

Nc

07-720-GA-BTA

FILE



UTILITY TECHNOLOGIES INTERNATIONAL CORPORATION
2685 PLAIN CITY-GEORGESVILLE ROAD
WEST JEFFERSON, OHIO 43162
614-879-7316
614-879-6719 FAX

June 19, 2007

Mr. Jon Pawley, Siting Specialist
Public Utilities Commission of Ohio
Utilities Department
Facilities Siting & Environmental Analysis Division
180 East Broad Street
Columbus, OH 43215

PUCO

2007 JUN 19 PM 1:23

RECEIVED-DOCKETING DIV

Re: Application to Amend
DEL-MAR Pipeline – Zaremba Relocation
City of Delaware Ohio
Original Case Number 04-1542-GA-BTX

Dear Mr. Pawley,

Utility Technologies International Corporation (UTI), on behalf of DEL-MAR Pipeline Company Inc., is submitting the enclosed application to amend its original Certificate of Environmental Compatibility and Public Need in order to relocate approximately 5,800 feet of its twelve-inch pipeline located in the City of Delaware, Delaware County, Ohio. This relocation has been requested by the Zaremba Group in order to facilitate the construction of a multi-use development along US36/SR37 at Glenn Rd.

Construction of the development project is scheduled to begin in September of 2007. It is anticipated the relocation of the pipeline could begin September 1, 2007 with completion by October 7, 2007.

I appreciate your assistance with this project. If you need additional information please contact me at 614-879-7316.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Lindel R. Jackson', is written over a horizontal line.

Lindel R. Jackson
Manager, Project Engineering

Enclosure

copy: Mr. David Pemberton Jr. (DEL-MAR)
Mr. Hoby Grisct (UTI)

This is to certify that the images appearing are an
accurate and complete reproduction of a case file
document delivered in the regular course of business.
Technician 2 Date Processed 6-19-07

APPLICATION TO AMEND
The
OHIO POWER SITING BOARD
CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED
For
DEL-MAR PIPELINE COMPANY LLC

RECEIVED-DOCKETING DIV
2007 JUN 19 PM 1:23
PUCO

ZAREMBA RELOCATION
CITY OF DELAWARE, OHIO

Original Case Number 04-1542-GA-BTX

Prepared by

UTILITY TECHNOLOGIES INTERNATIONAL CORPORATION



**Application to Amend
Certificate of Environmental Compatibility and Public Need
DEL-MAR Pipeline Company LLC Original Case No. 04-1542-GA-BTX**

4906-11-01 Letter of notification requirements.

(A) General information containing the following information:

(1) The name of the project and applicant's reference number, if any, names and reference number(s) of resulting circuits and a brief description of the project, and why the project meets the requirements for a letter of notification.

On May 23, 2005 The Ohio Power Siting Board (OPSB) approved the application filed by DEL-MAR Pipeline Company (Del-Mar) for the construction of the twelve-inch pipeline in Delaware and Marion Counties. This pipeline was completed on September 28, 2005 and placed in service on September 29, 2005. This pipeline has been in operation continuously since that time.

The Zaremba Group (Zaremba), a Commercial Developer, with offices at 14600 Detroit Avenue, Cleveland Ohio 44107 has requested Suburban Natural Gas Company, operator of the pipeline owned by DEL-MAR to relocate approximately 4,300 feet of pipe at the south terminus of the pipeline, near the intersection of US Route 36 / State Route 37 and Glenn Rd. Zaremba is planning a multi use commercial and residential development on over 200 acres. This relocation will require the installation of approximately 5,800 feet of pipe and will parallel existing highway and road rights of way. In addition, the adjacent 6 inch pipeline will also be relocated within the same right of way. This project is designated as the Zaremba Relocation.

DEL-MAR requests an amendment of its original Certificate of Environmental Compatibility and Public Need (04-1542-GA-BTX), in order to perform the relocation.

(2) If the proposed letter of notification project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

This project is necessary for the continued economic development of the area. The project will be funded in its entirety by Zaremba. The project will involve the installation of approximately 5,800 feet of 12 inch, .281 wall, X60 ERW pipe along with the relocation of the existing 6 inch valve and tie-in piping to Suburban Natural gas Company's 6 inch pipeline. Zaremba will provide an easement adjacent to US36/SR37. There will be two property owners providing easements along Glenn Rd. One easement will be on property owned by Mr. Wendell Nutter, owner of Nutter Farm Inc., through a

separate agreement negotiated and mutually agreed to by Mr. Nutter and Zaremba. The second easement is on the remainder of the 200 plus acres optioned by Zaremba. This easement is along the southerly portion of Glenn Road at the intersection with the railroad track and is owned by the Georgia Ann Manos Trust. This tract will be purchased by Zaremba in the future as the housing project develops. The Manos Trust is in support of this project.

The pipeline will be installed by the open cut method for the majority of its length. The proposed pipeline route also crosses Mill Creek. This section will be directionally drilled to minimize impact to the creek.

The abandoned pipe will be excavated and removed from the property. The pipe originally installed by directional drilling beneath Mill Creek and an unnamed tributary will be pulled from those areas without disturbance. In the event this pipe cannot be extracted from these areas, the pipe will be excavated to a location adjacent to and outside of the banks of the waterway, capped by welding and abandoned in place.

Figure 1 shows the existing and proposed routes.

- (3) The location of the project in relation to existing or proposed lines and stations shown on the maps and overlays provided to the public utilities commission of Ohio in the applicant's most recent long-term forecast report.**

Not applicable

- (4) The alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to impacts associated with socioeconomic, natural environment, construction, or engineering aspects of the project.**

Preferred Route

The preferred route is located on the south side of US36/SR37 parallel and adjacent to an existing Consolidated Electric easement which is immediately adjacent to the road right of way. The pipeline will follow the Consolidated Electric easement in an easterly direction along US36/SR37 then turn south and continue to follow the electric easement until that easement intersects with the proposed Glenn Rd. easement. From that point the proposed route will follow parallel and adjacent to the proposed Glenn Rd easement until it reaches the end of the project at the railroad crossing. It is proposed to end the twelve-inch relocation at the intersection of Glenn Rd and the railroad right of way. The tie-in and valve setting will be relocated to this area. This will provide for a more preferred alignment for the future extension of the twelve inch to the south and across the railroad right of way.

It should be noted that the City of Delaware has proposed plans for the alignment and widening of Glenn Rd. The pipeline corridor was selected so that it would not conflict with the road widening project. The total length of this preferred route is approximately 5,800 feet.

Alternative Route

The alternative route would be to follow the western property boundary then turn east along the railroad right of way. This proposed route traverses extensive wetland area and a buffer zone for a closed landfill area. This route would also place the pipeline in the back yards of several of the proposed new homes.

The preferred route does not contain any wetland areas and places the pipeline along existing utility corridors and road rights of way. The preferred route provides the least impact to future property owners and offers the least environmental impact.

The preferred route and proposed right of way is shown in Figure 2.

(5) The anticipated construction schedule and proposed in-service date of project.

The developer would like to begin site work in September. In order to meet this timeline it is anticipated that OPSB approval would be granted in August and construction of the pipeline could begin on September 3, 2007. The planned in-service date is October 12, 2007.

(6) An area map of not less than 1:24,000 scale clearly depicting the facility's location with clearly marked streets, roads, and highways, and clearly written instructions for locating and viewing the facility.

The map included in Figure 1 shows the overall location of the proposed project on a 1:24,000 United States Geological Survey (USGS), Delaware quadrangle map. The project extends along the south side of US36/SR37 from just east of the intersection of SR 521 easterly to Glenn Road then south along the west side of Glenn Rd to the railroad tracks.

(B) Technical features of the project. This description shall contain the following information:

(1) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

This project will not require any above ground structures. There will be a buried valve with ground level access on the south end of the project. This valve will provide the inter-connection between the twelve-inch pipeline and the six-inch pipeline.

The right of way width will be 40 feet along US36/SR37 and 35 feet in width for the entire length along Glenn Rd.

The pipeline will be constructed and tested to maintain the original Maximum Allowable Operating Pressure (MAOP) of 500 pounds per square inch (PSIG).

(2) For electric power transmission lines, the production of electric and magnetic fields during the operation of the proposed electric power transmission line. The discussion shall include:

(a) Calculated electric and magnetic field strength levels at one meter above ground under the lowest conductors and at the edge of the right-of-way for:

(i) Normal maximum loading.

(ii) Emergency line loading.

(iii) Winter normal conductor rating.

(b) A discussion of the company's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Not applicable for this project.

(3) The estimated cost of the project by federal energy regulatory commission account, unless the applicant is not an electric light company, a gas company or a natural gas company as defined in Chapter 4905 of the Revised Code (in which case, the applicant shall file the capital costs classified in the accounting format ordinarily used by the applicant in its normal course of business).

All costs incurred for this project will be the responsibility of the developer.

<u>FERC Account No.</u>	<u>Title</u>	<u>Amount</u>
374	Land and Land Rights	Provided by Developer
374	Mains	\$836,800

(C) Socioeconomic data. Describe the social and ecological impacts of the project. This description shall contain the following information:

- (1) A brief, general description of land use within the vicinity of the proposed project, including: (a) a list of municipalities, townships, and counties affected; and (b) estimates of population density adjacent to rights-of-way within the study corridor (the U.S. census information may be used to meet this requirement).**

The current land use along the proposed route is primarily agricultural. There is an abandoned homestead along with one additional home that has been purchased by the developer and will be removed for the commercial development. The home is currently occupied and will be vacated by the time the project begins.

The entire length along US36/SR37 and south along Glenn Road for approximately 1,260 feet is planned commercial. The next approximately 1,200 feet is a separate tract owned by Nutter Farms that will remain farm land until such time it is developed. The remaining approximately 700 feet along Glenn Road is planned as a future phase of the residential development by Zaremba.

This project affects the City of Delaware and County of Delaware (formerly Brown Twp).

- (2) The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of notification within the proposed electric power transmission line right-of-way, or within the proposed electric power transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.**

Not applicable for this project.

- (3) A description of the applicant's investigation (concerning the presence or absence of significant archeological or cultural resources that may be located within the area likely to be disturbed by the project), a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

Phase I cultural resource management surveys were performed on the area proposed for the pipeline relocation. The northwestern and southeastern portions of the proposed pipeline corridor were included in Phase I Archaeological Survey on a 225 acre development by Stephen Biehl of Ohio Valley Archaeological issued on July 8, 2005. A Phase I Cultural Resource Management Survey was performed by Weller and Associates on the balance of the corridor with report issued May 11, 2007. These two studies indicated isolated and low-density prehistoric lithic scatter and historic period scatter within the project corridor. These sites were not considered to be eligible for the National Register of Historic Places (NRHP) and no further assessment was recommended for the project.

Williams Creek Consulting provided a copy of the Weller and Associates report with information regarding the proposed pipeline project to the Ohio Historic Preservation Office and requested their review and concurrence with the findings of the report. The Ohio Historic Preservation Office has not responded to our request at the writing of this report. We will forward their response upon receipt. A copy of the request letter is included in this submittal.

Copies of the reports are included in this submittal as Appendix A.

- (4) Documentation that the chief executive officer of each municipal corporation and county, and the head of each public agency charged with planning land use in the area in which any portion of the facility is to be located have been notified of the project and have been provided a copy of the letter of notification. The applicant shall describe the company's public information program used in the siting of the proposed facility. The information submitted shall include either a copy of the material distributed to the public or a copy of the agenda and summary of the meeting(s) held by the applicant.**

A copy of the letter of notification has been sent to the following public officials.

William Ferrigno, City Engineer
City of Delaware
20 E. William St.
Delaware OH 43015

Chris E. Bauserman
Delaware County Engineer
50 Channing St.
Delaware, OH 43015

R. Thomas Homan, City Manager
City of Delaware
1 S. Sandusky St.
Delaware OH

Larry Ufferman, Director
Delaware County Soil and Water
Conservation
557A Sunbury Rd.
Sunbury, OH 43074

Scott Sanders, Executive Director
Delaware Regional County Planning
Commission
50 Channing St.
Delaware, OH 43015

Delaware County Board of Commissioners
101 N. Sandusky St.
Delaware, OH 43015

- (5) A brief description of any current or pending litigation involving the project known to the applicant at the time of the letter of notification.**

To the best of our knowledge there is no current or pending litigation involving this project.

- (6) A listing of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.**

The following local, state and federal government agencies have permit, special notification and/or prior authorization requirements that must be met in connection with the construction of this project.

- City Of Delaware
- Delaware County
- Public Utilities Commission of Ohio
- Ohio Power Siting Board
- Ohio Environmental Protection Agency
- Ohio Historic Preservation Office

(D) Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:

- (1) A description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the area likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

On May 9, 2007 Williams Creek Consulting requested information from the US Fish and Wildlife Service (USFWS) regarding Endangered and threatened species within the project area. The USFWS responded to our request on May 29, 2007. A copy of their response is included in Appendix B.

Williams Creek Consulting reviewed the USFWS list of threatened and endangered species for Delaware County. The USFWS listed four endangered or threatened species within Delaware County: Indiana Bat (*Myotis sodalist*), Bald Eagle (*Haliaeetus laucocephalus*), Clubshell (*Pleurobema clava*), and Rayed Bean (*Villosa fabalis*). Favorable habitat for the Indiana Bat is trees with exfoliating barks, snags and trees with cavities and dead limbs. Favorable habitat for the Bald Eagle is forests near large bodies of water. Favorable habitat for the Clubshell and Rayed Bean mussel is rivers

with sand and gravel substrates. Favorable habitat for the Bald Eagle, Clubshell and Rayed Bean was not present within the project corridor. Four, mature trees that exhibited potential bat habitat in the form of dead trees, dead branches or cavities were located within the 40 foot pipeline easement. These trees will be marked in the field and it is our understanding that the pipeline alignment within the corridor can be adjusted to avoid impacts to these trees.

A copy of the agency correspondence is included in the Environmental Review letter report issued by Williams Creek Consulting on May 24, 2007 (Appendix B).

- (2) A description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

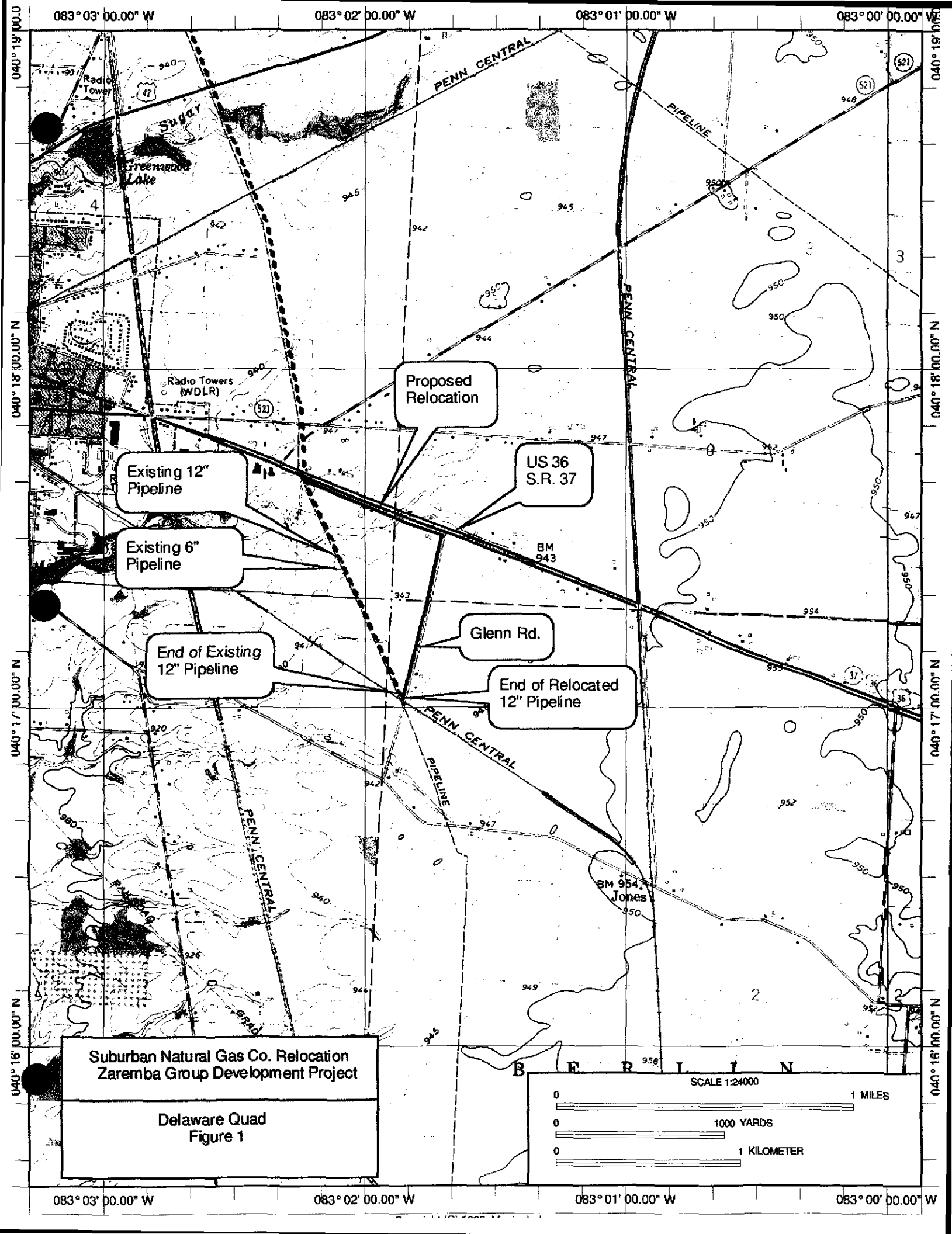
Williams Creek Consulting conducted an environmental review on behalf of DEL-MAR. As part of the environmental review, information was requested from the Ohio Department of Natural Resources (ODNR), Division of Natural Areas and Preserves regarding rare and endangered species, state nature preserves, scenic rivers, unique ecological sites, geologic features or animal assemblages within a one-half mile radius of the site. The ODNR responded to our request on May 10, 2007 and indicated they had no record of rare or endangered species or other unique features within a one-half mile radius of the site. A copy of their correspondence is provided in the environmental review letter report

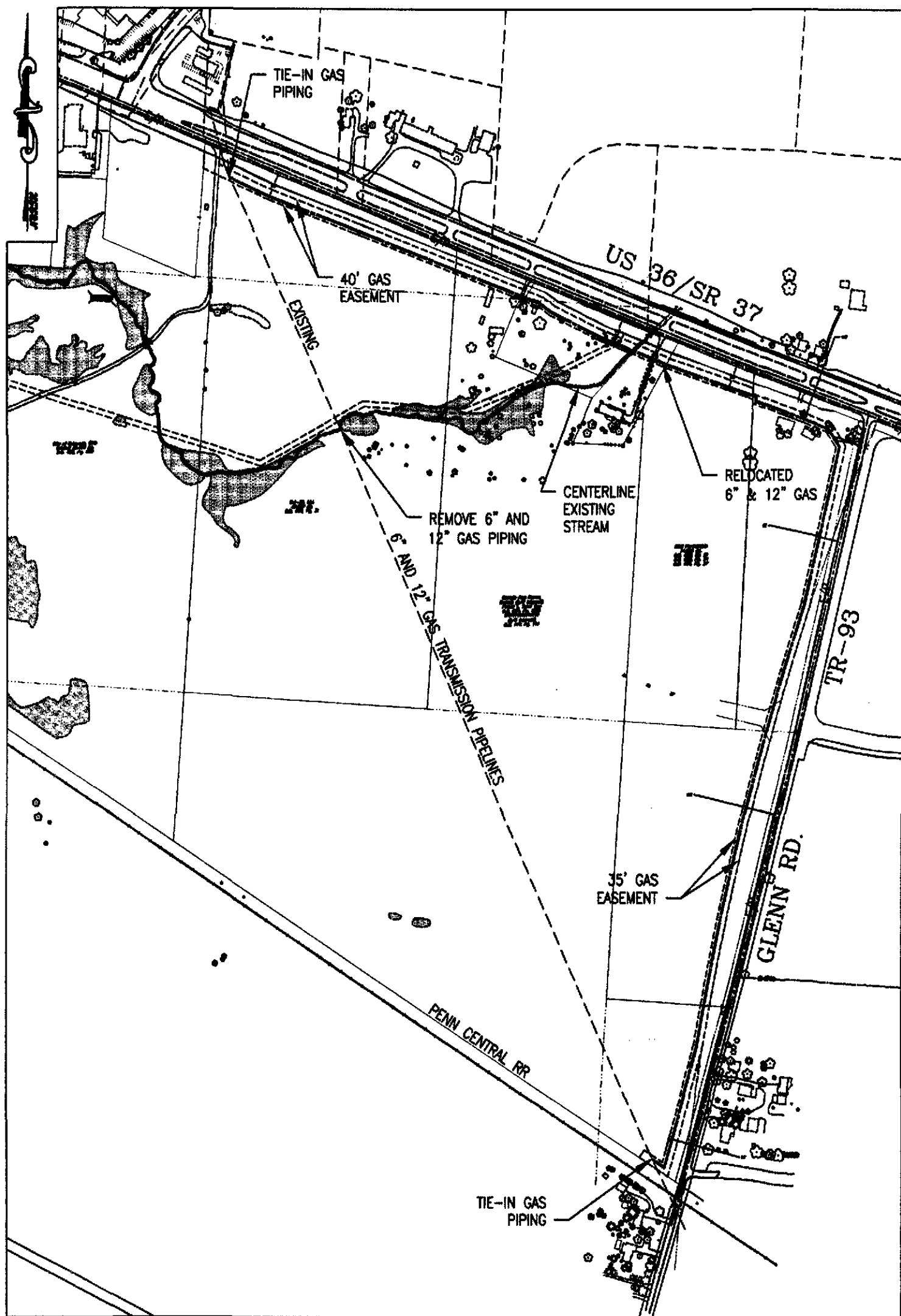
No floodplains or floodways were mapped within the project corridor. No wetland areas were located within the project corridor. Mill Run, a tributary to the Olentangy River, is located within the project corridor. Direct impacts to Mill Run and the associated riparian corridor will be minimized by directional drilling under Mill Run.

A copy of the letter report issued on May 24, 2007 is included in this submittal (Appendix B).

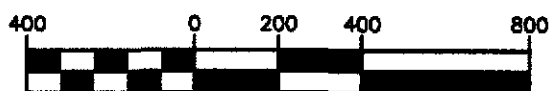
- (3) Any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.**

To the best of our knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.





GRAPHIC SCALE



(IN FEET)
1 inch = 400 ft.



Utility Technologies International Corporation
SUBURBAN NATURAL GAS PIPELINE
OPSB APPLICATION FOR RELOCATION
EXISTING 6", 12" GAS PIPELINES
DELAWARE, OHIO

Figure 2

DRAWN BY JED

DATE 6/16/07

DWG NO

APPENDIX A
PHASE I
CULTURAL RESOURCE MANAGEMENT SURVEY



ECOLOGICAL CONSULTING ENGINEERS

May 24, 2007

Julie A. Quinlan
Program Reviews Manager
Ohio Historic Preservation Office
567 East Hudson Street
Columbus, Ohio 43211-1030

Re: Cultural Resource Review Request
Springfield, Ohio

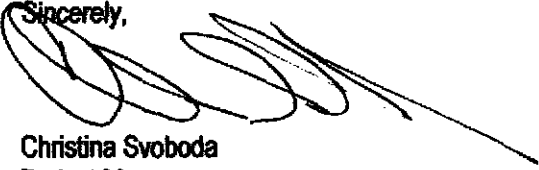
Dear Ms. Quinlan

Williams Creek Consulting is submitting the enclosed cultural resources report that was completed by Weller and Associates Inc. for a proposed natural gas pipeline relocation project at S.R. 36 and Glenn Road in Delaware, Ohio. The project involves relocation of approximately 1-mile of natural gas pipeline in a 35-40 foot L-shaped corridor along S.R. 36 and Glenn Road. The Phase I Cultural Resource Evaluation was performed as support documentation for a Letter of Notification to the Ohio Power Siting Board. The Weller and Associates report covers portions of the 1-mile corridor not previously assessed.

The Phase I survey detected no archeological properties that are eligible for nomination to the National Register of Historic Places and indicated that a finding of "no historic properties affected" is deemed appropriate for the project. WCC is seeking your review of this report and concurrence with these findings.

Thank you for your assistance with this request. If you have any questions or need additional information, please contact our office.

Sincerely,



Christina Svoboda
Project Manager

cc: Lindy Jackson -UTI-
Enclosure: Cultural Resources Report

247 E. Livingston Ave
Suite B

Columbus, Ohio 43215

614.224.4473 phone

614.224.4485 fax

info@williamscreek.net

www.williamscreek.net

Weller & Associates, Inc.

A Phase I Cultural Resource Management Survey for a 732 m (2,400 feet) Long Natural Gas Line Relocation in Brown and Berlin Townships, Delaware County, Ohio

Ryan Weller

May 11, 2007

1395 West Fifth Ave.
Columbus, OH 43212
Phone: 614.485.9435 Fax: 614.485.9439
Email: rweller@columbus.rr.com

**A Phase I Cultural Resource Management Survey for a 732 m
(2,400 feet) Long Natural Gas Line Relocation in Brown and
Berlin Townships, Delaware County, Ohio**

By

Ryan Weller

Submitted By:

**Ryan Weller, P.L.
Weller & Associates, Inc.
1395 West Fifth Ave.
Columbus, OH 43212
Phone: 614.485. 9435 Fax: 614.485. 9439
rweller@columbus.rr.com**

Prepared for:

**Williams Creek Consulting
247 E. Livingston Avenue, Suite B
Columbus OH 43215
Phone: 614-224-4473**

Lead Agency:

Ohio Power Citing Board

May 11, 2007

Copyright © 2007 by Weller & Associates, Inc. All rights reserved.

W-432

i. Abstract

In May of 2007, a Phase I cultural resources management (CRM) survey was completed for a 732 m (2,400 feet) natural gas line relocation in Berlin and Brown Townships, Delaware County, Ohio. The lead federal agency for this undertaking is the Ohio Power Citing Board. These investigations involved surface collection, visual inspection, shovel probe excavation and shovel test unit excavation. The survey was completed to satisfy Section 106 requirements per the National Historic Preservation Act of 1966 (as amended) and to identify any sites or properties and to evaluate them for the National Register of Historic Places (NRHP). These investigations identified two previously unrecorded archaeological sites including 33DL2305 and 33DL2306. There are no buildings involved in this project.

Plans are to relocate a gas pipeline that will be entirely underground. These investigations were limited to the construction easement that is about 12 m (40 feet) wide. It is "L" shaped and mirrors two roads including State Route 36 and Glenn Road. The majority is contained in open and tilled agricultural field. This pertains to furrow plowing of most of the southern leg and a small part of the westernmost segment. This is an area that is situated in a farmland setting that is between the urban sprawl of Delaware and the interchange developments near Interstate 71. The area is largely undeveloped, but the surrounding terrain is slated for construction. Previous CRM investigations were conducted in the vicinity that identified archaeological sites.

The literature review indicated that there were no previously recorded archaeological sites in the project corridor. Previous investigations had been completed in the surrounding and abutting terrain (Biehl 2005; Pecora 2005; Pecora and Burks 2006; Stillwell 2001). Two surveys (Biehl 2005; Pecora and Burks 2006) identified 17 archaeological sites (i.e., 33DL1826-1842) and recommended assessment at 33DL1831 and 33DL1837. These are prehistoric period lithic scatters that date from the Late Archaic to Early Woodland periods. Both are located on isolated slight upland rises, but neither of these sites is on landforms that abut the current project corridor.

A review of cartographic maps indicated a residence/farmstead near the intersection of Glenn Road and SR 36. The project corridor skirts buildings and ruins that are affiliated with this and is largely maintained in a previously altered easement along the highway segment. Scattered historic period remains were recovered and noted in the open field that is to the south of a former yard.

There were two archaeological sites identified in the project corridor. This includes an isolated prehistoric artifact (33DL2305) and a historic period scatter (33DL2306). These sites are not eligible for the National Register of Historic Places and are not recommended for additional work. A finding of 'no historic properties affected' is deemed appropriate for this undertaking. No further cultural resource management work is deemed necessary.

List of Tables and Figures

List of Tables

1. Previously Recorded Archeological Sites Located in the 2-km Study Radius.
2. Artifact Inventory for site 33DL2306.

List of Figures

1. Political Map of Ohio showing the approximate location of the project corridor.
2. Portion of the USGS 1960 (*P.R. 1973*) *Delaware, Ohio Quadrangle 7.5 Minute Series (Topographic)* map indicating the location of the project corridor, previously recorded resources and previous surveys in the vicinity.
3. Portions of the Brown and Berlin Township maps from the *Atlas of Delaware County, Ohio* (Beers 1866) indicating the approximate location of the project corridor.
4. Portions of the Brown and Berlin Township maps from the *Illustrated Historical Atlas of Delaware County, Ohio* (Everts 1875) indicating the approximate location of the project corridor.
5. Portion of the 1903 *Delaware, Ohio Quadrangle 15 Minute Series (Topographic)* map indicating the approximate location of the project corridor.
6. Fieldwork schematic depicting datum location, testing strategy, photographic orientations and the location of site 33DL2305-2306.
7. View of the disturbed northern portion of the project corridor along State Route 36.
8. Another view of the northern portion of the project corridor.
9. A view of the disturbed conditions evident on the surface within the northern aspect of the corridor.
10. A typical disturbed shovel probe excavated within the corridor.
11. View of the surface collected portion of the project corridor along Glenn Road.
12. Typical surface visibility encountered at the time of survey.
13. Some historic artifacts recovered from site 33DL2306.

Table of Contents

i. Abstract.....	i
ii. List of Tables and Figures.....	ii
Introduction.....	1
Environmental Setting.....	1
Cultural Setting.....	4
Research Design.....	12
Literature Review.....	14
Fieldwork Results.....	16
APE Definition and NRHP Determination.....	19
Recommendations.....	19
References Cited.....	20
Figures.....	27

Appendix A:

Ohio Archaeological Inventory (OAI) forms for sites 33DL2305-2306.

Introduction

In May of 2007, Weller & Associates, Inc. (Weller) conducted Phase I Cultural Resources Management Survey for a 732 m (2,400 feet) Long Natural Gas Line Relocation in Brown and Berlin Townships, Delaware County, Ohio (Figures 1-2). The work was completed for Williams Creek Consulting. A survey was deemed necessary to identify any sites or properties and to evaluate them for the National Register of Historic Places (NRHP) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]). The lead federal agency is the Ohio Power Siting Board. This survey was completed in accordance with the *Archaeology Guidelines* established by the Ohio Historic Preservation Office [OHPO] (1994).

The project plans involve the relocation of an existing gas line. This underground utility will have a segment that extends along the south side of SR 36 and the western side of Glenn Road. The project corridor is 12 m wide and about 732 m long. The line is being relocated to compensate for the proposed Glenn Road widening and realignment.

The survey for this project was conducted on May 7, 2007. Chad Porter completed the literature review on May 10, 2007. Brett Carmichael, Chad Porter, Ryan Weller and Justin Zink completed the fieldwork. Ryan Weller served as the principal investigator and the project manager.

Environmental Setting

Climate

Delaware County, like all of Ohio, has a continental climate with hot and humid summers and cold winters. Delaware accumulates about 91 cm (36 in) of precipitation yearly. The average monthly precipitation is 7.6 cm (3 in). February and October are the driest months because they only get an average of 5 cm (2 in), while July is the wettest month as it gets 12.7 cm (5 in) [Putnam et. al. 1998; United States Department of Agriculture, Soil Conservation Service (USDA, SCS) 2001].

Physiography, Relief, and Drainage

Delaware County is almost exclusively located within the Central Ohio Clayey Till Plains region of Ohio (Brockman 1998). This region is characterized as having "well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins" (Brockman 1998).

Delaware County's primary drainages include the Scioto River, Olentangy River, and Big Walnut Creek. The Scioto River, which is the principal drainage, drains the western aspect of the county. The Olentangy River drains the central portions, and the eastern part is drained by Big Walnut Creek (Sherman 1964; USDA, SCS 2001). The project corridor is 940 ft above mean sea level and is drained by Mill Run, a tributary of the Olentangy River.

Geology

Delaware County is comprised of Wisconsinan-age till. The soils are predominately clayey with a higher concentration of lime. Below the till are lacustrine deposits that cap Paleozoic-aged rocks. The eastern portion of the county contains some shales and loess deposits. The project corridor is contained within Lower Paleozoic-age carbonate rocks and shales (Brockman 1998).

Soils

The project area is situated within the Blount-Pewamo-Glynwood soil association. These soils are characterized as "very deep, level to strongly sloping soils that formed in till" (USDA, SCS 2001). There are four specific soils encountered within the corridor: Blount silt loam (BoA; 0-2 percent slopes), Glynwood silt loam (GwB; 2-6 percent slopes), Glynwood silt loam (GwC2; 6-12 percent slopes) and Pewamo silty clay loam (PwA; 0-1 percent slopes).

Flora

There is or at least was great floral diversity in Ohio. This diversity is related to the soils and the terrain that generally includes the till plain, lake plain, terminal glacial margins, and unglaciated plateau (Forsyth 1970). Three major glacial advances, including the Kansan, Illinoian, and Wisconsinan, have affected the landscape of Ohio. The effects of the Wisconsin glaciation are most pronounced and have affected more than half of the state (Pavey et al. 1999).

The least diverse part of Ohio extends in a belt from the northeast below the lake-affected areas through most of western Ohio (Gordon 1966). These areas are part of the late Wisconsin ground moraine and lateral end moraines positioned between the lake plains region and the terminal glacial moraines. This area included broad forested areas of beech maple forests interspersed with mixed oak forests in elevated terrain or where relief is greater (Forsyth 1970; Gordon 1966). Prairie environments such as those in Wyandot and Marion County areas would contain islands of forests, but were mostly expansive open terrain dominated by grasses.

The northwestern Ohio terrain is nearly flat because of ancient glacial lakes and glaciation, which affected the flora. However, the vegetation was more diverse than the till plain to the south and east because of the variety of factors that contributed to its terrain. Forests within the Black Swamp were generally comprised of elm/ash stands; however, dissected areas along drainages and drier, elevated areas from beach deposits would contain mixed forests of oak and hickory (Gordon 1966, 1969). There was little upland floral diversity in the lake plains (Black Swamp region), except for the occasional patches of oak and hickory. Floral variety was most evident in narrow sleeves along larger stream valleys where there is relief.

The most biological diversity in Ohio is contained within the Allegheny Plateau, which encompasses the southeastern two-thirds of the state (Sheaffer and Rose 1998). Because this area is higher and has drier conditions, it is dominated by mixed oak forests. Some locations within the central part of this area contain beech and mixed mesophytic forests. There are large patches of oak and sugar maple forests to the south of the terminal moraine from Richland County to Mahoning County (Gordon 1966).

Southwestern Ohio from about Cincinnati to Bellefontaine east to the Scioto River historically contained a very diverse floral landscape. This is an area where moraines from three glacial episodes are prevalent (Pavey et al. 1999). Forests in this area include elm-ash swamp, beech, oak-sugar maple, mixed mesophytic, prairie grasslands, mixed oak, and bottomland hardwoods (Core 1966; Gordon 1966, 1969). These forest types are intermingled with prairies being limited to the northern limits of this area mostly in Clark and Madison Counties.

Generally, beech forests are the most common variety through Ohio and could be found in all regions. Oak and hickory forests dominated the southeastern Ohio terrain and were found with patchy frequency across most of northern Ohio. Areas that were formerly open prairies and grasslands are in glacial areas, but are still patchy. These are in the west central part of the state. Oak and sugar maple forests occur predominantly along the glacial terminal moraine. Elm-ash swamp forests are prevalent in glaciated areas including the northern and western parts of Ohio (Gordon 1966; Pavey et al. 1999).

The project corridor and central Delaware County are generally within what is considered to be a beech forest area, with small sections of oak-sugar maple and elm-ash swamp forests (Gordon 1966).

Fauna

The upland forest zone afforded a diversity of mammals for the prehistoric diet. These food resources consisted of white-tailed deer, black bear, Eastern cottontail rabbit, opossum, a variety of squirrels, as well as other less economically important mammals. Several avian species were a part of the upland prehistoric diet as well (i.e., wild turkey, quail, ruffed grouse, passenger pigeon, etc.). The lowland zone offered significant species as well. Raccoon, beaver, and muskrat were a few of the mammals, while wood duck and wild goose were the economically important birds. Fishes and shellfish were also an integral part of the prehistoric diet. Ohio muskellunge, yellow perch, white crappie, long nose gar, channel catfish, pike, and sturgeon were several of the fish species, whereas the Ohio naiad mollusc, butterfly's shell, long solid, common bullhead, knob rockshell, and cod shell were the major varieties of shellfish. Reptiles and amphibians, such as several varieties of snakes, frogs, and turtles, were also part of the prehistoric diet (Lafferty 1979; Mahr 1949; Trautman 1981).

Cultural Setting

The first inhabitants of Ohio were probably unable to enter this land until the ice sheets of the Wisconsin glacier melted around 14,000 B.C. Paleoindian sites are considered rare due to the age of the sites and the effects of land altering activities such as erosion. Such sites were mostly used temporarily and thus lack the accumulation of human occupational deposits that would have been created by frequent visitation. Paleoindian artifact assemblages are characteristic of transient hunter-gatherer foraging activity and subsistence patterns. In Ohio, major Paleoindian sites have been documented along large river systems and near flint outcrops in the Unglaciaded Plateau (Cunningham 1973). Otherwise, Paleoindian sites in the glaciaded portions of Ohio are encountered infrequently and are usually represented by isolated finds or open air scatters.

The Paleoindian period is characterized by tool kits and gear utilized in hunting Late Pleistocene megafauna and other herding animals, including, but not limited to, short-faced bear, barren ground caribou, flat-headed peccary, bison, mastodon, giant beaver (Bamforth 1988; Brose 1994; McDonald 1994). Groups have been depicted as being mobile and nomadic (Tankersley 1989); Paleoindian artifacts include projectile points, multi-purpose unifacial tools, burins, graters, and spokeshaves (Tankersley 1994). The most diagnostic artifacts associated with this period are fluted points that exhibit a groove or channel positioned at the base to facilitate hafting. The projectiles dating from the late Paleoindian period generally lack this trait; however, the lance form of the blade is retained and is often distinctive from the following Early Archaic period (Justice 1987).

The Archaic period has been broken down into three sub-categories, including the Early, Middle, and Late Archaic. During the Early Archaic period (ca. 10000-8000 B.P.), the environment was becoming increasingly arid as exhibited by the canopy (Shane 1987). This period of dryness allowed for the exploitation of areas that were previously inaccessible or undesirable. The Early Archaic period does not diverge greatly from the Paleoindian regarding the type of settlement. Societies still appear to be largely mobile with reliance on herding animals (Fitting 1963). For these reasons, Early Archaic artifacts can be encountered in nearly all settings throughout Ohio. Tool diversity increased at this time, including hafted knives that are often re-sharpened by the process of beveling the utilized blade edge and intense basal grinding (Justice 1987). There is a basic transition from lance-shaped points to those with blades that are triangular. Notching becomes a common hafting attribute. Other characteristic traits occurring almost exclusively in the Early and Middle Archaic periods are basal bifurcation and large blade serrations. Tool forms begin to vary more and may be a reflection of differential resource exploitation. Finished tools from this period can include bifacial knives, points, drills/perforators, utilized flakes, and scrapers.

The Middle Archaic period (8000-6000 B.P.) is poorly known or understood in archaeological contexts within Ohio. Some (Justice 1987) regard small bifurcate points as being indicative of this period. Ground stone artifacts become more prevalent at this time. Other hafted bifaces exhibit large side notches with squared bases, but this same

trait can extend back to the Paleoindian period. The climate at this time is considered to be similar to the modern climate. The Middle Archaic period subsistence tended to be associated with small patch foraging involving a consistent need for mobility with a shift towards stream valleys (Stafford 1994). Sites encountered from this time period throughout most of Ohio tend to be lithic scatters or isolated finds. The initial appearance of regional traits may be apparent at this time.

The Late Archaic period in Ohio (ca 6000-3000 B.P.) diverges from the previous periods in many ways. Preferred locations within the regional setting appear to have been repeatedly occupied. The more intensive and repeated occupations often resulted in the creation of greater social and artifact complexity. The environment at this time is warmer and drier. Most elevated landforms in northeastern Ohio have yielded Archaic artifacts (Prufer and Long 1986:7) and the same can be stated for the remainder of Ohio.

Various artifacts are diagnostic of the Late Archaic period. Often, burial goods provide evidence that there was some long-distance movement of materials, while lithic materials used in utilitarian assemblages are often from a local chert outcrop. There is increased variation in projectile point styles that may reflect regionalism. Slate was often used in the production of ornamental artifacts. Ground and polished stone artifacts reached a high level of development. This is evident in such artifacts as grooved axes, celts, bannerstones, and other slate artifacts.

It is during the Terminal Archaic period (ca 3500-2500 B.P.) that extensive and deep burials are encountered. Regional expressionism within Ohio is apparent with Crab Orchard to the southwest, Glacial Kame to the north, and Meadowood from central to northeastern Ohio. Along the Ohio River, intensive Riverton culture occupations have been documented. Pottery makes its first appearance during the Terminal Late Archaic as well.

The Early Woodland period (ca 3000-2100 B.P.) in Ohio is often associated with the Adena culture and the early mound builders (Dragoo 1976). Early and comparably simple geometric earthworks first appear with mounds more spread across the landscape. Pottery at this time is often thick and tempered with grit, grog, or limestone; however, it becomes noticeably thinner towards the end of the period. There is increased emphasis on gathered plant material, including maygrass, chenopodium, sunflower, and squash. Habitation sites have been encountered that include structural evidence. Houses that were constructed during this period were circular, with a diameter of up to 18.3 m (Webb and Baby 1963) and often with paired posts (Cramer 1989). Artifacts dating from this period include leaf-shaped blades with parallel to lobate hafting elements, drilled slate pieces, ground stone, thick pottery, and increased use of copper. Early Woodland artifacts can be recovered from every region of Ohio.

The Middle Woodland period (ca 2200-1600 B.P.) is often considered to be equivalent with the Hopewell culture. The largest earthworks in Ohio date from this time period. There is a dramatic increase in the appearance of exotic materials, most often in association with earthworks and burials. Artifacts representative of this period include

thin grit-tempered pottery, dart-sized projectile points (Lowe Flared, Steuben, Snyders, and Chesser) [Justice 1987], and exotic materials (mica, obsidian, and marine shell, etc.). The points are often thin, bifacially beveled, and with flat-cross sections. There seems to have been a marked increase in the population as well as increased levels of social organization. Middle Woodland sites seem to reflect a seasonal exploitation of the environment. There is a notable increase in the amount of Eastern Agricultural Complex plant cultigens, including chenopodium, knotweed, sumpweed, and little barley. This seasonal exploitation may have followed a scheduled resource extraction year in which the populations moved camp several times per year, stopping at known resource extraction loci. Middle Woodland land use appears to center on or focus on the regions surrounding earthworks (Dancey 1992; Pacheco 1996); however, there is evidence of repeated occupation away from earthworks (Weller 2005a). Household structures at this time vary with many of them being squares with rounded corners (Weller 2005a). A fairly large round structure was identified on an upland rise south of Orange Road that dates from this time period; however, it lacks the types of artifacts commonly associated with the culture (Weller 2006).

Exotic goods are often attributed to funerary activities associated with the mounds and earthworks. Utilitarian items are more frequently encountered outside of funerary/ritual contexts. The artifact most diagnostic of this period is the bladelet (and bladelet cores), a prismatic and thin razor-like tool. Middle Woodland remains are more commonly recovered from central Ohio south and are lacking from most areas in the northern and southeastern part of the state.

The Late Woodland period (ca A.D. 400-900) differs from the previous period in several ways. There appears to be a population increase and a more noticeable aggregation of groups into formative villages. The villages are often positioned along large streams on terraces and were likely seasonally occupied (Cowan 1987). This increased sedentism was due in part to a greater reliance on horticultural garden plots, much more so than in the preceding Middle Woodland period. The early Late Woodland groups were growing a wide variety of crop plants that are collectively referred to as the Eastern Agricultural Complex. These crops included maygrass, sunflower, and domesticated forms of goosefoot and sumpweed. This starch and protein diet was supplemented with wild plants and animals. Circa A.D. 800 to 1000, populations adopted maize agriculture, and around this same time, shell-tempered ceramics appear. Other technological innovations and changes during this time period include the bow and arrow and changes in ceramic vessel forms.

The Cole complex (ca A.D. 1000-1300) has been identified in central and south central Ohio. Sites that have been used to define the Cole complex include the W.S. Cole (33DL11), Ufferman (33DL12), and Decco (33DL28) sites along the Olentangy; the Zencor Village site, located along the Scioto River in southern Franklin County; and the Voss Mound site (33FR52), located along the Big Darby Creek in southwestern Franklin County. This cultural manifestation may have developed out of the local Middle Woodland cultures and may have been contemporaneous with the Late Prehistoric period (Baby and Potter 1965; Barks 1982; Potter 1966). However, Cole is a poorly defined

cultural complex as its attributes are a piecemeal collection gathered from various sites. It may be associated with the Fort Ancient period (Pratt and Bush 1981). Artifacts recovered from sites considered as Cole include plain and cordmarked pottery, triangular points, Raccoon-notched points, chipped slate discs, rectangular gorgets, and chipped stone celts. The vessels often have a globular form with highly variable attributes and rim treatment. The few structures encountered from this period are typically rounded or circular (Pratt and Bush 1981; Weller 2005b). Dates associated with Cole occupations are considered to be from A.D. 1100 to about A.D. 1300 AD, the early Late Prehistoric period.

The Late Prehistoric period (ca A.D. 1000-1550) is distinctive from former periods. At this time, regions were a major focus of specific groups. Large and sometimes palisaded villages were usually tied to a regional focus such as Fort Ancient (southern half of Ohio), Cole(?) [central Ohio], or Monongahela (east and southeast Ohio). There is a marked increase in evidence supporting residential sedentism. Population density rose sharply with new and more effective means of resource and land exploitation. Communal aggregations such as villages are well established after A.D. 700 (Fuller 1981; Pollack and Henderson 2000). Maize or corn agriculture as well as other cultigens made up a significant portion of the prehistoric diet. There appears to have been an increase in domestic pottery production. Social organization is presumed to have become more complex and possibly moved towards a chiefdom model during the Late Prehistoric period. Artifact types are similar to those from the previous period; however, pottery is often thinner with differing exterior treatments that may reflect regional cultural expressions. Structures can be round or elongated ovals with larger sites often being located in large stream valleys.

Protohistoric to Settlement

By the mid-1600s, French explorers traveled through the Ohio country as trappers, traders, and missionaries. They kept journals about their encounters and details of their travels. These journals are often the only resource historians have regarding the early occupants of seventeenth century Ohio. The earliest village encountered by the explorers in 1652 was a Tionontati village located along the banks of Lake Erie and the Maumee River. Around 1670, it is known that three Shawnee villages were located along the confluence of the Ohio River and the Little Miami River. Because of the Iroquois Wars, which continued from 1641-1701, explorers did not spend much time in the Ohio region and little else is known about the natives of Ohio during the 1600s. Although the Native American tribes of Ohio may have been affected by the outcome of the Iroquois Wars, no battles occurred in Ohio (Tanner 1987).

French explorers traveled extensively through the Ohio region from 1720-1761. During these expeditions, the locations of many Native American villages were documented. In 1751, a Delaware village known as Maguck existed near present-day Chillicothe. In 1758, a Shawnee town known as Lower Shawnee II existed at the same location. The French also documented the locations of trading posts and forts, which were typically established along the banks of Lake Erie or the Ohio River (Tanner 1987).

While the French were establishing a claim to the Ohio country, many Native Americans were also entering new claims to the region. The Shawnee were being forced out of Pennsylvania because of English settlement along the eastern coast. The Shawnee created a new headquarters at Shawnee Town, which was located at the mouth of the Scioto River. This headquarters served as a way to pull together many of the tribes which had been dispersed because of the Iroquois Wars (Tanner 1987).

Warfare was bound to break out as the British also began to stake claims in the Ohio region by the mid-1700s. The French and Indian War (1754-1760) affected many Ohio Native Americans; however, no battles were recorded in Ohio (Tanner 1987). Although the French and Indian War ended in 1760, the Native Americans continued to fight against the British explorers. In 1764, Colonel Henry Bouquet led a British troop from Fort Pitt, Pennsylvania to near Zanesville, Ohio.

In 1763, the Seven Years' War fought between France and Britain, also known as the French and Indian War ended with The Treaty of Paris. In this Peace of Paris, the French ceded their claims in the entire Ohio region to the British. When the American Revolution ended with the Second Treaty of Paris in 1783, the Americans gained the entire Ohio region from the British; however, they designated Ohio as Indian Territory. Native Americans were not to move south of the Ohio River but Americans were encouraged to head west into the newly acquired land to occupy and govern it. (Tanner 1987).

By 1783, Native Americans had established fairly distinct boundaries throughout Ohio. The Shawnee tribes generally occupied southwest Ohio, while the Delaware tribes stayed in the eastern half of the state. Wyandot tribes were located in north-central Ohio, and Ottawa tribes were restricted to northeast Ohio. There was also a small band of Mingo tribes in eastern Ohio along the Ohio River, and there was a band of Mississauga tribes in northeastern Ohio along Lake Erie. The Shawnee people had several villages within Ross County along the Scioto River (Tanner 1987). Although warfare between tribes continued, it was not as intense as it had been in previous years. Conflicts were contained because boundaries and provisions had been created by earlier treaties.

In 1795, the Treaty of Greenville was signed as a result of the American forces' defeat of the Native American forces at the Battle of Fallen Timbers. This allocated the northern portion of Ohio to the Native Americans, while the southern portion was opened for Euro-American settlement. Although most of the battles which led up to this treaty did not occur in Ohio, the outcome resulted in dramatic fluctuations in the Ohio region. The Greenville Treaty line was established, confining all Ohio Native Americans to northern Ohio, west of the Tuscarawas River (Tanner 1987).

Ohio Native Americans were again involved with the Americans and the British in the War of 1812. Unlike the previous wars, many battles were fought in the Ohio country during the War of 1812. By 1815, peace treaties began to be established between the Americans, British, and Native Americans. The Native Americans lost more and

more of their territory in Ohio. By 1830, the Shawnee, Ottawa, Wyandot, and Seneca were the only tribes remaining in Ohio. These tribes were contained on reservations in northwest Ohio. By the middle 1800s, the last of the Ohio Native Americans signed treaties and were removed from the Ohio region.

Delaware County History

The Virginia Military District encompassed all lands west of the Scioto River, while the lands east of the Scioto were part of the U.S. Military Lands. Portions of these land-grant districts would become Delaware County. The first settlers came to these lands in 1801. Captain Nathan Carpenter and Avery Powers from New York settled 8 km south of the present city of Delaware (Baskin 1880). Other early settlers arrived by 1803 and mainly settled in the southern portions of the county. Most of the early immigrants were Welsh, while in the second half of the eighteenth century, Irish and Germans made up the majority of second wave immigration (Rickey 1983). One of the most important immigrants to formation and development was Colonel Moses Byxbe who owned great tracts within the U.S. Military Lands and laid out two towns in the county, including the county seat (Jones 1955). On February 10, 1808, Delaware County was organized and the city of Delaware, which had just missed a bid for state capitol, instead became the county seat (Lytle 1908).

Newcomers to Delaware County settled in the rich bottomlands of the Olentangy River, Scioto River, and Alum Creek. Most early settlers were farmers and produced corn, wheat, cattle, and hogs. Apples and grapes became popular crops during the 1800s. Horses and sheep became important between 1880 and 1930. Agriculture remained a major source of income for the county until after 1980, when it began to decline because of urban expansion. Today, much of southern Delaware County has become suburbs related to the development of the city of Columbus. Northern Delaware County remains agriculturally oriented (Rickey 1983).

In 1804, Nathan Carpenter fittingly built the first sawmill, and soon after, his neighbors throughout the county had built other sawmills, grist, and woolen mills, as well as tanneries. Timber harvested for lumber was a major resource of the county in the 1800s. The first road, the Columbus-Sunbury-Galena-Mt. Vernon road, came to be in 1820. In 1868, the Delaware-Worthington Turnpike was completed. In 1851, the first railroad came to the county, the Cleveland-Cincinnati. In 1854, another line, the Springfield, Delaware, and Mt. Vernon Railroad, crossed the county east to west. In 1902, an electric railway system traveled between Marion and Columbus, passing through the county. The improvement of transportation routes spurred economic developments in the county, particularly in the city of Delaware. Improvement in transportation has continued in the twentieth century with the construction of highways for automobiles. Interstate I-71 and several US routes pass through the county today (Buckingham 1976).

Organized education within Delaware County was not early, but once started it became widespread and diverse. Beginning in 1807, several private institutions provided children with the three Rs until the first public school opened in 1846. Ohio Wesleyan

University opened as a college November 13, 1844 with the Female College (est. 1853) added in 1877 to form a coeducational university. The Delaware County Library aided educational facilities beginning in 1951 (Jones 1955). Today there are four major school districts as well as several private schools.

Churches began to organize in the early days with the Presbyterian Church organized in 1810, Episcopalians in 1817, Methodists in 1822, Lutherans in 1821, Welsh Congregationalists in 1841, Baptists organized in 1853, and Catholics in 1850 (Baskin 1880; Jones 1955).

A bank opened in Delaware in 1817. Because timber was an important resource of the county, wood products were a significant industry. A lodge and church furniture company began producing goods in 1869 in Ashley. During the 1860s, the city of Delaware had a planing mill, foundries, and many various small goods factories. Between 1880 and 1930, Delaware had become the economic center of the county. The following industries were present: cigar manufacturing, tile factories, an ice and coal company, a lumber company, an underwear company, a stove company, Cook Motor Company, and K&W Rubber Company. During the 1890s, several quarries dug limestone. A crane factory employed many in Delaware in 1942. Presently, several light industries reside in the city of Delaware, as do various types of businesses that range from chemical manufacture to production of resins (Buckingham 1976; Jones 1955; Rickey 1983).

Brown Township History

Brown Township was one of the slowest progressing and last tamed areas of Delaware County. Its minimalized state has more to do with the fact that almost all major routes of transportation have bypassed the township from the earliest years to now, certainly more than the idea that the populous is somehow lazy or undesirable of progress. This erroneous bit is disproved by the fitting example of the township's first permanent settler.

Erastus Bowe lived within Brown's present borders around the year 1809, however, he did not stay long, and the early histories treat him as little more than a squatter and bestow the title of 'first permanent settler' upon the man Daniel G. Thurston who made this vicinity his home in 1817 (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908). His industrious manor is proved immediately by the reason for his residence here. Thurston came in order to investigate, establish, and hopefully run a salt mining industry at the salt spring that was known to exist here. He partnered with James Eaton and Steven Gorham and the three of them obtained a loan from the state to initiate their business (Baskin 1880, Modie 1908). The business failed and later, the state auctioned the land to recoup its losses. Much mention is made of the 'salt tract' and of Thurstons and Eatons in the early histories.

Thurston is credited as hosting the first organized religious groups in the township at his house. He was a charter member of the first Methodist Episcopal denomination in

1828, and some time later invited the Presbyterians to use his house for their church as well. All indications lead one to believe that this was the central place of worship until 1841 when the Methodists built the first frame church. Mr. Thurston was also one of the driving forces behind education for the township. he and several other men met in 1830 and proposed to build the first schoolhouse, which they did soon after (Baskin 1880).

Brown is also home to the 'County Infirmary' as they called it in that day. It was more or less a poor house or institution when it was built in 1852, an asylum was added within four years, and today the site is used as a special needs school for the handicapped (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908).

The township holds only two very small villages. Lenordsburg, the smallest, is a product of S. G. Caulkins' survey. He laid the town out in 1852 naming it for the storeowner there (Baskin 1880). Lenordsburg is on the township's only railroad and for a while helped the community's very small farm shipping industry; but Delaware is only six miles down the track and ended up becoming a much larger and better suited place to do business. Kilbourn is the other. Isaac Eaton, James' son, established it as Eden at an early, unknown date (Baskin 1880). Industry in the township has been entirely incorporated within these villages, beginning with Ezekiel Longwell's sawmill within Kilbourn in 1830. The rest of the township is agricultural, and well suited to it (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908).

The records of establishment for this township have been lost, but it is commonly assumed that Delaware raised it sometime between 1822 and 1831 and probably about 1826 (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908).

Berlin Township History

Berlin Township today is the size and shape of the original United States Military District survey Township 4, Range 18. Between that survey and today however, it has been absorbed, divided, and reorganized several times. The Military District survey was a project the newly formed American government ordered in order to calculate exactly how much land they now had and needed to control. American occupation was the best way for their controlling influence to be accomplished and so they provided incentives for pioneering including land grants to repay the faithful soldiers of the War for Independence. Many of these men collected their land certificates but never claimed the land; some used them as currency. Moses Byxbe was a tavern keeper who collected many of these from men who did not desire to leave the settled familiarity of Massachusetts, thus he became rich in Ohio lands. When he came in 1804, he owned an entire quarter section of this township. This situation led to the division of this township. In 1806, when Berkshire set its bounds, it included sections one and four. Delaware and Liberty annexed the other two at the time of their respective foundations (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908).

This division lasted until 1820 when Asa Scott noticed that the population of the original military township was large enough to bid for its own organization. The earliest settlers however, were more worried about the dimensions and locations of their own

claims than to which township they might belong. George Cowgill was the first to establish himself here. Cowgill arrived in late 1805. He preceded David Lewis, Sr., Joseph Eaton, Sr., and John Johnston by less than a year (Baskin 1880, Lytle 1908, Modie 1908).

Frontier life was typical here; the people mostly subsistant agrarian slowly developing roads, mills, stores, and the other basic necessities of a community. One of the frontier commonalities in the years 1811-1813 was a fear of the native Indians who, incited by the British, had become hostile to the Ohio settlers. During this time, the pioneers in Berlin built a two-story, log-hewn blockhouse in which to seek refuge from natives' attacks. Later, when peace had settled over Berlin, the structure afforded more peaceful purposes. It held a school for several years as well as providing a meetinghouse for the Baptists from their inception in this township in 1816 until they built the township's first house of worship in 1824 (Baskin 1880, Everts 1875, Lytle 1908, Modie 1908).

Several small towns have tried to survive in Berlin Township. None remain as municipalities today. Cheshire was probably the most successful. Samuel Adams was a farmer who laid out his fields into village lots. In the mid to late 1800's, the town was a marginal community. Alum Creek was a railroad town that is now under the reservoir built in the 1960's; the same fate is true of Jacktown. Berlin Station was never more than a railway platform. Jones and Gregory were two other collections of houses by the rails. Rust Corners, Saunder's Corners, and Steward's Corners were crossroad towns which have faded from existence. Berlin was a town on paper and never anything more. In the 1800's, the "Underground Railroad" passed directly through Cheshire though with little sympathy from the majority of the population (Baskin 1880, Buckingham 1976, Everts 1875, Helwig 1987, Lytle 1908, Modie 1908).

Today the city of Delaware creeps into the township at two points on the western edge. Alum Creek Lake Reservoir covers a large central portion of the township from north to south. Housing developments are expanding the population of the territory and new service and retail businesses as well as schools and churches have opened in order to serve the new populace.

Research Design

The purpose of a Phase I survey is to locate and identify cultural resources that will be affected by the planned development. This includes archaeological deposits as well as architectural properties that are older than 50 years. Once these resources are identified and sampled, they are evaluated for their eligibility or potential eligibility to the NRHP. These investigations are directed to answer or address the following questions:

- 1) Did the literature review reveal anything that suggests the project corridor had been previously surveyed, and what is the relationship of previously recorded properties to the project corridor?
- 2) Are cultural resources likely to be encountered in the project corridor?

- 3) Will the planned undertaking affect any archaeological or architectural properties?
- 4) Will any NRHP eligible sites or properties be affected by the planned development?

Archaeological Field Methods

The survey conducted within the project corridor used several methods of sampling and testing to identify and evaluate cultural resources. These included shovel test units, shovel probes, surface collection and visual inspection.

Shovel test unit excavation. Shovel test units were initially placed at 7.5-m intervals within identified site boundaries and at locations where surface visibility was lacking. Shovel test units measure 50 cm on a side and are excavated to 5 cm below the topsoil/subsoil interface. Individual shovel test units are documented regarding their depth, content and color (Munsell). Wherever sites are encountered, Munsell color readings are taken per shovel test unit. All of the undisturbed soil matrices from shovel test units are screened using .6 cm hardware mesh.

Shovel probe excavation. Shovel probes were excavated during these investigations to document the extent of the disturbance associated with construction and grading activities for the northern leg. These probes were excavated similarly to shovel test units. They have the same dimensions of 50 cm on a side, but are not screened. They were excavated at 30-m intervals in the disturbed areas and generally were excavated to a depth of 15-20 cm or deep enough to establish lack of integrity.

Surface Collection. The furrow plowed field was inspected. The field had been fall plowed and was sufficiently weathered. Transects were spaced at 3 m intervals through the corridor. Artifact provenience for this project utilized grab sampling of surface materials as they were either isolated finds or scattered historic materials. Surface visibility within plowed field was at 100 percent.

Visual inspection. This method was reserved for areas that were found to be severely disturbed. The areas along the existing roadways were found to contain mottled and disturbed soils. This is especially true of the segment south of SR 36, which contained fill from prior construction easements.

The application of the resulting field survey methods was documented in field notes, field maps, and project plan maps.

Prehistoric Artifact Analysis

An artifact inventory was accomplished upon completion of the fieldwork. This involved identifying the functional attributes of individual artifacts, as well as the artifact

cluster(s) or site assemblage collectively. The prehistoric artifact types and material were identified during the inventory process. The lithic artifact categories are modeled after Flenniken and Garrison (1975) and include the following:

Uniface. A uniface has evidence of use-wear on one side of the artifact. Unifacial artifacts include utilized flakes, end and side scrapers, and bladelets. However, bladelets are typically categorized as blades or lamellar flakes and are diagnostic of the Middle Woodland period.

Identification of the material type of individual artifacts is based on several attributes, including color, inclusions, and luster. Several resources were used to aid in the inventory of the material types, including Converse (1994), DeRegnaucourt and Georgiady (1998), and Stout and Schoenlaub (1945).

Historic Period Artifact Inventory

Artifacts recovered from testing will be inventoried and the results analyzed to determine if there is differential patterning and to verify the age of the site relative to information gathered from atlases or histories. The identification of historic artifacts for purposes of determining age and function are guided by: Ball (1984); Deiss (1981); Esary (1982); Greer (1981); Mansberger (1981); McConnell (1992); McCorvie (1987); Miller (1987); Newman (1970); Ramsay (1976); and Visser (1997).

Curation

The landowners have been sent a letter regarding the disposition of the artifacts, which had not been received as of the completion of this report. Weller and Associates will maintain the field notes and maps for this project at their office.

Literature Review

The literature review study area is defined as a 2.0 km (1.24 mile) radius from the center of the project. In conducting the literature review, the following resources were consulted at OHPO and the State Library of Ohio:

- 1) *An Archaeological Atlas of Ohio* (Mills 1914);
- 2) OHPO United States Geological Survey (USGS) 7.5' series topographic maps;
- 3) Ohio Archaeological Inventory (OAI) files;
- 4) Ohio Historic Inventory (OHI) files;
- 5) National Register of Historic Places (NRHP) and Determinations of Eligibility files;
- 6) OHPO CRM/contract archaeology files; and
- 7) Delaware County atlases, histories, historic USGS 15' series topographic map(s), and current USGS 7.5' series topographic map(s).

The *Archaeological Atlas of Ohio* (Mills 1914) did not indicate any resources within the project corridor; nor were any noted within general vicinity.

A review of the OHPO topographic maps indicated no sites located in the project corridor, however there are 25 located in the study area (Table 1). Since none of these are within the project corridor, they will not be impacted.

Table 1. Previously Recorded Archeological Sites Located in the 2-km Study Radius			
OAI #	Site Type	Temporal Association	Landform
33DL1199	Isolated find	Unassigned prehistoric	--
33DL1200	Isolated find	Unassigned prehistoric	--
33DL1201	Isolated find	Unassigned prehistoric	--
33DL1202	Isolated find	Unassigned prehistoric	--
33DL1203	Lithic scatter	Unassigned prehistoric	Moraine
33DL1204	Lithic scatter	Unassigned prehistoric	Moraine
33DL1205	Lithic scatter	Unassigned prehistoric	Moraine
33DL1206	Lithic scatter	Unassigned prehistoric	Moraine
33DL1826	Lithic scatter/Historic scatter	Middle Woodland/ 1850-1899	Moraine
33DL1827	Lithic scatter	Early Archaic	Moraine
33DL1828	Lithic scatter	Archaic, Early Woodland, Middle Woodland	Moraine
33DL1829	Lithic scatter	Late Archaic, Early Woodland	Moraine
33DL1830	Lithic scatter	Unassigned prehistoric	Moraine
33DL1831	Lithic scatter	Late Archaic	Moraine
33DL1832	Lithic scatter	Early Archaic	Moraine
33DL1833	Lithic scatter	Early Archaic, Late Archaic, Early Woodland	Moraine
33DL1834	Lithic scatter	Late Archaic, Early Woodland	Moraine
33DL1835	Historic scatter	20 th Century	Moraine
33DL1836	Lithic scatter	Late Archaic, Late Woodland	Moraine
33DL1837	Lithic scatter	Late Archaic, Early Woodland, Middle Woodland	Moraine
33DL1838	Structural remains	1850-2000	Moraine
33DL1839	Clay mine	1930-1974	Moraine
33DL1840	Historic scatter	1850-1929	Moraine
33DL1841	Isolated find	Unassigned prehistoric	--
33DL1842	Isolated find	Unassigned prehistoric	--

The Ohio Historic Inventory (OHI) files indicated no previously recorded OHIs located in the project corridor, nor in the 2 km study area.

A review of the NRHP resources and determinations of eligibility (DOE) files did not indicate any resources or potentially eligible resources located within the project corridor; nor in the 2 km study area.

A review of the OHPO contract files indicated that four previous surveys had been conducted within the study radius (Biehl 2005; Pecora 2005; Pecora and Burks 2006; Stillwell 2001). A portion of the project corridor has been surveyed by two previous surveys (Biehl 2005; Pecora 2005). This is the northwestern aspect of the corridor and no sites were recorded within the section that had been surveyed prior.

Cartographic/atlas resources were reviewed for the project area. The *Atlas of Delaware County, Ohio* (Beers 1866) indicates that Mrs. D. Williams and Mrs. S. Williams owned the land containing the project corridor (Figure 3). One residence was located adjacent to the corridor near the intersection of S.R. 36 and Glenn Road. The *Illustrated Historical Atlas of Delaware County, Ohio* (Everts 1875) indicates the landowners as being J.R. Richards, S. Williams and J. Davis (Figure 4). The adjacent residence indicated on the previous atlas still exists at the same location. The USGS 1903 *Delaware, Ohio Quadrangle 15 Minute Series (Topographic)* map does not indicate any structures within the corridor and the USGS 1960 (P.R. 1973) *Delaware, Ohio Quadrangle 7.5 Minute Series (Topographic)* map indicates the same (Figure 2).

Evaluation of Research Questions 1 and 2

There were two questions presented in the research design that will be addressed at this point. These are:

- 1) Did the literature review reveal anything that suggests the project corridor had been previously surveyed, and what is the relationship of previously recorded properties to the project corridor?
- 2) Are cultural resources likely to be encountered in the project corridor?

The northwestern aspect of the project corridor had been previously surveyed (Biehl 2005; Pecora 2005). No resources were recorded within this portion of the corridor by either survey. Given the close proximity of a former residence and the abundance of cultural resources in Delaware County, field investigations expect to encounter prehistoric and historic period remains from this corridor.

Fieldwork Results

The field investigations for this project were conducted on May 7, 2007. The conditions were favorable and included sunny skies and seasonably warm temperatures. The northern part of the project corridor was mostly contained in mowed grass with the southern leg being plowed field. There is a nineteenth century farmstead at the intersection of the involved roads, SR 36 and Glenn Road. The residence and many of the outbuildings appear to have been razed; however, the primary barn (three-bay) and granary remain. The corridor does not intercept any standing buildings or any locations where it was clear that building had been situated; it circumvents these to the north and east. Historic period remains (33DL2306) were identified near this lot and in the northeastern part of the plowed field. Further to the south, a single prehistoric artifact was recovered during surface collection (33DL2305).

The project corridor is located to the southwest of the intersection of SR 36 and Glenn Road (Figure 6). This aspect of Delaware County is collectively the target of development and has been for many years prior. Recent CRM surveys (Biehl 2005; Pecora and Burks 2006) have been conducted in the surrounding terrain that attests to the

upcoming construction activities. Severe disturbance was encountered in the northern leg of the project corridor (Figures 7-10). There were several underground utility lines in this area including a storm sewer easement that is recognized by the occasional manhole covers. Limestone gravel and subsoil was acknowledged at the surface and mottled through the probed areas. A total of 11 disturbed shovel probes were placed within this portion of the project corridor.

Surface collection was conducted in the southern leg of the project corridor. This is a field that had been furrow plowed the previous fall. The surface was very weathered and offered 100 percent bare ground visibility (Figures 11-12). There is little topography in this upland area. The slight elevations were noticed by the lighter soil color as readily as their higher relief. Transecting the length of this part of the project area was a newly placed underground utility easement. This was narrow and accounted for about 3 m of disturbance at most. This did not appear to alter the conditions greatly or affect the outcome of these investigations. A single prehistoric artifact was recovered from a rise about midway down the surface collected part of the project corridor (33DL2305; Figure 6).

There were four shovel test units excavated along the centerline of the proposed easement and within site 33DL2306. The shovel testing did not establish natural looking soils. Instead, they appeared to be mixed and jumbled containing peds of clayey subsoil. Historic period remains were noted in this area, but loose and scattered. The soil where they were identified was an ashy gray color and readily distinguished amidst the surrounding soils. Small fragments of brick, concrete, and tabular limestone were encountered. These were not collected as they did not offer any interpretive value to the site.

Archaeological Site Descriptions

These investigations identified two archaeological sites including 33DL2305-2306 (Appendix A). This includes an isolated prehistoric artifact and a historic period scatter. The following are more detailed descriptions of these archaeological sites.

33DL2305

This is an isolated find that was identified during surface collection of a furrow-plowed field and in the southern leg of the project corridor. The site is located to the west of Glenn Road and in an upland area. The artifact was recovered from a slight rise that is drained by an unnamed tributary of Mill Run. This is within the Olentangy River watershed. The size of the site is 1 sq m. There were no additional artifacts recovered despite intensified inspection of the surrounding soils.

The artifact is a utilized flake of Delaware chert. This is functionally indicative of used as a cutting utensil and was likely discarded as they typically have a short use-life. Utilized flakes are not temporally diagnostic.

This site is not considered to be eligible for inclusion into the NRHP as it does not meet the minimum requirements under any criteria (Little et al. 2000; NPS 1997). The site lacks integrity due to grading activity affiliated with modern era occupation. No further work is deemed necessary for this site.

33DL2306

Surface collection and shovel test unit excavation encountered historic period remains near the intersection of Glenn Road and SR 36. The artifacts were recovered from a plowed field that is south of the former residential lot. The soils are lighter colored and ashy from the site and it appears that this is a scattering of artifacts that may have been deposited when a nearby building burnt down or when the residence was razed/burnt. Other remains such as brick fragments, limestone (foundation?), and concrete are fragmented and many appear to be burnt. Shovel testing within the area demonstrated that the soils were a mixture of topsoil and subsoil. The site seems to be the result of secondary deposition of the former residence. The size of the site is considered to be 330 sq m. Its dimensions are 10 m east-west by 33 m north-south.

Most of the artifacts that were collected from the surface or recovered from shovel testing were ceramic sherds. This is a small but diverse assemblage of nineteenth century wares including transfer prints, sponge ware, and yellow ware (Figure 13). A pre-bellum flint bottle fragment was recovered. The following is an inventory of the artifacts recovered from this site (Table 2).

Table 2. Artifact Inventory for site 33DL2306.					
Bag #	Provenience	Artifact	Function-Class	Date Range	Count
2	Grab Sample	Black transfer print	Kitchen-Serving	Mean 1850	1
		Red transfer print	Kitchen-Serving	Mean 1850	1
		Blue transfer print	Kitchen-Serving	Mean 1850	3
		Flint bottle glass	Kitchen-Storage	1825-1845	1
3	T.U. 0, 175S	Spongeware	Kitchen-Serving	1820-1850	1
		Blue-edge whiteware	Kitchen-Serving	Mean 1820	1
				<i>Total</i>	<i>8</i>

Review of atlases and topographic maps indicate that a residence existed in the vicinity since the middle of the nineteenth century. It was noted as being closer to the intersection, but outside of the project corridor. It was owned by Mrs. D. Williams in 1866 and J. R. Richards in 1875 (Figures 3 and 4). The residence is noted into the modern era.

This site is not considered to be eligible for inclusion into the NRHP. Artifacts were found to be scattered within the plowzone. This deposit does not appear to be primary. The former residence has been razed and the remainder of the farmstead is in poor condition or ruins. There does not appear to be any significance affiliated with the previous landowners. This site is considered to lack integrity and the ability to yield

additional and important information regarding the prehistory of the area (Little et al. 2000). No further work is deemed necessary.

Evaluations of Research Questions 3 & 4

There were two questions presented in the research design that will be addressed at this point. These are:

- 3) Will the planned undertaking affect any archaeological or architectural properties?
- 4) Will any NRHP eligible sites or properties be affected by the planned development?

These investigations recorded prehistoric sites 33DL2305-2306. These resources will be affected by the planned construction, but they are not considered to be eligible for the NRHP, therefore the undertaking will not impact any historic properties.

APE Definition and NRHP Determination

The APE is a term that must be applied on an individual project basis. The nature of the project or undertaking is considered in determining the APE. This may include areas that are off the property or outside of the actual project's boundaries to account for possible visual impacts. This undertaking involves the relocation of an existing underground gas pipeline. With the placement of an underground pipeline there is only a temporary effect on the landscape, therefore the APE is considered to be the footprint of the project corridor.

The project plans are to relocate an existing gas pipeline that runs from Mill Run to the intersection of SR 36 and Glenn Road, then the corridor proceeds south along Glenn Road. The northern extent of the corridor has been previously disturbed and the southern leg is located within a plowed agricultural field. The archaeological sites identified in the project corridor (33DL2305-2306) are not considered to be significant. The construction activities involved for this project are considered to have no effect on any historic properties.

Recommendations

In May of 2007, Weller completed Phase I Cultural Resources Management Survey for a 732 m (2,400 feet) Long Natural Gas Line Relocation in Brown and Berlin Townships, Delaware County, Ohio. The fieldwork involved manual excavations, surface collection and visual inspection. These investigations identified two previously unrecorded archaeological sites (33DL2305-2306). The archaeological sites are not considered to be eligible for the National Register of Historic Places (NRHP) and further work is not deemed necessary at these locations. No further work is deemed necessary for this project.

References Cited

Baby, R. and M. Potter

1965 *The Cole Complex: A Preliminary Analysis of the Late Woodland Ceramics in Ohio and Their Relationship to the Ohio Hopewell Phase*. Papers in Archaeology of the Ohio Historical Society, February 1965, No. 2. Ohio Historical Society, Columbus.

Ball, D. B.

Historic Artifact Patterning in the Ohio Valley. *Proceedings of the Symposium on Ohio Valley and Historic Archaeology*. Vol. 2:24-36.

Bamforth, D.

1988 *Ecology and Human Organization on the Great Plains*. Plenum, New York.

Barkes, B.

1982 *Analysis of Late Woodland Ceramics from the Decco (33DL28), Ufferman (33DL12), and W. S. Cole (33DL11) Sites: The Cole Complex Reconsidered*. Copy available at the Ohio Historic Preservation Office, Columbus.

Baskin, O.L. & Co.

1880 *History of Delaware County and Ohio*. O.L. Baskin & Co., Chicago. Reprinted Unigraphic, Inc., Evansville, Indiana. 1973

Beers, F.

1866 *Atlas of Delaware County, Ohio*. Beers, Ellis & Soule, New York.

Biehl, S.

2005 *Phase I Archaeological Survey of the Proposed 225 Acre Commercial/Residential Development in Berlin, Brown, and Delaware Townships, Delaware County, Ohio*. Submitted to Davey Resource Group by Ohio Valley Archaeological Consultants, Inc. Copy available for review at the Ohio Historic Preservation Office, Columbus.

Brockman, C.

1998 *Physiographic Regions of Ohio*. Ohio Department of Natural Resources, Division of Geological Survey, Columbus.

Brose, D.

1994 Archaeological Investigations at the Paleo Crossing Site, a Paleoindian Occupation in Medina County, Ohio. In *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 61-76. The Ohio Archaeological Council, Columbus.

Buckingham, R.

1976 *Delaware County Then and Now*. History Book, Delaware.

- Converse, R.
1994 *Ohio Flint Types*. The Archaeological Society of Ohio, Columbus.
- Core, E.
1966 *Vegetation of West Virginia*. McClain, Parsons, West Virginia.
- Cowan, W.
1987 *First Farmers of the Middle Ohio Valley: Fort Ancient Societies, A.D. 1000-1670*. The Cincinnati Museum of Natural History, Cincinnati.
- Cramer, A.
1989 *The Dominion Land Company Site: An Early Adena Mortuary Manifestation in Franklin County, Ohio*. M.A. Thesis, Kent State University, Kent, Ohio.
- Cunningham, R.
1973 Paleo Hunters along the Ohio River. *Archaeology of Eastern North America* 1(1) 116-118.
- Dancey, W.
1992 Village Origins in Central Ohio: The Results and Implications of Recent Middle and Late Woodland Research. In *Cultural Variability in Context: Woodland Settlements of the Mid-Ohio Valley*, edited by M.F. Seeman, pp. 24-29. Special Papers 7, *Midcontinental Journal of Archaeology*, Kent State University Press, Kent, Ohio.
- Deiss, R. W.
1981 *The Development and Application of a Chronology for American Glass*. MS thesis at Illinois State University, Normal.
- DeRegnaucourt, T. and J. Georgiady
1998 *Prehistoric Chert Types of the Midwest*. Hothem House, Lancaster.
- Dragoo, D.
1976 Some Aspects of Eastern North American Prehistory: A Review 1975. *American Antiquity* 41(1):3-27.
- Esary, M. E.
1982 *Archaeological Geographical and Historical Comparison. Eleven Nineteenth-Century Archaeological Sites Near Belleville*. MS thesis. Illinois State University. Normal, Illinois.
- Everts, L. H.
1875 *Illustrated historical atlas of Delaware County, Ohio*. L.H. Everts & Co., Philadelphia. Reprinted in *Combined Atlases and Wall Maps 1849, 1866, 1875, 1908 Delaware County Ohio*. Windmill Publications, Inc., Mt. Vernon, Indiana. 1990.

Fitting, J.

1963 The Hi-Lo Site: A Paleo-Indian Site in Western Michigan. *Wisconsin Archaeologist* 44:87-96.

Flenniken, J. and E. Garrison

1975 Thermally Altered Novaculite and Stone Tool Manufacturing Techniques. *Journal of Field Archaeology*. 2: 125-131.

Forsyth, J.

1970 A Geologist Looks at the Natural Vegetation Map of Ohio. *The Ohio Journal of Science* 70(s):180-191.

Fuller, J.

1981 *Developmental Change in Prehistoric Community Patterns: The Development of Nucleated Village Communities in Northern West Virginia*. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Washington, Seattle.

Gordon, R.

1966 Natural Vegetation of Ohio at the Time of the Earliest Land Surveys. Ohio Biological Survey and the Natural Resources Institute of the Ohio State University, Columbus.

1969 The Natural Vegetation of Ohio in Pioneer Days. *Bulletin of the Ohio Biological Survey, New Series* 3(2), Ohio State University, Columbus.

Greer, G. H.

1981 *American Stonewares*. Schiffer Publishing Ltd., Exton, Pennsylvania.

Helwig, R. M.

1987 *Ohio Ghost Towns No. 43: Delaware County*. Center for Ghost Town Research in Ohio, Galena, Ohio.

Jones, W.

1955 *Public Opening and Second Annual Pilgrimage: Delaware County Historical Museum*. Delaware County Historical Society, Delaware.

Justice, N.

1987 *Stone Age Spears and Arrow Points of the Midcontinental and Eastern United States*. Indiana University Press, Bloomington and Indianapolis.

Lafferty, M.

1979 *Ohio's Natural Heritage*. Ohio Academy of Science, Columbus.

Little, B. E., M. Seibert, J. Townsend, J. H. Sprinkle, Jr., and J. Knoerl

2000 *National Register Bulletin: Guidelines for Evaluating and Registering Archeological Properties*. U. S. Department of the Interior, National Park Service, Washington, D.C.

- Lytle, J.
1908 *Twentieth Century History of Delaware County, Ohio*. Biographical Publishing Company, Chicago.
- Mahr, A.
1949 A Chapter of Early Ohio Natural History. *Ohio Journal of Science* 49(1).
- Mansberger, F. R.
1981 *An Ethnohistorical Analysis of Two Nineteenth Century Illinois Farmsteads*. MS thesis. Illinois State University. Normal, Illinois.
- McConnell, K.
1992 *Spongeware and Spatterware*. Schiffer Publishing, West Chester.
- McCorvie, M. R.
1987 *The Davis, Baldrige, and Huggins Sites Three Nineteenth Century Upland South Farmsteads in Perry County Illinois*. Preservation Series 4. American Resources Group, Ltd. Carbondale, Illinois.
- McDonald, H.
1994 The Late Pleistocene Vertebrate Fauna in Ohio: Coinhabitants with Ohio's Paleoindians. In *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 23-41. The Ohio Archaeological Council, Columbus.
- Miller, G.
1987 *An Introduction to English Ceramics for Archaeologists. A One-day Seminar at the Second Conference on Historic Archaeology in Illinois*. Midwestern Archaeological Research Center. Illinois State University. Normal, Illinois.
- Mills, W.
1914 *Archeological Atlas of Ohio*. Ohio State Archaeological and Historical Society, Columbus.
- Modie, F. B.
1908 *Modie's centennial atlas and history of Delaware County, Ohio*. F. Burr Modie, Columbus. Reprinted in *Combined Atlases and Wall Maps 1849, 1866, 1875, 1908 Delaware County Ohio*. Windmill Publications, Inc., Mt. Vernon, Indiana, 1990.
- Newman, S. T.
1970 A Dating Key for Post-Eighteenth Century Bottles. *Historical Archaeology* 4:70-75.
- Ohio Historic Preservation Office
1994 *Archaeology Guidelines*. Ohio Historic Preservation Office and Ohio Historical Society, Columbus.

Pacheco, P.

1996 Ohio Hopewell Regional Settlement Patterns. In *A View From The Core: A Synthesis of Ohio Hopewell Archaeology*, edited by P. Pacheco, pp. 16-35. The Ohio Archaeological Council, Columbus.

Pavey, R.R., R.P. Goldthwait, C.S. Brockman, D.N. Huyll, E. MacSwinford, and R.G. Van Horn

1999 *Quaternary Geology of Ohio*. Ohio Division of Geological Survey Map No. 2. The Ohio Department of Natural Resources, Division of Geological Survey, Columbus.

Pecora, A. and J. Burks

2006 *Phase II Archaeological Assessments of Sites 33DL1831 and 33DL1837, Delaware County, Ohio*. Submitted to Zaremba Group by Ohio Valley Archaeology, Inc. Copy available for review at the Ohio Historic Preservation Office, Columbus.

Pecora, A.

2005 *3.5 Acre Addendum to : Phase I Archaeological Survey of the Proposed 225 Acre Commercial/Residential Development in Berlin, Brown, and Delaware Townships, Delaware County, Ohio*. Submitted to Davey Resource Group by Ohio Valley Archaeological Consultants, Inc. Copy available for review at the Ohio Historic Preservation Office, Columbus.

Pollack, D. and A. Henderson

2000 Insights into Fort Ancient Culture Change: A View from South of the Ohio River. In *Cultures Before Contact: The Late Prehistory of Ohio and Surrounding Regions*, edited by R. Genheimer, pp. 194-227. The Ohio Archaeological Council, Columbus.

Potter, M.

1966 Cole Ceramics: A Study of Late Woodland Pottery. Unpublished M.A. thesis on file at the Ohio Historical Society, Department of Archaeology, Columbus.

Pratt, G. and D. Bush

1981 *Archaeological Resource Management in Ohio: A State Plan for Archaeology (Draft)*. Copy available for review at the Ohio Historic Preservation Office, Columbus.

Prufer, O. and D. Long

1986 The Archaic of Northeastern Ohio. *Kent Research Papers in Archaeology*, No. 6, Kent State University Press, Kent.

Putnam, K., K. Boone and L. Brown

1998 *Delaware County Water Resources*. Ohio State University Extension. Electronic document, <http://ohioline.osu.edu/aex-fact/0480>, accessed December 9, 2005.

- Ramsay, J.
1976 *American Potters and Pottery*. ARS Ceramica, New York.
- Rickey, B.
1983 *Delaware County Historical Overview*. The Ohio Historical Society, Columbus.
- Shane, L.
1987 Late-glacial Vegetational and Climatic History of the Allegheny Plateau and the Till Plains of Ohio and Indiana, U.S.A. *Boreas* 16:1-20.
- Sheaffer, C., and M. Rose
1998 *The Native Plants of Ohio, Bulletin 865*. The Ohio State University Extension (College of Food, Agricultural & Environmental Sciences) Department of Horticulture. Electronic document, http://ohioline.osu.edu/b865/b865_01.html, accessed November 28, 2005.
- Sherman, C.
1964 *Map of Ohio Showing Principal Streams and Their Drainage Areas*. Ohio Department of Natural Resources, Division of Water, Columbus.
- Stafford, R.
1994 Structural Changes in Archaic Landscape Use in the Dissected Uplands of Southwestern Indiana. *American Antiquity*, 59:219-237.
- Stillwell, L.
2001 *Phase I Archaeological Field Reconnaissance of a Proposed Development near Delaware, Delaware County, Ohio*. Submitted to Alt-Witzig Engineering, Inc. by Archaeological Consultants o Ossian. Copy available for review at the Ohio Historic Preservation Office, Columbus.
- Stout, W. and R. Schoenlaub
1945 *The Occurrence of Flint in Ohio*. Bulletin 46, Fourth Series. Department of Natural Resources, Ohio Division of the Geological Survey, Columbus, Ohio.
- Tankersley, K.
1994 Was Clovis a Colonizing Population in Eastern North America? In *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 95-116. The Ohio Archaeological Council, Columbus.
- 1989 *Late Pleistocene Lithic Exploitation and Human Settlement Patterns in the Midwestern United States*. Unpublished Ph.D. dissertation, Department of Anthropology, Indiana University, Bloomington.
- Tanner, H.
1987 *Atlas of Great Lakes Indian History*. University of Oklahoma Press, Norman.

Trautman, M.

1981 *The Fishes of Ohio*. The Ohio State University Press, Columbus.

U.S. Department of Agriculture, Soil Conservation Service

2001 *Soil Survey of Delaware County, Ohio*. Soil Conservation Service, U. S. Department of Agriculture, Washington, D. C. in cooperation with the Ohio Department of Natural Resources, Division of Lands and Soils, and the Ohio Agricultural Research and Development Center, Columbus.

United States Department of the Interior, National Park Service

1997 *National Register Bulletin; How to Apply the National Register Criteria for Evaluation*. United States Department of the Interior, National Park Service, Washington, D.C.

Visser, T. D.

1997 *Field Guide to New England Barns and Farm Buildings*. University Press of New England, Hanover, New Hampshire.

Webb, W. and R. Baby

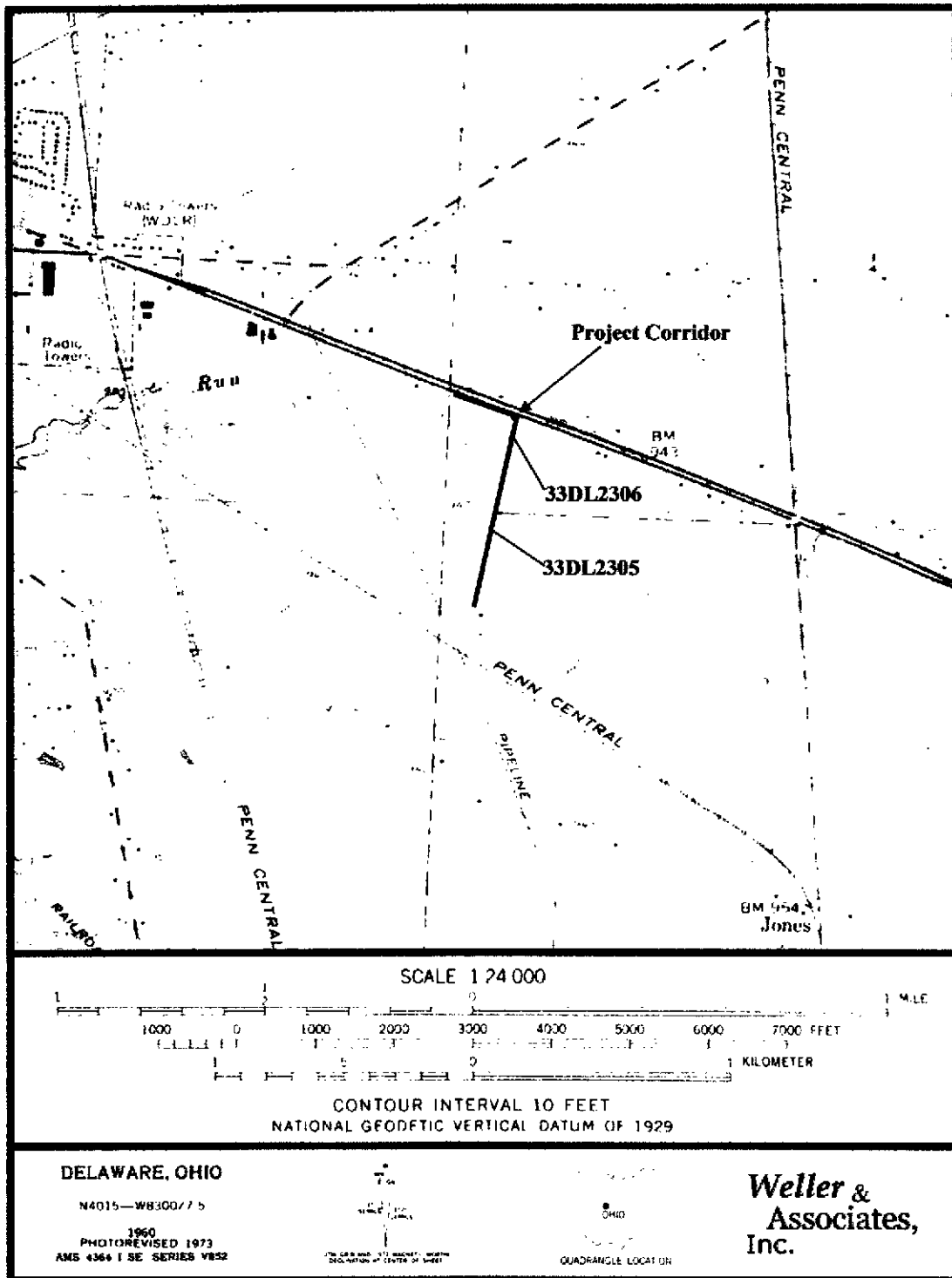
1963 *The Adena People No. 2*. The Ohio Historical Society, The Ohio State University Press, Columbus.

Weller, R. J.

2005a *Data Recovery at the Haven Site (33DL1448) Located in Liberty Township, Delaware County, Ohio*. Weller & Associates. Submitted to the Delaware County Sanitary Engineer's Office. Copy available for review from the Ohio Historic Preservation Office, Columbus.

2005b *Data Recovery at the Knowlton Site (33DL1450) Located in Liberty Township, Delaware County, Ohio*. Weller & Associates. Submitted to the Delaware County Sanitary Engineer's Office. Copy available for review from the Ohio Historic Preservation Office, Columbus.

2006 *Phase III Data Recovery at 33DL268, the McCammon Circle, Within the McCammon Chase Housing Development in Orange Township, Delaware County Ohio*. Weller & Associates. Submitted to M/I Homes, Inc. Copy available for review from the Ohio Historic Preservation Office, Columbus.



Appendix A. Portion of the USGS 1960 (P.R. 1973) Delaware, Ohio Quadrangle 7.5 Minute Series (Topographic) map indicating the location of the project corridor and sites 33DL2305-2306.



Figure 1. Political Map of Ohio showing the approximate location of the project corridor.

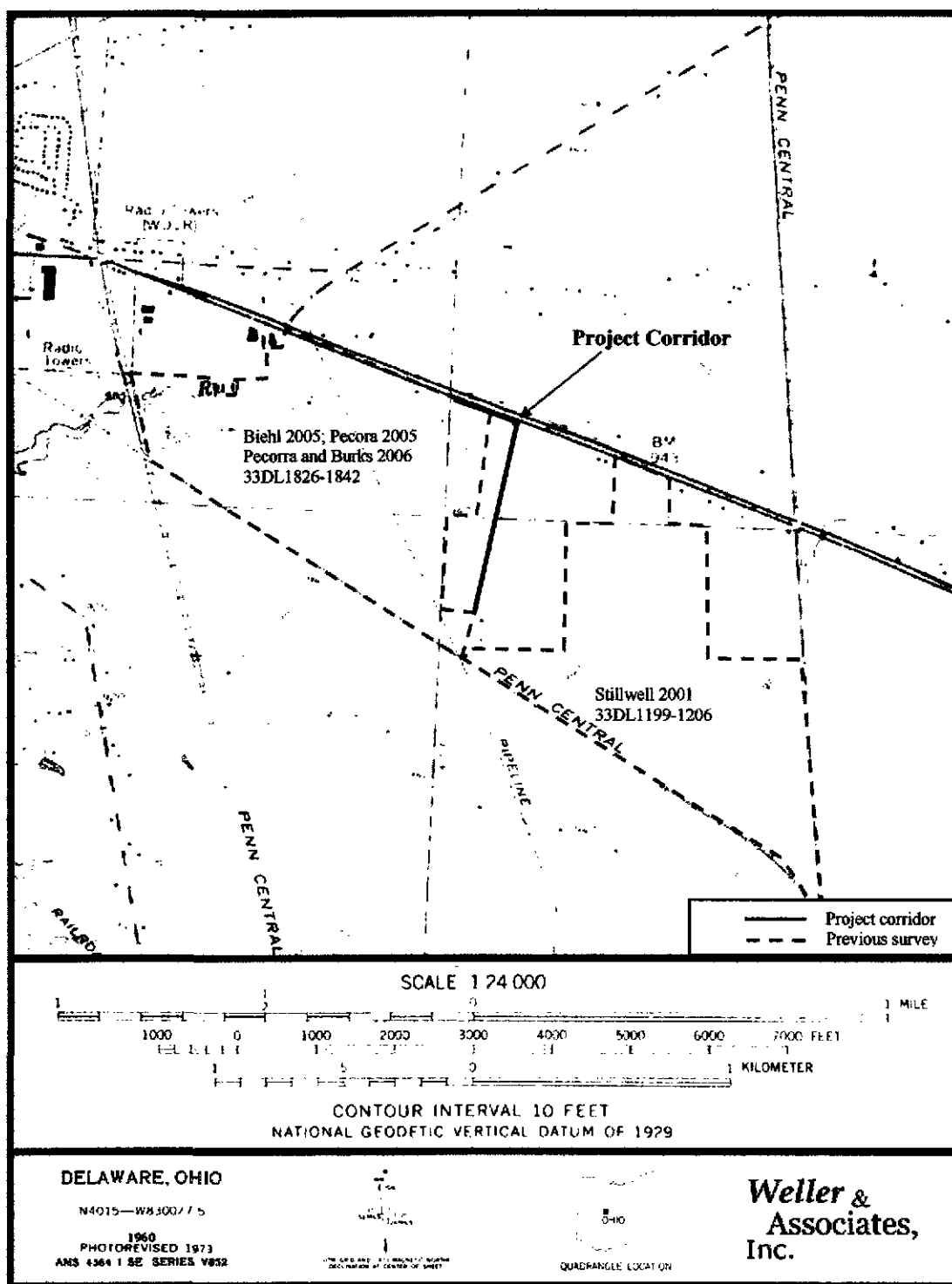


Figure 2. Portion of the USGS 1960 (P.R. 1973) Delaware, Ohio Quadrangle 7.5 Minute Series (Topographic) map indicating the location of the project corridor, previously recorded resources and previous surveys in the vicinity.

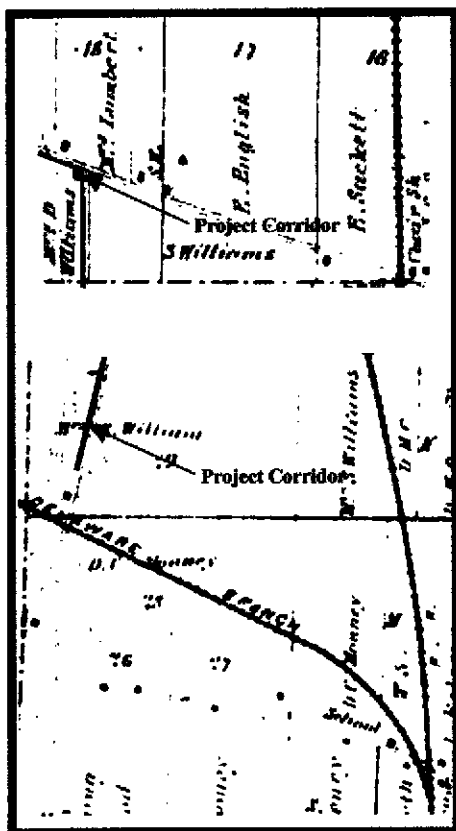


Figure 3. Portions of the Brown and Berlin Township maps from the *Atlas of Delaware County, Ohio* (Beers 1866) indicating the approximate location of the project corridor.

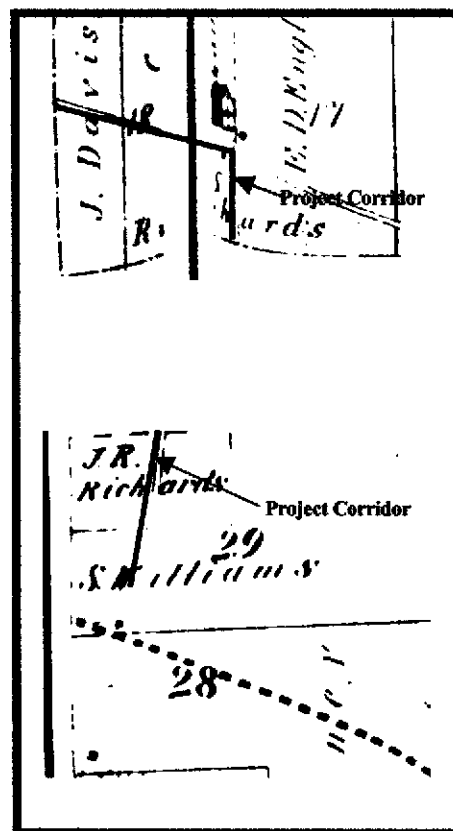


Figure 4. Portions of the Brown and Berlin Township maps from the *Illustrated Historical Atlas of Delaware County, Ohio* (Everts 1875) indicating the approximate location of the project corridor.

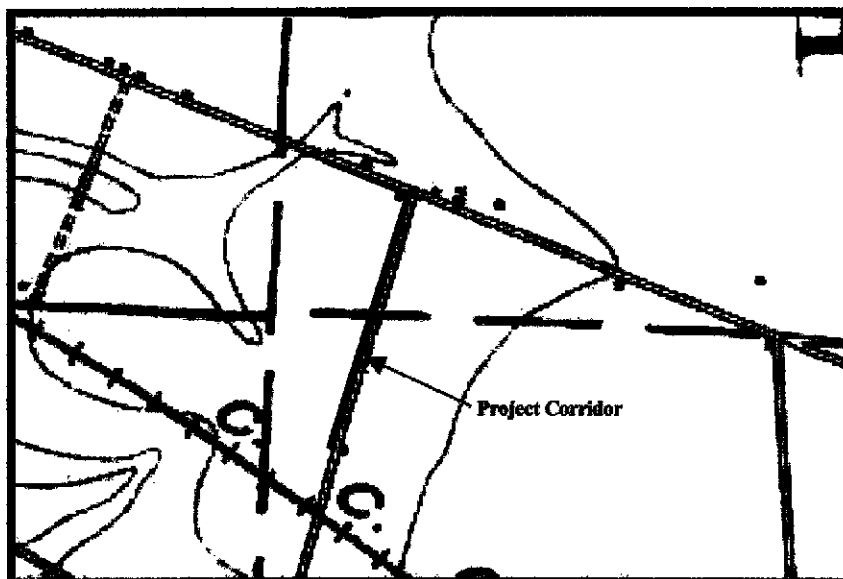


Figure 5. Portion of the 1903 *Delaware, Ohio Quadrangle 15 Minute Series (Topographic)* map indicating the approximate location of the project corridor.

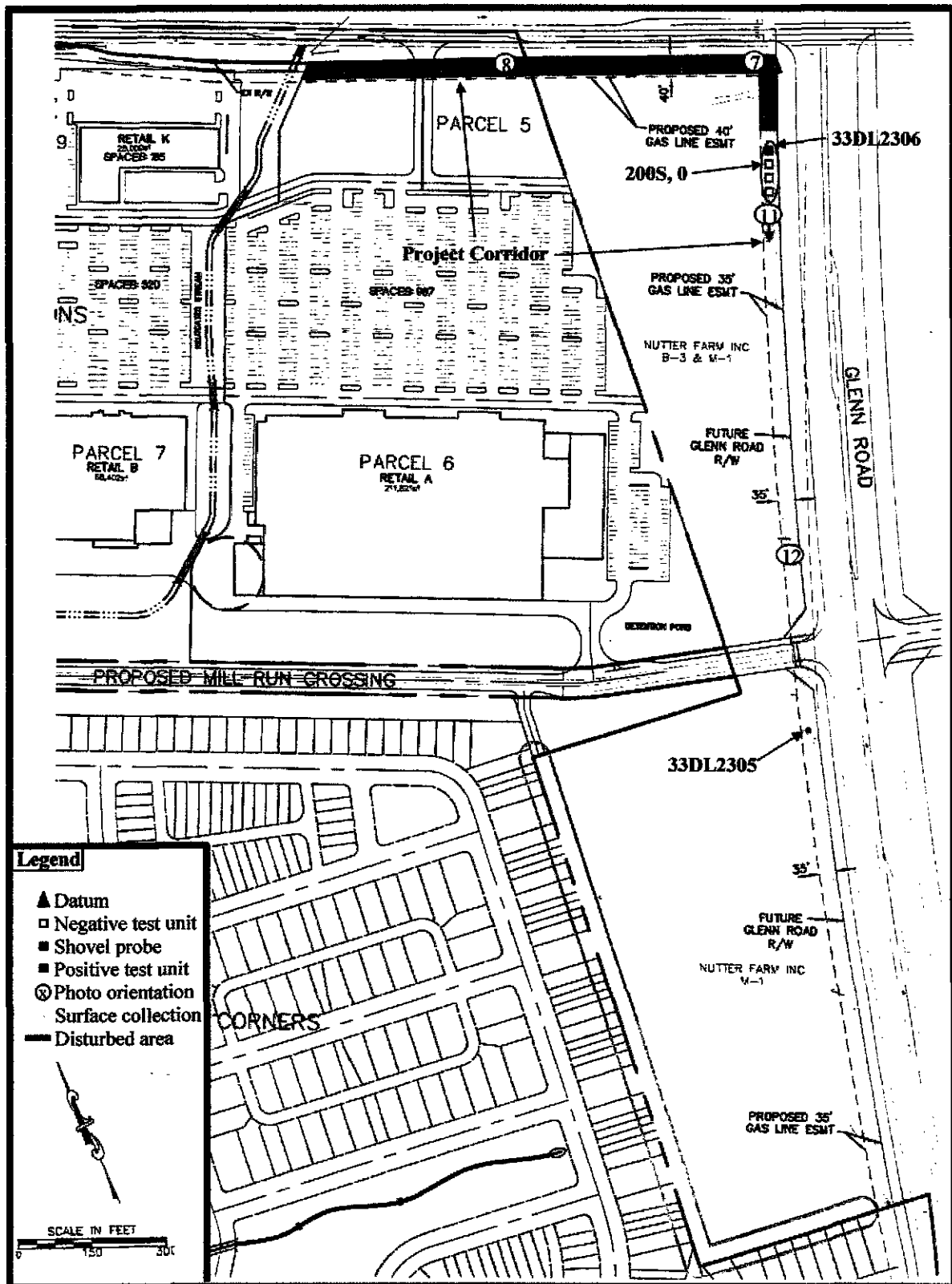


Figure 6. Fieldwork schematic depicting datum location, testing strategy, photographic orientations and the location of site 33DL2305-2306.



Figure 7. View of the disturbed northern portion of the project corridor along State Route 36.



Figure 8. Another view of the northern portion of the project corridor.

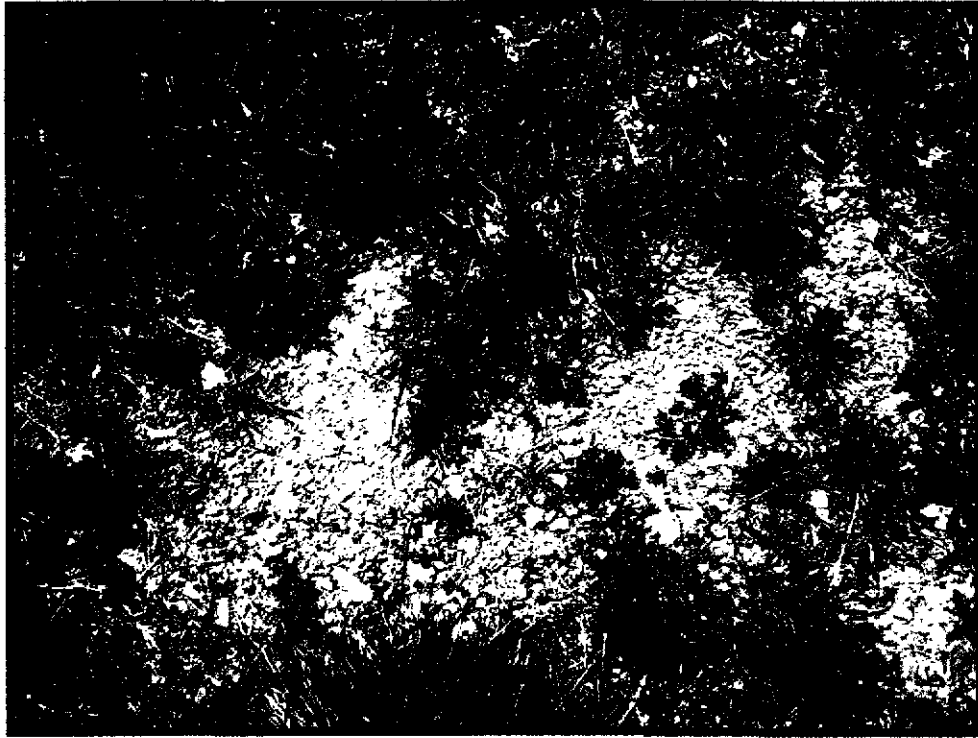


Figure 9. A view of the disturbed conditions evident on the surface within the northern aspect of the corridor.



Figure 10. A typical disturbed shovel probe excavated within the corridor.



Figure 11. View of the surface collected portion of the project corridor along Glenn Road.

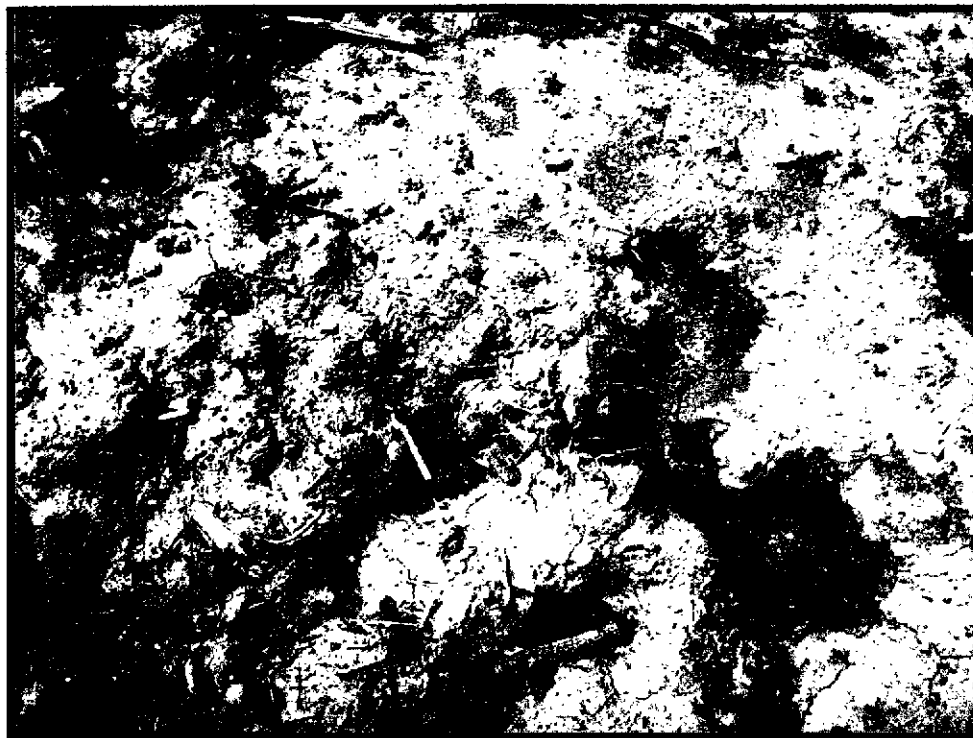


Figure 12. Typical surface visibility encountered at the time of survey.

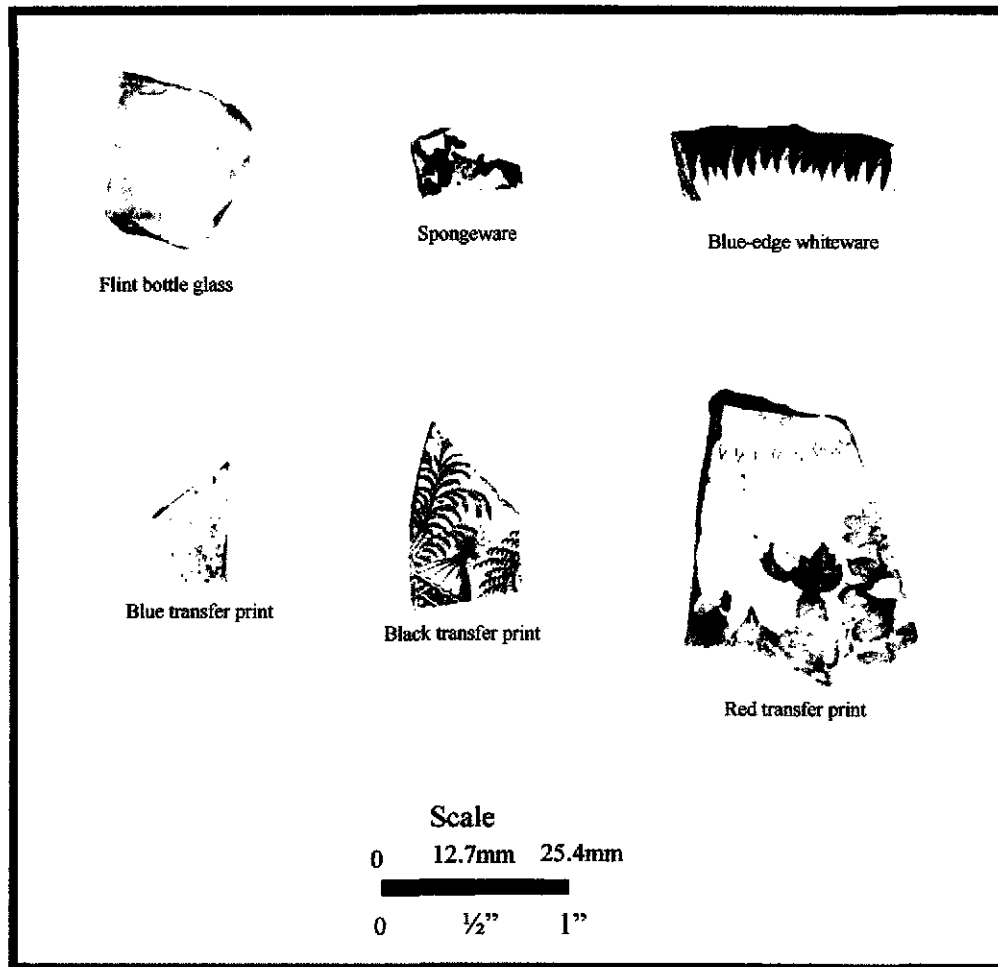


Figure 13. Some historic artifacts recovered from site 33DL2306.

APPENDIX B
ENVIRONMENTAL REVIEW



ECOLOGICAL CONSULTING ENGINEERS

24 May 2007

Mr. Lindy Jackson
UTI
2685 Plain City Georgesville Road
West Jefferson, Ohio 43165

**Re: Environmental Review Letter Report
Suburban Gas DEL-MAR Pipeline Relocation
S.R. 36 and Glenn Road
Delaware, Ohio**

247 E. Livingston Ave
Suite B

Columbus, Ohio 43215

614.224.4473 phone

614.224.4485 fax

info@williamscreek.net

www.williamscreek.net

Dear Mr. Jackson:

INTRODUCTION

Williams Creek Consulting, Inc. (WCC) appreciates the opportunity to provide this Environmental Review letter report for the proposed Suburban Gas DEL-MAR Pipeline relocation at S.R. 36 and Glenn Road in Delaware, Ohio (SITE).

The proposed project includes relocation of an existing Suburban Natural Gas Pipeline currently installed at S.R. 36 southeast to the intersection of Glenn Road and the railroad tracks to a 35 to 40 foot L-shaped easement along S.R. 36 and Glenn Road to facilitate development of a proposed commercial and residential development.

The Environmental Review will serve as support documentation for submittal of a Letter of Notification to the Ohio Power Siting Board for the proposed relocation. This report provides a desktop review of relevant and publicly available documents, and details information collected during the SITE reconnaissance including a wetlands determination, an evaluation of the potential presence of other natural resources within the SITE boundary, and the identification of favorable habitat for endangered, threatened and rare species.

DESKTOP REVIEW

United States Geological

WCC reviewed the USGS topographic map for the SITE. The SITE is located on the Delaware, Ohio USGS-7.5 Minute Quadrangle Map with coordinates of 40.291368°N 83.028829°W. SITE topography is nearly level with surface drainage tending to the west/southwest. Mill Run, a tributary to the Olentangy River is located in the central portion of the SITE. (Figure 1).

National Wetland Inventory (NWI) Map

NWI maps were developed to meet a USFWS mandate to map the wetland and deepwater habitats of the United States. These maps were developed using high altitude aerial photographs. Indicators noted in the photographs which exhibited pre-determined wetland characteristics were identified according to a detailed classification system. In some cases, the NWI information is erroneous. Some areas are misidentified as wetlands, which emphasizes the need to perform field verification.

The NWI maps use the USGS Quadrangle maps as a topographic base. The NWI map retains some of the detail of the Quadrangle map; however, it is used primarily for demonstration of wetland areas identified by the agency. The NWI map should not be used to positively identify wetlands on a SITE. The maps are accurate to a scale of 1:24,000.

No wetlands were identified on the NWI Map within the SITE boundaries (Figure 2).

National Resource Conservation Service (NRCS) County Soil Survey

WCC reviewed the NRCS County Soil Survey map provided on the NRCS website for the SITE. The Soil Survey map is an aerial photograph on which distinct soil units are identified. Other information contained within the soil survey may be used to identify wetland characteristics, drainage features, or land use.

Three soil units are identified within the SITE boundary: Bennington silt loam (BoA, BoB), Glynwood silt loam (GwB, GwC2) and Pewamo silty clay loam (PwA) (Figure 3). Pewamo silty clay loam is classified as a hydric soil. The areas of Pewamo soils within the corridor were in recently tilled agricultural fields. Mill Run is shown within the SITE boundaries.

Aerial Photography

Aerial photographs provide a visual overview of the SITE and can provide information to assist in identifying land use practices, terrain, drainage, vegetated areas, wetlands, habitats, etc. Certain features such as variegated soil patterns, may suggest the presence of wetlands. Figure 4 presents a copy of a Spring 2005 photograph. The aerial depicts the SITE as primarily agricultural fields with a stream corridor and a farmstead. No wetland features were identified on the aerial photograph.

Flood Insurance Rate Map (FIRM)

The Federal Emergency Management Agency (FEMA) was developed in 1979 to reform disaster relief and recovery, civil defense, and to prepare and mitigate for natural hazards. The Mitigation Division of FEMA manages the National Flood Insurance Program which provides guidance on how to lessen the impact of disasters on communities through flood insurance, floodplain management, and flood hazard mapping. Proper floodplain management has the ability to minimize the extent of flooding and flood damage and improve stormwater quality by reducing stormwater velocities and erosion. The one percent annual chance flood (100-year flood) boundary must be kept free of encroachment as the national standard for the program.

WCC reviewed a FIRM that showed the location of the SITE (Panel Number 39041C0120J) Figure 5. No floodplains or floodways were mapped within the SITE boundary.

Endangered, Threatened, or Rare (ETR) Species

WCC requested information from the US Fish and Wildlife Service (USFWS) regarding Endangered and threatened species within the project area. A copy of our request letter is provided in **Appendix A**. The USFWS had not responded to our request at the writing of this report. The response letter from USFWS will be forwarded upon receipt.

WCC reviewed the USFWS list of threatened and endangered species for Delaware County. The USFWS listed four endangered or threatened species within Delaware County: Indiana Bat (*Myotis sodalist*), Bald Eagle (*Haliaeetus leucocephalus*), Clubshell (*Pleurobema clava*), and Rayed Bean (*Villosa fabalis*). Favorable habitat for the Indiana Bat is trees with exfoliating barks, snags and trees with cavities and dead limbs. Favorable habitat for the Bald Eagle is forests near large bodies of water. Favorable habitat for the Clubshell and Rayed Bean mussel is rivers with sand and gravel substrates. Favorable habitat for the Indiana Bat may be present within the project corridor. Favorable habitat for the Bald Eagle, Clubshell and Rayed Bean was not present within the project corridor.

WCC also requested information from the Ohio Department of Natural Resources (ODNR), Division of Natural Areas and Preserves regarding rare and endangered species, state nature preserves, scenic rivers, unique ecological sites, geologic features or animal assemblages within a one-half mile radius of the SITE. The ODNR responded to our request on May 10, 2007 and indicated they had no record of rare or endangered species or other unique features within a one-half mile radius of the SITE. A copy of their correspondence is provided in **Appendix A**.

SITE RECONNAISSANCE

Williams Creek staff scientists conducted a field investigation at the SITE on May 7, 2007. WCC made note of the presumed land use of the SITE and surrounding area, as well as evaluated the SITE for the potential presence of wetlands, "waters of the U.S.", and natural resources using the findings of the desktop review and field observations. Photographs were taken during the field investigation and are provided in **Appendix B**.

The project involves relocation of approximately 1-mile of natural gas pipeline in a 35-40 foot corridor along S.R. 36 and Glenn Road. The corridor consists primarily of recently plowed agricultural fields. Two abandoned farmsteads, lawn areas, and a tree line comprise the remainder of the project. No wetlands were identified within the pipeline corridor. The proposed pipeline project will cross Mill Run. The portion of Mill Run at the proposed crossing has a narrow riparian buffer, poor channel development and a silt and clay substrate. Direct impacts to Mill Creek and the riparian corridor will be avoided by directional drilling. Erosion and sediment control measures will be implemented to minimize impacts to Mill Creek. No other streams were identified within the pipeline corridor.

Four, mature trees that exhibited potential bat habitat in the form of dead trees, dead branches or cavities were located within the 40 foot pipeline easement. These trees will be marked in the field and it is our understanding that the pipeline alignment within the corridor can be adjusted to avoid impacts to these trees.

CONCLUSIONS

The proposed project includes relocation of an existing Suburban Natural Gas Pipeline currently installed at S.R. 36 southeast to the intersection of Glenn Road and the railroad tracks to a 35 to 40 foot easement along S.R. 36 and Glenn Road to facilitate development of a proposed commercial and residential development. Based on the information obtained through our desktop review and site reconnaissance, Williams Creek Consulting offers the following conclusions:

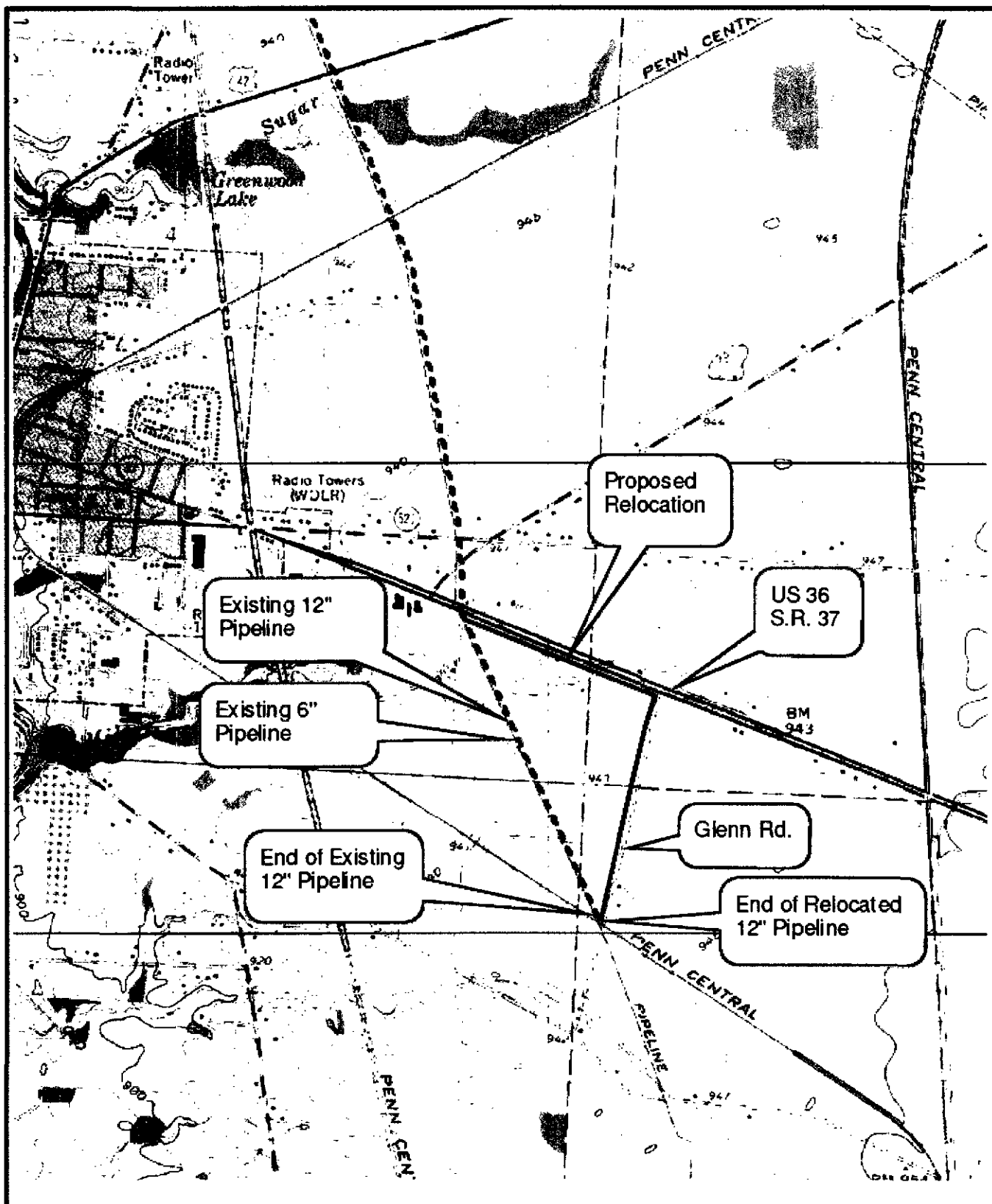
- ☛ No wetland areas were located within the project corridor
- ☛ Mill Run, a tributary to the Olentangy River, is located within the project corridor. Direct impacts to Mill Run and the associated riparian corridor will be minimized by directional drilling under Mill Run.
- ☛ Williams Creek Consulting requested information from the U.S. Fish and Wildlife Services (USFWS) regarding threatened and endangered species within the project area. The USFWS had not responded to our request at the writing of this report. This information will be forwarded upon receipt.
- ☛ Williams Creek Consulting reviewed the USFWS list of threatened and endangered species for Delaware County. Suitable habitat for the Indiana Bat was observed within the study corridor. It is our understanding that these trees will be marked in the field and the pipeline alignment within the corridor can be adjusted to avoid impacts to these trees. Suitable habitat was not observed for any other endangered or threatened species.
- ☛ The Ohio Department of Natural Resources had no record of threatened or endangered species or unique ecological features within a one-half mile of the study corridor.
- ☛ No floodplains or floodways were mapped within the project corridor.

Williams Creek Consulting appreciates the opportunity to provide our services on this project. If you have any questions or would like additional information, please contact our office.

Sincerely,
Williams Creek Consulting, Inc.



Christina Svoboda
Project Manager



247 E. Livingston Ave
Suite B
Columbus, Ohio 43215
Tel: 614-224-4473
Fax: 614-224-4485



1"=2000'

FIGURE #1
USGS Topographic Map
Delaware Quad
Suburban Pipeline Relocation
S.R. 36 and Glenn Road
Delaware, Delaware County, Ohio

Prepared for:

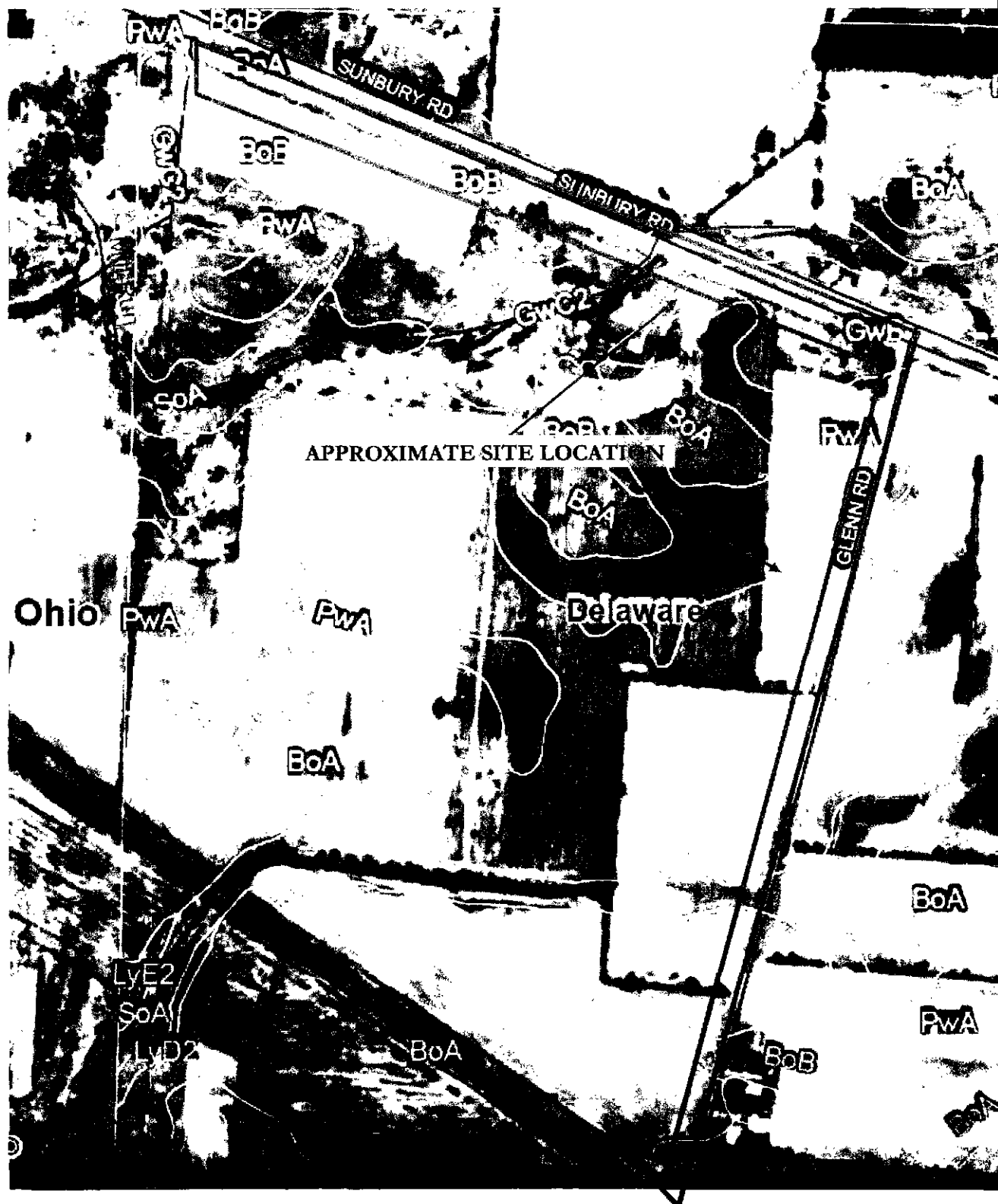
UTI

Project No.

070083

Date:

May 2007



247 E. Livingston Ave
Suite B
Columbus, Ohio 43215
Tel: 614-224-4473
Fax: 614-224-4485



1"=2000'

FIGURE # 3
USDA Soil Map
Suburban Pipeline Relocation
S.R. 36 and Glenn Road
Delaware, Delaware County, Ohio

Prepared for:
UTI

Project No.
070083

Date:
May 2007



8310156 36" W 1162 5020

Shoring (111) 100%

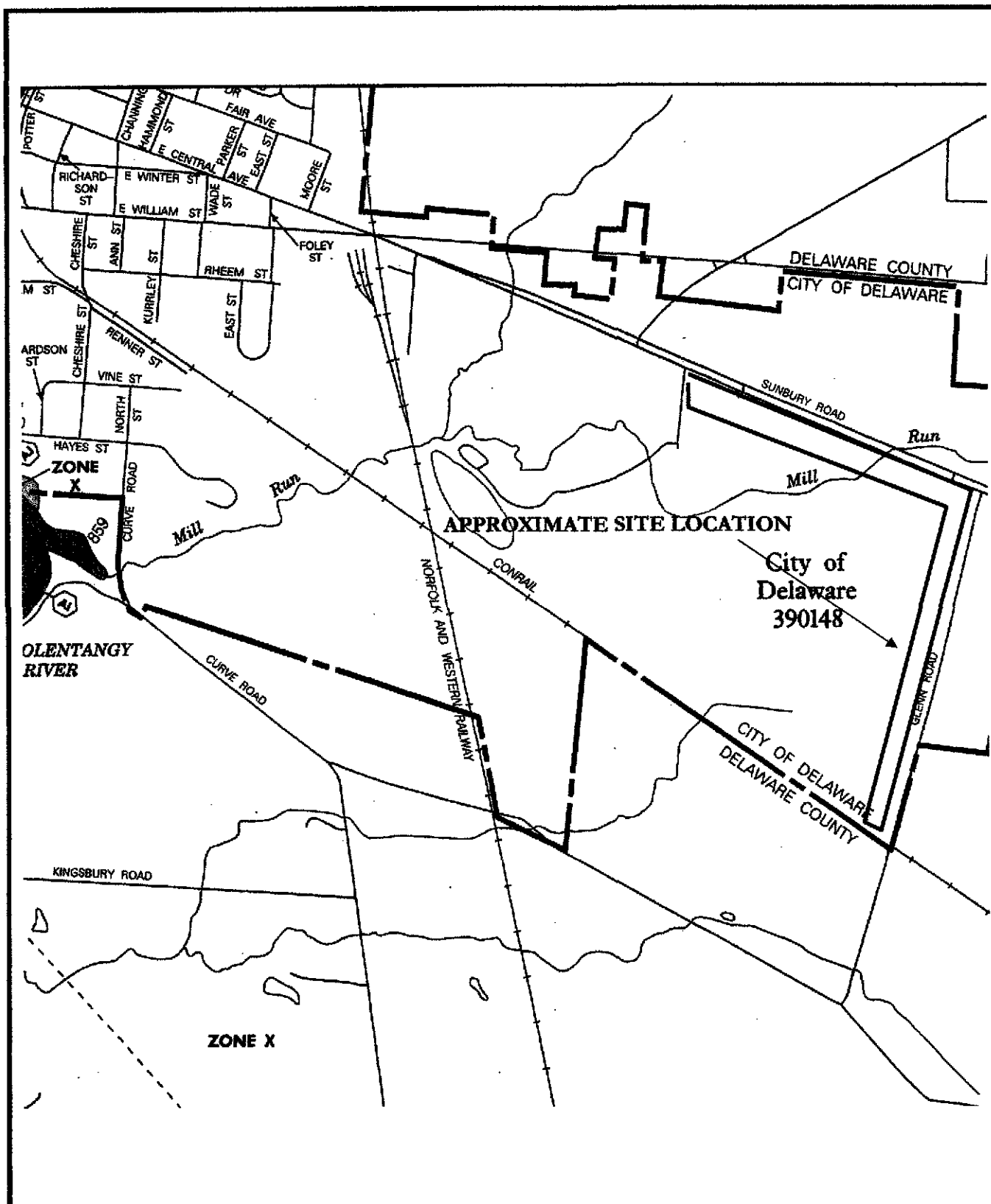


247 E. Livingston Ave
Suite B
Columbus, Ohio 43215
Tel: 614-224-4473
Fax: 614-224-4485



FIGURE # 4
2005 Aerial Photograph
Suburban Pipeline Relocation
S.R. 36 and Glenn Road
Delaware, Delaware County, Ohio

Prepared for: UTI	
Project No. 070083	Date: May 2007



247 E. Livingston Ave
Suite B
Columbus, Ohio 43215
Tel: 614-224-4473
Fax: 614-224-4485



FIGURE # 5
Flood Insurance Rate Map
Suburban Pipeline Relocation
S.R. 36 and Glenn Road
Delaware, Delaware County, Ohio

Prepared for:

UTI

Project No.

070083

Date:

May 2007

APPENDIX A
AGENCY CORRESPONDANCE



Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

Division of Natural Areas and Preserves

Steven D. Maurer, Chief

2045 Morse Rd., Bldg. F-1

Columbus, OH 43229-6693

Phone: (614) 265-6453; Fax: (614) 267-3096

May 10, 2007

Christine Svoboda
Williams Creek Consulting
247 E. Livingston Ave., suite B
Columbus, OH 43215

Dear Ms. Svoboda:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has no records of rare or endangered species in the proposed suburban gas pipeline relocation project area, including a half mile radius, along Glenn Rd. and U.S. Route 36 in Berlin, Brown and Delaware Townships, Delaware County, and on the Delaware Quad ().

There are no existing or proposed state nature preserves or scenic rivers at the project site. We are also unaware of any unique ecological sites, geologic features, animal assemblages or state parks, forests or wildlife areas within a half mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas. Also, we do not have data for all Ohio wetlands. For National Wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at 614-265-6576.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Debbie Woischke".

Debbie Woischke, Ecological Analyst
Natural Heritage Program





ECOLOGICAL CONSULTING ENGINEERS

247 East Livingston Avenue

Suite B

Columbus,

Ohio 43215

May 9, 2007

Dr. Mary Knapp
US Fish and Wildlife
6950 Americana Parkway -Suite H
Reynoldsburg, Ohio 43068-4127

614.224.4473 phone

614.224.4485 fax

**RE: Data Request
Proposed Natural Gas Pipeline Relocation
S.R. 36 and Glenn Road
Delaware County Ohio**

info@williamscreek.net

www.williamscreek.net

Dear Dr. Knapp,

I am requesting information regarding the occurrence or possible occurrence of Federally listed endangered, threatened, or candidate species as well as designated wilderness areas or wildlife preserves within the vicinity of a proposed Suburban Natural Gas Pipeline Relocation project at S.R. 36 and Glenn Road in Delaware, Ohio. A topographic map of the site is included. The project is more specifically located at 40.291368°N 83.028829°W.

The project involves relocation of approximately 1-mile of natural gas pipeline in a 35-40 foot corridor along S.R. 36 and Glenn Road. The corridor consists primarily of recently plowed agricultural fields. Two abandoned farmsteads, lawn areas and a tree line comprise the remainder of the project. Four, mature trees that exhibited potential bat habitat in the form of dead trees, dead branches or cavities were located within the pipeline easement. These trees will be marked in the field and it is our understanding that the pipeline alignment within the corridor can be adjusted to avoid impacts to these trees.

No wetlands were identified within the pipeline corridor. The proposed pipeline project will cross Mill Creek. Direct impacts to Mill Creek and the riparian buffer will be avoided by directional drilling. Erosion and sediment control measures will be implemented to minimize impacts to Mill Creek. No other streams were identified within the pipeline corridor.

If you have any question or need additional information to process this request you can contact me at (614) 224-4473.

Sincerely,

Christina Svoboda
Project Manager
Williams Creek Consulting, Inc.

Enclosures

cc: Lindy Jackson - UTI



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4127
(614) 469-6923 / FAX (614) 469-6919
May 29, 2007

Christina Svoboda
Williams Creek Consulting
247 E. Livingston Avenue, Suite B
Columbus, Ohio 43215

TAILS: 2007-TA-0569

Re: Natural Gas Pipeline, SR 36 and Glenn Rd, Delaware County, Ohio

Dear Ms. Svoboda:

This is in response to your May 9, 2007 letter requesting information regarding federally listed threatened and endangered species at the above-referenced project site. The project involves relocation of approximately 1-mile of natural gas pipeline in a 35-40 foot corridor along SR 36 and Glenn Road in Delaware County, Ohio. The corridor consists primarily of recently plowed agricultural fields. Four mature trees exhibiting characteristics of Indiana bat roosts are located within the pipeline easement. The trees will be marked in the field and the pipeline alignment can be adjusted to avoid the marked trees.

There are no Federal wilderness areas, wildlife refuges, or designated Critical Habitat within the vicinity of the proposed site. The proposed project lies within the range of the **Indiana bat** (*Myotis sodalis*), a Federally-listed endangered species. Because the four suitable roost trees located in the right of way will be avoided, and no other suitable habitat will be impacted, impacts to this species are unlikely. The proposed project lies within the range of the federally endangered **clubshell mussel** (*Pleurobema clava*), federally threatened **bald eagle** (*Haliaeetus leucocephalus*) and the **rayed bean mussel** (*Villosa fabalis*), a federal candidate species. Due to the project type, location, and onsite habitat, no impacts to these three species are expected.

Should additional information on listed or proposed species or their critical habitat become available or if new information reveals effects of the action that were not previously considered, our comments and recommendations may be reconsidered. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (ESA), as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy. If you have questions, or if we may be of further assistance in this matter, please contact Jeromy Applegate at extension 21 in this office.

Sincerely,

Mary Knapp, Ph.D.
Field Supervisor

cc: ODNR, DOW, SCEA Unit, Columbus, OH

APPENDIX B
PHOTOGRAPHS

Photo 1: 05/07/07 – East to west view of the corridor for the proposed gas line relocation along S.R. 36



Photo 2: 05/07/07 – West to east view of the corridor for the proposed gas line relocation along S.R. 36

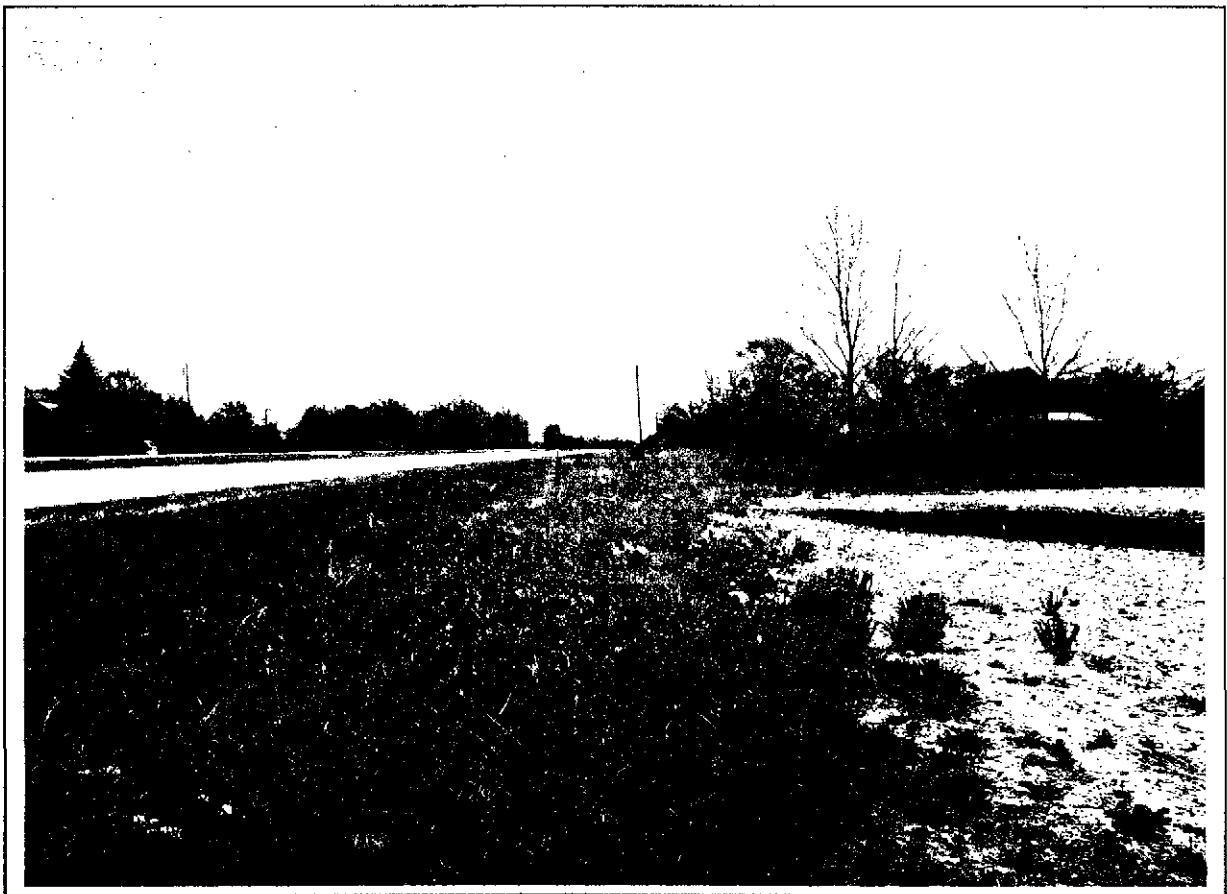


Photo 3: 05/05/07 West to east view across Mill Run at area of proposed directional drill crossing.



Photo 4: 05/05/07 View of former farmstead area with mature trees with potential bat habitat



Photo 5: 05/05/07 North to south view across the corridor for the proposed pipeline relocation along Glenn Road



Photo 6: 05/05/07 South to north view across the corridor for the proposed pipeline relocation along Glenn Road

