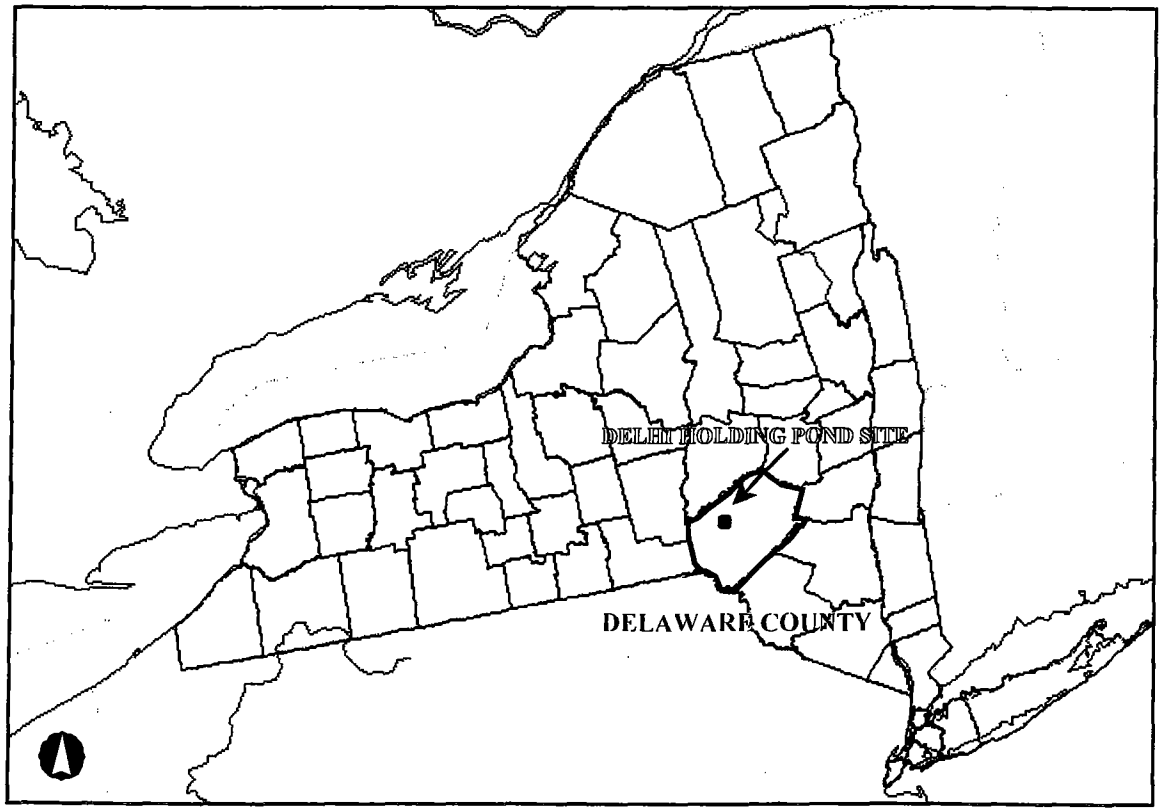


Figure 1. Location of the Delhi Holding Pond site in Delaware County and New York State.

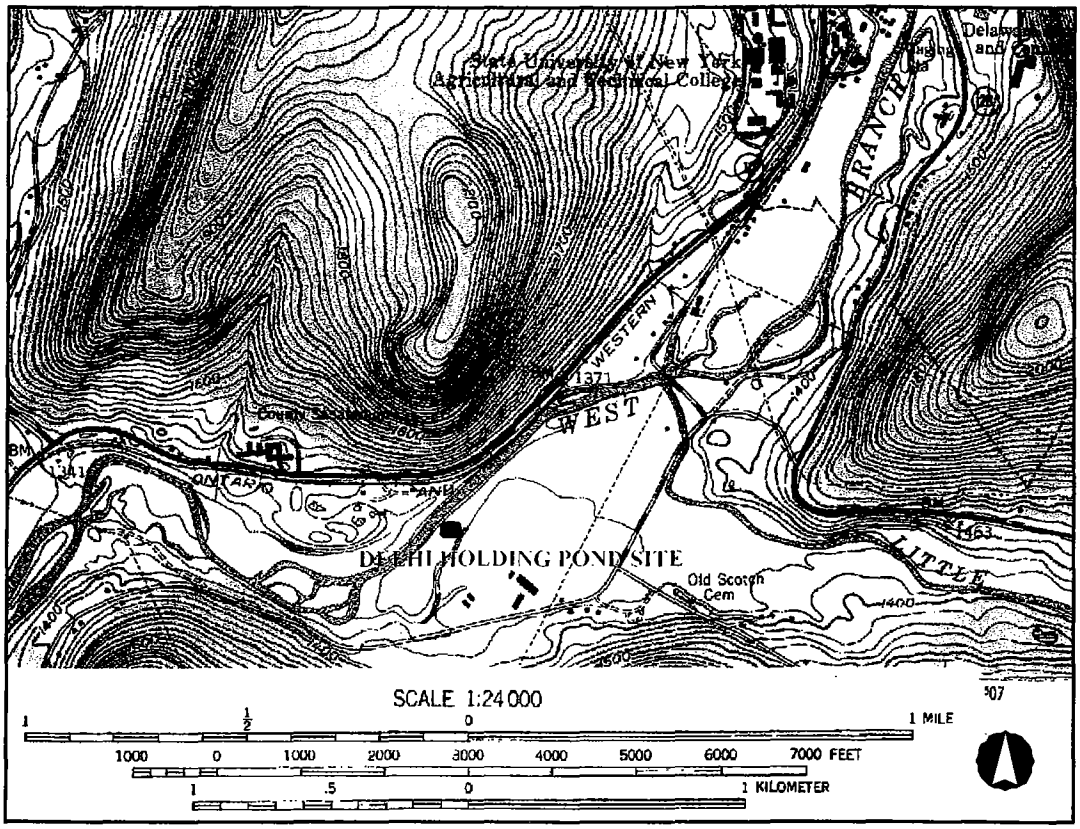


Figure 2. Location of the Delhi Holding Pond Site on the USGS 7.5' Delhi, New York quadrangle.

Figure 3. Digital elevation model for the USGS 7.5' Delhi, New York Quadrangle.

1.2 Archaeological Investigations

During the reconnaissance survey, PAF archaeologists excavated 31 shovel test pits (STPs) across the project area at 15 m (49 ft) intervals. Artifacts recovered during the survey included four Onondaga chert flakes from one STP (B6). Radial pits excavated at 3 m (10 ft) intervals around B6 did not produce additional prehistoric artifacts. The location of STP B6 was designated the center of the site.

The site examination included the excavation of three 1 x 1 meter (3.3 x 3.3 ft) units ringing STP B6, and 24 close interval STPs (2-3 meters apart) within the site area. When the southernmost unit produced the greatest frequency of artifacts, a series of close-interval STPs were used to provide a more accurate estimate of intra-site artifact patterning (Figure 4). The three test units and 24 STPs sampled 12% of the Delhi Holding Pond site, which measures roughly 75 m^2 (805 ft^2). Tables 1 and 2 summarize the artifacts found from reconnaissance and site examination.

Table 1. Summary of prehistoric artifact types for the Delhi Holding Pond site.

BIFACE	DEBITAGE	ROUGHSTONE	TOTAL
1	28	4 Pitted Stones/Chopper	33

Table 2. Lithic debitage/core attributes for the Delhi Holding Pond site

LITHIC VARIABLE	COUNT (PERCENT)
DEBITAGE TYPES	24 (86%) NON-CORTICAL FLAKE 2 (7%) CORTICAL FLAKE 2 (7%) CHUNK/SHATTER
RAW MATERIAL	100% ONONDAGA CHERT
HEAT/BURNING	NO BURNT PIECES WITHIN THE ASSEMBLAGE
CORTEX TYPE	TWO CORTICAL FLAKES EXHIBIT SMOOTH CORTEX - PHYSICALLY WEATHERED
FLAKE SIZE	1 (4%) 1-2 INCHES 10 (38%) 0.5-1.0 INCHES 15 (58%) 0.25-0.5 INCHES
FLAKE WEIGHT	0.24 GRAMS AVERAGE
FLAKE CONDITION	8 (31%) WHOLE 7 (27%) BROKEN 11 (42%) FRAGMENTED - NO INTACT PLATFORMS
PLATFORM	1 (7%) COLLAPSED 4 (29%) FLAT 90 6 (43%) FLAT 90-45 1 (7%) FLAT <45 3 (14%) FACET 90-45
UTILIZATION	6 UTILIZED DEBITAGE 21% OF TOTAL DEBITAGE

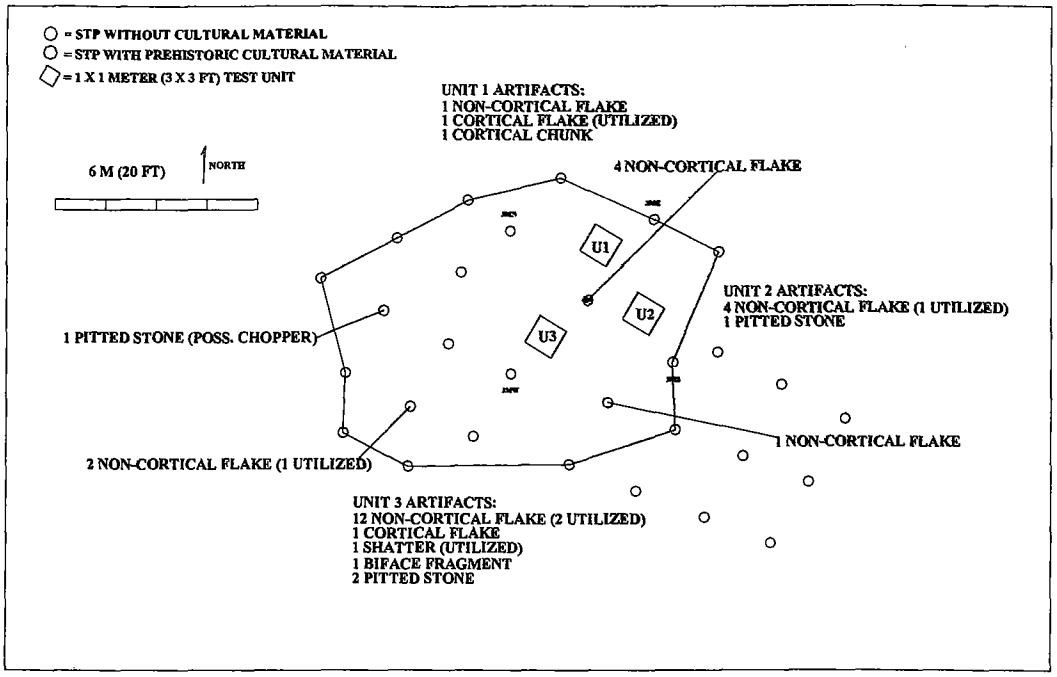
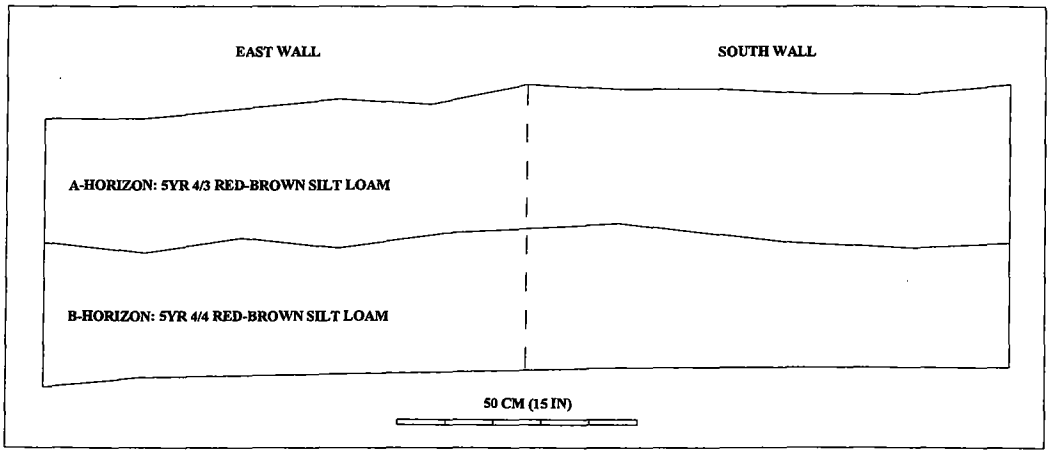


Figure 4. Location of Phase 1 and 2 excavations.

The excavations at the Delhi Holding Pond site revealed soil profiles typical of the Basher and Barbour series expected for this area. The A-horizon (including the plowzone) appeared as a reddish brown to dark brown silt loam with an average depth of approximately 32 cm (13 in). The underlying B-horizon (subsoil) appeared as a lighter reddish-brown silt loam with occasional river cobbles. STPs excavated in the bottom of each unit identified sterile silt and clay alluvium to 1.43 to 1.53 meters (4.6-5 ft) below the ground surface. One of the STPs hit fractured bedrock at a depth of 1.44 cm (4.7 ft) below the surface. A geomorphological assessment determined that this section of the West Branch exhibited high energy characteristics, resulting in a low probability for deeply buried cultural horizons. Prehistoric artifacts were found within the A-horizon and transition to subsoil.



No features were identified from the limited excavation, but it is possible that at least one small feature (e.g., a hearth) is likely present in the site area. Charcoal flecks noted in the soil matrix from units 1 and 3 support this hypothesis. Analysis of the debitage assemblage reflects a bifacial reduction strategy, and approximately 6 of the 28 pieces of debitage (21%) exhibit macroscopic use-wear. The four pitted stones may suggest some plant (nut) processing; they may have also been used as anvils for lithic reduction. The site was tentatively interpreted as a seasonal camp, but it is also possible that it is a specialized activity area within a larger residential site.

II. RESEARCH CONTEXT

The Public Archaeology Facility is involved in ongoing research on sites from the West and East Branches of the Delaware River. Research in the Delhi segment of the West Branch has produced preliminary research contexts within which the Delhi Holding Pond site can be interpreted (Carroll et al. 2007; Knapp and Versaggi 2002, Knapp et al. 2006, Kudrle 2007a, b; Rudler 2007; Versaggi 2007). The research proposed for the Delhi Holding Pond site will use existing research designs and contribute to these ongoing investigations. The following contexts and research questions will be used to structure the Delhi Holding Pond site data recovery.

2.1 Environmental Setting

The upper branches of the Delaware River rise from upland springs and wetlands on a drainage divide near the border between Schoharie and Delaware Counties. They course through narrow, constricted valleys, which widen slightly at certain points along their routes. The West Branch begins in the Town of Jefferson, Schoharie County, and travels 102 km (63 mi) southwest until its juncture with the East Branch at Hancock, NY. The East Branch follows a roughly parallel course, rising in the uplands near Grand Gorge Station, and flowing 114 km (71 mi) to Hancock. Both branches also parallel the Susquehanna River, which runs through a relatively wider valley to the north of a series of drainage divides that extend east-west in the Towns of Meridith and Kortright. However, the Susquehanna and the Delaware drainages differ greatly in their elevations as well as the width of their valleys. For instance, the Susquehanna at Oneonta sits at an elevation of about 335 m (1100 ft) ASL, while both branches of the Delaware (near Delhi and Margaretville) occur at an elevation of about 396 m (1300 ft). Valley widths at these same points range from about 762 m (2500 ft) at Oneonta, to 305 m (1000 ft) at Delhi, to 457 m (1500 ft) at Margaretville. These environmental differences have the potential to influence variations in land use and settlement patterns within the two valley systems. These variations may be related to associations with different cultural or ethnic groups, as well.

2.2 Chronology

Not much is known about prehistoric land use and settlement within the upper reaches of the two branches that form the main trunk of the Delaware River. Most previous research has focused on the Delaware south of Hancock, New York (Kinsey 1972; Custer 1996). However, in recent years, some professional surveys for roads and other developments have produced fresh data that have contributed to a regional chronology of the two valleys (Cassell 1988; Hartgen 1988, 2003; Rafferty et al. 1996; Levandowski and Versaggi 2003; Hohman and Versaggi 2005; Knapp et al. 2006; Grills and Versaggi 2007).

Very little is known about the chronological context of prehistoric sites in the East Branch. Within the West Branch Valley, from Deposit to South Kortright, a better chronological picture emerges. To the far west, the Herrick Hollow National Register District in the Town of Masonville, Delaware County documented a series of seven sites on an upland divide (Hohman and Versaggi 2005; Versaggi and Hohman 2007). Most of the sites contained Late Woodland diagnostic points and pottery, as well as radiometric dates that support this cultural affiliation. However, there was a strong Early Woodland Meadowood presence, and one date that falls within the accepted range for this time period. Moving to the east, the Hale Eddy National Register District (Knapp et al. 2006) contains 22 prehistoric sites from several time periods, including Paleo-Indian and Early Archaic. Non-local raw materials used for some of the tools include Normanskill chert and yellow jasper.

One radiometric date from the Beaver Lodge site did not match the Hardaway-Dalton point fragments found. However, few sites of this time are known for the upper Delaware Valley (and none are radiometrically dated). It is not known if this date is acceptable or not for this region.

Approaching the Delhi region, the Peake site represents multiple episodes of land use from the Early Archaic through the Late Woodland (Hartgen 1988, 2003). A series of 14 radiometric dates ranging from 3170 BC to AD 730 supports some of these occupations. Within the Village of Delhi, the Knapp I site (private collection) also suggests multiple visits to the area based on possible Clovis, Snook Kill, and Orient Fishtail projectile points. Closer to East Delhi, the Rockefeller Mine site produced diagnostics from the Paleo-Indian, Transitional and Early Woodland periods (Levandowski and Versaggi 2003). No radiometric dates are available for this site. The Bloomville/Beardsley site (Grills and Versaggi 2007) is a small lithic scatter without diagnostics or features. However, the site produced

greenish-blue flakes classified as Normanskill chert. These flakes appear to be identical to the raw material used for some of the point fragments at the Hale Eddy Beaver Lodge site. A tentative interpretation of this lithic site as Paleo-Indian was proposed.

In the South Kortright area, the Truesdale site (Rafferty et al. 1996; Hartgen 2003) documented a small Late Woodland occupation within the upper reaches of the West Branch. Nearby, the Betty Brook site (Rafferty et al. 1996) contained an Orient Fishtail diagnostic from the Transitional period.

Taken as a whole, there is a clear but sparse presence of Paleo and Early Archaic components in the West Branch Valley. In combination with Normanskill chert and jasper, it appears that the valley represented a favorable travel and foraging route for highly mobile early groups. A Late Archaic presence is also sparse in both valleys. However, by the terminal Late Archaic and Transitional periods, a more noticeable presence is observed in both valleys. This pattern continues for the Early Woodland period. Until recently, the Early Woodland period was the least distinct of the temporal manifestations in the Upper Delaware Valley. Unlike sites in the Finger Lakes and the Niagara Frontier, the known Early Woodland sites in this part of New York rarely contained Adena traits other than projectile points. The burial ceremonial complex is completely lacking (Versaggi 1999). Therefore, it was thought that Early Woodland sites were rare in these valleys, as well as on the drainage divides between them. However, the recovery of Early Woodland material from Mt. Laurel Gardens, and several other sites: Herrick Hollow Sites (I, II and possibly VII), Peake, Rockefeller Mine, and from the Yager Collection at Hartwick College (Gette 2000), changes this perception.

While Middle Woodland diagnostics appear to be absent from the sample of sites used in this study, the Peake site contained a series of dates consistent with land use during this period. It is likely that the land use activities did not require hunting tools, or the intensity of land use did not result in the loss of these implements. There is an almost ubiquitous Late Woodland presence in the East and West Branch Valleys. Instead of the large villages common in the Susquehanna Valley, Late Woodland occupations are much smaller and resemble small camps instead of large residential sites.

There are similarities in the temporal sequence between the two branch valleys of the Upper Delaware. These similarities are mostly manifested in the presence of Early and Late Woodland camp sites, and the distinct presence of Snook Kill and Transitional components. Missing from the East Branch are traces of Palo-Indian and Early Archaic land use, both of which are present in the West Branch.

2.3 Land Use and Settlement Patterns

There appears to be two general types of sites in the Delhi region of the West Branch. The first includes small camps on the north bank of the river near confluences; these were repeatedly visited, and contain multiple diagnostics from several time periods. Among these sites are Peake (Hartgen 1988), located at the confluence of Peake Brook and the West Branch. This site contained Early Archaic through Late Woodland diagnostics as well as pit and hearth features, which yielded a suite of radiometric dates to support many of these episodes of land use. The Knapp I site (a private collection), located near the confluence of the Little Delaware River, shows a continuum of time periods from the terminal Late Archaic through the Transitional period. Information on site type and possible land use patterns is lacking, but the revisits to this site over thousands of years, and the location at a confluence suggest a camp similar to the Peake site. Rockefeller Mine, located at the confluence of Elk Creek with the West Branch near a wetland, produced Paleo, Late Archaic, and Early Woodland artifact clusters within a plowed context. Within the East Branch Valley, the Mt. Laurel Gardens site, located near the confluence with Dry Brook, produced a continuum of occupation from the terminal Late Archaic through Early Woodland; a nearby Late Woodland camp was also present. None of these multicomponent sites can be considered to be large residential camps, similar to those found in the Susquehanna Valley. Instead, they all represent smaller single or multi-task camps. Except for Mt. Laurel, their positions on the north bank where they would receive maximum exposure to the sun, suggests colder seasons of occupation.

The second type of site appears to be more ephemeral activity areas where lithic debitage and expedient tools are the dominant assemblage, sometimes supplemented with a single hearth feature. These sites are not at confluence areas, but they do occur on terraces and pieces of floodplain not too distant from the river. The Clark-Delhi site is one example; the Bloomville Mine site is another. A unique twist on this pattern is the Delhi Holding Pond Site (Kudrle

2007a, b). This small site (75 m^2) produced only 28 pieces of debitage (of which 6 are utilized), 1 broken biface, and 4 large pitted anvil stones (some have multiple pits). This obviously represents a specialized activity area that either existed in isolation, or was part of a larger site.

In logistically organized hunter-gatherer societies, this pattern of camps and resource processing locations is expected. While the main residential camps are tethered to prime locations, possibly in the main trunk of the Delaware or within the Susquehanna Valley, the need for distant resources required mobile work groups who could access distant resource areas, and return partially processed resources back to the main camp. The multicomponent sites at confluences lack the characteristics of the large residential bases common in the Susquehanna Valley, but they resemble small camps tethered to important confluence areas for short-term visits. The second group of sites are the ancillary foraging locations that may or may not contain evidence of an overnight stay. The sites resemble single or multiple episodes of resource processing but lack the bifacial tool kit more common at the confluence camps. Instead, the expedient production of flakes for use as tools, or the sharpening of bifacial implements characterize these sites.

2.4 Regional Comparisons

Table 3 summarizes an array of variables that can form the beginnings of a model for regional comparisons. The table relies on lithic variables, since lithics are the most common artifact type found on these sites. However, the table can be expanded in the future to include spatial information, as well as other non-artifactual variables.

To begin the comparison, the Herrick Hollow I site (Early Woodland) stands out within this group of sites. This biface production site represents the extreme single-task site, with small amounts of resource processing present. For this reason, HHI is a good benchmark for comparison. The amount of lithic debitage, number of expedient tools, and number of formal tools per m^2 excavated is among the highest for the group of sites in Table 3. This is also reflected in the debitage to tools ratio and the debitage to expedient ratio. All other sites pale in comparison, indicating that early bifacial reduction was not a dominant activity at these camps and processing stations. One would expect that the Mt. Laurel Gardens site (in the East Branch Valley) would compare favorably with sites in the West Branch, due to a similar environmental context. This is not the case. Instead, Mt. Laurel compares the closest to the Park Creek I upland camp site in the Susquehanna Valley. Both sites have a relatively low number of expedient tools and debitage per m2 excavated, supported by relatively low ratios of debitage to formal tools and debitage to expedient tools. These variables suggest that these camps have a more balanced combination of informal and formal tools, and activities were not generating large densities of debitage. It is interesting to note that Park Creek I is also a terminal Archaic Snook Kill/Genesee camp. While this may be coincidence based on the small sample size, it does seem to suggest that Mt. Laurel compares more closely to sites of a similar cultural affiliation than to sites in a similar geographic region.

The Delhi Holding Pond site compares closest with the Clark-Delhi and Rockefeller Mine sites. All are within the West Branch Valley, and all represent small activity loci away from prime confluence areas. All characterize ephemeral processing locations rather than a longer term encampment where formal tools were used, maintained, and replaced.

2.5 Research Objectives

- *Chronology.* The data recovery will search for diagnostics and/or features to determine the chronological context of the site.

- *Landuse/Settlement Patterns.* Analysis will address lithic reduction methods, tool function, and intra-site patterning to interpret site type and functional use of this landform.

- *Regional Systems.* Using the above information and data from other sites, archaeologists will refine the regional model for hunter-gatherer mobility and landuse within this portion of the West Branch of the Upper Delaware Valley.

Table 3. Comparative sites from the region.

	Clark-Delhi	Delhi Holding Pond	Mt Laurel Gardens	Sidney AWOS	Betty Brook	Rockefeller Gravel Mine	Park Creek I	Herrick Hollow 1	Herrick Hollow 2
Site Size (m^2)	434	75	3,933	575	540	4,000 (four loci)	48	264	600
m^2 excavated (% of site excavated)	7 (1.6 %) plus surface survey	5.5 (12%)	47 (1.1%) plus surface, mechanical stripping	58.5 (10.1%) plus surface, mechanical stripping	8 (1.5%)	22.5 (.5%) plus surface	23 (48%)	32 (12%)	85 (14%)
Time Period	Not known	Not known	Late Archaic, Transitional, Early Woodland	Late Archaic/ Early Woodland	Transitional	Paleo-Indian/ Early Woodland	Late Archaic	Early Woodland	Early and Late Woodland
Physiographic Zone	Primary Terrace West Branch Delaware	Floodplain West Branch Delaware	Primary Terrace East Branch Delaware	Glacial Outwash Terrace Susquehanna	Glacial Outwash Terrace East Branch Delaware	Glacial Outwash Terrace West Branch Delaware	Upland Susquehanna	Upland Divide - Susq. & West Branch	Upland Divide - Susq. & West Branch
Features	0	0	2 (thermal)	2	0	0	1	1 (boulder)	3 (hearths, pits)
# of Formal Tools (per m^2 excavated)	1 (.14)	1 (.18)	23 (.49)	30 (.51)	8 (1.0)	3 (.13)	9 (.39)	40 (1.25)	25 (.29)
# of Expedient Tools (per m^2)	3 (.43)	6 (1.05)	42 (.89)	105 (1.79)	30 (3.75)	7 (.31)	13 (.57)	99 (3.09)	236 (2.78)
# of Lithic Debitage (per m^2)	37 (5.3)	28 (4.9)	347 (7.38)	1558 (26.6)	106 (13.25)	80 (3.56)	120 (5.22)	5090 (159.1)	1149 (13.5)
Expedient: Formal Ratio	3.00	6.00	1.83	3.5	3.75	2.33	1.44	2.48	9.44
Debitage: Tools Ratio	37.0	28.0	15.1	51.9	13.25	26.7	13.3	127.25	45.96
Debitage: Expedient Ratio	12.3	4.67	8.26	14.84	3.5	11.4	9.23	51.41	4.87

III. METHODOLOGY

In order to accomplish the research objectives of this data recovery, field investigations will need to adequately sample the horizontal and vertical extent of the site area within the impact zone. The goal is to retrieve a representative sample of artifacts and features from the site area so that the research topics can be addressed.

3.1 Field Methodology

The Delhi Holding Pond site is small: approximately 75 m^2 (387 ft^2) at its maximum (Figure 4). These limits encompass STP B6, the three units, and additional STPs excavated to refine the site boundaries. The proposed field strategies include both unit excavation and stripping of the A-horizon. Specifically, we propose the following:

- **Unit excavation.** Archaeologists will excavate an additional 6-8 units measuring 1 x 1 meter within the Delhi Holding Pond site area. We estimate that each unit will take 1-2 days to complete (16 persondays total).

- **Mechanical stripping of the site topsoil.** Once unit excavations are complete, a backhoe will remove the A-horizon and archaeologists will shovel clean the surface of the B-horizon to locate features. Since features are as important as artifact clusters on the site, this field strategy will insure that this data potential is fully examined. In addition, if any burials are present, this method will expose the top of the burial pit. A backhoe with a **smooth-bladed bucket** supplied by SUNY Delhi will remove the A-horizon. This topsoil stripping will be monitored by the project and field directors. Once the B-horizon is exposed, crews will shovel-scrape the loose soil in order to clean the subsoil surface to reveal traces of potential features. Soil will need to be excavated to a depth of 30-50 cm (10-20 in) to remove the A-horizon. We estimate that this task will take 1 day (4 persondays total).

- **Feature excavation.** Any features located during shovel-scraping will be systematically excavated using the normal PAF process. First, their boundaries will be defined by trowelling, then plan views will be drawn and the feature will be photographed. Soil discolorations, post-holes, etc. will be cross-sectioned to obtain a vertical profile. The remaining half will also be bisected to obtain a perpendicular profile. Standard-sized (approximately 10 liters, where possible) soil samples for flotation will be collected for each feature. **We estimate that 1-2 features will be found within the project limits.** We estimate that each of the expected features will take one day to excavate with a team of two people (4 persondays total).

Units will be excavated by removing the top 25 cm (9.8 in) plowzone (Ap horizon). The remaining soil matrix will be excavated in arbitrary 5 cm (2 in) levels within the natural or cultural soil layers to identify potential temporal stratification in the cultural deposits. Each unit will extend at least 10 cm (4 in) into culturally sterile subsoil. Archaeologists will excavate all units with shovels and trowels. Soil will be screened through a ¼ inch hardware mesh onto plastic sheeting. All artifacts will be noted and bagged by level.

Table 4. Summary of Field Investigations for the Delhi Holding Pond Site.

Type of Excavation	No.	Total Area Excavated (m^2)
Phase 1 and 2 STPs	24	2.7 m^2
Site Examination Units	3	3 m^2
Subtotal:		*5.7 m^2*
Proposed Data Recovery Units	6-8	6-8 m^2
Mechanical Stripping		100% of site area

With the data recovery, approximately 12-14 m^2 (16% to 19%) of the site area will be systematically excavated and screened. The mechanical stripping of the site will provide 100% coverage for features and partial recovery of artifacts noted during the stripping process. This combination of excavation and soil removal offers an acceptable balance for this data recovery.

3.2 Laboratory Methods

Following fieldwork, all artifacts will be processed and analyzed in the laboratories of the Public Archaeology Facility. Artifacts will be processed and catalogued according to standard procedures. Analysis of chipped and rough stone artifacts will occur in a staged manner according to reduction stages and functional attributes. Other artifacts, such as fire-cracked rock (FCR), will be counted and/or weighed as appropriate.

3.3 Analysis Methods

Chronology

Central to the analysis of the Delhi Holding Pond site is a definition of the chronological components present on the site. This task is dependent on finding diagnostics and/or datable features. Assuming that features are found, carbon samples will be submitted to Beta-Analytic of Coral Gables, Florida to provide radiometric dating of the site. Carbon samples too small for standard C-14 methods will be submitted for AMS dating. These data will be combined with stratigraphic information to define both vertical and horizontal components on the site. The resulting chronology will structure the form of all subsequent analyses.

Landuse and Settlement Patterns

Detailed lithic analysis (technological and functional) and intra-site analysis are needed to address this research objective. Technological analysis will focus on the procurement and manufacture of chipped stone tools, while the functional data will focus on the activities these tools performed. In both cases, the purpose of the analysis is to make visible productive tasks (labor) that were occurring within the site context. However, the type of labor that each category of data addresses is very different. Technological analysis provides information on the techniques and stages of lithic reduction that were being performed on site. Information regarding procurement of lithic raw material is also recorded during this phase of analysis. Functional analysis addresses the types of activities for which lithic tools were used. These data provide a more holistic view of the chipped stone tradition and provide an interesting perspective on the day-to-day activities that were occurring on the site.

Technological Lithic Analysis

Lithics first will be classified by raw material type. There are three major chert-bearing rock units in New York. Devonian limestones contain the chert-bearing Onondaga and Helderberg limestones; and Ordovician shales contain the chert-bearing Normanskill shale (Cassedy 1993; Hammer 1976). The most extensive units are the Onondaga and Normanksill formations. While all three rock units converge in the Hudson Valley region, Normanskill is confined geographically to the Hudson Valley and eastward while Onondaga cherts outcrop in a broad band across southern New York from the western edge of the Hudson Valley to as far west as Buffalo (Cassedy 1993; Hammer 1976; Lavin and Prothero 1992). In the east the formation extends south into northern New Jersey, Pennsylvania and Tennessee (Hammer 1976:48). In central and western New York, the Onondaga formation is the major chert-bearing unit (Cassedy 1993: 40). Helderberg cherts outcrop primarily west of the Hudson River along the Allegheny Plateau between the Normanskill and Onondaga formations (Cassedy 1993).

In southern New York, Onondaga cherts are by far the most commonly encountered material on prehistoric sites. While primary quarry sources are not common, source areas have been identified for Onondaga chert in the Buffalo area, Normanskill chert in the Coxsackie-Catskill area (Lavin and Prothero 1992), and for Helderberg chert in eastern Green County, New York (Cobb and Webb 1994). It is likely that the majority of Onondaga chert found in archaeological contexts in the southern New York region were obtained from secondary sources (Lavin and Prothero 1992). Raw material types can aid in understanding possible lithic exchange networks and regional interaction.

A lithics catalog then will be generated for all chipped stone artifacts. The chipped stone artifacts will be described by size (>2", 1"-2", 0.5"-1", 0.25"-0.5"), subtype (non-cortical, bifacial edge, bipolar core, blade, etc.), and whether the flake has been subjected to heat. All flakes greater than 0.25" in diameter will be characterized by raw material, condition (broken, whole, fragment), utilization (defined as a flake in which one edge has at least 4 small

negative flake scars in a uniform pattern and/or polish), heat treatment (i.e., color change, or pot lid flakes), dorsal scars, and the presence or absence of cortex (Pope 1996; Sullivan and Rozen 1985). All flakes greater than 0.25" will be classified by the number of dorsal scars (0-2, >2) and cortex type (surficial smooth, surficial rough, marginal smooth, marginal rough, and no cortex). All flakes greater than 0.25" that are whole will have their platform cortex, dorsal scar index, platform type (cortex, flat, faceted, point, and collapsed) and platform angle (different degrees of obtuse, acute, and indeterminate) recorded. Flakes less than 0.16" will be described by subtype, counted, and weighed.

All chipped stone debitage will be categorized by specific characteristics. These include: cortical flake, non-cortical flake, bifacial edge flake, core flake, blade flake, non-cortical chunk, cortical chunk, shatter, flake core, core fragment, bifacial thinning flake, non-cortical flake fragment (distal, medial, proximal), bipolar core, bifacial core, blade core, and discoidal core. Debitage and debris are the by-products of chipped stone tool manufacture and maintenance. Debitage includes nine artifact types: cores and core fragments, cortical and non-cortical flakes, bifacial, bipolar, and core rejuvenation flakes, micro-flakes, and flake fragments. Cores, flakes, and chunk/shatter are considered to be indicators of chipped stone production. Cores are defined as culturally modified stone from which one or more flakes have been removed for further modification or use, but in which the piece itself is generally not intended for further use.

Functional Lithic Analysis

Lithic artifacts initially will be cataloged using a general classification system developed by Melody Pope (1996). The typology used for the analysis of chipped stone artifacts is modeled after the type-subtype classification system described by Odell (1982, 1996). The system separates the lithic artifacts into formal tool types (e.g., drill, gouge, graver, etc.), debitage/core, fire-cracked rock, groundstone, or unmodified rock. Formal tools (e.g., drills, gravers, hoes, projectile points, etc.) are then further described by specific characteristics (e.g., a projectile point may be catalogued as fluted, bifurcated based, or Brewerton, etc.). Expedient tools are an important aspect of a site's functional interpretation. All debitage will be examined macroscopically for use wear, and interpretations will follow based on the patterning evident.

Feature Analysis

To establish feature function a typological analysis will be conducted. Important variables to be used in this analysis are: size, shape, and feature contents. This analysis will involve an examination of existing feature typologies for the Eastern Woodlands (e.g., Stewart 1975, 1977; Stahl 1985; Ritchie and Funk 1973; Hatch and Stevenson 1980; Knapp 1996).

Large-volume (e.g. 10 liters, where possible) soil samples will be collected and floated from each feature on the site. The recoveries from each floated feature will be sent to consultants for archaeobotanical analysis and if larger than expected volumes are derived, these will be sampled during analysis. Faunal remains will be analyzed at Binghamton University. The data generated from feature and subsistence analyses will be used to address the research topics outlined in Section II.

Intra-site Analysis

Analysis of site function and structure within the project limits will examine spatial variability in artifact diversity and density across the site space. Units excavated on the site will be characterized by their individual artifact content. Content will be defined using the gross categories derived from the lithic reduction study and the low-power search for utilization. Previous studies have found that common clusters resulting from this form of analysis include groupings dominated by manufacturing by-products; those with a major component of expedient tools; those with an assemblage dominated by curated tools; as well as other less common combinations. These groupings, in turn, can be linked to feature locations and a preliminary model of the site's spatial structure emerges. This model will then be refined using the results of the technological and functional analysis of lithics to better define how the site space was divided and used. The data generated from these spatial analyses will be used to estimate site function and how this site fits within existing settlement models of prehistoric landuse within the Upper Delaware drainage.

Regional Analysis and Interpretation

Each of the data sets discussed above will be integrated to provide an interpretation of the prehistoric landuse patterns in the region surrounding the Delhi Holding Pond site. This synthesis will specifically address the function of this site within a larger settlement and subsistence system and the regional context of the site. Macrowear analysis and an examination of subsistence remains recovered from features are critical information for assessing site function and seasonality. These data will highlight the types of resources targeted and the range of processing activities occurring at the site. Data on lithic reduction/management systems in operation at the site will inform us on group mobility, which is relevant to any understanding of the site's role in a larger settlement system. Data on raw material types utilized at the site will contribute to our understanding of possible lithic exchange networks and regional integration of groups. These data will be used to refine and enhance the Delhi research context presented in Section II.

IV. COMMUNITY OUTREACH

After excavations and analyses are complete, PAF staff will consider potential public outreach projects, such as a pamphlet for local schools, an addition of the site results to PAF's web page, and/or a small exhibit for schools and local historical societies. Once the outreach potential of the data is known, a final decision will be made as to the most effective presentation and the target audience for that presentation.

In addition, once the quality of results is known, presentations will be made at professional and/or amateur meetings such as the annual NYSAA conference, ESAF, and MAAC. Depending on the results of analysis, findings and interpretations will be prepared for publication in scholarly journals and presentations at national meetings, such as SAA.

V. CURATION POLICY

The Public Archaeology Facility maintains professional collections curation facilities that comply with federal standards (36 CFR Part 79) and professional guidelines. All artifacts, notes and other documentation of the data recovery will be curated according to federal (36 CFR Part 79) and state guidelines (NYAC 1994) in the facilities of the Department of Anthropology at Binghamton University.

Use of our collections is restricted to qualified professionals and students for study, loan, public interpretation, exhibition and scientific analysis. All requests for collection use are considered by the Director of PAF. Short-term, supervised use of collection material is available in secure work areas. Long-term loans are time limited and made only to researchers associated with an institution (educational or museum) who can demonstrate that a safe and secure environment can be maintained for the duration of the loan.

The proper curation of collections at the university maintains this data base in the public domain and guarantees that this information is available for serious researchers.

VI. State Historic Preservation Office/ New York State Office of parks, Recreation and historic Preservation Human Remains Discovery Protocol

In the event that human remains are encountered during construction or archaeological investigations, the State historic Preservation office (SHPO) requires that the following protocol is implemented:

- At all times human remains must be treated with the utmost dignity and respect. Should human remains be encountered, work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.

- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.

- The Director of PAF, county coroner and local law enforcement as well as the SHPO and the involved agency will be notified immediately. The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archaeological. If the remains are archaeological in nature, a bioarchaeologist will confirm the identification as human.

- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. The involved agency will consult SHPO and appropriate native American groups to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance.

- If human remains are determined to be Euro-American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Consultation with SHPO and other appropriate parties will be required to determine a plan of action.

VII. REFERENCES CITED

Carroll, Lynda, Samuel Kudrle, and Nina M. Versaggi
2007 *Phase 3 Data Recovery, Mt. Laurel Gardens Site (SUBi-2523),* Town of Middletown, Delaware County, New York. Prepared by the Public Archaeology Facility, Binghamton University, prepared for Two Plus Four Construction Co., Inc., Syracuse, NY.

Cassedy, D.
1993 *Native American Interaction Patterns and Lithic Acquisition Strategies in Eastern New York and Southern New England.* Ph.D. Dissertation, Department of Anthropology, Binghamton University, Binghamton, NY.

Cassell, Mark
1988 *Report of Field Reconnaissance #29, M-ARK Project, Inc. Town of Middletown, Delaware County, New York.* Report prepared for the M-ARK Project, Inc., and the New York State Museum. Prepared by the Public Archaeology Facility, Binghamton, New York.

Cobb, C. and P. Webb
1994 A Source Area Perspective on Expedient and Formal Core Technologies. In *North American Archaeologist,* edited by Roger Moeller. 15 (3): 197-219.

Custer, Jay F.
1996 *Prehistoric Cultures of Eastern Pennsylvania.* The Pennsylvania Historical and Museum Commission, Harrisburg.

Funk, Robert E.
1993 *Archaeological Investigations in the Upper Susquehanna Valley, New York State.* Persimmon Press: Buffalo, New York (Vol. 1-2).

Gette, Christopher
2000 *Collectors, Willard Yager, and the Susquehanna River: A Provenience Analysis of the Upper Susquehanna Collection.* Unpublished Masters Thesis, Binghamton University, Binghamton, New York.

Grills, Brian R.
2006 *Cultural Resource Management Report. Phase 1 Cultural Resource Survey, Bloomville Mine Project. Town of Stamford, Delaware County, New York (MCD 02517), 05PR05852.* Public Archaeology Facility, Binghamton University, Binghamton, NY.

Grills, Brian and Nina M. Versaggi
2007 Limited Phase 3 Data Recovery, Bloomville Beardsley Site (SUBi-2605). Bloomville Gravel Project, Town of Stamford, Delaware County, New York (05PR05852). Prepared by the Public Archaeology Facility, Binghamton University.

Hammer, J.
1976 Identification and Distribution of Some Lithic Raw Materials from Western New York State. In *Man in the Northeast* 11:39-62.

Hartgen archaeological Associates, Inc.
1988 *Peake Historic and Prehistoric Site, 12-68-7, Marcy South 345 kV Transmission Line, Town of Delhi, Delaware Country, New York.* On file at OPRHP, Waterford, New York.

2003 *Phase III Archaeological Site Mitigation - Truesdell Precontact Site.* OGS Allen Residential Wastewater Treatment Facility, Towns of Kortright and Stamford, Delaware County, NY. On file at OPRHP, Waterford, New York.

Hatch, James A. and Christopher M. Stevenson
1980 A Functional Analysis of Fisher Farm Features. In *The Fisher Farm Site: A Late Woodland Hamlet in Context. The Archaeology of Central Pennsylvania,* Volume 1, edited by James W. Hatch, pp. 140-170. The Pennsylvania State University, Department of Anthropology Occasional Papers No. 12. University Park, Pennsylvania.

Hohman, Christopher and Nina M. Versaggi
2003 *Phase 2 Site Examinations, Herrick Hollow II, Herrick Hollow III, Herrick Hollow IV, Herrick Hollow V, Herrick Hollow VI, Herrick Hollow VII, Richardson Hill Road Landfill Superfund Site, Town of Masonville, Delaware County, New York.* Public Archaeology Facility, Binghamton University, Binghamton, New York.
2005 *Data Recovery of Herrick Hollow II, Herrick Hollow III, Herrick Hollow IV, Herrick Hollow V, Herrick Hollow VI, Herrick Hollow VII, Richardson Hill Road Landfill Superfund Site, Town of Masonville, Delaware County, New York.* Public Archaeology Facility, Binghamton University, Binghamton, New York.

Kinsey, W. F. III
1972 *Archaeology in the Upper Delaware Valley.* Anthropological Series, Number 2. Commonwealth of Pennsylvania, The Pennsylvania Historical and Museum Commission, Harrisburg, PA.

Knapp, Timothy
1996 *Stage 3 Data Recovery Thomas/Luckey Site (SUBi-888), Town of Ashland, Chemung County, New York.* Public Archaeology Facility, Binghamton University, Binghamton, New York.

2000 *Stage 1B Addendum* Reconnaissance, *Deposit Water/Sewer Project, Town of Deposit, Delaware County, New York and Stage II Site Examination of the Deposit Airport III Site (SUBi-2050), Town of Deposit, Delaware County, New York.* Public Archaeology Facility, Binghamton University, Binghamton, New York.

Knapp, Timothy D., Brian Grills, Michael E. Jacobson, Samuel M. Kudrle, Michael Rudler, Daniel Seib and Andrea Zlothucha Kozub

2006 *Cultural Resource Management Report, 2003-2004 Highway Program, Addendum Cultural Reconnaissance Survey and Site Examinations. PIN 9066.91.121, NY Route 17 Access, Towns of Deposit and Hancock, Delaware County, New York.* Prepared for New York State Museum and State Education Department.

Knapp, Timothy D. and Nina M. Versaggi
2002 *Data Recovery Investigations of the Deposit Airport I Site (SUBi-2048)*, Deposit Water/Sewer Project, Town of Deposit, Delaware County, New York (MCD 02506, 99PR4258). Prepared for C&S Engineers, Inc. Syracuse, NY. Prepared by the Public Archaeology Facility, Binghamton University, New York.

Kudrle, Sam
2005 *Phase 3 Data Recovery of the Sidney Hanger Site (SUBi-2073) Sidney Airport Project, Town of Sidney, Delaware County, New York.* Prepared by Public Archaeology Facility, Binghamton University, Binghamton, New York.

2007a *Phase 1 Reconnaissance Survey, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York.* Prepared by Public Archaeology Facility, Binghamton University, Binghamton, New York.

2007b *Phase 2 Site Examination, SUNY Delhi Holding Pond Project, Town of Delhi, Delaware County, New York.* Prepared by Public Archaeology Facility, Binghamton University, Binghamton, New York

Lavin, L. and D. R. Prothero
1992 Prehistoric Procurement of Secondary Sources: The Case for Characterization. *North American Archaeologists* 13(2):97-113.

Levandowski, James and Nina M. Versaggi
2003 *Cultural Resource Management Report, Phase 2 Site Examination, Rockefeller Gravel Mine Project, Town of Delhi, Delaware County, New York.* Prepared by Public Archaeology Facility, Binghamton University, Binghamton, New York.

Miroff, Laurie
2000 *Stage 1 Archaeological Reconnaissance, Sidney Airport Project, Towns of Bainbridge and Sidney, Chenango and Delaware Counties, New York, MCDs 01702 and 02516.* Prepared by Public Archaeology Facility, Binghamton University, Binghamton, New York.
2002 Upland Land Use Patterns During the Early Late Prehistoric (A.D. 700-1300). In *Northeast Subsistence-Settlement Change A.D.* 700-1300. John P. Hart and Christina B. Rieth (eds.), New York State Museum Bulletin 496, New York State Museum, Albany. pp. 193-208.

Miroff, Laurie and Sam Kudrle
2003 *Data Recovery of the Sidney AWOS Site, Sidney Airport Project, Towns of Bainbridge and Sidney, Chenango and Delaware Counties, New York.* Public Archaeology Facility, Binghamton University, Binghamton, NY.

Odell, George H.
1982 *The Typological System Employed to Process Lithic Artifacts from Sites on the FAP408 Corridor.* Contract Archaeology Program, Center for American Archaeology, Reports of Investigations, no. 128.

1996 *Stone Tools: Theoretical Insights into Human Prehistory*, edited by G. H. Odell. Plenum Books, New York.

Pope, Melody
1996 A Research Context for Micro-wear Analysis on Upland Sites in the Susquehanna Valley. Manuscript on file in the Public Archaeology Facility, Binghamton University.

Rafferty, Sean, Richard Kastl, Leith Smith and Jessie Ravage
1996 *PIN 9095.54.121, Site Examinations, NY 10, Towns of Kortright and Stamford, Delaware County, New York.* Public Archaeology Facility, Binghamton University, Binghamton, New York.

Ritchie, W. A.
1980 *The Archaeology of New York State.* Harbor Hills Books: Harrison, New York.

Ritchie, W. A. and R. Funk
1973 *Aboriginal Settlement Patterns in the Northeast.* Memoir 20. New York State Museum and Science Service, State Education Department, Albany, New York.

Rudler Michael
2007 *Phase 2 Site Examination, Clark-Delhi 1 Site (SUBi-2670), SUNY-Delhi Honors Student Housing Project, Town of Delhi, Delaware County, NY.* Prepared by the Public Archaeology Facility, Binghamton University for the Clark Companies, Delhi, NY.

Stahl, Ann
1985 The Dohack Site, American Bottom Archaeology, FAI-270 Site Reports, Volume 12. University of Illinois Press, Urbana.

Stewart, Marilyn
1975 *A Typology of Pits on the Engelbert Site.* Unpublished Ph.D. dissertation, Department of Anthropology, SUNY-Binghamton, New York.

1977 Pits in the Northeast: A Typological Analysis. In Current Perspectives in Northeastern Archaeology, edited by Robert E. Funk and Charles F. Hayes III, pp. 149-164. Research and Transactions of the New York State Archaeological Association 17(1). Rochester, New York.

Sullivan, A. P. and K. C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50:755-79.

Versaggi, Nina M.
1999 Regional Diversity within the Early Woodland of the Northeast. *Northeast Anthropology*, Number 57 (Spring): 45-56.

2007 Delhi Region Context Statement, Delaware County, NY. In *Phase 2 Site Examination, Clark-Delhi 1 Site (SUBi-2670), SUNY-Delhi Honors Student Housing Project, Town of Delhi, Delaware County, NY.* Prepared by Michael Rudler, Public Archaeology Facility, Binghamton University for the Clark Companies, Delhi, NY.

Versaggi, Nina M. and Christopher Hohman
2007 Small Lithic Sites: Linking Significance with Context. In *Current Approaches to the Analysis and Interpretation of Small Lithic Sites in the Northeast.* New York State Museum Bulletin.

Versaggi, Nina M. and Timothy D. Knapp
2000 Steatite, Interaction, and Persistence: The Transitional Period of New York's Upper Susquehanna. Paper presented at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia, Pennsylvania.