Large Filing Separator Sheet

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TRANSCRIPT



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

August 11, 2004

Mr. Allan M. Hale URS Corporation 36 East 7th Street, Suite 2300 Cincinnati, OH 45202-4434

Dear Mr. Hale:

This is in response to your June 29, 2004 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species within the vicinity of the proposed construction of a substation located at the corner of Hillcrest Road and Greenbush East Road in Brown County, Ohio. The new substation will require approximately seven miles of transmission line to the Eastwood substation in Clermont County. Per our conversation August 11, 2004, the transmission line will be above ground. This preliminary request for information will be used to develop a preferred and alternative route within the study area. There are no Federal wildlife refuges, wilderness areas, or Critical Habitat within the vicinity of this project.

The Service recommends that once the preferred and alternative route have been developed, requests for threatened and endangered species information submitted to the Service's Ohio Field Office include the following information: 1) location data including latitude and longitude of project area, site address, and county; 2) a detailed project description, including layout of any new construction; 3) a detailed description of onsite habitat, including the size, location, and quality (when available) of streams, wetlands, forested areas and other natural areas, and proposed impacts; 4) a description of the forested habitat onsite, including type of forest, and presence of dead trees, split branches or trunks, and exfoliating bark, and proposed impacts; 5) photographs representative of all cover types on the site and encompassing views of the entire site (photocopies are acceptable); and 6) a topographic map with the project area identified. This information may enable our staff to fully evaluate potential impacts to any threatened or endangered species which may occur within the vicinity of the project.

ENDANGERED SPECIES COMMENTS: The proposed project lies within the range of the Indiana bat (Myotis sodalis), a Federally-listed endangered species. Since first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. Summer habitat requirements for the species are not well defined but the following are considered important:

- Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
- 2. Live trees (such as shagbark hickory and oaks) which have exfoliating bark.
- 3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.

Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above, we recommend that the habitat and surrounding trees be saved wherever possible. If the trees must be cut, further coordination with this office is recommended. Additionally, suitable bat roost trees should not be cut between April 15 and September 15.

If desirable trees are present and must be cut, mist net or other surveys may be warranted to determine if bats are present. Any survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office. The survey should be conducted in June or July, since the bats would only be expected in the project area from approximately April 15 to September 15.

A portion of the study area includes Clermont County which lies within the range of the running buffalo clover (Trifolium stoloniferum), a Federally-listed endangered species. This species can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. Should the proposed project impact any of the habitat types described above, further coordination with this office may be required.

The proposed site is also within the range of the rayed bean mussel (Villosa fabalis), a Federal Candidate species. The Service is providing the following information regarding this species in the event there are potential stream impacts associated with the construction of this project. The rayed bean is generally known from smaller, headwater creeks, but records exist in larger rivers. They are usually found in or near shoal or riffle areas, and in the shallow, wave-washed areas of lakes. Substrates typically include gravel and sand, and they are often associated with, and buried under the roots of, vegetation, including water willow (Justicia americana) and water milfoil (Myriophyllum sp.). The rayed bean has been recorded in the East Fork of the Little Miami River, and is potentially present in its tributaries. Should the proposed project directly or indirectly impact any of the habitat types described above, further coordination with this office may be required.

The proposed project lies within the range of the sheepnose mussel (*Plethobasus cyphus*), a Federal Candidate species. The sheepnose mussel is primarily a larger-stream species. Due to the project location, no impacts to this species are anticipated. Relative to this species, this precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

This technical assistance letter is submitted in accordance with provisions 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, as amended, and is 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 any questions regarding our response or if you need additional information, please contact Karyn Tremper at extension 13.

Sincerely.

Mary Knapp, Ph.D

Supervisor

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

APPENDIX 06-2

PUBLIC MEETING INFORMATION

Hillcrest/Eastwood Transmission Line - Substation and Power Line Construction Project



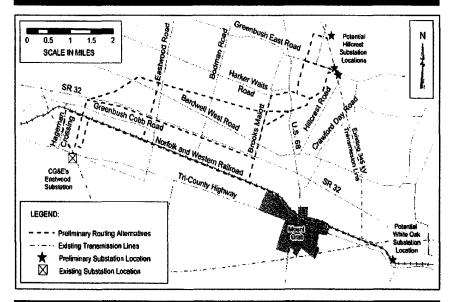
OPEN HOUSE

5:00 p.m. – 8:00 p.m.. Tuesday, December 7, 2004 Western Brown High School 476 West Main Street in Mt. Orab

Cincinnati Gas & Electric would like to invite you to an open house to discuss the proposed new substation and electric transmission line in western Brown County and eastern Clermont County. The exact route will not be determined until after this open house because CG&E wants to listen to citizen concerns and questions. Only one of these routes, or some variation of one, may be approved by the Ohio Power Siting Board.

Company representatives will be present throughout the evening to answer questions about transmission line route options, the environmental assessment process, construction schedule, engineering considerations, property easements, and other topics. You can arrive at any time during the open house; there will be no formal presentation.

Proposed Routes Hillcrest - Eastwood Electric Transmission Line



History

The proposed substation and transmission line are necessary to maintain reliable service to customers within the eastern part of the CG&E system. Rapid growth of residential developments and businesses is expected to continue, and the demand for electricity will result in reduced reliability if steps are not taken to provide a new source of power. CG&E has made improvements to substations, distribution lines, and other system components over the years, but such efforts can no longer meet the expected demand for electric service in this area.

Computer modeling of the CG&E system shows that the proposed substation and transmission line are the best options for meeting the projected demand.

CGCE and its consultants have assembled information that documents the environmental conditions, cost, engineering feasibility, and other features for the substation and power line routes. This information will be compiled into an application for a construction certificate that will be submitted to the Ohio Power Siting Board in 2005. Construction could begin in late 2006.

Acquiring Easements

CG&E will contact property owners where easements are needed and will negotiate with each property owner to reach agreement on Easements are legal agreements that grant CG&E access to property to construct and maintain power lines within the area called a right-ofthe compensation to be paid for granting each market rates, depending on the acreage and easement. Easement fees are negotiated at fair location of the easement. way.

Property owners maintain ownership of the property, subject to the rights granted to CG&E. CG&E will remove trees and tall shrubs from various widths of the right-of-way, which is a pair of the easement signed with the property owner and filed in the appropriate county court-

Property Restoration

such damage at the company's expense before the project is complete. Any property disturbed by construction of the power line will be restored to its original condition or better. A before construction begins and will be used to guide restoration. videotape of the power line route will be taken Where construction crews need to cross property, it is likely that a certain amount of grass, agricultural field, and/or landscaping will be damaged to some extent. CG&E will repair

exceptions. Large permanent structures such as line work. Specifies of property restoration ers can use their property as before, with a few homes, garages and swimming pools are not allowed in the easement area because CG&E needs to maintain clear access to this area for vegetation maintenance and any future power will be discussed during easement negotiations. After the power line has been constructed, own-

- Substation land purchased ► Summer 2004
- Public Information Open House (Advertised in newspapers) ■ Winter 2004-05
 - ➤ Spring 2005
- with the Ohio Power Siting Certificate application filed Board
- (Advertised in newspapers) Local Public Hearing and Adjudicatory Hearing as part of the Ohio Power Siting Board process ► Summer 2005
- Certificate received, detailed surveys and engineering, easements obtained ► Fall 2005
 - Construction begins, with land restoration following ■ Winter 2006-07
 - Line in service, final land restoration **►** Summer 2008

Summary

is just one of many steps CG&E is taking to al customers far into the future. This power line make sure the electric transmission system CG&E is committed to providing its customers with a reliable supply of electricity for home, business, and industrial uses. The Hillcrest-Eastwood Line will preserve the existing system's reliability and meet the needs of additionremains safe and dependable. For more information about the Hillcrest-Eastwood electric transmission line project, please contact:

For easement and land rights questions: Mark Kline at 513-287-4004 or mkline@cinergy.com For engineering or construction questions: Michael Clodfelder at 513-287-1721 or mclodfelder@cinergy.com

Hillerest - Eastwood Fransmission Line Substation and Power Line Construction Project



CG&E's Eastwood Substation.

Project Summary

Population growth and commercial development in CG&B's eastern service territory have led to increased use of electricity. Detailed studies show the company must epistucia new electric transmission line and associated subfattion in Brown county to maintain reliable service in this part of its system. The new transmission line will be named the Hillcrest-Eastwood Line.

The Hillcrest-Eastwood Line will begin at a substation to be built near either the intersection of Greenbush East and Hillcrest Reads, near where the existing transmission line crosses the roads, or near White Oak Station Road, as shown on the map. The new transmission line will end at CG&E's existing Eastwood Substation on Tri-County Highway in Clermont County.

CG&E and its consultants are assembling information that documents the environmental conditions, cost, engineering feasibility, and other features for the substation and power line routes. This information will be compiled into an application for a construction extificate that will be submitted to the Ohio Power Sting Board (GPSB). Assuming timely, approval, construction will begin at the end of 2006. The jarget date for the line to begin service is summer 2008.

ne Facts	138,000 volts	7-10 acres	Approx. 7 miles	Steel and wood poles	50-100 feet	100-500 feet
Transmission Line Facts	Line Voltage:	Substation:	Line Length:	Support Structures:	Height of Structures:	Distance between Structures:

Power Line Safety

Over the past few decades there has been discussion that exposure to power lines can cause adverse health affects. Power lines create electric and magnetic fields (EMF), which are invisible lines of force that surround electrical devices. Every electrical device, whether household appliance or wiring, industrial motor, or electric line, produces EMF.

Scientists from government agencies and universities in almost every industrialized country have conducted extensive research on this topic and found there is no cause and effect relationship between EMF and diseases. There is a small amount of evidence that exposures may present a leukernia hazard, but this evidence is not strong enough to warrant concern from regulatory agencies. Scientists generally agree that if there is any health risk, it is apparently a very small risk and affects a very small portion of the population. There are no government standards for exposures to EMF because there is so little evidence of any harm.

For more information about EMF, you can visit Cinergy's website at: www.cinergy.com/environment.



Construction Sequence

Before any work begins, the new portion of the line must be surveyed. In addition to a land survey, a survey from a helicopter or plane may be performed. Vegetation will be cleared in the exsement as necessary to facilitate the land survey.

When construction begins, area residents can expect to see typical power fine service trucks in addition to some heavy equipment. Existing access roads and private roads will be used whenever possible. Property ow ners will be contacted prior to using private roads. Construction will generally follow this sequence:

- ► Clear for Construction: Once the line route has been marked, the easement will be cleared where needed to facilitate construction and maintain required clearances.
- ► Construction: Pole structures and equipment will be delivered to the job site. Holes will be augured into the earth where poles will be set. Then, the hole will be backfilled and compacted. If steel poles/structures are used, foundations may need to be installed. Insulators will be installed on the poles and the conductors (wires) will be pulled onto and clamped to the insulators.
- ► Energizing Conductors: CG&E will conduct testing on the line prior to it being placed in service.
- ► Property Restoration: CG&E will restore all property disturbed by the construction.

Once the line is in service, CG&E will regularly inspect the line and provide maintenance as needed. A tree trimming schedule will be established to keep trees from growing up under the line.

Hillcrest - Eastwood Electric Transmission Line Hillcrest - Eastwood Electric Transmission Line SCALE IN MILES SR32 SR32 Rad Baron Ba

REDROY

U.S. 68

Th-County Highway

CG&E's Eastwood Substation Preliminary Routing Alternatives

LEGEND:

---- Existing Transmission Lines

Preliminary Substation Location Existing Substation Location

 $\star \boxtimes$

CG&E hired independent consultants to study alternative routes, by taking environmental, land use, historic and archeologic, and engineering factors into consideration. More than 60 route combinations and sections were evaluated and scored. The lines on the map indicate the proposed routes under proposed final consideration. Only one of these routes, or some variation of one, may be approved by the Ohio Power Siting Board (OPSB), which is primarily erosion and will eventually be built.

The procedure to obtain construction approval requires CG&E to prepare a detailed environmental

analysis, publish newspaper notices about the project, hold a public information meeting, and take various other steps to inform the agency and the public about CG&E's plans. CG&E voluntarily expands upon this process by interviewing public officials, preparing this brochure, and meeting with potential stakeholders well in advance of the requirements. When the time comes, CG&E will also prepare an evosion and sedimentation control plan. CG&E will also obtain approvals from the Ohio Department of Transportation, Brown and Clermont Counties and affected property owners.

Potential White Oak Substation Location





Delivered to more Southwest Ohlo each Sunday than 21,000 homes in

20 pages 50 cents

Vo. 7, Issue 49 Dec. 12, 2004

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CG&E to construct substation in area By WADE LINVILLE Staff writer

Electric held an open house at the Western Brown High School in Mt. Orah Tuesday, Dec. 7 to gather public opinion on the construction of a new substation and 138,000 volt transmis-MT. ORAB - Cincinnati Gas and sion line in Brown County.

station in order to maintain dependable service to Mt. Orab's section of the electric system. tion growth in the Mt. Orab service transmission line in Brown County area. CG&E must construct a new that will connect to an associated sub-Due to an increased use of electricity because of commercial and popula-

ning for the new line.
According to Robert McElfresh,
According to Robert scientist, plans for the project started durferent route combinations while plan-CG&E evaluated more than 60 dif-

least impact overall," said Alan Halof URS, who was chosen by CG&E to help evaluate the proposed project
"We're looking at it from a lot of difformal senerts."

approximately seven to 10 acres of ferent aspects."

The new line will be approximately seven miles in total length. Support structures for the line will consist of steel and wood poles, and will be placed between 100 to 500 fect apart. The new substation will require

of the line construction will be around \$3.6 million. CG&E must obtain a "right of way" for property that the new line will cross and that could affect its cost for the project, according to Hicks. Rick Hicks, CG&E project manager, said the cost of the new substation will be around \$5 million and the cost

One of the routes must be approved by the Ohio Power Sitting Board, which is primarily staffed by the Public Utilities Commission of Ohio.

Please see CG&E/ page 3



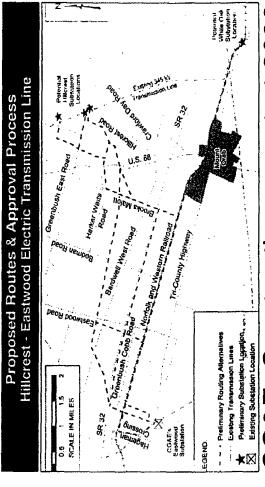
CG&E project struction of a new substation transmission line in Brown County during CG&E's open house Dec. 7 at manager, discusses the conopen house Dec. 7 al Western Brown High School. Rick Hicks,

ing the summer. They have narrowed it down to just a few alternatives. The

transmission line is expected to begin at a substation that will be built in a location where it is able to connect to an existing 345,000 volt transmission the intersection of Hillcrest and Greenbush East roads to construct the CG&E plans to choose between one or one of three possible locations near location near White Oak Station Road,

existing substation on Tri-County Highway in Clermont County known as the Eastwood Substation. McBifresh seemed to favor the White Oak Station location for the new subline could then be constructed along the path of the Norfolk and Western The new line is expected to end at an station because the new transmission new substation.

Railroad, which passes directly through Mt. Orab. "We try to find the route that has the



CG&E: Construction may start 2006

continued from page 1

Construction approval can-not be obtained unless CG&E publishes newspaper notices about the project, holds a public information meeting, prepares a detailed environmental analysis, and takes other

new line and substation.

reliability and helps feed the area."

in a timely manner, CG&E plans to start the construction at the end of 2006 and hopes to have the new line If the project is approved

in service by the summer of 2008. additional steps to inform the public about their plans. tris not really that intrusive, said Mt. Orab Mayor is Bruce Lunsford when he was asked how he felt about the plans to construct the "Anything that upgrades



Corporate Office P. O. Box 250 • 2780 Coonpath Road Lancaster, Ohio 43130-0250 (740) 653-4422 • Fax (740) 681-4488 • 1-800-282-5064

The Power of Human Connections

July 23, 2004

John McNabb Staff Engineer - T&D Planning Cinergy P.O. Box 960 EM661 Cincinnati, Ohio 45202

Dear Mr. McNabb,

Thank you for contacting South Central Power (SCP) about your new route proposal for building a 138kV-transmission line to your future Hillcrest substation. SCP has been evaluating the need for a new 69 or 138kV tap for our existing 34.5kV Eastwood substation. This would provide SCP with more reliability to tie its existing distribution to our Duckwall substation. We have reviewed this information and have determined that due to the load center of the distribution facilities that our existing Eastwood substation location is adequate. SCP would prefer that the proposed route be between points B and K (along the Norfolk and Western Railroad) on your proposed maps with the alternative being between points C and I (St. Rt. 32). This would allow the 138kV tap to be at a close proximity to the existing SCP Eastwood substation. If there are any other questions or concerns that I may help you with please feel free to contact me at (740) 689-6123.

Regards.

Kevin Seesholtz Staff Engineer

South Central Power Company

A. Kadakia Cc:

file

BRANCH OFFICES

Circleville, OH 43113-9199 2100 Chickasaw Drive (740) 474-6045 Fax (740) 477-2219 1-800-206-0745 (Ohio only)

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APPENDIX 06-3

EMF INFORMATION

Environment

Environmental Electric and Magnetic Fields

- View Figure 1 The difference in frequencies in the electromagnetic spectrum
- View figure 2 -- Magnetic Field Strengths

What we know and don't know about EMF

- 1. What is EMF?
- 2. Where are magnetic fields found?
- 3. Can you feel EMF?
- 4. What do we know about the health effects of EMF?
- What is Cinergy's opinion about EMF?
- 6. Should I be concerned about EMF?
- What additional research is being conducted?
- 8. What is Cinergy doing to minimize EMF exposures to the general public?
- 9. Are there any standards for safe exposures to electric lines?
- 10. Where can I get additional information?

For several years news coverage has reported a possible association between electric and magnetic fields (EMF) and human health. The following questions and answers have been compiled to help Cinergy customers gain a better understanding of this complex subject and to alleviate some of the concerns. For simplicity, we have limited this to the EMF that we all encounter in our daily lives from typical electric transmission and distribution wires.



1. What Is EMF?

EMF refers to electric and magnetic fields. Electric fields are produced by voltage in a wire or device. Magnetic fields are produced by the electric current as measured by amperes. In the U.S., electricity is transmitted at a frequency of 60-cycles per second, which simply means that the alternating current changes direction 60 times per second. Electric motors, clocks, and other devices operate properly because the electric companies carefully control the frequency and voltage.

The amperage, in power lines, however, changes on a daily or even hourly basis as customers use more or less electricity at different times of the day. As the amperage increases the strength of the magnetic field also increases. The strength of the EMF decreases rapidly as you move away from the electrical source, just as the heat from a campfire decreases with distance.

EMF are a part of a broad spectrum that includes radio, TV, radar, microwaves, radiant heating, visible light, and even X-rays. The frequencies are vastly different. Figure 1 demonstrates the huge difference in frequencies in the electromagnetic spectrum. Sixty-cycle electricity has a very low energy component, regardless of voltage or amperage.

Since most of the EMF health research, and therefore the news coverage, is about magnetic fields, that is the main topic of this discussion. Magnetic fields are commonly measured in units called "milligauss" with the abbreviation mG.

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2. Where Are Magnetic Fields Found?

The earth has a natural direct current magnetic field of about 500 mG. This force is what makes a compass needle point north. Power frequency EMF is 60 cycle alternating current, however, which means that the electron flow changes direction 60 times each second. The flow of electrons is what causes the magnetic field according to the laws of physics.

Magnetic fields are found around any type of electrical wire or device that is turned on. This includes household appliances, light bulbs, motors, and of course, electric wires whether on a tower, a pole, or the wiring in your home. The magnetic field stops when the device is turned off. Figure 2 shows the magnetic field caused by several common appliances at distances where people would normally use the appliance.

Magnetic fields at the edges of rights-of-way for Cinergy transmission lines are typically between 4 and 20 mG. This is lower than the fields associated with many appliances, and far below the earth's normal field strength. As you move farther from the wires, the field strength declines. At only 200 to 300 feet away from a right-of-way we cannot measure any magnetic field from the wires.

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3. Can You Feel EMF?

People cannot detect magnetic fields at the levels from power lines or in homes. We can sometimes detect electric fields because this is the force that, under the right conditions, makes our hair stand on end. You can create a similar electric field by brushing your hair or walking across a carpet on a day with low humidity.

Most people do not realize that every living organism is an electrochemical "machine." Our muscles contract when stimulated by electric currents transmitted by nerves. We mentioned earlier that the strength of the EMF is highly dependent on distance. Because our nerves, muscles, and all other cells are so close together, the field strengths at the cell walls are much stronger than the fields that can be caused by exposure to power lines or appliances.

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4. What Do We Know About the Health Effects Of EMF?

Scientists have been doing intense research on EMF and health since 1979. A wide variety of studies have been conducted and the results of some have found their way into the news media. In response to public interest, two major U.S. government-sponsored programs examined the different studies by looking at the data and reaching general conclusions.

In 1997, the National Academy of Sciences (NAS) issued the results of their six-year study. In the words of the NAS.



The other project was a five-year cooperative research program between industry, the government, and citizen groups. This was authorized by the U.S. Congress in 1992 and had three tasks:

- 1. to conduct a health effects research program;
- 2. to compile information for public outreach; and
- 3. to evaluate any other potential health hazards from low frequency EMF.

The conclusions of this research are:

- The scientific evidence suggesting that exposure to EMF is a health hazard is weak.
- Other factors may account for the weak evidence that EMF may be a hazard, but no one knows what those factors might be.
- Most of the laboratory research shows no cause and effect relationship between EMF and diseases or changes in biological functions.
- There is a small amount of evidence that exposures may present a leukemia hazard, but this
 evidence is not strong enough to warrant concern from regulatory agencies.
- General public education programs aimed at ways to reduce exposures should be continued.
- Further research should focus on leukemia, degenerative diseases of the nervous system, and heart rate variability.

The report, completed in 1998, is titled National Institute of Environmental Health Sciences Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields. It is available from the National Institutes of Health as publication number 99-4493, or at http://www.niehs.nih.gov/emfrapid/booklet/home.htm.

In addition to the U.S. studies, foreign research organizations have looked at the evidence. In late 1999 researchers from the United Kingdom published the results of another project. The United Kingdom Childhood Cancer Study found no link between magnetic fields and childhood cancer. The principal investigator for this study is quoted as saying,



This study is reported in the December 1999 issue of The Lancet which is a British medical journal.

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5. What Is Cinergy's Opinion About EMF?

At Cinergy, we believe that it would be irresponsible to state that there is absolutely no risk from exposure to EMF. We can never "prove" a negative conclusion with absolute certainty, although the great majority of research to date does not support any significant link to adverse health effects. We do know that IF there is any danger from electric lines or use of electricity, it is apparently a very small risk that affects a very limited segment of the population. There are research studies from many industrialized countries to support this position, and Cinergy will continue to monitor on-going research results.

We willingly accept many known risks in our everyday lives; from our driving habits, to choices of diet and lifestyle, to choices of household cleaning products and lawn chemicals. To the best of our knowledge, EMF is among the least of any such risks.

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6. Should I Be Concerned About EMF?

While an absolute answer is impossible, evidence strongly points toward "no". Very few studies have shown a relationship between EMF and disease, and so many studies show no relationship.

Various international health agencies have issued statements on the probability of harm resulting from exposure to EMF. One of the more recent such statements is:

"There is no consistent evidence that exposure to fields experienced in our living environment causes direct damage to biological molecules, including DNA. Results from animal studies conducted so far suggest that ELF (extremely low frequency) fields do not initiate or promote cancer." (World Health Organization Summary, October 2001)

The U.S. National Institute of Environmental Health Sciences reported to Congress in 1999 that:

- The evidence for a risk of cancer and other human disease from the electric and magnetic fields around power lines is "marginal" and "weak".
- EMF exposure "cannot be recognized at this time as entirely safe, because of weak scientific
 evidence that exposure may pose a leukemia hazard."
- "The NIEHS believes that the probability that EMF exposure is truly a health hazard is currently small."

The ultimate decision comes down to each person's comfort level with the results of the research. There is simply no documented evidence that day-to-day exposure to electricity, outside of the obvious electric shock effects, has resulted in harm to people or the environment.

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7. What Additional Research Is Being Conducted?

Research into this issue has declined since the late 1990s. The reason is that scientists, and the organizations that provide their funding, want to spend their time and money on more likely threats to public health. There have been hundreds of EMF studies, costing many tens of millions of dollars, which have shown no harmful effects from electric wires and electric usage. There are, however, projects that are looking more deeply into whether EMF might be a factor in breast cancer, leukemia, and certain neurological diseases. It is impossible to predict the outcome of this research, but it seems likely that the results will be similar to past studies.

Cinergy has been a participant in various research projects to determine whether there is any risk to our customers. Our results have been included in the national studies of public exposures and there is no evidence of harmful health effects in our service area.

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8. What Is Cinergy Doing To Minimize EMF Exposures To The General Public?

All of Cinergy's electric lines, regardless of voltage or amperage, are built in accordance with the National Electric Safety Code (NESC). The NESC is a standard set of criteria that establishes safe distances and construction methods to protect people from electric shock hazards. While the NESC does not specifically address EMF exposures, the distances of the wires above ground and the installations of underground electric lines result in relatively low EMF exposures for people.

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9. Are There Any Standards For Safe Exposures To Electric Lines?

Only two states (Florida and New York) have set guidelines for the strength of magnetic fields at the edge of the rights-of-way. All of Cinergy's lines are far below those guidelines. Various states, including Ohlo, and certain European governments, have looked into whether there should be legally binding standards for exposures. All such governments have concluded that there is too little evidence of harm to warrant regulations.

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10. Where Can I Get Additional Information?

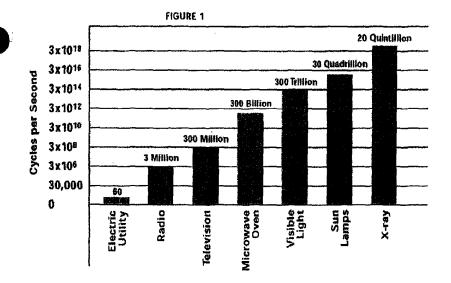
You may call Cinergy to talk to an EMF specialist.

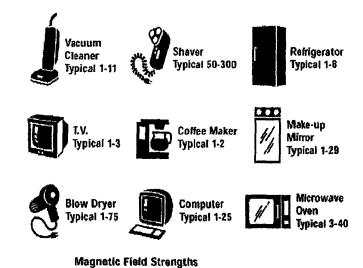
In Indiana: Please call your local district office. In Ohio or Kentucky: Please call (513) 287-3885.

This is a toll-free call in the Greater Cincinnati area. If outside this area, you may call 1-800-262-3000 and follow the voice prompts to extension 3885.

There are various publications and Internet web sites with useful information about EMF. One of the better and more objective sources is the web site of the National Institute of Environmental Health and Safety: http://www.niehs.nih.gov/emfrapid/booklet/emf2002.pdf. This booklet, released in June 2002, provides answers to frequently asked EMF questions. An extensive and frequently updated web site is maintained by the Medical College of Wisconsin at http://www.mcw.edu/gcrc/cop/powerlines-cancer-fag/toc.html. Most public libraries have computers with internet access.

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Measurements in milligeuss, taken at normal user distances

FIGURE 2

4906-15-07 Ecological impact analysis.

- (A) The applicant shall provide a summary of any studies that have been made by or for the applicant on the natural environment in which the proposed facility will be located. The applicant shall conduct and report the results of a literature search, including map review, for the area within one thousand feet on each side of a transmission line alignment and the area within the immediate vicinity of a substation or compressor station site. On-site investigations shall be conducted within one hundred feet on each side of a transmission line centerline or within one hundred feet of a substation or compressor station site to characterize the potential effects of construction, operation, or maintenance of the proposed facility.
- (B) The applicant shall provide for each of the site/route alternatives a map(s) of not less than 1:24,000 scale, including the area one thousand feet on each side of the transmission line alignment and the area within the immediate vicinity of a substation site or compressor station site. The map(s) shall include the following:
 - (1) Proposed transmission line alignments.
 - (2) Proposed substation or compressor station locations.
 - (3) All areas currently not developed for agricultural, residential, commercial, industrial, institutional, or cultural purposes including:
 - (a) Streams and drainage channels.
 - (b) Lakes, ponds, and reservoirs.
 - (c) Marshes, swamps, and other wetlands.
 - (d) Woody and herbaceous vegetation land.
 - (e) Locations of threatened or endangered species.
 - (4) Soil associations in the corridor.
- (C) The applicant shall provide for each of the site/route alternatives a description of each stream or body of water (and associated characteristics including floodplain) that is present and may be affected by the proposed facility, including but not limited to the following:
 - (1) Construction: The applicant shall estimate the probable impact of the construction of the proposed facility on streams and bodies of water. This shall include the impacts from route clearing.
 - (2) Operation and maintenance: The applicant shall estimate the probable impact of the operation and maintenance of the proposed facility after construction on streams and bodies of water. This shall include the permanent impacts from route clearing.

- (3) Mitigation procedures: The applicant shall describe the mitigation procedures to be used during construction of the proposed facility and during the operation and maintenance of the proposed facility to minimize the impact on streams and bodies of water.
- (D) The applicant shall provide for each of the site/route alternatives a description of each wetland that is present and may be affected by the proposed facility. The applicant shall describe the probable impact on these wetlands, including but not limited to the following:
 - (1) Construction: The applicant shall estimate the probable impact of the construction of the proposed facility on wetlands and wildlife habitat.
 - (2) Operation and maintenance: The applicant shall estimate the probable impact of the operation and maintenance of the proposed facility after construction on wetlands and wildlife habitat. This would include the permanent impacts from route clearing and any impact to natural nesting areas.
 - (3) Mitigation procedures: The applicant shall describe the mitigation procedures to be used during construction of the proposed facility and during the operation and maintenance of the proposed facility to minimize the impact on wetlands and wildlife habitat.
- (E) The applicant shall provide for each of the site/route alternatives a description of the naturally occurring vegetation that is present and may be affected by the proposed facility. The applicant shall describe the probable impact to the environment from the clearing and disposal of this vegetation, including but not limited to the following:
 - (1) Construction: The applicant shall estimate the probable impact of the construction of the proposed facility on the vegetation. This would include the impacts from route clearing, types of vegetation waste generated, and the method of disposal or dispersal.
 - (2) Operation and maintenance: The applicant shall estimate the probable impact of the operation and maintenance of the proposed facility after construction on species described above. This would include the permanent impact from route clearing and any impact to natural nesting areas.
 - (3) Mitigation procedures: The applicant shall describe the mitigation procedures to be used during construction of the proposed facility and during the operation and maintenance of the proposed facility to minimize the impact on species described above.
- (F) The applicant shall provide for each of the site/route alternatives a description of each major species of commercial or recreational value and species designated as endangered or threatened, in accordance with U.S. and Ohio species lists, that is present and may be affected. The applicant shall describe the probable impact to the habitat of the species described above, including but not limited to the following:

- (1) Construction: The applicant shall estimate the probable impact of the construction of the proposed facility on commercial, recreational, threatened, or endangered species. This would include the impacts from route clearing and any impact to natural nesting areas.
- (2) Operation and maintenance: The applicant shall estimate the probable impact of the operation and maintenance of the proposed facility after construction on species described above. This would include the permanent impact from route clearing and any impact to natural nesting areas.
- (3) Mitigation procedures: The applicant shall describe the mitigation procedures to be used during construction of the proposed facility and during the operation and maintenance of the proposed facility to minimize the impact on species described above.
- (G) The applicant shall provide for each of the site/route alternatives a description of the areas with slopes and/or highly erodible soils (according to the natural resource conservation service and county soil surveys) that are present and may be affected by the proposed facility. The applicant shall describe the probable impact to these areas, including but not limited to the following:
 - (1) Construction: The applicant shall provide a description of the measures that will be taken to avoid or minimize erosion and sedimentation during the site clearing, access road construction, facility construction process, and any other temporary grading. If a storm water pollution prevention plan is required for the proposed facility, the applicant shall include the schedule for the preparation of this plan.
 - (2) Operation and maintenance: The applicant shall describe and estimate the probable impact of the operation and maintenance of the proposed facility after construction on the environment. This would include permanent impacts from sites where grading has taken place.
 - (3) Mitigation procedures: The applicant shall describe the mitigation procedures to be used during construction of the proposed facility and during operation and maintenance of the proposed facility to minimize the impact on the environment due to erosion from storm water run-off.
- (H) The applicant shall provide site-specific information that may be required in this particular case to adequately describe other significant issues of concern that were not addressed above. The applicant shall describe measures that were taken and/or will be taken to avoid or minimize adverse impacts. The applicant shall describe public safety-related equipment and procedures that were and/or will be taken.

Effective: 12/15/2003

R.C. 119.032 review dates: 09/30/2003 and 09/30/2008

Promulgated Under: 111.15 Statutory Authority: 4906.03

(A) Summary of Ecological Impact Studies

As part of the preparation of this Application, ecological surveys were conducted for the proposed Preferred and Alternate Routes including a field reconnaissance to document the occurrence of wetlands, streams, and vegetation within 100 feet on each side of the proposed transmission centerline. A field reconnaissance was conducted by URS and CG&E ecologists on September 28 and 29, 2004 and on February 9 and March 25, 2005. A pedestrian field reconnaissance was conducted for the entire length of the Preferred Route and selected portions of the Alternate Route, with the remainder of the Alternate Route evaluated from nearby roadways. A pedestrian survey of the entire proposed Alternate Route will be conducted, and the results submitted to the OPSB, if the Alternate Route should be certificated by the OPSB. The results of the ecological field surveys are discussed under the appropriate headings throughout the remainder of this Section.

Ecological information within 1,000 feet of the proposed transmission centerline was supplemented through the review of available aerial photography (USGS DOQQ's), USGS maps, NWI maps, and soil survey maps for Clermont and Brown Counties. Additional information regarding endemic vegetation and wildlife was obtained from the Ohio Department of Natural Resources - Division of Natural Areas and Preserves (ODNR-DNAP), ODNR Division of Real Estate and Land Management (ODNR-DRELM), ODNR Division of Wildlife (ODNR-DOW), and the United States Fish and Wildlife Service (USFWS).

(B) <u>Ecological Features</u>

Maps at a scale of 1:24,000 illustrating the proposed Preferred and Alternate Routes, including 1,000 feet on each side of the proposed transmission line, are presented as Figures 04-1A and 04-1B. Features within 1,000 feet of the project centerline were

derived from published data and where possible supplemented by the field survey. The focus of the field survey was the 200-foot wide corridor formed by a 100-foot boundary on either side of the project centerline. Note that maximum transmission line right-of-way (ROW) width for the Preferred Route is 35 feet on either side of the transmission line centerline, or a 70-foot wide corridor, along the southern edge of the Norfolk Western rail line. The remainder of the Preferred Route and all of the Alternate Route is likely to be constructed on single wood poles requiring a 25-foot ROW to either side of the project centerline, or a 50-foot wide corridor.

(1) Route Alignments

The proposed route alignments, including turning points, are presented for both the Preferred and Alternate Routes on Figures 04-1A and 04-1B and are discussed further in Section 4906-15-04(A)(1)(a) of this Application.

(2) Substations

The project will begin at the existing CG&E Eastwood Substation located approximately 1,600 feet west of the intersection of Tri-County Highway and Old State Route 74. The project will end at either the Preferred or Alternate Hillcrest Substation Site, both of which are located directly under the existing CCD 345 kV Stuart-Foster transmission line, and are discussed briefly below. The Hillcrest Substation is discussed fully in a separate filing to the PUCO (case no. 05-360-EL-BSB).

a) Preferred Site: The Preferred Substation Site is located on the north side of Greenbush East Road, approximately 1,600 feet northwest of the intersection of Greenbush East and Hillcrest Roads. The site is currently undeveloped agricultural land. The site is currently part of a larger parcel that is developed with two residences located on the southeastern portion of the property. These residences and some surrounding acreage will be divided from the larger parcel, with the landowner retaining ownership of

the homes if the Preferred Site is selected. Access to the site is from Greenbush East Road to the south.

- b) Alternate Site: The Alternate Substation Site is located at the southwest corner of Hillcrest Road and Greenbush East Road. The southern and western portions of the site are currently owned by CG&E and are dominated by oldfield habitat. Two residential parcels located at the northeast corner of the Alternate Site will be purchased by CG&E if the Alternate Substation Site is selected. Access to the site is from Greenbush East Road to the north and Hillcrest Road to the east.
- (3) All Areas Currently Not Developed For Agricultural, Residential, Commercial, Industrial, Institutional, Or Cultural Purposes, Including:
- Streams and Drainage Channels: Surface water features along the proposed (a) Preferred and Alternate Routes, including ponds, perennial and intermittent streams, and ephemeral ditches were noted in the field surveys and are depicted on Figures 07-1A through 07-1H. Ohio EPA Qualitative Habitat Assessment Index (QHEI) data forms were completed for the perennial and intermittent streams and ditches along the Preferred Route and are provided in Appendix 07-1. Note that the Alternate Route, at the same or different locations, crosses the same drainages. If the Alternate Route is selected, QHEI evaluations will be completed for all drainages crossed by the Alternate Route. The locations of the QHEI evaluations are shown on Figures 07-1A through 07-1H. Wetland 10, mapped as an unnamed tributary to Sterling Run on the USGS topographic map of the Mount Orab Quadrangle, met the classification of a wetland according to criteria established by the U.S. Army Corps of Engineers (COE) Manual for Identifying and Delineation of Jurisdictional Wetlands (1987) and as such was not assessed under QHEI. Similarly the portion of Indian Camp Run, included as part of Wetland 5, was not assessed under OHEI. These emergent wetlands were qualitatively assessed under the Ohio Rapid Assessment Method (ORAM) for Wetlands v. 5.0, discussed in Section 4906-15-07(B)(3)(c) of this Application, as were all wetlands identified along the Preferred Route.

Surface drainages in the project area discharge to the Little Miami River located approximately 1.2 miles to the west, and Grant Lake located approximately 1.6 miles to the south and southeast. Five surface waters along the Preferred Route were scored using the Ohio EPA QHEI methodology including Indian Camp Run, one tributary to Indian Camp Run and three unnamed tributaries to Sterling Run. For the surface waters assessed, QHEI scores ranged from between 24.5/100 and 57/100. These scores represent low to moderate quality waters. Two of the unnamed tributaries to Sterling Run (Stream 4A & 5A) scored 54/100 and 53.5/100, respectively, due to good channel morphology and moderate stability, a mixed gravel, silt and muck substrate, moderate riparian width, and minimal bank erosion. Indian Camp Run (Stream 2A and 2B) and the unnamed tributary to Indian Camp Run (Stream 1A) scored 54/100 to 57/100. These channels possessed a mixed silt and gravel substrate, with moderate to dense in-stream cover. Channel morphology and development was generally good with this surface drainage. Stream 3, identified as an unnamed tributary to Sterling Run, is located approximately 450 feet north of the intersection of Brooks-Malott and Bardwell West Roads. This stream crossing scored the lowest at 24.5/100, reflecting generally poor in-stream cover, little pool and riffle development, with heavy to severe bank erosion. The substrate in this tributary was predominantly muck and silt.

Indian Camp Run and its tributaries (Stream 1A, 2A and 2B) and the two unnamed tributaries to Sterling Run (Stream 4A & 5A) would likely be classified by the Ohio EPA as Warmwater Habitats (WWH). A WWH designation defines the "typical" warmwater assemblage of aquatic organisms for Ohio rivers and streams. This use represents the principal restoration target for the majority of water resource management efforts in Ohio. In the case of Stream 3, identified as an unnamed tributary to Sterling Run, the QHEI score results in the likely Ohio EPA aquatic use designation of Limited Resource Water (LRW). The LRW use designation applies to small streams (usually less than a three square mile drainage area) and other water courses, which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported. The MWH designation applies to modified habitats that support the semblance of a warmwater biological community, but where the community falls short of attaining the WWH

biological criteria because of functional and structural alterations of the macro-habitat. Examples include streams that have been channelized, straightened and/or heavily impounded and streams that are experiencing heavy sedimentation. It should be noted that, ultimately, the Ohio EPA decides the aquatic life use designation for a particular surface water.

Construction equipment crossing of stream channels will not be necessary for the project, as other access routes exist along paved roadways. Some vegetation removal where the transmission line ROW crosses these drainages is expected. Best Management Practices and erosion control methods including silt fencing, straw bale barriers, and coconut fiber coir rolls will be used where appropriate and will be included in the SWP3 plan for the project. No significant impacts to surface waters identified in the study area are anticipated as a result of this project. No notification or permit applications under Section 404 and 401 of the Clean Water Act (CWA) will be required for the COE and the Ohio EPA respectively, for the project as proposed.

within 100 feet of the Preferred and Alternate Routes. One pond was identified within 100 feet east of the Preferred Route centerline. This pond was mapped approximately 1,400 feet northwest of the existing CG&E Eastwood Substation. The boundary of this pond was identified as Wetland 1 because this area met the wetland criteria established by the COE Manual for Identifying and Delineation of Jurisdictional Wetlands (1987). One relatively large pond of approximately 13 acres was identified approximately 100 feet south of the Alternate Route centerline to the west of the intersection of SR 32 and Bodman Road. Several ponds were identified within 1,000 feet of the Preferred and Alternate Routes. Two of the ponds were identified on the west side of Hageman Crossing Road, both located within 550 feet of the Preferred Route centerline. Another pond was identified on the south side of Waits Road within 980 feet of the Preferred Route. Best Management Practices will be used as appropriate during construction to minimize potential runoff siltation into these areas. None of these water bodies are

expected to be impacted by the construction, operation, or maintenance of the transmission line along the Preferred or Alternate Route alignments.

(c) Marshes, Swamps, and Other Wetlands: Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated (hydric) soil conditions. Wetlands within 1,000 feet of both routes were evaluated by reviewing the appropriate USFWS National Wetland Inventory (NWI) maps. Wetlands within 100 feet of the entire Preferred Route and selected portions of the Alternate Route were evaluated by conducting a desktop study followed by a field delineation, which included an evaluation of hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the COE Manual for Identifying and Delineation of Jurisdictional Wetlands (1987). U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) (formerly the Soil Conservation Services [SCS]) soil survey and hydric soil lists for Clermont and Brown County, Ohio were also reviewed for the Preferred and Alternate Routes. This mapping information and COE guidelines, combined with a windshield survey, was used to determine approximate areas of additional wetlands located along the Alternate Route. Completed COE wetland delineation forms for each of the 13 delineated wetlands along the Preferred Route are provided in Appendix 07-2. Maps showing field delineated and determined wetlands within 100 feet of the Preferred and Alternate Routes are shown at 1:6,000 scale on Figures 07-1A through 07-1H. If the Alternate Route is certificated a wetland delineation and ORAM assessment will be conducted for those areas determined to be wetland along this route so that, in final engineering, such areas will be avoided.

Approximately 3.7 percent of the 200-foot wide Preferred Route study corridor was identified as wetland, including 23 identified wetland areas totaling 8.36 acres. It should be noted the ROW width for this project is 50 feet for the single pole portions or 70 feet, for H-frame sections of the Preferred Route. Approximately 1.6 percent of the Preferred Route ROW has been identified as wetland and includes 18 identified wetland areas

totaling 1.08 acres within the project ROW. The Preferred Route centerline spans 753 feet of delineated wetlands, with individual distances ranging from less than one foot to 265 feet. A summary table of the delineated wetlands that were identified within 100 feet of the Preferred Route centerline is presented on Table 3. Wetland 10, mapped as an unnamed tributary to Sterling Run on the USGS topographic map, was identified as wetland rather than a stream due to the presence of wetland vegetation, inundation or standing water onsite, and mapped and field confirmed hydric soil. Additionally, the boundary of the pond east of Hagemans Crossing Road and north of Tri-County Highway was identified as a wetland (Wetland 1) because this area exhibited hydrophytic vegetation and also met the classification of a wetland according to the soils and hydrology criteria established by the COE Manual for Identifying and Delineation of Jurisdictional Wetlands (1987).

Approximately two percent of the 200-foot wide Alternate Route study corridor was determined or delineated as wetland, including 17 wetland areas estimated to total about 4 acres. The ROW for this route is 50 feet wide as the entire route will be constructed using single poles. Approximately 2.6 percent of the Alternate Route ROW has been identified as wetland and includes 12 identified wetland areas totaling 1.38 acres within the project ROW. The Alternate Route centerline spans approximately 1,125 feet, ranging from four to 309 feet, of determined and delineated wetlands.

A qualitative Ohio EPA ORAM version 5.0 for wetlands was completed during the field reconnaissance for each of the 13 delineated wetlands along the Preferred Route, the results of which are presented in Appendix 07-3 and Table 07-3. Wetlands along the Preferred Route were categorized based on detailed field evaluations. The ORAM is designed to evaluate the entire wetland, not just the portion of the wetland within the project area. Therefore, acreages given on the ORAM forms may not match those in Table 07-3 if the wetland continues outside of the 200-foot wide study corridor defined for the Preferred Route. The ORAM scores for the 13 wetlands identified along the preferred transmission line study corridor ranged from a low of 10 (Category 1) to a high of 34.5 (Category 2). The generally low ORAM scores were primarily due to the high

intensity of surrounding land use (row cropping), narrow average buffer widths, and poorly developed vegetation communities. A preliminary field survey to assess the quality of determined wetlands along the Alternate Route conservatively indicated two Category 1 and nine Category 2 wetlands. If the Alternate Route is selected final ORAM scores will be determined for all wetlands crossed by this route. No Category 3, or high quality wetlands, were identified along the Preferred or Alternate Routes. Thus, there are no additional Ohio EPA limitations on activities within, or adjacent to, the wetlands along the entire length of the candidate routes.

Palustrine wetland systems were identified along the Preferred and Alternate Routes and are defined as freshwater, non-tidal wetlands often characterized by the presence of water at or near the ground surface for extended periods during the growing season. Palustrine wetland plant communities observed along the candidate routes included emergent, scrub/shrub, and forested communities. Table 07-1 provides an inventory of the major plant species observed during the field surveys in wetland and upland portions of the candidate routes. A discussion of the emergent and emergent/scrub-shrub/forested wetland types and the dominant plant species observed in these wetland areas along the candidate routes is presented below.

stands at depths of less than 1 foot for a portion of the growing season. The plant community is typically made up of both perennial and annual hydrophytic species. This wetland type may exist semi-permanently if the water source is reliable over the long term. Alternatively, the community may be in a transitional phase toward scrub/shrub or forested wetland systems, or to non-wetlands, if recent disturbance has occurred. Emergent wetlands are found in low-lying areas or depressions. Species observed in emergent wetlands within the study corridor included members of the sedge family (Carex spp.), narrow leaved cattail (Typha angustifolia), whitegrass (Leersia virginica), swamp verbena (Verbena hastata), soft rush (Juncus effuses), Pennsylvania smartweed (Polygonum pensylvanicum), spotted joe-pye-weed (Eupatorium maculatum), woolgrass (Scirpus cyperinus), and creeping jenny (Lysimachia nummularia).

- wetlands represent successional stages between these three wetland types and have a highly variable plant community ranging from an herbaceous community similar to that of an emergent wetland to a community dominated by woody species (i.e. shrubs and trees). Dominant herbaceous species included sedges, jewelweed (Impatiens capensis), deertongue (Dichanthelium clandestinum), and the common boneset (Eupatorium perfoliatum). The shrub layer was scattered with patches of spicebush (Lindera benzoin), and saplings from the eastern cottonwood (Populus deltoides), boxelder (Acer negundo), slippery elm (Ulmus rubra), red maple (Acer rubrum), and green ash (Fraxinus pennsylvanica). The tree species that were identified in these wetlands were generally limited to the above-listed, with few individuals above the 10-inch diameter breast height (dbh) size class.
- (d) Woody and Herbaceous Vegetation Land: The Preferred and Alternate Routes are bordered for portions of their lengths by woodlots, scrub/shrub, old-field, and agricultural cropland. A variety of woody and herbaceous lands, as described below, are present within the 1,000-foot corridor of the Preferred and Alternate Routes. Table 07-1 provides a summary of the woody and herbaceous vegetation along the Preferred and Alternate Routes. Habitat descriptions, applicable to both the Preferred and Alternate Routes, are provided below.
- (i) Agricultural Cropland: Agricultural cropland along the Preferred and Alternate Routes is used primarily for soybean and corn cultivation. Agricultural cropland was dominant throughout the study corridor, particularly in the central and northeastern portion of the study area. Construction impacts to agricultural cropland are expected to be temporary in nature and limited to vehicle access and temporary laydown activities. As the project is a transmission line with limited excavation at pole locations, no impacts to soil structure or drainage tiles are expected. No agricultural areas are expected to be impacted by the operation of the transmission line along the proposed candidate routes, with the exception of the few square feet occupied by each structure or pole that will not remain in agricultural use.

- (ii) Upland Woodland: Upland woodlands are relatively scarce along the Preferred and Alternate Routes. These upland woodlots appear to be isolated in nature and are typically limited to narrow strips of land adjacent to wetlands, streams, or agricultural fields. Woody species dominating these areas included red maple, pin oak (Quercus palustris), shagbark hickory (Carya ovata), and white oak (Quercus alba). Shrub communities are relatively sparse in these areas as a result of the high canopy density. The dominant shrub-layer species included viburnums (Viburnum spp.), honeysuckle (Lonicera japonica) and poison ivy (Toxicodendron radicans).
- (iii) Riparian Woodland: Riparian woodlands are limited to narrow bands along the edges of intermittent and perennial streams draining the study area. Woody species dominating the riparian zone include green ash, red maple, silver maple, and cottonwood. The shrub and herb layer is dominated by multiflora rose (Rosa multiflora), honeysuckle, and poison ivy.
- (iv) Scrub/Shrub: Scrub/shrub habitats represent the successional stage between old-field and second growth forest. This cover type has a highly variable plant community ranging from an herbaceous community similar to that of old field habitat with a few woody species, to a community dominated by forest herbs and woody species. Dominant shrub-layer species observed in the scrub/shrub habitats along the Preferred and Alternate Routes included multiflora rose and poison ivy. Saplings of cottonwood, box elder, and hackberry (Celtis occidentalis) were also observed within the scrub/shrub habitats along the Preferred and Alternate Routes. The herbaceous layer resembled the old field habitat discussed below and was dominated by similar species.
- (v) Old Field: Herbaceous cover exists alongside roads, field borders, and unused agricultural fields within the 1,000-foot corridor of the Preferred and Alternate Routes in the form of successional old field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas

within the ROW and adjacent areas are relatively homogeneous in nature and are vegetated by native shade-intolerant species, domestic and agricultural escapees, and species from adjacent shrub and forest communities. These areas are dominated by fleabane daisy (*Erigeron annuus*), Queen Anne's lace (*Daucus carota*), foxtail (*Setaria spp.*), and goldenrods (*Solidago spp.*). Other frequents observed include Canada thistle (*Cirsium arvense*), broom-sedge (*Andropogon virginicus*), chicory (*Cichorium intybus*), and teasel (*Dipsacus sylvestris*).

(e) Locations of Threatened and Endangered Species: Correspondence with the USFWS, ODNR-DRELM and ODNR-DOW indicated that the project routes are within the range of a number of species that are on federal and/or state listed threatened or endangered species, or are of high interest.

No state or federal-listed plants were observed during the field survey or are recorded by the ODNR-DRELM or ODNR-DOW as being in or adjacent to the proposed routes. The USFWS reported that a portion of the study area includes Clermont County, which lies within the range of the federally endangered running buffalo clover (*Trifolium stoloniferum*). This perennial species is characteristically found along streams and trails, in partially shaded woodlots, borders, and in mowed or disturbed habitats. This species was not observed during the surveys of the Preferred and Alternate Routes.

Potentially suitable habitat for the following Clermont and Brown County threatened or endangered plant species was observed during the field survey as follows:

Blue false indigo (Baptisia australis): This perennial species is identified on the Ohio
Natural Heritage Database as a state-listed endangered species for Clermont County.
This Ohio endangered species occurs in rich open woods, alluvial thickets, stream
banks, and sandy floodplains. This plant species of concern was not identified during
the field survey.

- Missouri gooseberry (Ribes missouriense): According to the Ohio Natural Heritage
 Database, this deciduous shrub is identified as a stated-listed endangered species for
 Clermont and Brown County. This species characteristically grows in mesic slopes
 and moist soils. This species of concern was not identified during the field
 reconnaissance.
- Sparse-lobe grape-fern (Botrychium biternatum): This fern is listed on the Ohio
 Natural Heritage Database as a state-threatened species for Clermont County. This
 species occurs in a variety of moist, shaded conditions (i.e. low woods, mesic ravines,
 wooded floodplains, and thickets). This species of concern was not identified during
 the field survey.
- Southern woodrush (*Luzula bulbosa*): This perennial herb is listed on the ODNR
 Natural Heritage Database as a state-threatened species for Clermont County. This
 species of concern was not identified during the field survey.
- Carolina willow (Salix caroliniana): The ODNR Natural Heritage Database reported
 that this species is endangered in both Clermont and Brown County. The Carolina
 willow is most frequently encountered around ponds, ditches, and wet clearings. This
 plant species was not identified during the field reconnaissance.
- Spring nettle (Urtica chamaedryoides): This annual herb was listed as a stateendangered species for Brown County. This plant species was not identified during the field survey.
- Missouri violet (Viola missouriensis): This stemless perennial herb was listed as a stated-endangered species for Brown County. The Missouri violet occurs in a variety of conditions and habitats including arid roadsides, woodland borders, and mesic hillsides. This species of concern was not identified during the field reconnaissance.
- One-sided rush (Juncus secundus): The ODNR Natural Heritage Database identified
 this plant as a state-threatened species for Brown County. This perennial herb occurs
 in prairies, clearings, and along railroads. This plant species was not identified during
 the field survey.
- Maypop (Passiflora incarnata): This ODNR Natural Heritage Database listed this
 plant as a state-threatened species for Brown County. Maypop occurs in a variety of
 conditions and habitats including, open woods, thickets, fields, roadsides, and railroad
 embankments. This species of concern was not identified during the field survey.

It should be noted that even though potentially suitable habitat exists in the project area for the plant species mentioned above, most of the Preferred and Alternate Routes are within road ROW or areas of agricultural farmland. These areas are regularly disturbed by mowing and row-cropping respectively, providing limited opportunities for species of concern to become established. In addition, the small and isolated pockets of suitable wooded and shrub habitats throughout the project area are not expected to contain viable populations of threatened or endangered plant species. It should also be noted that the wetland areas adjacent to the Norfolk and Western rail lines which may contain suitable habitat for some of the abovementioned species of concern will not be disturbed by the project as proposed. The project ROW will begin at the south edge of the rail ROW, well outside of the linear wetland complexes located along the rail line.

The federal and state threatened or endangered animal species potentially present along the proposed routes during any portion of the year are described below. However, it should be noted that while potentially suitable habitats for some of these species are available along the proposed routes, these habitats are limited and unlikely to represent critical habitat. None of the animal species discussed below was recorded by either the USFWS or the ODNR as inhabiting the proposed routes. A list of animal species observed or expected to occur within the general vicinity of the study area is provided in Table 07-2. The species list was developed based upon the field survey and literature sources.

i) Mammals:

Indiana bat (Myotis sodalis): The Indiana bat is considered to be an endangered species by the federal government and the State of Ohio. This species is a possible inhabitant of both Clermont County and Brown County. The Indiana bat is a migratory species, wintering in a few limestone cave hibernacula principally located in Indiana, Kentucky and Missouri. Summer roosting and foraging areas are typically farther north in the glaciated regions of Indiana, Illinois, and Ohio. Males and gravid females may arrive in northern regions in April and remain until October. The bat typically roosts under the exfoliating (loose) bark of live or dead trees of various rough-barked tree species. The 8-

to 10-inch size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), and elm (*Ulmus* spp.) are utilized in live form. These tree species and many others may be used when dead if there are adequately sized patches of loosely adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes; (1) a mixture of favored loose-barked trees with 60 to 80 percent canopy closure and (2) a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy).

The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical, because prey density is greater over or near open water. A distance from water to suitable roost trees of less than 0.6 mile is optimal. The relative percent of forest cover on a landscape is also limiting. Maternity colonies have not been documented where tree cover is less than 5 percent.

Along the Preferred Route the wooded parcels within, and adjacent to Wetland 4C, Wetland 5 and Wetland 11 provide low to moderate quality habitat for the Indiana bat. Scattered shagbark hickories of the suitable size class and a few snags were observed within or near these areas. Some additional ROW clearing is expected in these areas. CG&E proposes to overbuild the existing electric distribution line along the east side of Brooks-Malott Road, thus minimizing any potential impacts that may be incurred as a result of ROW clearing activities in Wetland 11. CG&E will conduct all tree cutting so that it is outside of the April 15 to September 15 roosting window of the Indiana bat or will conduct bat surveys if cutting is necessary to avoid any possible impacts to this species.

ii) Aquatic Species:

The state protected rayed bean mussel (*Villosa fabalis*) has been recorded in the East Fork of the Little Miami River; located approximately 1.2 miles west of the project area. Neither the Preferred nor Alternate Route spans this water course. The USFWS

identified the project route as being within the range of the rayed bean mussel and sheepnose (*Plethobasus cyphus*). No mussels were observed in the drainages crossed by the Preferred or Alternate Routes.

As this project is a transmission line and will span all streams, this effectively eliminates most potential construction related impacts to aquatic species. Localized removal of riparian vegetation may increase thermal loads in a narrow stretch of stream but these effects are typically restricted to the cleared areas and just downstream. Best Management Practices will be used during construction to minimize potential sedimentation into streams crossed by the selected route, thereby limiting any water quality degradation. Increased stream turbidity resulting from construction activities is unlikely and if it occurs should be of short duration and minor compared to that caused by natural high water flow and sediment runoff from agricultural land uses in the project vicinity.

(4) Soil Associations in The Corridor:

The soil associations that will be crossed by the Preferred and Alternate Routes include Avonburg-Clermont, Clermont-Avonburg, and Rossmoyne-Bonnell Associations (U.S. Department of Agriculture [USDA], 1976). These associations are discussed in the following sections and represented on Figure 07-2.

(i) Clermont County

Avonburg-Clermont: These soils are deep, nearly level to gently sloping, somewhat poorly drained to poorly drained soils. This association is typically found on the uplands in the northern and eastern parts of Clermont County. Avonburg-Clermont Association covers approximately 33 percent of Clermont County. The association consists of approximately 50 percent Avonburg soils and 41 percent Clermont soils. The remaining 9 percent of the soil includes well-drained Rossmoyne soils and poorly drained Blanchester soils.

(ii) Brown County

Clermont-Avonburg: This soil association, covering approximately 38 percent of Brown

County, is the dominant soil association in the central and northern portion of the county.

Characteristically, these soils are nearly level to gently sloping soils that formed in loess

and glacial till on the Illinoian till plain. Fifty five percent of the soils in this association

are Clermont soils, while the remaining 45 percent consists of Avonburg soils (25%) and

other less extensive soil types (20%). Three management concerns that are associated

with these soils include ponding, seasonal wetness, and restricted permeability.

Rossmoyne-Bonnell: These soils are deep, gently sloping to very steep, moderately well

drained to well-drained soils. These soils formed in loess and in the underlying glacial

till. Rossmoyne-Bonnell Association is commonly found on knolls, low ridges, at the

head of drainageways, and on slopes near stream valleys. This association constitutes

approximately 44 percent of the county soils and consists of 55 percent Rossmoyne soils,

15 percent Bonnell soils, and 30 percent less extensive soils. This soil association is

typically used for the cultivation of crops, or simply left as pasture or woodlands. The

slopes for this soil association range from 1 to 60 percent.

None of the soils along the Preferred and Alternate Routes exceed 12 percent slopes

except in areas directly adjacent to drainageways and on the slopes of existing

transportation berms and grades, specifically along the Norfolk and Western Railroad.

Poles (and H-frame structures in the case of the Preferred Route) will be placed only at

locations where soil conditions are deemed acceptable.

(C) Impacts of Alternative Routes on Water Bodies

(1) Construction Impact

Best Management Practices will be employed near stream crossings to avoid soil erosion

and sedimentation that could occur as a result of construction activities. A Stormwater

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and Pollution Prevention Plan (SWP3) will be developed for the project as per Ohio EPA requirements prior to the start of construction. Erosion potential at these stream crossings should be minimal as a result of the relatively flat topography along the candidate routes, flexibility in structure placement, and the fact that no construction equipment crossing of streams will be necessary. All water bodies along the selected candidate route will be spanned by the transmission line and the new transmission structures will installed away from any ponds and surface drainagways. Selective clearing is expected to remove woody vegetation within the transmission line ROW along stream banks and within wetlands that have wooded and/or shrub components. Clearing of woody vegetation within wetland areas will be done using equipment staged outside of the wetland supplemented by hand cutting with chain saws or by using other non-mechanized methods. Clearing adjacent to stream channels will only include cutting of those species incompatible with the operation of the transmission line.

Three perennial (unnamed tributary to Indian Camp Run and two crossings of Indian Camp Run) and three intermittent stream crossings (all unnamed tributaries to Sterling Run) have been identified along each of the Preferred and Alternate Routes. These crossings are shown on Figures 07-1A through 07-1H and discussed further in Section 4906-15-07(3) of this Application. The QHEI forms for the stream crossings along the Preferred Route are provided in Appendix 07-1.

(2) Operation and Maintenance Impact

Once the line is in operation, no significant impact to streams or drainage channels along the proposed routes is anticipated. Only periodic selective removal of vegetation that may endanger reliable operation of the transmission line will be required. No major lakes, ponds, or reservoirs should be affected by the operation or maintenance of the Preferred or Alternate Route.

(3) Mitigation Procedures

Impacts to riparian vegetation zones at stream crossings will be minimized during construction. Best Management Practices will be implemented during construction to control erosion. Selective removal of vegetation that might impede construction or interfere with operation of the transmission line is anticipated near stream banks and drainage channels. Areas where soil has been disturbed will be seeded and mulched to prevent soil erosion and sedimentation. Additionally areas adjacent to stream channels will be planted, as required, with low-growing shrub species to aid in streambank stabilization and to maintain in-stream shade cover and thermal protection to aquatic species.

(D) Wetlands Impact

(1) Construction Impact

Wetlands identified within the ROW of the proposed Preferred and Alternate Routes are comprised of palustrine emergent and palustrine emergent, scrub/shrub, forested types. Four wetland areas constituting 438 linear feet contain a forested component along the Preferred Route and five wetland areas constituting approximately 646 linear feet contain a forested component along the Alternate Route. Clearing of trees and shrubs in wetlands is expected to total 0.563 acre within the Preferred Route ROW and 0.855 acre within the Alternate Route ROW.

Disturbance of soils in wetland areas during construction is not anticipated. Wetlands will be spanned where overhead lines are to be installed and no access routes will cross identified wetlands along either candidate route. Along the Preferred and Alternate Routes, new structures will be installed outside of wetland areas. If the Alternate Route is certificated a wetland delineation will be performed prior to construction activities to clearly identify wetland boundaries in these areas. Final engineering would then be done to avoid impacts to such areas. It is not anticipated that any minor ROW cutting activities

in wetlands would result in erosion or water quality degradation. Where required, woody vegetation in wetlands will be cut from equipment staged outside of the wetland boundaries or be hand-cut by chainsaws, or other non-mechanized techniques. Where appropriate, wetland boundaries will be clearly staked prior to the start of clearing to eliminate any incidental vehicular impacts.

(2) Operation and Maintenance Impact

Wetland areas should not be significantly affected by the operation or maintenance of this 138 kV transmission line along either the Preferred or Alternate Route. Vegetation that occurs within wetland areas may require periodic cutting. It is not anticipated that such activities would result in erosion or water quality degradation. The removal of vegetation debris in wetland areas resulting from ROW maintenance will be conducted only at the request of the property owner; otherwise it will be left in place

(3) Mitigation Procedures

No wetland impacts are expected, therefore no mitigation procedures are proposed. If any impacts occur, they should be temporary. Natural re-vegetation in any disturbed wetland areas will begin immediately after construction has been completed in the area. No dredge or fill will occur within wetlands identified along either candidate route. No U.S Army Corps of Engineers 404 or Ohio EPA 401 permitting is required with respect to vegetation clearing in wetlands for the project. As a consequence, no permitting requirements for wetland mitigation exist for the project as proposed.

(E) <u>Vegetation Impact</u>

(1) Construction Impact

The potential impacts on woody and herbaceous vegetation along the Preferred or Alternate Route will be limited to clearing within the proposed new transmission line ROW, where required. Approximately 6.6 acres of woodlot along the Preferred Route or 4.4 acres along the Alternate Route will need to be cleared for the project. Low-growing herbaceous and shrub vegetation within these areas will be allowed to re-establish naturally. The overall impacts to second growth forest and native herbaceous vegetation in the project vicinity is not considered significant.

(2) Operation and Maintenance Impact

During operation of the transmission line along either the Preferred or Alternate Route, the impacts on vegetated land should be minor. The undeveloped land not disturbed by construction should retain its current vegetation composition and continue successional development at a normal rate. Periodic mowing or cutting along the transmission line ROW will prevent the establishment of taller tree species but this is not expected to result in a significant environmental impact on nearby vegetation communities. Removal of vegetation that represents an operational concern to the transmission line, e.g., tall tree species, will be removed as needed. Periodic spraying of vegetation in upland areas may be required as part of the ROW maintenance and will be done with U.S. EPA approved herbicides by licensed applicators.

(3) Mitigation Procedures

Experience shows that seeding in non-wetland and non-agricultural areas helps to control erosion in areas disturbed by construction activities. Areas that are temporarily disturbed will be re-vegetated as soon as practical within Ohio EPA Permit No. OHC000002

guidelines. These measures will help preserve the aesthetic qualities along the route and prevent erosion and sedimentation.

(F) Commercial and Threatened/Endangered Species Impact

(i) Commercial Species: The commercially important species along the proposed routes consist of those hunted or trapped for fur or other byproducts, including the following:

Raccoon (*Procyon lotor*): This largely nocturnal species is abundant and widespread in Ohio. Raccoons are found principally around aquatic and woodland habitats, with occasional forages into croplands. Tracks of this species were observed immediately west of Stream 1A (unnamed tributary to Indian Camp Run).

Striped skunk (*Mephitis mephitis*): The striped skunk prefers a semi-open habitat of mixed woods, brush, farmland, open grassland, and small caves in proximity to water. These mammals are common statewide. This species is expected to inhabit the proposed routes, but was not observed during the field survey because they are largely nocturnal.

Opossum (*Didelphis virginiana*): The opossum's preferred habitat is farmland, especially wooded pastures adjacent to woodland streams and ponds. Dead individuals of this nocturnal species were observed along roadways within the vicinity of the project route candidates.

Long-tailed weasel (*Mustela frenata*): The long-tailed weasel is found throughout the state of Ohio in areas adjacent to rivers, lakes, streams, or marshes, where they feed on small mammals. This species may inhabit areas along the proposed routes.

(ii) Recreational Species: Suitable habitat for recreationally important species is present along the proposed routes. Recreational species include those hunted or fished as game, including the following:

Cottontail rabbit (*Sylvilagus floridanus*): The cottontail rabbit is Ohio's number one game species. It is abundant in both rural and urban areas and prefers field borders, brushy areas, and thickets. This species was observed along the proposed routes.

Woodchuck (*Marmota monax*): The woodchuck or groundhog is a common ground squirrel found throughout Ohio. It prefers sloped areas at the fringe of wooded and open areas. This species is expected to inhabit the proposed routes, but was not observed.

Gray, red, and fox squirrels: These tree squirrel species occur throughout the State of Ohio. The fox squirrel (Sciurus niger) is primarily an inhabitant of small, typically isolated woodlots. The gray squirrel (Sciurus carolinensis) and red squirrel (Tamiasurius hudsonicus) prefer more extensive woodland regions. Gray squirrels were observed along the Preferred and Alternate Routes; the other species are expected to inhabit woodled areas throughout the project area.

White-tailed deer (*Odocoileus virginianus*): White-tailed deer are found throughout Ohio. White-tailed deer use woodlots and shrub areas for cover and concealment, and they forage in the croplands periodically. White-tailed deer hoof prints and scat was observed at various places along the route candidates during the field surveys.

(iii) Game Fish: Based upon the nature of the surface waters crossed, game fish are not anticipated to inhabit the streams that are crossed by the proposed routes. However, local residents may stock some of the ponds in the project area.

(1) Construction Impact

(i) Commercial Species: The commercially important species along the proposed route include those species that are hunted or trapped for fur or other byproducts. The following commercially important species may be affected by construction.

Raccoon: This species is very adaptable to changes in the habitats in which it occurs, and as a result, construction along the proposed routes is anticipated to have negligible impact on the raccoon population. Additionally, similar habitats suitable to this species are readily available throughout the study area.

Striped skunk: It is not anticipated that construction of the proposed routes will alter a significant portion of this species' preferred habitat because of the presence of readily available similar habitats in the study area. Therefore, no impact on the striped skunk is anticipated.

Opossum: It is not anticipated that construction of the proposed routes will alter a significant portion of this species' preferred habitat because of the presence of readily available similar habitats. Therefore, no impact on the opossum is anticipated.

(ii) Recreational Species: Recreational species should experience different levels of impact, depending on the species' habitat and home range requirements.

Eastern cottontail: Cottontails will likely migrate from the ROW area during construction and move into adjacent areas that provide adequate cover and needed forage resources. After construction, this species' preferred habitat should be increased along the Preferred or Alternate Route as scrub/shrub and herbaceous growth will increase. Therefore, impacts to this species are expected to be minor.

Woodchuck: Any woodchucks present along the selected candidate route will likely travel out of the ROW during construction to seek friable soil material in which to establish burrows. Suitable alternative habitats are available close to the proposed routes. Therefore, impacts to this species are expected to be minor.

Gray, red, and fox squirrels: The elimination of minimal quantities of the suitable habitat of these species within the ROW will cause the squirrels to move into nearby woodlands during construction. It is anticipated that additional squirrels can be

assimilated into adjacent habitats without significant competition pressures from or on resident species. The loss of mast-producing trees offering a food source for the squirrels should be low. Thus the impact of construction on the resident squirrels is anticipated to

be minor, considering the availability of similar habitat and forage elsewhere.

White-tailed deer: White-tailed deer use the wooded portions along the proposed routes for cover and concealment, and they forage in the croplands periodically. Deer normally have a home range of less than 3 square miles. The abundance of similar wooded and cropland habitat surrounding the study area indicates that the impact of construction should be minimal for this species. Additionally, maintaining a ROW in low growth vegetation provides a beneficial "edge habitat" for this species.

(iii) Game Fish: Based upon the nature of the surface waters crossed, game fish are not anticipated to inhabit the streams that are crossed by the Preferred or Alternate Routes. Therefore, impacts to game fish as a result of construction activities associated

with this project are not anticipated.

(iv) Protected Species: Correspondence with the USFWS, ODNR-DRELM and ODNR-DOW indicated that the project routes are within the range of a number of species that are on federal and/or state listed threatened or endangered species, or are of high interest. No federally or state endangered, threatened, or potentially threatened species

and no critical habitats were observed on the proposed routes.

Protected Plants: No state or federal-listed plants were identified during the field survey or are recorded by the ODNR-DRELM or ODNR-DOW as being in or adjacent to the proposed routes. The USFWS reported that a portion of the study area includes Clermont County, which lies within the range of the federally endangered running buffalo clover (*Trifolium stoloniferum*). This perennial herb species is characteristically found along streams and trails, in partially shaded woodlots, borders, and in mowed or disturbed habitats. Individuals of this species and suitable habitat for this species were not observed during the surveys of the Preferred and Alternate Routes.

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Protected Wildlife: No wildlife species considered endangered or threatened by the State of Ohio or by the federal government were observed during the ecological survey or reported along the proposed candidate routes. Many of the protected or high interest wildlife species found in Ohio are not expected to inhabit areas along the Preferred or Alternate Routes. The project area either does not provide the appropriate habitat or it is out of the range of such species, the exceptions are discussed below.

Birds: Although state protected avian species may have a range to include the ROW of the proposed routes, it is expected that the small size and wide geographic separation of woodlots throughout the study area are poorly suited to these species which typically require larger, more mature areas of continuous forest. Individuals of these species and unique critical habitats for these species were not found within the ROWs of the Preferred or Alternate Route.

Reptiles and Amphibians: No federal or state protected reptiles or amphibians were identified as potential inhabitants of the proposed route, therefore impacts to protected reptiles and amphibians as a result of construction are not anticipated.

Aquatic species: No federal or state protected fish species were identified as having the potential for occurring in streams and ponds in the vicinity proposed route. The USFWS, however, identified the project route as being within the range of the rayed bean mussel and sheepnose (*Plethobasus cyphus*). Based on the location of the project and the types of drainage habitats traversed by the project routes, neither of these species are expected to inhabit the project route nor were any mussel observed in drainages crossed by the proposed routes.

Mammals: The Indiana bat may occur in the corridors due to project location within the animals' normal ranges as well as the suitable habitat provided as discussed in Section 4906-15-07(B)(3)(e) of this Application.

To avoid direct impacts to Indiana bat roosting and foraging habitat, USFWS typically recommends that mechanized tree clearing be done between September 15 and April 15 or that field data be collected to substantiate that Indiana bats are not using the area for summer roosting and foraging. CG&E proposes to limit tree removal activities to those times outside of the summer roosting months for this species. In the event tree removal must occur between April 15 and September 15, prior to commencing this activity, CG&E will conduct the necessary surveys to establish whether the Indiana bat is present or not.

No other protected and/or high interest animal species that could inhabit the ROW of the candidate routes during any part of the year should be significantly impacted by construction of the project along either the Preferred or Alternate Route. This conclusion takes into account the species' existing distributions, preferred habitats (community types), and the minimal acreages of these community types disturbed by clearing and construction along either of the proposed candidate routes.

(2) Operation and Maintenance Impact

During operation of the transmission line along either of the proposed routes, any impacts on protected wildlife that may be present should be minor. While portions of the ROW will need to be cleared, the undeveloped land not disturbed by construction will retain its current vegetation composition. Periodic maintenance along the ROW is not expected to result in a significant impact to the local wildlife. Operational impact to local wildlife is also expected to be negligible given the quantity of additional comparable habitat throughout the project area.

(3) Mitigation Procedures

The Preferred and Alternate Routes have been examined in the field and reviewed on aerial photographs by experienced biologists and environmental scientists. No significant problem areas that would require the use of special mitigation measures for protected wildlife have been identified. If, however, such conditions are recognized at a later date, the condition will be mitigated appropriately on an individual basis.

(G) Slopes and Erodible Soils

(1) Construction Impact

Most slopes in the areas along by the Preferred and Alternate Routes do not exceed 12 percent, with exceptions occurring directly adjacent to drainageways and existing transportation corridors, specifically directly adjacent to the Norfolk and Western railroad. Slope mechanics are not anticipated to present a significant concern to the Preferred or Alternate Routes. The soil associations crossed by the Preferred and Alternate Routes are discussed in Section 4906-15-07(B)(4) of this Application and are shown on Figure 07-2.

(2) Operation and Maintenance Impact

Once the transmission line is in place, the area will be returned to its former land use, and no impacts or erosion hazards are expected. Maintenance activities that involve excavation around towers are anticipated to be extremely rare, but in these cases, standard measures will be implemented to prevent soil erosion and run off into any nearby streams and wetlands.

(3) Mitigation Procedures

No special mitigation procedures on slopes or easily eroded soils are anticipated. Best Management Practices consisting of silt fence, straw bale barriers, and coconut mesh coir rolls will be used as required when construction takes place adjacent to drainage channels, streams, and wetlands. An Ohio EPA SWP3 will be generated for the project and the requirements of Ohio EPA Permit No. OHC000002 will be followed for erosion and sedimentation control.

(H) Other Issues

No other issues are anticipated.

TABLE 07-1 MAJOR PLANT SPECIES OBSERVED OR EXPECTED TO OCCUR IN THE STUDY AREA

Acer negundo	Lonicera japonica	Xanthium strumarium
Acer rubrum	Lonicera maacki	
Acer saccharinum	Lysimachia nummularia	
Agrostis alba (gigantea)	Mentha spicata	
Allium canadense	Phalaris arundinacea	
Ambrosia artemisiifolia	Phleum pratense	
Ambrosia trifida	Phytolacca spp.	
Andropogon virginicus	Plantago lanceolata	
Asclepias syriaca	Plantago major	
Aster spp.	Plantanus occidentalis	
Bidens frondosa	Poa pratensis	
Brassica rapa	Polygonum amphibium	
Campsis radicans	Polygonum pensylvanicum	
Carex spp.	Polygonum persicaria	
Carya ovata	Polygonum sagittatum	
Celtis occidentalis	Populus deltoides	
Centaurea maculosa	Prunus serotina	
Cerastium arvense	Quercus alba	
Cercis canadensis	Quercus palustris	
Chrysanthemum leucanthemum	Quercus rubra	
Cichorium intybus	Ranunculus hispidus	
Cirsium spp.	Ranunculus recurvatus	
Cornus stolinifera	Robinia psuedoacacia	
Cyperus esculentus	Rosa multiflora	
Daucus carota	Rubus allegheniensis	}
Dicanthelium clandestinum	Rumex crispus	
Dipsacus fullonum	Salix nigra	
Dipsacus sylvestris	Sambucus canadensis	
Elaeagnus spp.	Scirpus cyperinus	1
Eleocharis obtuse	Setaria spp.	
Erigeron annuus	Solidago canadensis	
Eupatorium maculatum	Toxicodendron radicans	
Eupatorium perfoliatum	Typha angustifolia	
Fraxinus americana	Typha latifolia	
Fraxinus pennsylvanica	Ulmus rubra	
Glycine max	Verbena hastate	
Impatiens capensis	Verbesina alternifolia	
Juncus effuses	Vernonia gigantean	
Juncus tenuis	Viola papilionacea	,
Leersia virginica	Vitis aestivalis	
Decisia vii giinea	Vitis riparia	

TABLE 07-2 ANIMAL SPECIES IDENTIFIED OR LIKELY TO OCCUR IN THE STUDY AREA

Birds	Reptiles & Amphibians	Mammals
Brown thrasher	Snapping turtle	Striped skunk
American kestrel	Eastern box turtle	Opossum
Yellow warbler	American toad	Long-tailed weasel
Warbling vireo	Dusky salamander	Eastern cottontail rabbit
Eastern kingbird	Eastern garter snake	Eastern gray squirrel
Red-eyed vireo	Northern spring peeper	Raccoon
Tennessee warbler	Green frog	White-tailed deer
Baltimore oriole	Northern leopard frog	Woodchuck
Wood thrush	Spotted salamander	Deer mouse
Blue jay	Western chorus frog	House mouse
Yellow-rumped warbler		Eastern mole
Black-capped chickadee		Short-tailed shrew
American robin		Meadow vole
Red-tailed hawk		Chipmunk
House finch	,	Coyote
Hooded merganser		Red fox
Killdeer		Red squirrel
Wild turkey		Fox squirrel
Rock Dove		
Common grackle		
European starling		
Brown-headed cowbird		
Eastern meadowlark		
European Starling		
English house sparrow		
Eastern bluebird		
Northern cardinal		
American robin		
Song sparrow		
Red-winged blackbird		
Mourning dove		
Common flicker		
Common snipe		
Canadian geese		
American crow		
Coopers hawk		

Cincinnati Gas and Electric
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TABLE 07-3 WETLAND SUMMARY

Wetland Identifier	Figure Key	Photo Number	Wetland Type*	ORAM Score (& Category)	Linear Feet of Wetland Under Transmission Line	Wetland Area within 100 ft of the Preferred Route Centerline (Acreage)	Wetland Area Wetland Area within 100 ft of within 25 ft of the Preferred the Preferred Route Centerline (Acreage)	Estimated Acreage of Entire Wetland	
w1	07-1A	-	РЕМ	23 (1)	0	0.025	0	0.1 - < 0.3	Eurorgent wetland located east of Hageman Crossing Road and northwest of the IGGESE Eastwood Substation. Hydrophytic vegetation accounts for approximately 100% of the dominant plant species. Bydrology criteria was met with areas of inundation, saturation in the upper 12 inches, oxidized root channels in the upper 12 inches, local soil survey data, and a positive FAC-neutral test. Hydric soil exhibited a low chroma and distinct montling. All three wetland criteria were satisified.
W2	07-1A	2-4	PEM/PSS/ PFO	34.5 (2)	264.778	1.323	0.339	3 - < 10	Emergent/scrub-shrub/forested wedland located on the southside of the Norfolk and Western Railroad, immediately east of Hagernan Cossing Road. Hydrophytic vegetation accounts for approximately 100% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, sediment deposits, derinage patterns in the wedland, oxidized roto channels in the upper 12 inches, water-stained leaves, local soil survey data, and a positive FAC-neutral test. Hydric soil was identified on the local and national hydric soils ist, possessed an aquic moisture regime, and exhibited a low chroma and distinct motifing. All three welland criteria were satisfied.
W3A-D	07-1A through 07- 1C	5-6	РЕМ	20 (1)	119.343	2.451	0.155	3 - < 10	Emergent wetland complex located on the southside of the Norfolk and Western Railroad, immediately northwest of the South Central Power Eastwood Substation and east of Wetland Z. Hydrophytic vegetation accounts for approximately 95% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, areas with sediment depositis, drainage pattern in the wetland, oxidized root learneds, water-stained leaves, local soil-survey data, and a positive FAC-neurral test. Hydric soil was identified on the local and national hydric soils list and exhibited low chroma and distinct mottling. All three wetland criteria were satisfied.
W4A-C	07-1C and 07- 1D	8-9	PEM/PSS/ PFO	32 (2)	11.037	0.887	0.057	0.3 - < 3	Emergent/scrub-shrub/forested wetland complex located immediately east of the South Central Power Eastwood Substation. Hydrophytic vegetation accounts for greater than 90% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, drainage patterns in the wetland, local soil survey data, and a positive FAC-neutral test. Hydric soil was identified on the national and local hydric soils list and achibitied a gleyed of low-chroma color scheme with distinct motiline. All three wetland criteria were satisfied.
WS	07-1D	10-11	W5 07-1D 10-11 PEM/PSS/PFO 28 (1) 142.297	28 (1)	142.297	650'1	0.167	0.3 - < 3	Energent/serub-shrub/forested wetland located on the south of the Nofolk and Western Railroad and cast of the Wetland 4 complex. Hydrophytic vegetation accounts for greater than 90% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, drainage patterns in the wetland, oxidized root channels, water-stained leaves, local soil survey data, and a positive FAC-neutral test. Hydric soil exhibited low chroma and distinct mottling and was identified on the local and national hydric soils list. All three wetland criteria were satisfied.

14945521 Hillcrest Eastwood Transmission Line Project

TABLE 7-3 (Continued)

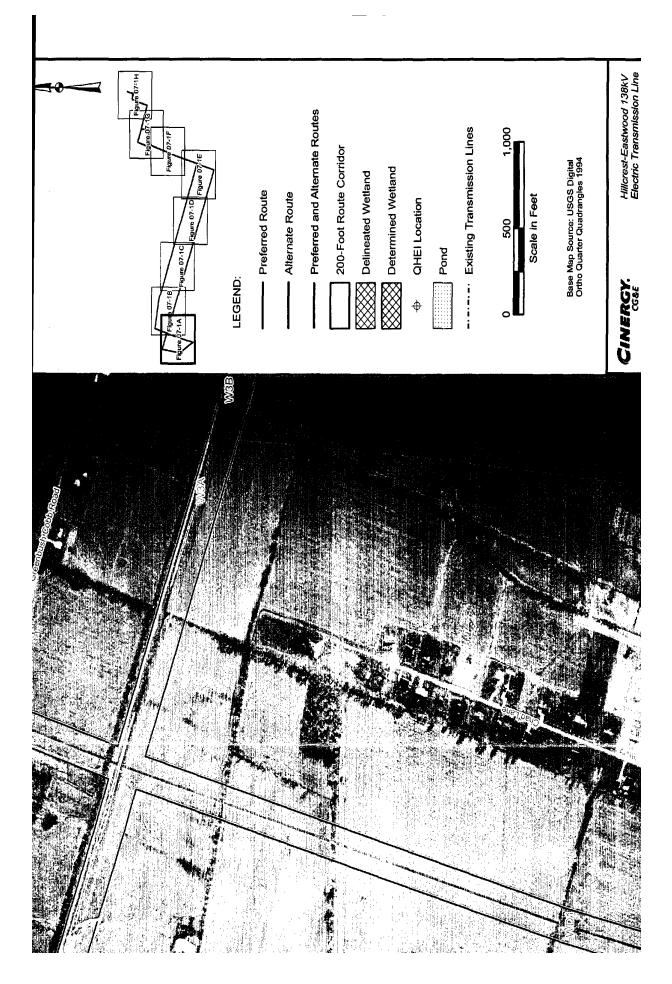
General Comments	Emergent wetland located immediately east of Bodman Road and south of the Norfolk and Wostenn Railroad. Hydrophytic vegetation accounts for greater than 90% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, drainage patterns in the welland, oxidized root channels, local soil survey data, and a positive FAC-neutral test. Hydric soil exhibited low chroma and distinct mottling and was identified on the local and national hydric soils ilst. All three welland criteria were satisfied.	Emergent wetland located on the south of the Norfolk and Western Railroad and west of Brocks Maiott Road. Hydrophytic vegetation accounts for greater than 90% of the dominant plant species. Hydrology criteria was met with saturation in the upper 12 inches, drainage patterns in the wetland, oxidized root channels, local soils survey data, and a positive PAC-neutral test. Hydric soil was identified on the local and national hydric soils lists and exhibited a low chroma and distinct mottling. All three wetland criteria were satisfified.	Emergent wetland located immediately southeast of the Norfolk and Wester Railroad - Brooks Malatt Crossing. Hydropbylic vegetation accounts for approximately 90% of the dominant plant species. Hydroblyoy oriteria was met with drainage patterns in the wetland, local soil survey data, and a positive FAC-neural test. Hydric soil was identified on the local and national hydric soils list and faint mottling was observed throughout the soil profile. All three wetland criteria were satisfied.	Emergent wetland complex located on the east side of Brooks Malott Crossing, between U.S. 68 and the Norfolk and Western Railroad. Hydrophytic vegetation accounts for approximately 90% of the dominant plant species. Hydrophytic verteria was met with saturation in the upper 12 inches, drainage patterns in the wetlands, water-stained leaves, local soil survey data, and a positive FAC-neutral test. Hydric soil was identified on the local and national hydric soils list and exhibited a low chroma and distinct moutling. All three wetland criteria were satisfied.	Emergent wetland located on the east side of Brooks Malott Road. Hydrophytic vegetation accounts for greater than 90% of the dominant plant species. Hydrology criteria was met with areas of immdation, saturation in the upper 12 inches, water marks, drainage patterns in the wetland, oxidized root channels, and a positive FAC-neutral test. Hydric soil exhibited a low chroma color scheme, reducing conditions, an aquic moisture regime, and a sulfidic odor. All three wetland criteria were satisfifed.	Emergent/scrub-shrub/forested wetland on the east side of Brooks Malott Road, approximately 600 feet south of the interesection of U.S. 68 and Harker Waits Road. Hydrophytic vegetation accounts for approximately 95% of the dominant plant species. With the exception of sediment deposits, this wetland exhibited all of the primary and secondary wetland hydrology indicators. Hydric soil exhibited a low februar acoust soons scheme with distinct mottling, reducing conditions, an aquic moisture regime, a sulfidic code, and was identified on the local and national hydric soils list. All three weelland criteria were satisfied.
Estinated Acreage of Entire Wetland	< 0.1	0.3 - < 3	0.3 - < 3	0,3 - < 3	0.3 - < 3	3-<10
Wetland Area within 25 ft of Project Centerline (Acreage)	0.014	0.001	0.035	0.248	0.068	0.063
Wetland Area within 100 ft of Project Centerline (Acreage)	0.274	1.133	0.062	0.281	0.172	0.209
Linear Feet of Wetland Under Transmission Line	12.624	0	22.142	20.002	72.720	70.711
ORAM Score (& Category)	13 (1)	21 (1)	18.5 (1)	16.5 (1)	32 (2)	34.5 (2)
Wetland Type	РЕМ	РЕМ	PEM	РЕМ	РЕМ	PEM/PSS/ PFO
Photo	12	13	14	15-17	19	20
Figure Key	07-1D	07-1D and 07- 1E	07-1E	07-1E	07-1F	07-1F
Wetland ¹ Identifier	9/\	W7	W8	W9A-D	W10	W11

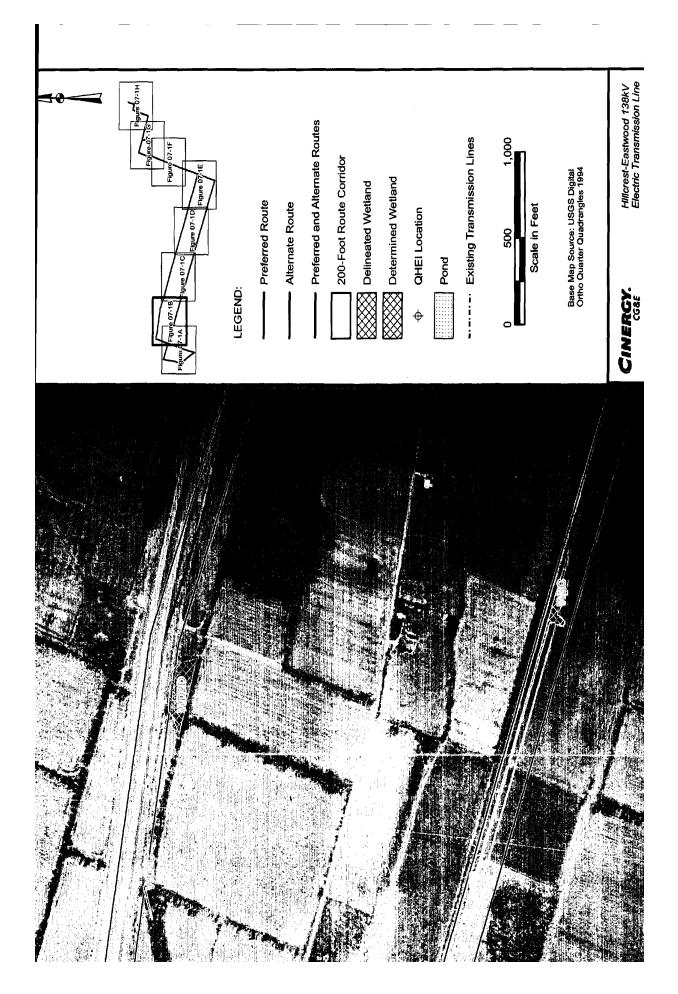
14945521 Hillcrest Eastwood Transmission Line Project

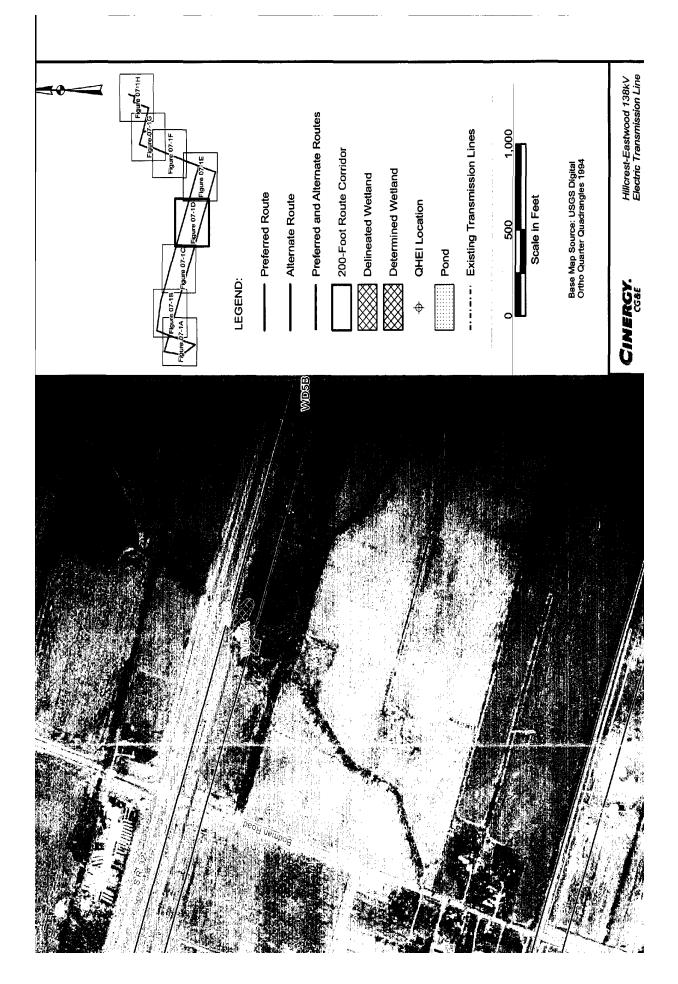
Cincinnati Gas and Electric June 2005

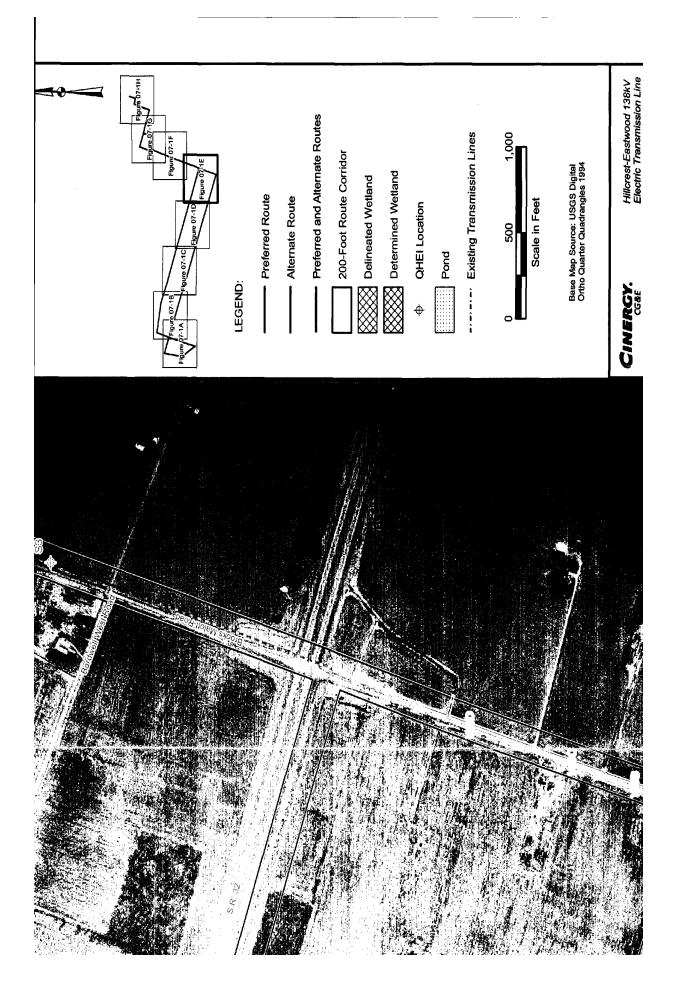
TABLE 7-3 (Continued)

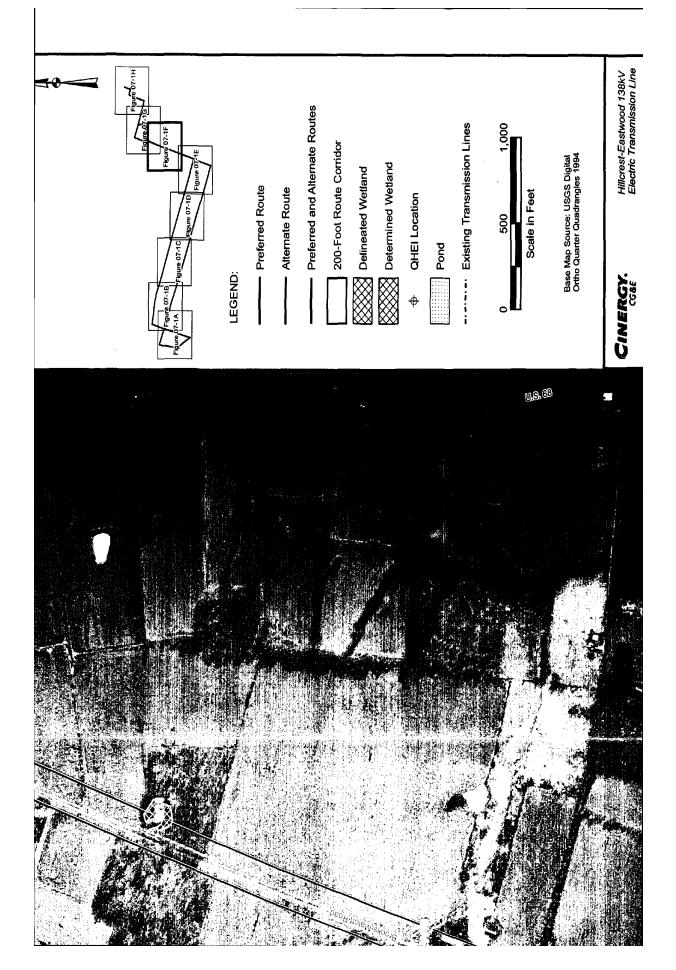
Estimated Acreage Of Entire Wetland	Emergent wetland complex located on the north side of Greenbush East Road, approximately 400 feet west of the proposed substation location property. Hydrophytic vegetation accounts for approximately 90% of the dominant plant species. Hydrology criteria was met with drainage patterns in the wetland, oxidized root charmels, local soil survey data, and a positive FAC-neutral test. Hydric soil was identified on the local and national hydric soils list and exhibited a low chroma color scheme with faint motifing at and below 6 inches in the soil profile. All three welland, criteria were saisfied,	Emergent wetland complex located on the north and south side of Greenbush East Road, approximately 400 feet east of the Wetland 12A-B complex. Hydrophytic vegetation accounts for approximately 80% of the dominant plant species. Hydrology oriteria was met with saturation in the upper 12 inches, drainage patterns in the wetland, oxidized root channels, local soil survey data, and a positive FAC-neutral lest. Hydro soils was identified on the local and national hydric soils list and exhibited a low chroma color scheme with distinct mottling throughout the soil profile. All three wetland criteria were satisfied.
Wetland Area within 25 ft of Project Centerline (Acreage)	0.034	0.007
Wetland Area within 100 ft of Project Centerline (Acreage)	0.049	0.024
Linear Feet of Wetland Under Transmission Line	10.04	7,067
ORAM Score (& Category)	(1) 01	14(1)
Wetland Type	РЕМ	РЕМ
Photo Number	23-24	,
Figure Key	67-1Н	H1-70
Wetland ¹ Identifier	W12A-B	W13A-B

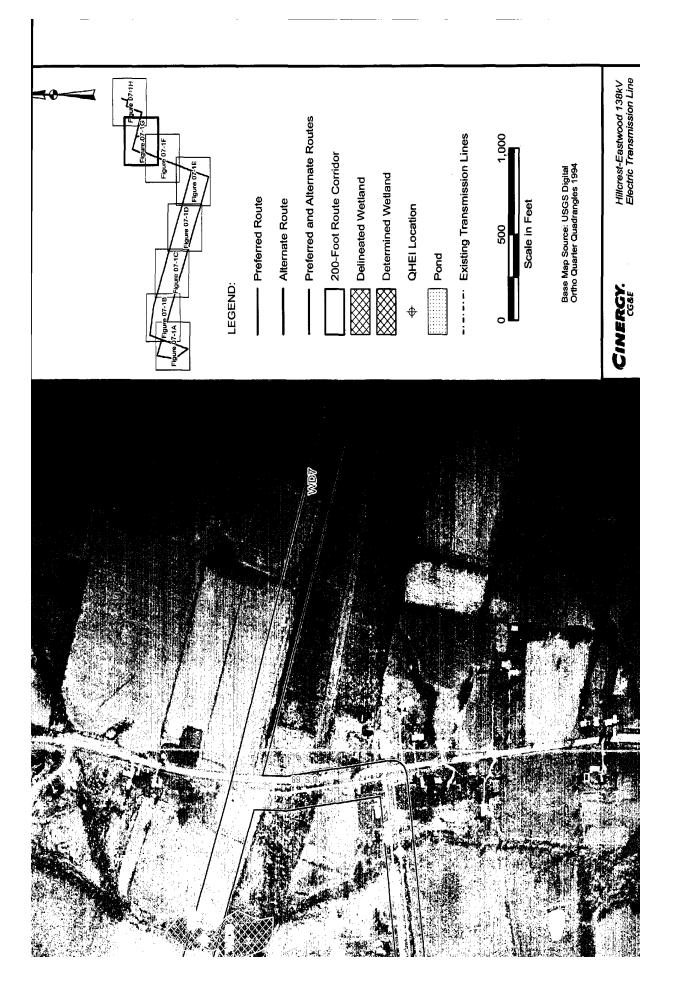


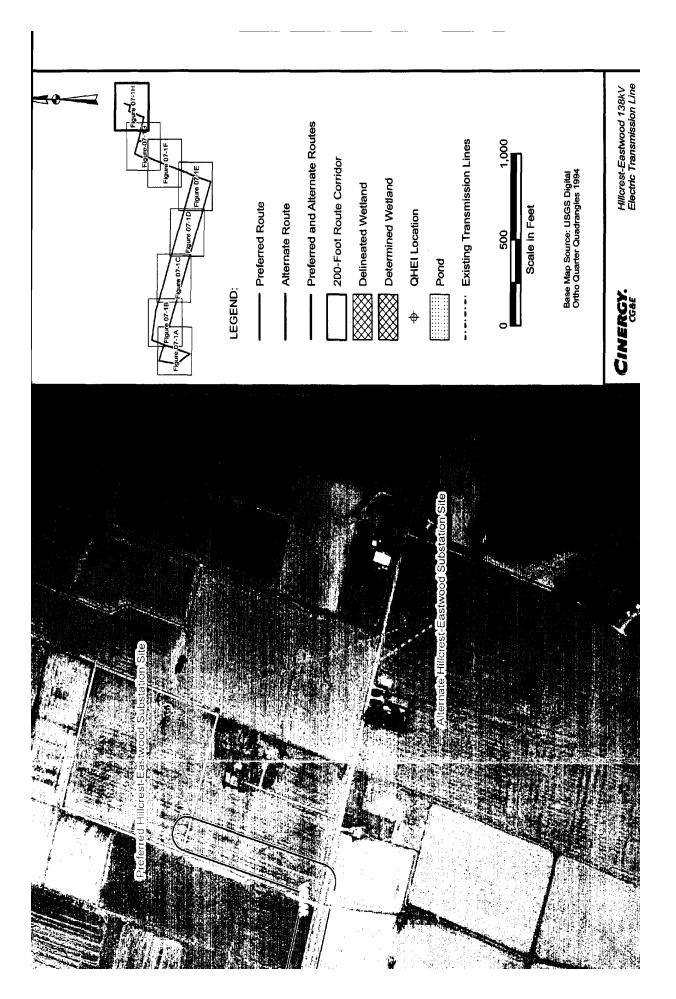


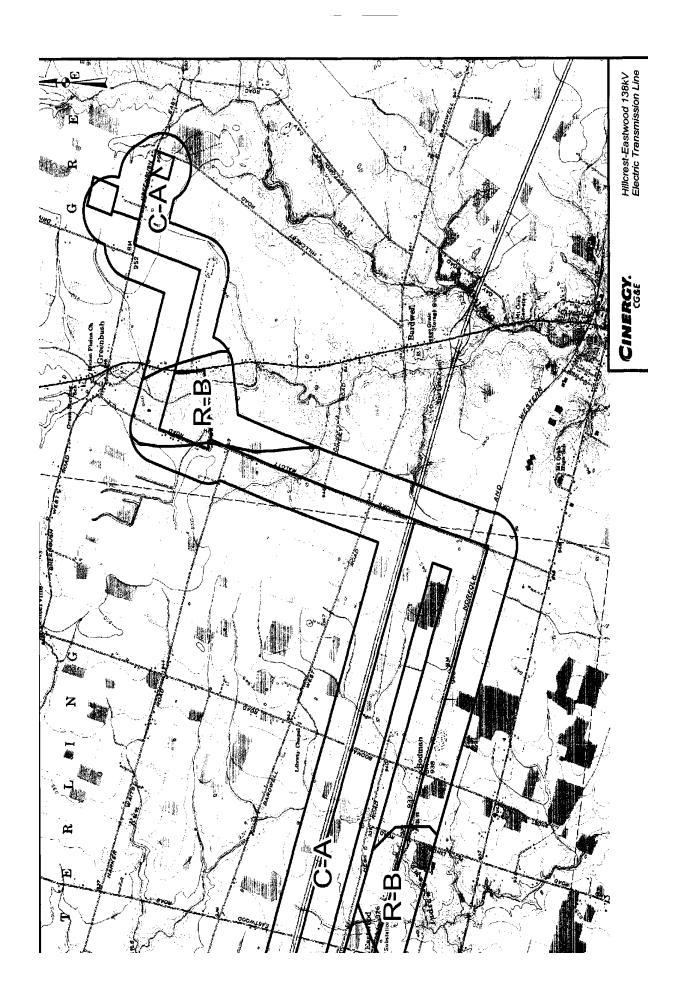












APPENDIX 07-1

OHIO EPA QUALITATIVE HABITAT ASSESSMENT INDEX (QHEI) DATA FORMS

Qualitative Habitat Evaluation Index Field Sh	eet QHEI Score: 54
River Code: NA RM: NA Stream: SIA-UT to Indian Can	IP RUM
Date: 09/28/04 Location: Along the South side of Norfalk &	Southern & Darlow fr. SE of
Scorers Full Name: STEVE LANE Attillation: URS CORPORATION	Eastwood R
1] SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present	
TYPE POOL RIFFLE POOL RIFFLE SUBSTRATE ORIGIN	SUBSTRATE QUALITY
DI BLOR ISLBS(10) SER GRAVEL [7] 10 40 Check ONE (OR 2 & AVERAGE)	heck one (or z & Average)
DO-BOULDER [9] DO-SAND [6] ALLIMESTONE [1] SILT:	II- SILT HEAVY [-2]
DD-COBBLE [8] DBEDROCK[5] ACTILLS [1]	D-SILT MODERATE [-1] Substrate
DICHARDPAN [4] DICHOETRITUS[3] DI-WETLANDS[0]	DE SILT NORMAL [0]
DI-MUCK (2) DICHARTIFICIALION DI-HARDPAN (D)	D-SILT FREE [1]
MESILT [2] 90 60 NOTE: Ignore Studge Originating II -SANDSTONE [0] EMBEDDED	
PIDITA FORM SOURCES 1 -RIP/RAP [0] NESS:	[] -MODERATE [-1]
NUMBER OF SUBSTRATE TYPES: 124 or More [2] 12-LACUSTRINE [0]	M-HORMAL [0]
(High Quality Only, Score 5 or >) 583 or Less [0] U-SHALE [-1]	13-NONE [1]
COMMENTS D-COAL FINES [-2]	
2) INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions)	OUNT: (Check ONLY One or
TURN A AUST A	eck 2 and AVERAGE) Cover
UNDERCUT BANKS [1]POOLS> 70 cm [2]OXBOWS, BACKWATERS [1]	- EXTENSIVE > 75% [11]
	MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1]BOULDERS [1]LOGS OR WOODY DEBRIS [1] [2]	- SPARSE 5-25% [3] Max 20
ROOTMATS [1] COMMENTS: MOSTLY OVERHANGING VEGETATION	- NEARLY ABSENT < 5%[1]
3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE	
SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY MODIFICATION	
U-HIGH [4] U-EXCELLENT [7] U-NONE [6] U-HIGH [3] U-SNAGGING	11 12-11
MODERATE [3] AC GOOD [5] A RECOVERED [4] MODERATE [2] D-RELOCATI	(
	EMOVAL II - LEVEED Max 20
D-NONE [1] D-RECENT OR NO D-DREDGING	
RECOVERY [1] DI- ONE SIDE	CHANNEL MODIFICATIONS /
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank PELOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) L R (Per Bank) L R (Most Predominant Per Bank) L R (Most P	BANK EROSION Riparian L. R. (Per Bank) DI-HONE/LITTLE [3] DI-HODERATE [2] [0] L. L. HEAVY/SEVERE[1] Max 10
5.]POOL/GLIDE AND RIFFLE/RUN QUALITY	Pool/
	POOLS & RIFFLESI] Current
(Check 1 ONLYI) (Check 1 or 2 & AVERAGE) (Check All Tr	
	PRENTIAL[-1]
	TERSTITIAL[-1] Mex 12
	TERMITTENT[-2] RY FAST[1]
1- < 0.2m [POOL=0] COMMENTS:	נון ובאז וא
CHECK ONE OR CHECK 2 AND AVERAGE	Riffle/Run
	LE/RUN EMBEDDEDNESS
☐ · Best Areas >10 cm [2] ☐ · MAX > 50 [2] ☐ · STABLE (e.g., Cobble, Boulder) [2]	D- NONE [2]
U- Best Areas 5-10 cm[1] /5(- MAX < 50[1] U-MOD. STABLE (e.g., Large Gravet) [1]	D-LOW [1] Max 8
Best Areas < 5 cm QUNSTABLE (Fine Gravel, Sand) [0]	MODERATE [0] Gradient
[RIFFLE=0]	D. EXTENSIVE [-1]
COMMENTS: D- NO RIFFLE (M	
	٠ الكنا
6] GRADIENT (ft/mi): ~50 DRAINAGE AREA (sq.mi.): ~.5 %POOL: 40	%GLIDE: 20 Max 10
%RIFFI FI 20	a la faireant
6] GRADIENT (R/mi): 50 DRAINAGE AREA (sq.mi.): 5 %POOL: 40 %RIFFLE 20	%GLIDE: 20 Max 10 %RUN: 20 06/24/01

Major Suspected Sources of impacts (Check All That Apply): Industrial ID (WMTP ID) WWITP ID) WMTP ID) MANTER CANALITY ID) MANTER ID)	Cuburban Runoff CSOs D Suburban Impacks D Channelization D Channelization D Riparian Removal D Natural D Chher Flow Atterston D Chher				Yes/No Is Stream Ephemenal (no pools, totally dry or only damp spots)? In there water upstream? How Far. Is There Water Close Downstream? How Far.
is Sampling Reach Representative of the Stream (Y/N) און אינאיי	Subjective Aeathedic Average Average Maximum Av. Bankfull Mean Wildth Depth Area Wildth Bebth Area Depth Area Moderate, D-High	Stream Drawing:	POUL RIFELE PROPOSED LINE	From J	Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3. Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, brite into of highest quality or in small amounts of highest quality in chocarde or greater amounts. Examples of highest quality include very large boulders in deep or fast water, jarge diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional pools.

CHEFA			eld Sheet QHEI Score	9: [7]
River Code: NA	RM: NA Stream	: SZAT INDIAN CAMP	RON	-
Date: 03/25/05		VIST OF LINDSEY PO	AD SOUTH OF RAILROAD	
Scorers Full Name:				
	ONLY Two SubstrateTYPE B			
		DL RIFFLE SUBSTRATE ORIGIN	SUBSTRATE QUALITY	
DD-BLDR/SLBS[10]		2 42 Check ONE (OR 2 & AVERA)	GE) Check ONE (OR 2 & AVERA	GF)
		AF-LIMESTONE [1] SII		or,
DD-BOULDER [9]		(X -TILLS [1]	• •	Substrate
	DBEDROCK(5)	D-NETLANDS[0]	CI - SILT MODERATE [-1]	
DID-HARDPAN (4)	CICLOETRITUS(3)		(A) -SILT NORMAL [0]	12
DIMUCK [2] 80	60 NOTE: Ignore Studge Origin: From Point Sources	II-HARDPAN [0]	MBEDDED CI-EXTENSIVE [-2]	
11 11 12 13 150	From Point Sources	D-RIP/RAP [0] NE	• •	Max 20
NUMBER OF SUBSTRATE	TVOEC: Ad A or More 121	D-LACUSTRINE [0]	ESS: []-MODERATE [-1] []-MORMAL [0]	
(High Quality Only, Score		D-SHALE [-1]	D-NONE [1]	
COMMENTS GRAVEL SI	- 2 or con [a]	D-COAL FINES [-2]	D-MONE [1]	
		of 0 to 3; see back for instruction	and) AMOUNTS (Charle Office)	
(Structure)	TYPE: Score All Th			Cover
			check 2 and AVERAGE)	
UNDERCUT BANKS [1]	POOLS> 70 cr	• •		. 111011
2 OVERHANGING VEGETA				Max 20
SHALLOWS (IN SLOW W		LOGS OR WOODY DEB		
	MMENTS:	ED Calcana OD shook 2 and A	II - NEARLY ABSENT < 5%[1	ı,
•	•	ER Calegory OR check 2 and A		Channel
	/ELOPMENT CHANNELIZAT		OUFICATIONS/OTHER	
	EXCELLENT [7] D- NONE [6]	•	- SNAGGING - IMPOUND.	11511
	GOOD [5] /X- RECOVER	• •		الحنا
	FAIR [3] D - RECOVER	• • • • • • • • • • • • • • • • • • • •	- CANOPY REMOVAL (1) - LEVEED - Dredging (1) - Bank Shapin	Max 20
□ - NONE [1] □ -			- ONE SIDE CHANNEL MODIFICATIONS	N
COMMENTS, CALABOA IS	RECOVERY [PATION INCREASES UPS	tream	- ONE SIVE CHANNEL MODIFICATIONS	
	A JOS (Males v. TC) C 2			
AL DUANTAN TUNE AND			AGE nor bank) & River Right i onkin	a Downstream P
•	D BANK EROSION check ON	E box per bank or check 2 and AVER	AGE per bank) PRiver Right Lookin	•
RIPARIAN WIDTH	D BANK EROSION check ON FLOOD PL	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A	RIPARIAN) BANK EROSION	g Downstream P Riparian
RIPARIAN WIDTH L R (Per Bank)	D BANK EROSION check ON FLOOD PL L R (Most Predominant F	E box per bank or check 2 and AVER <u>AIN QUALITY (<i>PAST 100 Meter f</i>i</u> ² er Bank) L. R	RIPARIAN) BANK EROSION L R (Per Bank)	Riparian
RIPARIAN WIDTH L R (Per Bank) LID-WIDE > 50m [4]	D BANK EROSION check ONI FLOOD PI L R (Most Predominant F X) STFOREST, SWAMP [3]	E box per bank or check 2 and AVER <u>AIN QUALITY (PAST 100 Meter A</u> Per Bank) L R CI CI-CONSERVATION	RIPARIAN) BANK EROSION L R (Per Bank) I TILLAGE [1] DI DI-MONE/LITTLE RUSTRIAL [0] AD 221-MODERATE [2]	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L Q WIDE > 50m [4] L MODERATE 10-50m	D BANK EROSION check ONI FLOOD PL L R (Most Predominant F DEFOREST, SWAMP [3] [3] DESHRUB OR OLD FIELD	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II D-CONSERVATION [2] ID SEVERBAN OR INC	RIPARIAN) BANK EROSION L R (Per Bank) I TILLAGE [1] DI DI-MONE/LITTLE RUSTRIAL [0] AD 221-MODERATE [2]	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L Q WIDE > 50m [4] D - MODERATE 10-50m [2] T - NARROW 5-10 m [2]	D BANK EROSION check ONI FLOOD PL L R (Most Predominant F D FOREST, SWAMP [3] [3] D SHRUB OR OLD FIELD D LRESIDENTIAL, PARK, NI	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] ID CONSERVATION [2] ID CONSERVATION [2] ID COPEN PASTURI	ILPARIAN) BANK ÉROSION L R (Per Bank) I TILLAGE [1] DUSTRIAL [0] E,ROWCROP [0] DI -HEAVY/SEVERI	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) LIC - WIDE > 50m [4] LIC - MODERATE 10-50m [2] NARROW 5-10 m [2] LIC - VERY NARROW <5 m	D BANK EROSION check ONI FLOOD PL L R (Most Predominant F DEFOREST, SWAMP [3] [3] DESHRUB OR OLD FIELD	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] ID CONSERVATION [2] ID CONSERVATION [2] ID COPEN PASTURI	ILPARIAN) BANK ÉROSION L R (Per Bank) I TILLAGE [1] DUSTRIAL [0] E,ROWCROP [0] DI -HEAVY/SEVERI	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] D - MODERATE 10-50m [2] ARROW 5-10 m [2] D - VERY NARROW <5 m	D BANK EROSION check ONI L R (Most Predominant F SE OFFICEST, SWAMP (3) G SHRUB OR OLD FIELD D RESIDENTIAL PARK, MI (1)	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DI-CONSERVATION [2] IDS-URBAN OR INC EW FIELD [1] ID -OPEN PASTURI II DI-MINING/CONS	ILPARIAN) BANK ÉROSION L R (Per Bank) I TILLAGE [1] DUSTRIAL [0] E,ROWCROP [0] DI -HEAVY/SEVERI	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] D - MODERATE 10-50m [2] ARROW 5-10 m [2] D - VERY NARROW <5 m	D BANK EROSION check ONI FLOOD PL L R (Most Predominant F D FOREST, SWAMP [3] [3] D SHRUB OR OLD FIELD D CHESIDENTIAL, PARK, NI	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DI-CONSERVATION [2] IDS-URBAN OR INC EW FIELD [1] ID -OPEN PASTURI II DI-MINING/CONS	ILPARIAN) BANK ÉROSION L R (Per Bank) I TILLAGE [1] DUSTRIAL [0] E,ROWCROP [0] DI -HEAVY/SEVERI	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L R (P	D BANK EROSION check ONI L R (Most Predominant F SHOREST, SWAMP [3] G SHRUB OR OLD FIELD - FENCED PASTURE [1] - FENCED PASTURE [1]	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DI-CONSERVATION [2] IDS-URBAN OR INC EW FIELD [1] ID -OPEN PASTURI II DI-MINING/CONS	ILPARIAN) BANK ÉROSION L R (Per Bank) I TILLAGE [1] DUSTRIAL [0] E,ROWCROP [0] DI -HEAVY/SEVERI	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L R (P	D BANK EROSION check ONI L R (Most Predominant F L R (Most P L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R C CONSERVATION [2] DISCURBAN OR INC EW FIELD [1] DI COPEN PASTURI DISCURS OPEN DESTURI	BANK ÉROSION L R (Per Bank) ITILLAGE [1] II -NONE/LITTLE PUSTRIAL [0] M. MI-MODERATE [2] E,ROWCROP [0] II -HEAVY/SEVERI TRUCTION [0]	Riparian [3] 5 [1] Max 10
RIPARIAN WIDTH L R (Per Bank) L D- WIDE > 50m [4] L D- WIDE > 50m [4] L D- MODERATE 10-50m [2] L D- VERY NARROW < 5 m L D- NONE [0] COMMENTS: FORE S. POOL/GLIDE AND RI	D BANK EROSION check ONI L R (Most Predominant F L R (Most P) L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R	BANK EROSION L R (Per Bank) ITILLAGE [1] DI NONE/LITTLE RUSTRIAL [0] BANK EROSION L R (Per Bank) DI NONE/LITTLE RUSTRIAL [0] DI NONE/LITTLE RUSTRIAL [0] PLIN TILLAGE RUSTRIAL [0] POOLS & RIFFLESI]	Riparian (3) 5
RIPARIAN WIDTH L R (Per Bank) L D. WIDE > 50m [4] L D. WIDE > 50m [4] L D. WODERATE 10-50m L	D BANK EROSION check ONI L R (Most Predominant F L R (Most P L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CHOONSERVATION [2] II DECURBAN OR INC EW FIELD [1] III CHOPEN PASTUR III CHONNER (CURRENT COURSE)	BANK EROSION L R (Per Bank) I TILLAGE [1] II -NONE/LITTLE PLANTINAL [0] MI M-MODERATE [2] E,ROWCROP [0] II -HEANY/SEVERI TRUCTION [0] VELOCITY [POOLS & RIFFLESI] TRUCK All That Apply)	Riparian (3) 5 E(1) Max 10
RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] D - WIDE > 50m [4] D - MODERATE 10-50m D - NONE (0) COMMENTS: FORG S.]POOL/GLIDE AND RIMAX. DEPTH (Check 1 ONLY1) D - > 1m [6]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL SET STRUB OR OLD FIELD D PRESIDENTIAL PARK, MI (1) CI -FENCED PASTURE (1) FFLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERA -POOL WIDTH > RIFFLE WID	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R Discussion Discussion Representation [2] Discussion Representation EW FIELD [1] DISCUSSION OR INC EW FIELD	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian (3) 5 E(1) Max 10
RIPARIAN WIDTH L R (Per Bank) L D. WIDE > 50m [4] L D. WIDE > 50m [4] L D. WODERATE 10-50m L	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R DI-CONSERVATION [2] DISCURBAN OR INC EW FIELD [1] DI-OPEN PASTURI DI-MINING/CONS (CURRENT CONSERVATION AGE) CURRENT CONSERVATION AGE DI-EDDIES[1] TH [2] DI-FAST[1]	BANK EROSION L R (Per Bank) ITILLAGE [1] DINONE/LITTLE BUSTRIAL [0] DINONE/LITTLE BANK EROSION L R (Per Bank) DINONE/LITTLE BANK EROSION L R (Per B	Riparian (3) 5 E(1) Max 10
RIPARIAN WIDTH L R (Per Bank) L R (Per Bank) L - WIDE > 50m [4] L - MODERATE 10-50m [2] NORE (0) NONE (0) COMMENTS: FOILS S, POOL/GLIDE AND RIMAX. DEPTH (Check 1 ONLY!) - > Im [6] - 0.7-1m [4]	D BANK EROSION check ONI L R (Most Predominant F- L R (Most Predominant F- L R (Most Predominant F- L R (Most Predominant R- L R (Most Predomin	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DICONSERVATION [2] IDSCURBAN OR INC EW FIELD [1] ID-OPEN PASTURI II DI-MINING/CONS (CURRENT CONS AGE) CURRENT CONS [1] ID-EDDIES[1] TH [1] ID-FAST[1]	BANK EROSION L R (Per Bank) ITILLAGE [1] DINONE/LITTLE BUSTRIAL [0] DINONE/LITTLE BANK EROSION L R (Per Bank) DINONE/LITTLE BANK EROSION L R (Per B	Riparian [3] 5 [1] Max 10
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NARROW 5- m [2] COMMENTS: Fortg S. [POOL/GLIDE AND RIMAX. DEPTH (Check 1 ONLY!) III - > Im [6] III - 0.7-1m [4]	D BANK EROSION check ONI L R (Most Predominant F- L R (Most Predominant F- L R (Most Predominant F- L R (Most Predominant R- L R (Most Predomin	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R DI-CONSERVATION [2] DISCURBAN OR INC EW FIELD [1] DI-OPEN PASTURI DI-MINING/CONS (CURRENT AGE CURRENT MITH [2] DI-FAST[1] TH [1] DI-FAST[1] [0] MININGRAFE [1]	BANK EROSION L R (Per Bank) ITILLAGE [1] DINONE/LITTLE BUSTRIAL [0] DINONE/LITTLE BANK EROSION L R (Per Bank) DINONE/LITTLE BANK EROSION L R (Per B	Riparian [3] 5 [1] Max 10
RIPARIAN WIDTH L R (Per Bank) DID-WIDE > 50m [4] DID-WIDE > 50m [4] DID-WODERATE 10-50m [2] DID-VERY NARROW <5 m DID-NONE [0] COMMENTS: Force 5.]POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) DID-NIM [6] DID-0.7-1m [4] DID-0.4-0.7m [2] DIC-0.2-0.4m [1]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant Pl L R (Most Pl L R (M	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R DI-CONSERVATION [2] DISCURBAN OR INC EW FIELD [1] DI-OPEN PASTURI DI-MINING/CONS (CURRENT AGE CURRENT MITH [2] DI-FAST[1] TH [1] DI-FAST[1] [0] MININGRAFE [1]	BANK EROSION L R (Per Bank) ITILLAGE [1] DINONE/LITTLE BUSTRIAL [0] DINONE/LITTLE BANK EROSION L R (Per Bank) DINONE/LITTLE BANK EROSION L R (Per B	Riparian [3] S E[1] Max 10 Pool/ Current Max 12
RIPARIAN WIDTH L R (Per Bank) DID-WIDE > 50m [4] DID-WIDE > 50m [4] DID-WODERATE 10-50m [2] DID-VERY NARROW <5 m DID-NONE [0] COMMENTS: Force 5.]POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) DID-NIM [6] DID-0.7-1m [4] DID-0.4-0.7m [2] DIC-0.2-0.4m [1]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R DI-CONSERVATION [2] DISCURBAN OR INC EW FIELD [1] DI-OPEN PASTURI DI-MINING/CONS (CURRENT AGE CURRENT MITH [2] DI-FAST[1] TH [1] DI-FAST[1] [0] MININGRAFE [1]	BANK EROSION R (Per Bank) ITILLAGE [1] DI HONE/LITTLE MUSTRIAL [0] E,ROWCROP [0] DI HEARY/SEVERI TRUCTION [0] VELOCITY [POOLS & RIFFLES] BOOK All That Apply) DI HITERSTITUAL[-1] DI HITERSTITUAL[-1] DI HITERSTITUAL[-1] DI VERY FAST[1]	Riparian [3] 5 [1] Max 10
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - WIDE > 50m [4] III - MODERATE 10-50m III - NARROW 5-10 m [2] III - NONE [0] COMMENTS: FORE 5.]POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY1) III - > 1m [6] III - 0.4-0.7m [2] IX - 0.2- 0.4m [1] III - < 0.2m [POOL=0]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II ID-CONSERVATION [Z] ID SCURBAN OR INC EW FIELD [1] ID -OPEN PASTUR [C] ID -MINING/CONS [C] CURRENT [C] CURRENT [C] ID -EDDIES[1] ITH [1] ID -FAST[1] [D] CONE OR CHECK 2 AND AVE	BANK EROSION R (Per Bank) ITILLAGE [1] DINONE/ILITLE BE,ROWCROP [0] DI-HEAVY/SEVERI TRUCTION [0] VELOCITY [POOLS & RIFFLES]] HOCK All That Apply) DI-HTERSTITIAL[-1] DI-HTERSTITIAL[-1] DI-HTERSTITIAL[-1] CI-HTERMITTENT[-2] DI-VERY FAST[1]	Riparian (3) 5 E(1) Max 10 Pool/ Current Max 12
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - WIDE > 50m [4] III - MODERATE 10-50m III - NARROW 5-10 m [2] III - NONE [0] COMMENTS: FORE 5. IPOOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) III - 1m [6] III - 0.4-0.7m [2] IX - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL STATE OF THE PROPERTY OF THE PROPERT	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] ID SCURBAN OR IND EW FIELD [1] ID -OPEN PASTURI GURRENT (C) CURRENT MGE) (C) TH [2] ID -EDDIES[1] TH [1] ID -FAST[1] [0] ID -MINING PAST[1] (C) CURRENT (C	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian (3) 5 E(1) Max 10 Pool/ Current Max 12
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NONE [0] COMMENTS: Force 5. POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) III - > 1m [6] III - 0.4-0.7m [2] III - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH III - Best Areas > 10 cm [7]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R Discussion of the control of t	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian (3) 5 E(1) Max 10 Pool/ Current Max 12
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NONE [0] COMMENTS: Forte S, IPOOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) III - > Im [6] III - 0.4-0.7m [2] IX - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH III - Best Areas > 10 cm [7] III - Best Areas 5-10 cm [7] III - Best Areas 5-10 cm [7]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] DX:URBAN OR IND EW FIELD [1] II O-PEN PASTURI [4] CURRENT 1 [5] CHECK 2 AND AVER [6] FIELD [1] II FAST[1] [6] SAMODERATE [1] [7] CONE OR CHECK 2 AND AVER [8] FIELF (RUN SUBSTRATE [9] II-STABLE (e.g., Cobble, Bould) [1] COND. STABLE (e.g., Large Gr	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian (3) 5 Fly Max 10 Pool/ Current Max 12 Riffle/Run Max 8
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW <5 m III - NONE [0] COMMENTS: Forts 5. POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) - > Im [6] II - 0.4-0.7m [2] AC 0.2-0.4m [1] - < 0.2-0.4m [1] - < 0.2-0.4m [1] Best Areas > 10 cm [7] Best Areas > 5 cm	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R Discussion of the control of t	BANK EROSION R (Per Bank) ITILLAGE [1]	Right 10 Pool/ Current Max 12 Riffle/Run
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - WIDE > 50m [4] III - MODERATE 10-50m III - NONE [0] COMMENTS: Force 5.]POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) I - > Im [6] I - 0.7-1m [4] I - 0.4-0.7m [2] BY - 0.2-0.4m [1] I - < 0.2m [POOL-0] RIFFLE DEPTH I - Best Areas > 10 cm [7] Best Areas > 5 cm [RIFFLE-0]	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] D\$CURRENT OR INT EW FIELD [1] II O-PEN PASTURI [4] CURRENT OF MINING/CONS [5] CURRENT OF MINING/CONS [6] CURRENT OF MINING/CONS [6] CURRENT OF MINING/CONS [7] CONFORT OF MINING/CONS [8] CONFORT OF MINING/CONS [9] CONFORT OF MININ	BANK EROSION R (Per Bank) ITILLAGE [1] ID HONE/LITTLE MUSTRIAL [0] E,ROWCROP [0] ID HEARY/SEVERI IRUCTION [0] WELOCITY [POOLS & RIFFLES]] NOCK All That Apply) ID HORERTIAL[-1] ID HITERSTITAL[-1] ID HITERSTITAL[-1] ID HYTERMITTENT[-2] ID HEROF FAST[1] RAGE RIFFLE/RUN EMBEDDEDNESS Pr) [2] RAGE RIFFLE/RUN EMBEDDEDNESS Pr) [2] RAGE RIFFLE/RUN EMBEDDEDNESS Pr) [2] RAGE RIFFLE/RUN EMBEDDEDNESS RIFF	Riparian [3] 5 Fly Max 10 Pool/ Current Max 12 Riffle/Run Max 8
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NARROW 5- m III - NONE [0] COMMENTS: Forte MAX. DEPTH (Check 1 ONLY!) III - > Im [6] III - 0.4-0.7m [2] III - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH III - Best Areas > 10 cm [7] III - Best Areas > 5 cm [RIFFLE-D] COMMENTS:	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PLOO	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] IJ X-URBAN OR INT EW FIELD [1] II I-OPEN PASTURI [4] CURRENT II [5] COPEN PASTURI [6] CURRENT II [7] II	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian [3] 5 Fly Max 10 Pool/ Current Max 12 Riffle/Run Max 8
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NARROW 5- m III - NONE [0] COMMENTS: Forte MAX. DEPTH (Check 1 ONLY!) III - > Im [6] III - 0.4-0.7m [2] III - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH III - Best Areas > 10 cm [7] III - Best Areas > 5 cm [RIFFLE-D] COMMENTS:	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PLOO	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II CONSERVATION [2] IJ X-URBAN OR INT EW FIELD [1] II I-OPEN PASTURI [4] CURRENT II [5] COPEN PASTURI [6] CURRENT II [7] II	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian [3] 5 Fly Max 10 Pool/ Current Max 12 Riffle/Run Max 8
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NARROW 5- m III - NONE [0] COMMENTS: Forte MAX. DEPTH (Check 1 ONLY!) III - > Im [6] III - 0.4-0.7m [2] III - 0.2- 0.4m [1] III - < 0.2m [POOL-0] RIFFLE DEPTH III - Best Areas > 10 cm [7] III - Best Areas > 5 cm [RIFFLE-D] COMMENTS:	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DECONSERVATION [Z] ID DECURBAN OR INC EW FIELD [1] III OPEN PASTURI [C] III - MININING/CONS [A CURRENT! [AGE) (Ci III [2] III - EDDIES[1] III [1] III - FAST[1] [O] MODERATE [1] [III SLOW [1] CONE OR CHECK 2 AND AVEI RIFFLE/RUM SUBSTRATE III STABLE (e.g., Cobble, Bould) III - NO [III	BANK EROSION R (Per Bank) ITILIAGE [1]	Riparian Riparian Pool/ Current Max 12 Riffle/Run Max 8
RIPARIAN WIDTH L R (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m [2] III - NARROW 5-10 m [2] III - NARROW 5- m III - NONE [0] COMMENTS: Forte S. [POOL/GLIDE AND RI MAX. DEPTH (Check 1 ONLY!) I - > Im [6] I - 0.4-0.7m [2] AC 0.2- 0.4m [1] I - < 0.2m [POOL-0] RIFFLE DEPTH I - Best Areas > 10 cm [7] Best Areas > 5 cm [RIFFLE-0] COMMENTS: 6] GRADIENT (ft/mi):	D BANK EROSION check ONI L R (Most Predominant FLOOD PL L R (Most Predominant FLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PL L R (Most Predominant PLOOD PLOO	E box per bank or check 2 and AVER AIN QUALITY (PAST 100 Meter A Per Bank) L R II DECONSERVATION [Z] ID DECURBAN OR INC EW FIELD [1] III OPEN PASTURI [C] III - MININING/CONS [A CURRENT! [AGE) (Ci III [2] III - EDDIES[1] III [1] III - FAST[1] [O] MODERATE [1] [III SLOW [1] CONE OR CHECK 2 AND AVEI RIFFLE/RUM SUBSTRATE III STABLE (e.g., Cobble, Bould) III - NO [III	BANK EROSION R (Per Bank) ITILLAGE [1]	Riparian Riparian Pool/ Current Max 12 Riffle/Run Max 8

Major Suspected Sources of Impacts (Check All That Apply): Impacts (Check All That Apply): Myntp Ellipse (Check All That Apply): Myntp Ellipse (Check All Apple)	Silviculture Construction Unban Funoif E CSOS E Suburtan impacts C Channellation E Cather Flow Alteration E C	7	Stream Ephameral (no pools to trial) Stream Ephameral (no pools to trial) dry or only damp spois)
Is Sampling Reach Representative of the Stream (Y/N) N if Not, Explain: ONLY SECTION OF INDIAN CANT ROW IN THIS AREA WHICH IS WOODED	Sampling Pass Search Distance: Water Clarity: Water Stage: Canopy -% Open Subjective Asstrated Average Maximum Av. Bankfull Masurements: Subjective Restrict Average Average Maximum Av. Bankfull Masurements: Statio Canopy -% Open Statio Ca	Stream Drawing:	Instructions for sooring the alternate cover metric: Each cover type should receive a score of between 0 and 3. Where: 0 - Cover type absent; 1 - Cover type present in moderate amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality; 3 - Cover type or highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed nootwads in deep/fast water, or deep, well-defined, functional pools.

ChieFA	Qualitative Hab					
River Code: NA	RM: NA Stre	am: SZB	INDIAN (MAP RO	M	
hate: 03/25/05	Location: WES			<u>`</u>		
Scorers Full Name:	STEVE LINE AH	illation: C	(NERBY			
SUBSTRATE (Check	ONLY Two SubstrateTYP	E BOXES; Estin	nate % present			
YPE POO	OL RIFFLE F	OOL RIFFLE SI	UBSTRATE ORIGIN		SUBSTRATE Q	UALITY
10-BLDR /SLBS[10]	GRAVEL [7]	30 SO Check	ONE (OR 2 & AVER	AGE)	Check ONE (OR Z &	A AVERAGE)
1 11-80ULDER [9]			LIMESTONE [1] S		II- SILT HEAV	
COBBLE (8)	DBEDROCK[5]	×a.·	TILLS [1]		II-SILT MODER	ATE [-1] Substr
1 CHARDPAN (4)	DID-DETRITUS[3]	o`·	-WETLANDS[0]		U-SILT NORMA	TIOI
1 D-MUCK [2]	DD-ARTIFICIAL[0]		HARDPAN [0]		SILT FREE (1	n' 11/2
SILT [2]	NOTE: Ignore Sludge O From Point Sources	idginating [-SANDSTONE (0) E	MBEDDE		
		-	RIP/RAP [0] N	NESS:	II-MODERATE	[-1]
NUMBER OF SUBSTRATE	TYPES: 154 or More [2]	a .	LACUSTRINE [0]		NORMAL [0]	
(High Quality Only, Score	5 or >) []-3 or Less [0]		SHALE [-1]		-NONE [1]	
COMMENTS GRAVEL S	ILT MUCH SAND	₽	COAL FINES (-2)			
2] INSTREAM COVER	(Give each cover type a se		e back for instruct	ions) (MOUNT: (Check O	NLY One or
(Structure)	TYPE: Score All	That Occur			heck 2 and AVERA	AGE) Cove
UNDERCUT BANKS [1]	P00L\$> 7	⁷ 0 cm (2)	_OXBOWS, BACKWATE	ERS [1]	🛚 - EXTENSIVE > 7	5% [11]
Z OVERHANGING VEGET/	ATION [1]ROOTWAI	DS [1]	_AQUATIC MACROPHY	rtes (1) 🕽	EC-MODERATE 25	-75% [7]
SHALLOWS (IN SLOW V	VATER) [1]BOULDER	S (1)	LOGS OR WOODY DE	EBRIS (1) I	SPARSE 5-25%	[3] Max 2
ROOTMATS [1] CO	MMENTS:			1	🕽 - NEARLY ABSEN	T < 5%[1]
3] CHANNEL MORPHO	DLOGY: (Check ONLY On	e PER Categor	y OR check 2 and A	AVERAGE)	
SINUOSITY DE	VELOPMENT CHANNEL	IZATION S	TABILITY N	AODIFICATIO	NS/OTHER	Chann
	- EXCELLENT [7] TEL- NONE	[6]	1- HIGH [3] C	🛚 - SNAGGIN	IG 🔲 - IMPO	OUND.
	- G00D [5] 💢 RECO	(4] 💆	🤆 MODERATE [2] 🛭	1 - RELOCAT	TON 🛅 - ISLAI	NDS 112
□ - LOW [2] □	EAID FOT ME DECC	OVERING [3]	I - LOW [1] [REMOVAL . LEVE	ED
{ }	- FAIR [3]		ו- נטיין וון	I - CANOPY	MEWOAME TI - FEAT	Max 2
	• •	NT OR NO	.,	I - DREDGIN	IG 🖫 BANI	K SHAPING
O-NONE [1]	- POOR [1]	NT OR NO		i - dredgin i - one sidi	IG EJ - BANI E CHANNEL MODIFIC	K SHAPING CATIONS
O-NONE [1] O COMMENTS: A] RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank) O O WIDTH A (Per Bank) O O WIDTH A (Per Bank) O O WIDTH A (Per Bank)	- POOR [1]	ONE box per bank D PLAIN QUALITI INT Per Bank) 3] ELD [2] K,NEW FIELD [1]	K or check 2 and AVE Y (PAST 100 Meter L R C CICONSERVATIO	I - DREDGIN I - ONE SIDI RAGE per b RIPARIAN) IN TILLAGE (HOUSTRIAL [RE,ROWCRO	IG	K SHAPING CATIONS I Looking Downst OSION Riparis ank) /LITTLE [3]
COMMENTS: 4], RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) COLUMN SOM (4) COLUMN	- POOR [1]	ONE box per bank D PLAIN QUALITI INT Per Bank) 3] ELD [2] K,NEW FIELD [1]	k or check 2 and AVE Y (PAST 100 Meter L R D DCONSERVATIO	I - DREDGIN I - ONE SIDI RAGE per b RIPARIAN) IN TILLAGE (HOUSTRIAL [RE,ROWCRO	IG	K SHAPING CATIONS I Looking Downst OSION Riparia ank) //LITTLE [3]
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) 10 - WIDE > 50m [4] 10 - MODERATE 10-50m 12 - NARROW 5-10 m [2]	- POOR [1]	ONE box per bank D PLAIN QUALITI INT Per Bank) 3] ELD [2] K,NEW FIELD [1]	K or check 2 and AVE Y (PAST 100 Meter L R C CICONSERVATIO	I - DREDGIN I - ONE SIDI RAGE per b RIPARIAN) IN TILLAGE (HOUSTRIAL [RE,ROWCRO	IG	K SHAPING CATIONS I Looking Downst OSION Riparia ank) //LITTLE [3]
COMMENTS: I) RIPARIAN ZONE AN RIPARIAN WIDTH II COMMENTS:	- POOR [1]	ONE box per bank D PLAIN QUALITI INT Per Bank) 3] ELD [2] K,NEW FIELD [1]	K or check 2 and AVE Y (PAST 100 Meter L R C CICONSERVATIO	I - DREDGIN I - ONE SIDI RAGE per b RIPARIAN) IN TILLAGE (HOUSTRIAL [RE,ROWCRO	IG	K SHAPING CATIONS I Looking Downst OSION Riparia ank) //LITTLE [3]
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH L R (Per Bank) L R (- POOR [1]	ONE box per bank D PLAIN QUALITI INT Per Bank) 3] ELD [2] K,NEW FIELD [1]	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III III OPEN PASTUI III III OPEN PASTUI III III OPEN PASTUI III IIII OPEN PASTUI	I - DREDGIN I - ONE SIDI RAGE per b RIPARIAM) IN TILLAGE HOUSTRIAL [RE,ROWCRO STRUCTION	IG	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: I) RIPARIAN ZONE AN RIPARIAN WIDTH R (PAR Bank) III - WIDE > 50m (4) III - WIDE > 50m (4) III - WODERATE 10-50m (2) III - WODERATE 10-50m (2) III - WODERATE 10-50m (2) III - NONE (0) COMMENTS: 5. POOL/GLIDE AND RIMAX, DEPTH	- POOR [1]	INT OR NO IY [1] ONE box per bank O PLAIN QUALIT INT Per Bank 31 BLD [2] K,NEW FIELD [1]	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III - URBAN OR IN III - OPEN PASTUI III - MINING/CON	D - DREDGIN D - ONE SIDE RAGE per b RIPARIAN IN TILLAGE IDUSTRIAL [RE,ROWCRC STRUCTION	G G BANIEL MODIFIC CHANNEL MODIFIC BANK ER L R (Per B LT) G NONE D MEANN D HEAVY D G G G G G G LPOOLS & RIFF	K SHAPING LATIONS I Looking Downst OSION Riparia ank) /LITTLE [3] //LITTLE [2] //SEVERE[1] Pool/
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH L R (Per Bank) L R (- POOR [1]	INT OR NO IN [1] ONE box per bank O PLAIN QUALITY INT PER Bank) 3] ELD [2] K,NEW FIELD [1] E[1]	K or check 2 and AVE Y (PAST 100 Meter L R C CLCONSERVATIO C C-CONSERVATIO C C-OPEN PASTUI C MINING/CON CURRENT (C)	J - DREDGIN J - ONE SIDN RAGE per b RIPARIAM) IN TILLAGE HOUSTRIAL [RE,ROWCRC STRUCTION TYELOCITY Check Ali T	G G-BANI E CHANNEL MODIFIC BANK ER L R (Per B L) G-NONE OI D-HEAV [0] G-HEAV L-POOLS & RIFF That Apply)	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
J-NONE [1] J. COMMENTS: J. RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank) J. J. WIDE > 50m [4] J. WIDE > 50m [6] J. WIDE > 50m [6] J. WIDE > 50m [6]	- POOR [1]	INT OR NO IY [1] ONE box per bank D PLAIN QUALIT INT Per Bank) 3] ELD [2] K,NEW FIELD [1] E [1] ERAGE) WIDTH [2]	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III O-URBAN OR IN III O-PEN PASTUI III O-HINING/CON CURRENT (C	- Dredgin - One side - Riparian) - Tillage - Houstrial - Re, Rowcro - Struction - Yelocity - Check Ail T	G G - BANI E CHANNEL MODIFIC entk) P River Right BANK ER L R (Per B [1] G - NONE O] E - MODE [0] G - HEAVY [0] [1] L - HEAVY [0] [1] POOLS & RIFF hat Apply) FORRENTIAL[-1]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) 10 - WIDE > 50m [4] 10 - WIDE > 50m [4] 10 - WODERATE 10-50m 10 - VERY NARROW <5 m 10 - NONE [0] COMMENTS: 5. POOL/GLIDE AND R MAX. DEPTH (Check 1 ONLYI) 10 - >1m [6] 10 - 0.7-1m [4]	- POOR [1]	INT OR NO IN [1] ONE box per band P PLAIN QUALIT INT Per Bank) 3] ELD [2] K,NEW FIELD [1] E[1] ERAGE) WIDTH [2] WIDTH [1]	K or check 2 and AVE (PAST 100 Meter L R II CONSERVATIO II O-PEN PASTUI	- Dredgin - One side - Reparian) In Tillage Houstrial - Re, Rowcro - Struction - Yelocity - Check Ali T	G G - BANI E CHANNEL MODIFIC BANK ER L R (Per B) G - B-NOBE O] G - MODE O] G - MODE O] G - MODE O] G - MODE O] O - HEAVY [0] L POOLS & RIFF hat Apply) FORRENTIAL[-1] NTERSTITIAL[-1]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: 4], RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) COMMENTS: 4]. RIPARIAN WIDTH LR (Per Bank) COMMENTS: 5]. NARROW 5-10 m [2] COMMENTS: 5]. POOL/GLIDE AND R MAX. DEPTH (Check 1 ONLYI) CO->1m [6] CO-0.7-1m [6] CO-0.7-1m [4] COMMENTS:	- POOR [1]	INT OR NO IN [1] ONE box per band P PLAIN QUALIT INT Per Bank) 3] ELD [2] K,NEW FIELD [1] E[1] ERAGE) WIDTH [2] WIDTH [1]	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III CONSERVATIO III COPEN PASTUI II C	D- DREDGIN D- ONE SIDI REPARIANI IN TILLAGE HOUSTRIAL RE,ROWCRC ISTRUCTION VELOCITY Check All T	G G BANI CHANNEL MODIFIC BANK ER L R (PER 1) 11 10-NONE 01 12-NONE 01 12-HEAVI [0] LPOOLS & RIFF Track Apply) FORRENTIAL[-1] NTERSTITIAL[-1]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank) DI - WIDE > 50m [4] DI - MODERATE 10-50m [2] NARROW 5-10 m [2] NONE [0] OMMENTS: S. POOL/GLIDE AND RIMAX. DEPTH (Check 1 ONLY!) OL-10 - NOT [4] OL-10 - NOT [2] OL-10 - NOT [2] OL-2 - 0.4m [1]	- POOR [1]	INT OR NO IN [1] ONE box per band P PLAIN QUALIT INT Per Bank) 3] ELD [2] K,NEW FIELD [1] E[1] ERAGE) WIDTH [2] WIDTH [1]	K or check 2 and AVE (PAST 100 Meter L R II CONSERVATIO II O-PEN PASTUI	D-DREDGIN D-ONE SIDI REPARIANI IN TILLAGE HOUSTRIAL RE,ROWCRC ISTRUCTION VELOCITY Check All T	G G - BANI E CHANNEL MODIFIC BANK ER L R (Per B) G - B-NOBE O] G - MODE O] G - MODE O] G - MODE O] G - MODE O] O - HEAVY [0] L POOLS & RIFF hat Apply) FORRENTIAL[-1] NTERSTITIAL[-1]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank) DI - WIDE > 50m [4] DI - MODERATE 10-50m [2] NARROW 5-10 m [2] NONE [0] OMMENTS: S. POOL/GLIDE AND RIMAX. DEPTH (Check 1 ONLY!) OL-10 - NOT [4] OL-10 - NOT [2] OL-10 - NOT [2] OL-2 - 0.4m [1]	- POOR [1]	INT OR NO IN [1] ONE box per band P PLAIN QUALIT INT Per Bank) 3] ELD [2] K,NEW FIELD [1] E[1] ERAGE) WIDTH [2] WIDTH [1]	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III CONSERVATIO III COPEN PASTUI II C	D-DREDGIN D-ONE SIDI REPARIANI IN TILLAGE HOUSTRIAL RE,ROWCRC ISTRUCTION VELOCITY Check All T	G G BANI CHANNEL MODIFIC BANK ER L R (PER 1) 13 13-NONE OI D-HEAVI [0] LPOOLS & RIFF That Apply) TORRENTIAL[-1] NTERMITTENT[-2]	K SHAPING CATIONS I Looking Downst OSION Riparia ank) Piparia (LITTLE [3] 7 RATE [2] V/SEVERE[1] Max 1 FLES1] Pool/ Currer Max 1
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) 10 - WIDE > 50m [4] 10 - WIDE > 50m [4] 10 - WIDE > 50m [4] 10 - NODERATE 10-50m [2] 10 - VERY NARROW 5-10 m [2] 10 - VERY NARROW 5-10 10 - NONE [0] 10 - NONE [0] 11 - NONE [0] 12 - NONE [0] 13 - NONE [0] 14 - NONE [0] 15 - NONE [0] 16 - NONE [0] 17 - NONE [0] 18 - NONE [0] 19 - NONE [0] 19 - NONE [0]	- POOR [1]	INT OR NO IN [1] ONE box per band P PLAIN QUALIT INI PER Bank) 3] ELD [2] K, NEW FIELD [1] ERAGE) WIOTH [2] WIOTH [1] W. [0]	K or check 2 and AVE Y (PAST 100 Meter L R D CONSERVATIO D OPEN PASTUL D OPEN PASTUL D OPEN PASTUL CURRENT (C) CI -EDDIES[1] D-FAST[1] D-FAST[1] S-MODERATE [1]	- OREDGIN - ONE SIDE - CAGE per b - RIPARIAN) - NTILLAGE - HOUSTRIAL [- RE, ROWCRO - ISTRUCTION - VELOCITY - Check All T	G G BANI CHANNEL MODIFIC BANK ER L R (PER 1) 13 13-NONE OI D-HEAVI [0] LPOOLS & RIFF That Apply) TORRENTIAL[-1] NTERMITTENT[-2]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) //LITTLE [3] //SEVERE[1] Pool/
COMMENTS: 4). RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank) 11 - WIDE > 50m (4) 11 - WIDE > 50m (4) 11 - NODERATE 10-50m 12 - NARROW 5-10 m [2] 13 - NONE (0) COMMENTS: 5. IPOOL/GLIDE AND R MAX. DEPTH (Check 1 ONLY!) 11 - >1m [6] 12 - 17 m [6] 13 - 0.4-0.7m [2] 14 - 0.2-0.4m [1] 15 - < 0.2m [POOL=0]	- POOR [1]	INT OR NO IN [1] ONE box per band OPLAIN QUALIT INT PER Bank) ELD [2] K, NEW FIELD [1] ERAGE) WIDTH [2] WIDTH [1] W. [0]	CURRENT CURRENT COURSENATION CURRENT COURSENATION CURRENT COURSENATION CURRENT COURSENATION CURRENT COURSENATION CURRENT COURSENATION COURSENAT	D- DREDGIN D- ONE SIDE RAGE per b RIPARIAN) IN TILLAGE HOUSTRIAL [RE, ROWCKG ISTRUCTION VELOCITY Check Ali T	G G BANI CHANNEL MODIFIC BANK ER L R (PER 1) 13 13-NONE OI D-HEAVI [0] LPOOLS & RIFF That Apply) TORRENTIAL[-1] NTERMITTENT[-2]	K SHAPING CATIONS I Looking Downst OSION Riparia ARITE [3] POOL Currer Riffle/R Riffle/R
COMMENTS: 4). RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) 11 - WIDE > 50m (4) 11 - WIDE > 50m (5) 12 - WODERATE 10-50m 13 - WODERATE 10-50m 14 - WODERATE 10-50m 15 - WODERATE 10-50m 16 - WODERATE 10-50m 17 - WODERATE 10-50m 18 - WODERATE 10-50m 19 - WODERATE 10-50m 10 -	- POOR [1]	INT OR NO IN [1] ONE box per band PLAIN QUALIT INT PER Bank) ELD [2] K, NEW FIELD [1] ERAGE) WIDTH [2] WIDTH [1] W, [0] ECK ONE OR C	CURRENT CUR	D- DREDGIN D- ONE SIDI REAGE per b RIPARIAN IN TILLAGE RE,ROWCRC STRUCTION VELOCITY Check All T D-1 11 D-1 ERAGE	G G BANI CHANNEL MODIFIC BANK ER L R (Per B L) HONE OI G-HEAVY OI G-HEAVY I POOLS & RIFF THAT APPLY TORRENTIAL[-1] INTERSMITTENT[-2) VERY FAST[1]	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) POOI/ RATE [2] POOI/ Currer Riffle/R Riffle/R
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH IR (Per Bank) III - WIDE > 50m [4] III - MODERATE 10-50m III - MODERATE 10-50m III - NONE [0] COMMENTS: 5. IPOOL/GLIDE AND R MAX. DEPTH (Check 1 ONLY) III - 0.7-1m [4] III - 0.7-1m [4] III - 0.2-0.4m [1] III - 0.2-0.4m [1] IIII - 0.2-m [POOL-0] RIFFLE DEPTH IIII - Best Areas > 10 cm [- POOR [1]	ERAGE) WIDTH [1] ERAGE) WIDTH [2] WIDTH [1] ECK ONE OR C RIFFLE, L-STABLE	K or check 2 and AVE Y (PAST 100 Meter L R II CONSERVATIO III O-VRBAN OR IN III O-PEN PASTUI II O-P	D- DREDGIN D- ONE SIDI REPARIANO IN TILLAGE HOUSTRIAL RE,ROWCRC ISTRUCTION VELOCITY Theck All T	G G BANI CHANNEL MODIFIC BANK PRIVOR Right BANK ER L R (Per B L R (P) P L R (P	K SHAPING CATIONS I Looking Downst OSION Riparia Ark) POOI/ RATE [2] POOI/ Currer Riffle/R Riffle/R
COMMENTS: 4], RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) 111- WIDE > 50m [4] 111- MODERATE 10-50m 122- NARROW 5-10 m [2] 111- NONE [0] COMMENTS: 5.IPOOL/GLIDE AND R MAX. DEPTH (Check 1 ONLYI) 111- > 1m [6] 111- 0.4-0.7m [2] 111- 0.2-0.4m [1]	- POOR [1]	ERAGE) WIDTH [1] ERAGE) WIDTH [2] WIDTH [1] ECK ONE OR C RIFFLE, L-STABLE L1]	CURRENT CHECK 2 AND AVE CHECK 2 AND AV	D- DREDGIN D- ONE SIDI REPARIANO IN TILLAGE (ROUSTRIAL E RE, ROWCRC STRUCTION VELOCITY Theck All T D-1 11 D-1 ERAGE RUE Gery (2) Gravet) [1]	G G BANI CHANNEL MODIFIC BANK ER L R (PER L	K SHAPING CATIONS I Looking Downst OSION Riparia ank) Piparia (LITTLE [3] RATE [2] V/SEVERE[1] Max 1 FLES1] Currer Riffle/R DEDNESS 1 Max 8
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank)	- POOR [1]	ERAGE) WIDTH [1] ERAGE) WIDTH [2] WIDTH [1] ECK ONE OR C RIFFLE, L-STABLE L1]	K or check 2 and AVE Y (PAST 100 Meter L R II CONSERVATIO III O-VRBAN OR IN III O-PEN PASTUI II O-P	D- DREDGIN D- ONE SIDI REPARIANO IN TILLAGE (ROUSTRIAL E RE, ROWCRC STRUCTION VELOCITY Theck All T D-1 11 D-1 ERAGE RUE Gery (2) Gravet) [1]	G G BANI CHANNEL MODIFIC BANK PRIVOR Right BANK ER L R (Per B L R (P) P L R (P	K SHAPING CATIONS I Looking Downst OSION Riparia ank) Piparia (LITTLE [3] RATE [2] V/SEVERE[1] Max 1 FLES1] Currer Riffle/R DEDNESS 1 Max 8 E [0] Gradie
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank)	- POOR [1]	ERAGE) WIDTH [1] ERAGE) WIDTH [2] WIDTH [1] ECK ONE OR C RIFFLE, L-STABLE L1]	CURRENT CHECK 2 AND AVE CHECK 2 AND AV	D- DREDGIN D- ONE SIDI REPARIANI IN TILLAGE (HOUSTRIAL E RE, ROWCRC ISTRUCTION I VELOCITY Check All T D-1 II D-1 ERAGE RERAGE RIF Gravel) [1] ROWCRC RERAGE RIF Gravel) [1] ROWCRC RERAGE RIF ROWCRC RERAGE RIF ROWCRC RERAGE RIF ROWCRC RERAGE RIF ROWCRC ROWCRC RIF ROWCRC ROWC	G G BANI CHANNEL MODIFIC BANK ER L R (Per Right L R (Per Ri	K SHAPING CATIONS I Looking Downst OSION Riparia ank) Piparia (LITTLE [3] RATE [2] (//SEVERE[1] Max 1 FLES1] Currer Riffle/R DEDNESS 1 Max 8 E [0] Gradie
COMMENTS: 4], RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank) COMMENTS: 4], RIPARIAN WIDTH LR (Per Bank) COMMENTS: 5] COMMENTS: 5] COMMENTS: 5] COMMENTS: 5] COMMENTS: 6] COMM	- POOR [1]	ERAGE) WIGHT HELD WINDTH [2] WIDTH [2] WIDTH [1] WE [0] WIDTH [2] WIDTH [1] W. [0] ECK ONE OR C RIFFLE LISTABLE LIMOD, ST LET UNSTABLE	K or check 2 and AVE Y (PAST 100 Meter L R III CONSERVATIO III O-URBAN OR IN III O-PEN PASTUI III O-PEN PASTUI III O-PEN PASTUI III O-FEN PASTUI II O	D- DREDGIN D- ONE SIDI REPARIANO IN TILLAGE (ROUSTRIAL E RE, ROWCRC STRUCTION VELOCITY Theck All T D-1 11 D-1 ERAGE RUE Gery (2) Gravet) [1]	G G BANI CHANNEL MODIFIC BANK ER L R (Per Right L R (Per Ri	K SHAPING CATIONS It Looking Downsto OSION Riparia Riparia FLEST Pool/ Currer Riffle/R DEDNESS T E [0] Gradie E [-1]
COMMENTS: RIPARIAN ZONE AN RIPARIAN WIDTH R (Per Bank)	- POOR [1]	ERAGE) WIGHT WHOTH (2) WHOTH (2) WHOTH (2) WHOTH (3) WHOTH (4) WHOTH (4) WHOTH (5) WHOTH (5) WHOTH (6) WHOTH (7)	CURRENT CHECK 2 AND AVE (PAST 100 Meter L R CONSERVATIO CONSERVATIO CHECK 2 AND AVE (RUN SUBSTRATE) CHECK 2 AND AVE (RUN SUBSTRATE) CRUSSERVATIO CHECK 2 AND AVE (RUN SUBSTRATE) CRUSSERVATIO CHECK 2 AND AVE (RUN SUBSTRATE) CRUSSERVATIO CR	D- DREDGIN D- ONE SIDIL REAGE POR B RIPARIAN) IN TILLAGE (HOUSTRIAL [RE, ROWCRO ISTRUCTION I VELOCITY Check All T D-1 T-1 G-1 G-1 G-1 G-1 G-1 G-1 G	G G BANI CHANNEL MODIFIC BANK ER L R (PER I) G G G G G G G G G G G G G G G G G G G	K SHAPING CATIONS It Looking Downsto OSION Riparia ank) Riparia FATE [2] V/SEVERE[1] Max 1 FLES1] Currer Riffle/R DEDNESS E [0] Gradie E [-1] Max 1
COMMENTS: 4]. RIPARIAN ZONE AN RIPARIAN WIDTH LR (Per Bank)	- POOR [1]	ERAGE) WIDTH [1] ERAGE) WIDTH [2] WIDTH [1] W. [0] ECK ONE OR C RIFFLE LANDA STABLE LANDA STABLE LANDA STABLE A (sq.mi.) : A	K or check 2 and AVE Y (PAST 100 Meter L R DICONSERVATIO L CONSERVATIO L COPEN PASTUI L COPEN PA	D- DREDGIN D- ONE SIDIL REAGE POR B RIPARIAN) IN TILLAGE (HOUSTRIAL [RE, ROWCRO ISTRUCTION I VELOCITY Check All T D-1 T-1 G-1 G-1 G-1 G-1 G-1 G-1 G	G G BANI CHANNEL MODIFIC BANK ER L R (PER I) G G G G G G G G G G G G G G G G G G G	K SHAPING CATIONS I Looking Downst OSION Riparia ank) Riparia FRATE [2] FRA

Major Suspected Sources of Impacts (Chack All That Apply): None D Industrial D WMTP D	Liveschot Dividual Liveschot Dividual Construction Dividual Runoff Dividual Runoff Dividual Runoff Dividual Channelization Dividual Channelization Dividual	exected law 70' wide	Yes/No Is Stream Ephemeral (no poots, totally dry or only damp spots)? Is there water upstream? How Far. How Far. Is There Water Close Downstream?
Is Sampling Reach Representative of the Stream (Y/N) / If Not, Exp <u>lain;</u>	Subjective Asstrator Average Average Maximum Av. Bankfull Mean Wild Bankfull Max Floodprone Entrench. (1-10) Gradient: (1-10)	Stream Drawing: \$5. \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts for if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast water, large diameter logs that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional poots.

EAREN INTERNITIONS

CHEA	Qualitative Habitat Eva	luation Index Field S	Sheet QHEI Score	<u>: 24.5</u>
River Code: NA	RM: NA Stream: Sa	1-UT to Strlin	a Run	
Date: 09/28/04	Location: East side of			of Bardwell
Scorers Full Name:_	STEVE LAWE Affillation:	URS CORPORATION	7	west Roa
1) SUBSTRATE (Check	ONLY Two SubstrateTYPE BOXES; I	Estimate % present		
		E <u>substrate origin</u>	SUBSTRATE QUALITY	
1 1 BLDR (SUBS[10]		Theck ONE (OR 2 & AVERAGE)	Check ONE (OR 2 & AVERAG	iE)
	[6]	CI LIMESTONE [1] SILT:	D-SILT HEAVY [-2]	Culturalman
DID-COBBLE [8]	DBEDROCK[5]	pktills [1]	SILT MODERATE [-1]	Substrate
DICHARDPAN [4]	DD-DETRITUS[3]	II -WETLANDS[0]	D-SILT NORMAL [0]	
PARMUCK [2] 20 YO	HO DID-ARTIFICIALION NOTE: Ignore Studge Originating	-HARDPAN [0] -SANDSTONE [0] EMBEDO	- PSTEED -	
MINCOLLI [2]	60 NOTE: Ignore Studge Originating From Point Sources	O-RIP/RAP (O) NESS:	D-MODERATE [-1]	Max 20
NUMBER OF SUBSTRATE T	YPES: CD-4 or More [2]	CI-LACUSTRINE (0)	D -NORMAL [0]	
(High Quality Only, Score 5		II -SHALE [-1]	D-NONE (1)	
COMMENTS LITTLE POUL	MEPLY BEVELOPMENT	CH-COAL FINES [-2]		·
2] INSTREAM COVER	Give each cover type a score of 0 to	3; see back for instructions)	AMOUNT: (Check ONLY One	or Course
(Structure)	TYPE: Score All That Occur		check 2 and AVERAGE)	Cover
LUNDERCUT BANKS [1]	POOLS> 70 cm [2]	OXBOWS, BACKWATERS [1]	11 - EXTENSIVE > 75% [11]	
ZOVERHANGING VEGETAT		AQUATIC MACROPHYTES [1]	[1] MODERATE 25-75% [7]	لكيا
SHALLOWS (IN SLOW W/		LOGS OR WOODY DEBRIS [1]	AC- SPARSE 5-25% [3]	Max 20
	WENTS:	Annual OF about 0 and NVEDAC]
•	LOGY: (Check ONLY One PER Cal) ELOPMENT CHANNELIZATION	T .	ic) Tions/other	Channel
	EXCELLENT [7] II - NONE [6]	CI- HIGH [3] CI- SNAG		
• •	GOOD [5] D RECOVERED [4]	MODERATE (2) II - RELOC	-	18.51
,	FAIR [3] AS RECOVERING [3]		PY REMOVAL D - LEVEED	Max 20
	POOR [1] D- RECENT OR NO	☐ · DRED	GING Q - BANK SHAPIN	
	RECOVERY [1]		IDE CHANNEL MODIFICATIONS	
COMMENTS: SCOLME	ENTATION THROUGHOUT CHAN	JNEL-		
				•
4]. RIPARIAN ZONE AND	BANK EROSION check ONE box per	bank or check 2 and AVERAGE pe		Downstream P
4]. RIPARIAN ZONE AND RIPARIAN WIDTH	BANK EROSION check ONE box per FLOOD PLAIN OU	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA	M) BANK EROSION	Downstream P Riparian
4). RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank)	BANK EROSION check ONE box per FLOOD PLAIN OU L. R (Most Predominant Per Bank	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA k) L R	L R (Per Bank)	Riperien
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) DI D- WIDE > 50m [4]	D BANK EROSION(check ONE box per FLOOD PLAIN QU L. R (Most Predominant Per Bank CI CIFOREST, SWAMP [3]	bank of check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA () L R CONSERVATION TILLAC	BANK EROSION L R (Per Bank) GE [1] D D-NONE/LITTLE [Riperien
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R (Per Bank) DI DI- WIDE > 50m [4] DI DI- MODERATE 10-50m [D BANK EROSION(check ONE box per FLOOD PLAIN QUE L. R (Most Predominant Per Bank CI CIFOREST, SWAMP [3] 10 DISHRUB OR OLD FIELD [2]	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA	L R (Per Bank) L R (Per Bank) GE [1] DI-NONE/LITTLE [LIO] DI-MODERATE [2]	Riperlen 3)
4], RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) LI LI- WIDE > 50m [4] LI LI- MODERATE 10-50m [2] LI LI- MARROW 5-10 m [2]	D BANK EROSION(check ONE box per FLOOD PLAIN QU L. R (Most Predominant Per Bank CI CIFOREST, SWAMP [3]	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA	BANK EROSION L R (Per Bank) GE [1] III II-NONE/LITTLE [L[0] III III-MODERATE [2] GROP OF SETTING STATE [2]	Riperlen 3)
4], RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) LI LI- WIDE > 50m [4] LI LI- MODERATE 10-50m [2] LI LI- MARROW 5-10 m [2]	D BANK EROSION(check ONE box per FLOOD PLAIN QU. L. R (Most Predominant Per Bank C) CIFOREST, SWAMP [3] 3] C) CISHRUB OR OLD FIELD [2] C) CIRESIDENTIAL, PARK, NEW FIELD	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA [1] X OPEN PASTURE, KOWC	BANK EROSION L R (Per Bank) GE [1] III II-NONE/LITTLE [L[0] III III-MODERATE [2] GROP OF SETTING STATE [2]	Riperlen 3)
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) D. D WIDE > 50m [4] D. D WIDE > 60m [2] L MODERATE 10-50m [D NARROW 5-10 m [2] VERY MARROW < 5 m	D BANK EROSION(check ONE box per FLOOD PLAIN QU. L. R (Most Predominant Per Bank C) CIFOREST, SWAMP [3] 3] C) CISHRUB OR OLD FIELD [2] C) CIRESIDENTIAL, PARK, NEW FIELD	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA [1] X OPEN PASTURE, KOWC	BANK EROSION L R (Per Bank) GE [1] III II-NONE/LITTLE [L[0] III III-MODERATE [2] GROP OF SETTING STATE [2]	Riperlen 3)
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) L. WIDE > 50m [4] L. WIDE > 50m [4] L. MODERATE 10-50m [2] L. MARROW 5-10 m [2] L. WERY MARROW <5 m L. MONE [0] COMMENTS:	D BANK EROSION(check ONE box per FLOOD PLAIN QUANT OF THE PROPERTY OF THE PROP	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA [1] X OPEN PASTURE, KOWC	BANK EROSION L R (Per Bank) GE [1] III II-NONE/LITTLE [L[0] III III-MODERATE [2] GROP OF SETTING STATE [2]	Riperlen 3)
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) L. T. WIDE > 50m [4] L. WIDE > 50m [4] L. WIDE > 50m [2] L. WIDE 60m [2] L. WIDE	D BANK EROSION(check ONE box per FLOOD PLAIN QUAL L R (Most Predominant Per Bank C CHOREST, SWAMP [3] C CHRESIDENTIAL, PARK, NEW FIELD TO CHECE PASTURE [1]	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R C) L-CONSERVATION TILLAC C) C-CONSERVATION TILLAC C) L-RBAN OR INDUSTRIA (1) (1) (2) C-PEN PASTURE (WOYC C) C) -MINING/CONSTRUCTO	BANK EROSION L R (Per Bank) GE [1] III - NONE/LUTTLE [1] L [0] III - NODERATE [1] CROP (0] APPLICATIVISEVERE ON [0]	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L. R. (Per Bank) L. L. WIDE > 50m [4] L. WIDE > 50m [4] L. WODERATE 10-50m [12] L. HARROW 5-10 m [2] L. VERY MARROW <5 m L. NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH	D BANK EROSION check ONE box per FLOOD PLAIN QUA L. R (Most Predominant Per Bank CI CFOREST, SWAMP [3] CI CFRESIDENTIAL, PARK, NEW FIELD [1] CI FENCED PASTURE [1] FELE/RUN QUALITY MORPHOLOGY	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R II-CONSERVATION TILLAC III-URBAN OR INDUSTRIA III-WISTONE PASTURE (WOWC III-MINING/CONSTRUCTO	BANK EROSION L R (Per Bank) EE [1] III - NONE/LITTLE [1 LIQ] IIII - NODERATE [2] EROP [0] A FHEAVY/SEVERE ON [0] TY [POOLS & RIFFLESI]	Riperian 31 21 21 21 21 21 21 21 21 21 21 21 21 21
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L II - WIDE > 50m [4] L II - WIDE > 50m [4] L - MODERATE 10-50m [2] L - MARROW 5-10 m [2] L - VERY MARROW <5 m L II - NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX_DEPTH (Check 1 ONLYI)	D BANK EROSION(check ONE box per FLOOD PLAIN OLD L R (Most Predominant Per Bank C) CI-FOREST, SWAMP (3) 3] C) D'SHRUB OR OLD FIELD (2) C) CI-FENCED PASTURE [1] CFLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE)	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R	BANK EROSION L R (Per Bank) L R (Per	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) DID-WIDE > 50m [4] DID-MODERATE 10-50m [12] DID-MARROW 5-10 m [2] DID-NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) DI->1m [6]	D BANK EROSION(check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank C) CI-FOREST, SWAMP (3) 3] CI DISHRUB OR OLD FIELD (2) CI CHESIDENTIAL, PARK, NEW FIELD (1) CI CI-FENCED PASTURE (1) FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) CI-POOL WIDTH > RIFFLE WIDTH [2]	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R	BANK EROSION L R (Per Bank) L R (Per	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) LID-WIDE > 50m [4] LID-MODERATE 10-50m [1] LID-MODERATE 10-50m [2] LID-MODERATE 10-50m [2] LID-MODE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) LID- > 1m [6] LID- 0.7-1m [4]	D BANK EROSION(check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D GFOREST, SWAMP (3) D D'SHRUB OR OLD FIELD (2) D CRESIDENTIAL, PARK, NEW FIELD THE FENCED PASTURE (1) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) L-POOL WIDTH > RIFFLE WIDTH (2) D-POOL WIDTH - RIFFLE WIDTH (1)	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R II CONSERVATION TILLAC III - URBAN OR INDUSTRIA III - MINING/CONSTRUCTE CURRENT VELOCIE (Check AI III - EDDIES[1]	BANK EROSION L R (Per Bank) E [1] II NONE/LUTTLE [LIQ] II NONE/LUTTLE [LIQ] II NODERATE [2] ROP [0] A HEAVY/SEVERE ON [0] TY [POOLS & RIFFLESI] II That Apply) I TORRENTIAL[-1] J-INTERSTITIAL[-1]	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) DID-WIDE > 50m [4] DID-MODERATE 10-50m [12] DID-MARROW 5-10 m [2] DID-NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) DI->1m [6]	D BANK EROSION(check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank C) CI-FOREST, SWAMP (3) 3] CI DISHRUB OR OLD FIELD (2) CI CHESIDENTIAL, PARK, NEW FIELD (1) CI CI-FENCED PASTURE (1) FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) CI-POOL WIDTH > RIFFLE WIDTH [2]	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R	BANK EROSION L R (Per Bank) E [1] II NONE/LITTLE [L[0] II NONE/LITTLE [L[0] II NODERATE [2] EROP [0] A PHEAVY/SEVERE ON [0] TY L POOLS & RIFFLESN [II That Apply) 1-TORRENTIAL[-1] 1-INTERSTITIAL[-1] 1-INTERSTITIAL[-1] 1-INTERMITTENT[-2]	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L - WIDE > 50m [4] L - WIDE > 50m [4] L - MODERATE 10-50m [4] L - NARROW 5-10 m [2] L - NARROW 5-10 m [2] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLY!) L - > 1m [6] L - 0.7-1m [4] L - 0.4-0.7m [2]	D BANK EROSION(check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D GFOREST, SWAMP (3) D D'SHRUB OR OLD FIELD (2) D CRESIDENTIAL, PARK, NEW FIELD THE FENCED PASTURE (1) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) L-POOL WIDTH > RIFFLE WIDTH (2) D-POOL WIDTH - RIFFLE WIDTH (1)	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R	BANK EROSION L R (Per Bank) E [1] II NONE/LUTTLE [LIQ] II NONE/LUTTLE [LIQ] II NODERATE [2] ROP [0] A HEAVY/SEVERE ON [0] TY [POOLS & RIFFLESI] II That Apply) I TORRENTIAL[-1] J-INTERSTITIAL[-1]	Riperian 31 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L - WIDE > 50m [4] L - WIDE > 50m [4] L - MODERATE 10-50m [6] L - NARROW 5-10 m [2] L - NARROW 5-5 m COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) L - > 1m [6] L - 0.7-1m [4] L - 0.4-0.7m [2] L - 0.2-0.4m [1]	D BANK EROSION check ONE box per FLOOD PLAIN QUE L R (Most Predominant Per Bank CIFFOREST, SWAMP [3] CIFFOREMAN OF STATE [1] CIFFOREMAN CONTROL OF SWAMP [3] CIFFOREST, SWAMP [3] CIFFOREMAN CONTROL OF SWAMP [3] CIFFOREMAN CONT	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R	BANK EROSION L R (Per Bank) E [1] II NONE/LITTLE [L[0] II NONE/LITTLE [L[0] II NODERATE [2] EROP [0] A PHEAVY/SEVERE ON [0] TY L POOLS & RIFFLESN [II That Apply) 1-TORRENTIAL[-1] 1-INTERSTITIAL[-1] 1-INTERSTITIAL[-1] 1-INTERMITTENT[-2]	Riperian [1] Max 10 Pool/ Current Amax 12
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] L D - MODERATE 10-50m [2] L - MARROW 5-10 m [2] L - VERY MARROW <5 m L D - NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) L - >1m [6] L - 0.7-1m [4] L - 0.4-0.7m [2] L - 0.2-0.4m [1]	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank C CI-FOREST, SWAMP (3) 3] C DISHRUB OR OLD FIELD (2) C CHECK ONE (1) CFLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C-POOL WIDTH > RIFFLE WIDTH [2] C-POOL WIDTH > RIFFLE WIDTH [1] MORPHOLOGY COMMENTS: CHECK ONE (1)	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L-CONSERVATION TILLAC L-URBAN OR INDUSTRIA L-URBAN OR INDUSTRIA L-MINING/CONSTRUCTO CURRENT VELOCI (Check AI L-EDDIES[1] L-AST[1] L-MODERATE [1] L-SLOW [1] CR CHECK 2 AND AVERAGE	AN) BANK EROSION L R (Per Bank) E [1] D INOMERUTTLE [1] ROP [0] TY [POOLS & RIFFLEST[1] That Apply) D-TORRENTIAL[-1] INTERSTITIAL[-1] INTERSTITIAL[-1] INTERNITENT[-2] VERY FAST[1]	Riperian [It] Max 10 Pool/ Current [2] Riffle/Run
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] L D - MODERATE 10-50m [1] L - MARROW 5-10 m [2] L - NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) L - > 1m [6] L - 0.4-0.7m [2] L - 0.2-0.4m [1] RIFFLE DEPTH	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank C) CI-FOREST, SWAMP (3) 3] C) DISHRUB OR OLD FIELD (2) C) CISHRUB OR OLD FIELD (2) C) CISHRUB OR OLD FIELD (2) C) FENCED PASTURE (1) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C) POOL WIDTH > RIFFLE WIDTH (2) C) POOL WIDTH - RIFFLE WIDTH (1) L POOL WIDTH < RIFFLE W. [0] COMMENTS: CHECK ONE C RUN DEPTH RIF	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L-CONSERVATION TILLAC L-URBAN OR INDUSTRIA L-MODERATE [1] L-RODERATE [1] L-	BANK EROSION L R (Per Bank) E [1] II HONDERUTTLE [LIQ] II HODERATE [2] ROP [0] A FIREARY/SEVERE ON [0] TY [POOLS & RIFFLEST[II That Apply) I TORRENTIAL[-1] I-INTERSTITIAL[-1]	Riperian [It] Max 10 Pool/ Current [2] Riffle/Run
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L D - WIDE > 50m [4] L D - MODERATE 10-50m [1] L - MARROW 5-10 m [2] L - NONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) L - > 1m [6] L - 0.7-1m [4] L - 0.2- 0.4m [1] C - 0.2- 0.4m [1] RIFFLE DEPTH D - Best Areas > 10 cm [2]	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L CLEFOREST, SWAMP (3) D ISHRUB OR OLD FIELD (2) DISHRUB OR OLD FIELD (2) DISHRUB OR OLD FIELD (2) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) POOL WIDTH - RIFFLE WIDTH (1) POOL WIDTH - RIFFLE WIDTH (1) COMMENTS: CHECK ONE C RUN DEPTH RIF J I- MAX > 50 (2) L STAIL	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R C CONSERVATION TILLAC C CURRENT VELOCI C CHECK 2 AND AVERAGE FLERUN SUBSTRATE BLE (e.g., Cobble, Boulder) [2]	AN) BANK EROSION L R (POP BANK) EE [1] D NODERATE [2] ROP [0] ETY LPOOLS & RIFFLEST[IT THAT Apply) D-TORRENTIAL[-1] D-INTERSTITIAL[-1] INTERMITTENT[-2] D-VERY FAST[1] RIFFLE/RUN EMBEDDEDNESS D-NONE [2]	Riperian Typiax 10 Pool/ Current Wax 12 Riffle/Run
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) LID-WIDE > 50m [4] LID-WIDE > 50m [4] LID-MODERATE 10-50m [1] LID-MODERATE 10-50m [2] LID-MONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLY!) LID- > 1m [6] LID-0.7-1m [4] LID-0.7-1m [4] LID-0.2-0.4m [1] LID-0.2-0.4m [1] LID-0.3-0.2m [POOL-0] RIFFLE DEPTH LID-0.3-0.3-0.3-0.3-0.0.0.0.0.0.0.0.0.0.0.0	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D CHFOREST, SWAMP [3] D DISHRUB OR OLD FIELD [2] C DIRESIDENTIAL PARK, NEW FIELD L D DI-FENCED PASTURE [1] FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C-POOL WIDTH - RIFFLE WIDTH [2] COMMENTS: CHECK ONE (CHECK ONE (bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R II CONSERVATION TILLAC III - URBAN OR INDUSTRIA DISTORMAN OR INDUSTR	AN) BANK EROSION L R (POP BANK) L R	Riperian Typiax 10 Pool/ Current Max 12 Riffle/Run Max 8
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) LI L- WIDE > 50m [4] LI C- WIDE > 50m [4] LI C- WIDE AND RIF 10-50m [12] LI C- WODERATE 10-50m [12] LI C- NONE [0] COMMENTS: 5.]POOL/GLIDE AND RIF MAX. DEPTH (Check 1 ONLY!) LI - Vim [6] LI - 0.7-1m [4] LI - 0.4-0.7m [2] LI - 0.2- 0.4m [1] C - 0.2m [POOL-0] RIFFLE DEPTH LI - Best Areas > 10 cm [2] LI - Best Areas > 5 cm	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D CHFOREST, SWAMP [3] D DISHRUB OR OLD FIELD [2] C DIRESIDENTIAL PARK, NEW FIELD L D DI-FENCED PASTURE [1] FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C-POOL WIDTH - RIFFLE WIDTH [2] COMMENTS: CHECK ONE (CHECK ONE (bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA C) L R C CONSERVATION TILLAC C CURRENT VELOCI C CHECK 2 AND AVERAGE FLERUN SUBSTRATE BLE (e.g., Cobble, Boulder) [2]	A) BANK EROSION L R (POF BANK) L R (POF BAN	Riperian Typiax 10 Pool/ Current Wax 12 Riffle/Run
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L III - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WODERATE 10-50m [12] LIII - MODERATE 10-50m [12] LIII - NONE [0] COMMENTS: 5. [POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) LI - YIM [6] LI - 0.7-1m [4] LI - 0.4-0.7m [2] LI - 0.2-0.4m [1] LI - 0.4-0.7m [2] LI - 0.2-0.4m [1] LI - 0.2-0.4m [1] LI - 0.3-0.4m [1] L	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D CHFOREST, SWAMP [3] D DISHRUB OR OLD FIELD [2] C DIRESIDENTIAL PARK, NEW FIELD L D DI-FENCED PASTURE [1] FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C-POOL WIDTH - RIFFLE WIDTH [2] COMMENTS: CHECK ONE (CHECK ONE (bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L CONSERVATION TILLAC L III - URBAN OR INDUSTRIA L III - WASTRIA (OWC CHECK AND AVERAGE FLERRIN SUBSTRATE D. STABLE (e.g., Large Gravel) [TABLE (Fine Gravel, Sand) [0]	AN) BANK EROSION L R (Per Bank) L R	Riperian 31
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) LI L- WIDE > 50m [4] LI C- WIDE > 50m [4] LI C- WIDE AND RIF 10-50m [12] LI C- WODERATE 10-50m [12] LI C- NONE [0] COMMENTS: 5.]POOL/GLIDE AND RIF MAX. DEPTH (Check 1 ONLY!) LI - Vim [6] LI - 0.7-1m [4] LI - 0.4-0.7m [2] LI - 0.2- 0.4m [1] C - 0.2m [POOL-0] RIFFLE DEPTH LI - Best Areas > 10 cm [2] LI - Best Areas > 5 cm	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L D CHFOREST, SWAMP [3] D DISHRUB OR OLD FIELD [2] C DIRESIDENTIAL PARK, NEW FIELD L D DI-FENCED PASTURE [1] FLE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) C-POOL WIDTH - RIFFLE WIDTH [2] COMMENTS: CHECK ONE (CHECK ONE (bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA c) L R II CONSERVATION TILLAC III - URBAN OR INDUSTRIA DISTORMAN OR INDUSTR	AN) BANK EROSION L R (Per Bank) L R	Pool/ Current Riffle/Run Max 8 Gradient
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) DID-WIDE > 50m [4] DID-MODERATE 10-50m [1] DID-MODERATE 10-50m [1] DID-MONE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLYI) DI- > 1m [6] DI- 0.7-1m [4] DI- 0.2-0.4m [2] DI- 0.2-0.4m [7] RIFFLE DEPTH DI- Best Areas > 10 cm [7] Best Areas > 5 cm [RIFFLE-0] COMMENTS:	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank I CI-FOREST, SWAMP (3) 3] I DISHRUB OR OLD FIELD (2) I CI-FENCED PASTURE (1) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) I-POOL WIDTH - RIFFLE WIDTH (2) I-POOL WIDTH - RIFFLE WIDTH (1) L-POOL WIDTH - RIFFLE W. [0] COMMENTS: CHECK ONE C RUN DEPTH RIF I CI-MAX > 50 [2] CI-STAI J MAX > 50 [1] G-MOI	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L-CONSERVATION TILLAC L-U-CONSERVATION TILLAC L-U-CONSERVATION TILLAC L-U-CONSERVATION TILLAC L-U-CONSERVATION TILLAC L-U-CONSERVATION TILLAC L-U-CONSERVATION TILLAC CURRENT VELOCI (Check AI L-EDDIES[1] L	AN) BANK EROSION L R (Per Bank) L HEAVY/SEVERE ON [0] TY [POOLS & RIFFLESI [I That Apply) L TORRENTIAL[-1] LINTERSTITIAL[-1] LINTERSTITIAL[-1] LINTERSTITIAL[-1] L OWN [2] I D - LOW [2] I D - EXTENSIVE [-1] [[Metric=0]	Riperian 31
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L III - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WODERATE 10-50m [III - NODERATE 10-50m [III - NODERATE 10-50m [III - NODE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLY!) L - > 1m [6] L - 0.7-1m [4] L - 0.4-0.7m [2] L - 0.2- 0.4m [1] C - 0.2- 0.4m [1] C - 0.2- 0.4m [1] RIFFLE DEPTH L - Best Areas > 10 cm [2] L - Best Areas > 5 cm [RIFFLE-0] COMMENTS: 6] GRADIENT (fl/mi):^	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank L ET (Most Predominant Per Bank MORPHOLOGY (Check 1 or 2 & AVERAGE) L POOL WIDTH - RIFFLE WIDTH [2] L POOL WIDTH - RIFFLE WIDTH [1] MORPHOLOGY (Check 1 or 2 & AVERAGE) L POOL WIDTH - RIFFLE WIDTH [1] MORPHOLOGY (Check ONE (Most One Check ONE (Most One Check ONE (Most One Check ONE Check ONE Check ONE Check ONE (Most One Check ONE Check ONE Check ONE Check ONE (Most One Check ONE C	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L CONSERVATION TILLAC L III - URBAN OR INDUSTRIA L III - URBAN OR INDUSTRIA L III - MINING/CONSTRUCT CURRENT VELOCI (Check AI LIII - EDDIES[1] LIII - FAST[1] LIII - FAST[1] LIII - SLOW [1] LIII - SLOW [1] LIII - SLOW [1] LIII - CODDER STRUCT CORRENT VELOCI (Check AI LIII - EDDIES[1] LIII - EDDIES[1] LIII - STAST[1] LIII - SLOW [1] LIII - SLOW [1] LIII - NO RIFFLE ME (e.g., Large Gravel) [1] LIII - NO RIFFLE MPOOL:	BANK EROSION L R (Per Bank) L HOBERTHE [2] L HODERATE [2] L POOLS & RIFFLESI L HOLOW [1] L HOTERSTITIAL[-1] LINTERSTITIAL[-1] LINTERSTITI	Pool/ Current Riffle/Run Max 8 Gradient
4]. RIPARIAN ZONE AND RIPARIAN WIDTH L R (Per Bank) L III - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WIDE > 50m [4] LIII - WODERATE 10-50m [III - NODERATE 10-50m [III - NODERATE 10-50m [III - NODE [0] COMMENTS: 5.]POOL/GLIDE AND RII MAX. DEPTH (Check 1 ONLY!) L - > 1m [6] L - 0.7-1m [4] L - 0.4-0.7m [2] L - 0.2- 0.4m [1] C - 0.2- 0.4m [1] C - 0.2- 0.4m [1] RIFFLE DEPTH L - Best Areas > 10 cm [2] L - Best Areas > 5 cm [RIFFLE-0] COMMENTS: 6] GRADIENT (fl/mi):^	D BANK EROSION check ONE box per FLOOD PLAIN OLV L R (Most Predominant Per Bank I CI-FOREST, SWAMP (3) 3] I DISHRUB OR OLD FIELD (2) I CI-FENCED PASTURE (1) FELE/RUN QUALITY MORPHOLOGY (Check 1 or 2 & AVERAGE) I-POOL WIDTH - RIFFLE WIDTH (2) I-POOL WIDTH - RIFFLE WIDTH (1) L-POOL WIDTH - RIFFLE W. [0] COMMENTS: CHECK ONE C RUN DEPTH RIF I CI-MAX > 50 [2] CI-STAI J MAX > 50 [1] G-MOI	bank or check 2 and AVERAGE pe ALITY (PAST 100 Meter RIPARIA L R L CONSERVATION TILLAC L III - URBAN OR INDUSTRIA L III - URBAN OR INDUSTRIA L III - MINING/CONSTRUCT CURRENT VELOCI (Check AI LIII - EDDIES[1] LIII - FAST[1] LIII - FAST[1] LIII - SLOW [1] LIII - SLOW [1] LIII - SLOW [1] LIII - CODDER STRUCT CORRENT VELOCI (Check AI LIII - EDDIES[1] LIII - EDDIES[1] LIII - STAST[1] LIII - SLOW [1] LIII - SLOW [1] LIII - NO RIFFLE ME (e.g., Large Gravel) [1] LIII - NO RIFFLE MPOOL:	AN) BANK EROSION L R (Per Bank) L HEAVY/SEVERE ON [0] TY [POOLS & RIFFLESI [I That Apply) L TORRENTIAL[-1] LINTERSTITIAL[-1] LINTERSTITIAL[-1] LINTERSTITIAL[-1] L OWN [2] I D - LOW [2] I D - EXTENSIVE [-1] [[Metric=0]	Pool/ Current Riffle/Run Max 8 Gradient

Major Suspected Sources of Impacts (Check All That Apply): None Industrial D. WWTP D. WWTP D. WWTP D. Livestock D. Silviculture D. Construction D. Urban Runch D. Solo	Other Flow A Other (4/60)	,5	Yes/No INTEXT.U.A.(TTENT) INTEXT.U.A.(TTENT) IS Stream Ephemeral (no pools. totally dry or only damp spots)? Intere water upstream? How Far. Is There Water Close Downstream? Is Ony Channel Mostly Natural?
is Sampling Reach Representative of the Stream (Y/N)	Subjective Aesthetic Average Average Maximum Av. Bankfull	Lione Smooth	Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast writer, large diameter logs that are stable, well developed nootwads in deep/fast water, or deep, well-defined, functional pools.

MMH

(ALMOST PEREUNIAL)

Qualitative Habitat Evaluation Index Field Sheet QHEI Score: 54
River Code: NA RM: VA Stream: S4 A - VT. to Str I na Run
Date: 09/29/04 Location: South of Waits Rd, ~460 ft 1/ks + of U.S. 68
Scorers Full Name: STEVE LAVE Affiliation: URS CORPORATION
1] SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present
TYPE POOL RIFFLE POOL RIFFLE SUBSTRATE ORIGIN SUBSTRATE QUALITY
□□BLDR /SLBS[10] □□□GRAVEL [7] □ 50 Check ONE (OR 2 & AVERAGE) Check ONE (OR 2 & AVERAGE)
DID-SOULDER [9] DID-SAND [6] DI-LINESTONE [1] SILT: DI-SILT HEAVY [-2]
DICCOBBLE [8] DI DIBEDROCK[5] ACTILLS [1] DI-SILT MODERATE [-1] Substrate
DICHARDPAN [4] DIOETRITUS[3] DI-WETLANDS[0] ASSILT NORMAL [0]
DEMUCK [2] 10 CLARTIFICIAL[0] C-HARDPAN [0] C-SILT FREE [1]
MICH TO GO SO NOTE: Ignore Studge Originating IT . CANINGTONE IT EMBEDDED IT EVERYENE [2]
From Point Sources
NUMBER OF SUBSTRATE TYPES: (RE4 or More [2] U-LACUSTRINE [0] ENORMAL [0]
(High Quality Only, Score 5 or >)
COMMENTS MUCK, SILT SKND, GRAVEL PLOOME FINES [-2]
2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions) AMOUNT: (Check ONLY One or
(Siructure) TYPE: Score All That Occur check 2 and AVERAGE)
LUNDERCUT BANKS [1]POOLS> 70 cm [2]OXBOWS, BACKWATERS [1] Q - EXTENSIVE > 75% [11]
ZOVERHANGING VEGETATION [1] ROOTWADS [1] AQUATIC MACROPHYTES [1] DE MODERATE 25-75% [7]
SHALLOWS (IN SLOW WATER) [1] BOULDERS [1] LOGS OR WOODLY DEBRIS [1] U-SPARSE 5-25% [3] Max 20
ZROOTMATS [1] COMMENTS: GOOD INSTREMA COVER U-NEARLY ABSENT < 5X[1]
3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)
SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY MODIFICATIONS/OTHER Channel
CI - HIGH [4] CI - EXCELLENT [7] CI - NONE [6] CI - HIGH [3] CI - SNAGGING CI - IMPOUND.
MODERATE [3] A GOOD [5] CI - RECOVERED [4] MODERATE [2] CI - RELOCATION CI - ISLANDS
-LOW [2] -FAIR [3] K-RECOVERING [3] -LOW [1] -CANOPY REMOVAL -LEVEED Max 20
□-NONE [1] □-POOR [1] □-RECENT OR NO □-DREDGING □-BANK SHAPING
RECOVERY [1] — ONE SIDE CHANNEL MODIFICATIONS
COMMENTS:
COMMENTS:
4], RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) Priver Right Looking Downstream P
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank). P River Right Looking Downstream P
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIVER Right Looking Downstream PRIPARIAN WIDTH L. R. (Per Bank) L. R. (Most Predominant Per Bank) L. R. (Most Predominant Per Bank) L. R. (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) Priver Right Looking Downstream PRIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) L. R. (Per Bank) L. R. (Most Predominant Per Bank) L. R. (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION/check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L. R. (Most Predominant Per Bank) L. R. (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L. R. (Per Bank) L. R. (Most Predominant Per Bank) L. R. (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) R (Per Bank) L
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)
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4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Por Bank) L R (Most Predominant Per Bank) L R (Por Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)
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4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) R (Per
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) R (Per Bank) L R (Per Bank) R (Per
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) R (Per Bank) L R (Per Bank) R (Per
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Por Bank) L R (Most Predominant Per Bank) L R (Por Bank) L R (Most Predominant Per Bank) L R (Por Bank)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Por Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Por Bank) L R (Most Predominant Per Bank) L R (Por Bank)
4]. RIPARIAN ZONE AND BANK EROSION, check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Most Predominant Per Bank) L R (Per Bank) Riparian R (Per Bank) L R (Per Bank) R (In And Per Bank) R (In
4]. RIPARIAN ZONE AND BANK EROSION/check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (POR Bank) L R (Most Predominant Per Bank) L R (Por Bank) Riparian
4]. RIPARIAN ZONE AND BANK EROSION, check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Most Predominant Per Bank) L R (Per Bank) Riparian R (Per Bank) L R (Per Bank) R (In And Per Bank) R (In

Major Suspected Sources of Impacts (Check All That Apply): Norred Inclustral ID WAYTP ID NORRED INVESTOCK	Urban Rundon D Urban Rundon D CSOS D Suburban Impacts D Channelization D Riparian Removal D	Landfills D Natural D Dams C Other Flow Alteration C		Yes/No a Stream Ephemeral (no pools, botally dry or only damp spots)? b the water upstream? b There Weter Close Downstream? b They Far. b Dry Channel Mostly Natural?
is Sampling Reach Representative of the Stream (Y/N) Y If Not, Exp <u>iain:</u>	Geer: Distance: Water Clarity: Water Stage: Canopy -% Open	Stream Measurements: Stream Me	Stream Drawing: From Manner Promote Prome	Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Wheer; 0 - Cover type absent; 1 - Cover type present in very small amounts of if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large boulders in deep or fast weter, large diameter bys that are stable, well developed rootwads in deep/fast water, or deep, well-defined, functional poots.

www (almost perennial)

Qualitative Habitat Evaluation Index Field Sheet QHEI	Score: 23.1
River Code: NA RM: NA Stream: S5A-UT to Stecling Run	
Date: 2/9/05 Location: South of Warts Rd. ~1300 At Southwes	\$3.2.U Tot
Scorers Full Name: Stove Lawe Affiliation: Cineral	
1] SUBSTRATE (Check ONLY Two SubstrateTYPE BOXES; Estimate % present	
TYPE POOL RIFFLE POOL RIFFLE SUBSTRATE ORIGIN SUBSTRATE	
□□-BLDR /SLB9[10] □□□-GRAVEL [7] □ SO Check ONE (OR 2 & AVERAGE) Check ONE (OR 2	& AVERAGE)
DID-BOULDER [9] DID-SAND (6) DI-LIMESTONE (1) SILT: DI-SILT HEA	0.1.4.4.
CORBLE [8] COBBLE [8]	
DICHARDPAN (4) DICHARDPAN (0) E-SILT NORM	
M Mour my GA SO NOTE inner Stude Originating an expression of expression of expression	
From Point Sources G.RIP/RAP [0] NESS: D.MODERATE	
NUMBER OF SUBSTRATE TYPES: DL4 or More [2] U-LACUSTRINE [0] D. MORMAL [0]	• •
(High Quality Only, Score 5 or >) D-3 or Less [0] D-SHALE [-1] D-HONE [1]	
COMMENTS MUCK SILT, SAND, GRAVEL DICOALFINES [-2]	
2] INSTREAM COVER (Give each cover type a score of 0 to 3; see back for instructions) AMOUNT: (Check	ONLY One or Cover
(Structure) TYPE: Score All That Occur check 2 and AVEF	(AGE)
UNDERCUT BANKS [1]POOLS> 70 cm [2]OXBOWS, BACKWATERS (1)D- EXTENSIVE >	* * 11/ / 15
OVERHANGING VEGETATION [1]ROOTWADS [1]AQUATIC MACROPHYTES [1] M- MODERATE 2	
3] CHANNEL MORPHOLOGY: (Check ONLY One PER Category OR check 2 and AVERAGE)	141 < 20[1]
SINLOSITY DEVELOPMENT CHANNELIZATION STABILITY MODIFICATIONS/OTHER	Channel
D. HIGH [4] D. EXCELLENT [7] D. NONE [6] D. HIGH [3] D. SNAGGING D. IMP	OUND.
☐ - MODERATE [3] ☐ - GOOD [5] ☐ - RECOVERED [4] MODERATE [2] ☐ - RELOCATION ☐ - ISL	ANDS (LU)
M- LOW [2] M- FAIR [3] M- RECOVERING [3] - LOW [1] - CANOPY REMOVAL - LEV	MIGA 40
	NK SHAPING
RECOVERY [1] D - ONE SIDE CHANNEL MODIF	
CUMPENTS:	re-y-to-to
COMMENTS: 41. RIPARIAN ZONE AND BANK EROSION check ONE box per bank or check 2 and AVERAGE per bank) Priver Rio	<u> </u>
4]. RIPARIAN ZONE AND BANK EROSION check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig	ht Looking Downstream F
4]. RIPARIAN ZONE AND BANK EROSION check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) BANK E L R (Per Bank) L R (Most Predominant Per Bank) L R	ht Looking Downstream P ROSION Riparian Bank)
4]. RIPARIAN ZONE AND BANK EROSION check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAN) L R (Per Bank) L R (Most Predominant Per Bank) L R DI : WIDE > 50m [4] DI : FOREST, SWAMP [3] DI : CONSERVATION TILLAGE [1]	ht Looking Downstream P ROSION Riparian Bank) [7]
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (ht Looking Downstream P ROSION Riparian Bank) E/UTTLE (3)
4]. RIPARIAN ZONE AND BANK EROSION/check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R	ht Looking Downstream P ROSION Riparian Bank) [7]
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) PRiver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) D-CONSERVATION TILLAGE (1) D-FOREST, SWAMP [3] D-FOREST, S	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE (3)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) D	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE (3)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) PRiver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) D-CONSERVATION TILLAGE (1) D-FOREST, SWAMP [3] D-FOREST, S	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE (3)
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)	ht Looking Downstream P ROSION Riparian Bank) Riparian E/UTTLE [3] 5 EATE [2] 70/SEVERE[1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) D - CONSERVATION TILLAGE (1) D - Som [4]	ht Looking Downstream P ROSION Riparian Bank) Riparian E/UTTLE [3] 5 EATE [2] 70/SEVERE[1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) D - CONSERVATION TILLAGE (1) D - FOREST, SWAMP [3] D - CONSERVATION TILLAGE (1) D - WIDE - Som [4] D - FOREST, SWAMP [3] D - CONSERVATION TILLAGE (1) D - WIDE - NON EN INTERPRETATION TILLAGE (1) D - WIDE - Som [4] D - SOM PROTECTION TILLAGE (1) D - WIDE - SOM ROUSTRUL [0] D - WIDE - SOM REST WAS BORD FIELD [1] D - WIDE - WIDE - SOM REST WAS BORD FIELD [1] D - WIDE - WIDE - SOM REST WAS BORD FIELD [1] D - WIDE - WIDE - SOM REST WAS BORD FIELD [1] D - WORD FIELD [1]	ht Looking Downstream P ROSION Riparian Bank) Riparian E/UTTLE [3] 5 EATE [2] 70/SEVERE[1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) Priver Rig RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) D G-ONSERVATION TILLAGE (1) D SHRUB OR OLD FIELD (2) D - URBAN OR INDUSTRUL [0] D - URBAN OR INDUSTRUL [0] D - HEAD D - WIDE - Som [3] D SHRUB OR OLD FIELD [2] D - URBAN OR INDUSTRUL [0] D - HEAD D - WIDE - SOM [3] D - FENCED PASTURE [1] D - HEAD D - MINING/CONSTRUCTION [0] D - HEAD COMMENTS: 5.]POOL/GLIDE AND RIFFLE/RUN QUALITY MAX. DEPTH MORPHOLOGY (Check 1 ONLYI) Check 1 or 2 & AVERAGE) CCHRENT YELOCITY 1 POOLS & RIF (Check All That Apply) D - FONLWIDTH > RIFFLE WIDTH [2] D - EDDIES[1] D - TORRENTIAL[-1]	ht Looking Downstream P ROSION Riparian Bank) Riparian E/UTTLE [3] 5 EATE [2] 70/SEVERE[1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) D G-CONSERVATION TILLAGE [1] D G-MOND D G-MINING/CONSTRUCTION [0] D G-MOND D G-MINING/CONSTRUCTION [0] D G-MOND COMMENTS: 5.]POOL/GLIDE AND RIFFLE/RUN QUALITY MAX. DEPTH MORPHOLOGY (Check 1 ONLYI) Check 1 ONLYI) Check 1 ONLYI) Check 1 ONLYI) Check 1 ONLYI) D G-EDDIES[1] D TORRENTIAL[-1] D G-AST[1] D INTERSTITIAL[-1]	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE [3] E/UTTLE [3] F/Y/SEVERE[1] Max 10 Pool/ Current Max 12
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Dec Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE [3] E/UTTLE [3] F/Y/SEVERE[1] Max 10 Pool/ Current Max 12
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Dec Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE [3] E/UTTLE [3] F/Y/SEVERE[1] Max 10 Pool/ Current Max 12
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Dec Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream PROSION ROSION Riparian Bank) E/UTTLE [3] F//SEVERE[1] FOOV FILESI] Poov Max 12
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH R (Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)	ht Looking Downstream P ROSION Riparian Bank) E/UTTLE [3] E/UTTLE [3] FATE [2] POON FLESI] Poon Max 12 Riffe/Run
4]. RIPARIAN ZONE AND BANK EROSION/check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH ELOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (DI - WIDE > 50m [4] DEFOREST, SWAWP [3] DI-CONSERVATION TILLAGE [1] ADES: MODERATE 10-50m [3] DISHRUB OR OLD FIELD [2] DI-VERY NARROW 5-10 m [2] ADES: MODERATE 10-50m [3] DI-FENCED PASTURE [1] DI-WIDE OND PLAIN GOLD FIELD [2] DI-WIDE OND PLAIN GOLD FIELD	ht Looking Downstream PROSION Riparian Bank) E/UTTLE [3] 5 ERATE [2] 7//SEVERE[1] Max 10 FFLESI] Current Max 12 Riffle/Run DDEDNESS
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (DOS PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)	ht Looking Downstream PROSION ROSION Riparian Bank) E/UTTLE [3] E/ATTLE [3] FACTOR [1] F
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream ROSION ROSION Riparian Bank) E/UTTLE [3] E/ATT [2] POOV FLESI] PooV Current Max 12 Riffle/Run DDEDNESS Max 8
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream ROSION Riparian Bank) E/UTTLE [3]
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) D - CONSERVATION TILLAGE (1) SEANNE L R (Per Bank) L R (Most Predominant Per Bank) L R (Per	ht Looking Downstream ROSION Riparian Bank) E/UTTLE [3]
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	HA Looking Downstream ROSION ROSION Riparian Bank) FAUTTLE [3] FALTE [3] FALTE [1] FAL
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) D - CONSERVATION TILLAGE (1) SEANNE L R (Per Bank) L R (Most Predominant Per Bank) L R (Per	ht Looking Downstream PROSION ROSION Riparian Bank) E/UTTLE [3] E/UTTLE [3] FALESI] FOOV FILESI] Riffle/Run DDEDNESS Max 8 TE [0] Gradient VE [-1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L	ht Looking Downstream PROSION Riparian Bank) E/UTTLE [3] 5 ERATE [2] 7//SEVERE[1] Max 10 FFLESI] Current Max 12 Riffle/Run DDEDNESS Max 8 TE [0] Gradlent VE [-1] Max 10
4]. RIPARIAN ZONE AND BANK EROSION(check ONE box per bank or check 2 and AVERAGE per bank) RIPARIAN WIDTH FLOOD PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (DO PLAIN QUALITY (PAST 100 Meter RIPARIAM) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank) L R (Per Bank) L R (Per Bank) L R (Most Predominant Per Bank) L R (Per Bank)	ht Looking Downstream PROSION ROSION Riparian Bank) E/UTTLE [3] E/J F//SEVERE[1] Max 10 POON FILESI] Current Max 12 Riffle/Run DDEDNESS Max 8 Gradient VE [-1] Max 10

Major Suspected Sources of Impacts (Check All That Apply): None Electrical Industrial Distriction All Apply Silving Add Livestock Silving Silv	Rup Rup Other				Yes/No	Is Stream Ephemeral (no pools, total day or only damp spots)? Is there water upstream? How Far. Is There Water Close Downstream? Is There Water Close Downstream?
Is Sampling Reach Representative of the Stream (Y/N), Y If Not, Explain:	First Average Averag	Stream Drawing:	N Culvert ROAD	Residential	in dournos	Instructions for scoring the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where: 0 - Cover type absent; 1 - Cover type present in very small amounts or if more common of marginal quality; 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts of highest quality; 3 - Cover type of highest quality in moderate or greater amounts. Examples of highest quality include very large bouldes in deep of rist wafe, tage damented rogs that are stable, well developed contrast in deep of rast wafer, and defined functional pools.

APPENDIX 07-2

U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION FORMS

Project/Site: HILLCREST -EASTWO Applicant/Owder: CLUERGY Investigator: STOVE LAWE (URS)	0D	Date: O9/28/04 County: CLERMONT. State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situa Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes (No. Yes (No.	Community ID: PCM. Transect ID:
VEGETATION		
Deminant Plant Species 1. TYPHA ANGUST I FOLIA H OBL 2. POPULUS DENTOIDES H FAC 3. SALIX NIGRA H FACW 4. 5. 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks: DOM (NAWT CATTAIL FOW YOUNG SI (OTTO NUSOOD), WETLAMS VEG	9	Stretum Indicator
AYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: O - 2 (in.)	Water Mari Drift Lines Sodiment D Drainage P Secondary Indicators Voidized R Water-Stale Local Soil S FAC-Neutra	IN PLACES in Upper 12 Inches ks Deposits attems in Wetlands (2 or more required): bot Channels in Upper 12 Inches and Leaves Gurvey Date
Remarks: WETLAND HYDROLOGY SUPPLIED CONSTRUCTION CHOTRA FARM	TO PERIMETER	WETLAMM BY

Map Unit Name Ct - CLERW	ONT SILT LO	M Dreinage Class: POOR
Taxonomy (Subgroup): TYDIC OC		Field Observations Confirm Mapped Type? (Fes) No
Profile Description: Depth Matrix Color (Munsell Moist) 0-6 A 104/R5/2 6-18 B 2.545/1	Mottle Colors (Munsell Molst) 7,5476/6	Mottle Texture, Concretions, Abundance/Contrest Structure, etc. COMMON DISTINCT SILT LOAM SILTYCLY LUMM
Hydric Soil Indicators: Histosol Histic Epipadon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Low-Chroma Col	三 三	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Usted on Local Hydric Soils Ust Usted on National Hydric Soils Ust Other (Explain in Remarks)
Remarks: HYDR(C SUIL	as mappe	TO
WETLAND DETERMINATION		.i.=
Hydrophydic Vegetation Present? Wedlend Hydrology Present? Hydric Solls Present?	No (Circle) No No	(Circle)
Romarks:	P OF WE	turns surranding thru
DOND		

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Approved by HQUSACE 3/92

Project/Site: HYLLCREST -EASTWORD Applicant/Owder: C(NERGY Investigator: STEVE LANE (VB)		Date: 09/28/04 County: CLE(Mont State: 0)
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes No Yes No	Community ID: Transect ID: Plot ID:
VEGETATION		
Dominant Plant Socies 1. TOA PRATENSIS Y FACU 2. POPULUS DELTOIDES H PAC 3. PLANTAGO MATOR: H FACU 4. SOLIDAGO CANADGNSIS: IT FACU 5. BRASSICA RAPA H NI 6. CERASTIUM ARVENSE Y UPL 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Romarks: UPLAND MOWEN VEGETATION	9.	
HYDROLOGY Recorded Date (Describe in Remarks):Stream, Leke, or Tide GeugeAcriel PhotographsOtherNo Recorded Data Available Field Observations: Dapth of Surface Water:(in.) Depth to Free Water in Pit:	Water Mad Drift Unes Sediment C Drainage P Secondary Indicators	n Upper 12 inches ts leposits externs in Wedends (2 of more required); not Channels in Upper 12 inches led Leaves urvey Oata
Homarks: UPLAND HYBROLOGY DNLY	1 SECOND ARY	INDICATOR

Map Unit Name (Series and Phase):			· Field Optav	vations ··
Taxonomy (Subgroup): Profile Description: Depth (Inches) · Herizon	Matrix Color (Munsell Moist)	Mortie Colors (Munsell Molst)	,	Texture, Concretions, Structure, etc.
7-10 A	104R5/7	7248514	PEW / FANT	SILT LOAM
10-18 B	104175/1	7,54R5/6	COMMON/DISTINCT	
		·····		
	11			
Reducing Gleyed o		— Hig — Or	ncretions ph Organic Content in Sur gar Sted on Local Hydric Soils ted on National Hydric Si ted on National Hydric Si her (Explain in Remarks)	List
YETLAND DETERM	INATION			: ##:
Hydrophydo Vegetadd Wetland Hydrology Pr Hydric Solls Present?	osent? Yo	He (Circle)	this Sampling Point With	(Clrole)
Remarke: UPLA	No Plan i	UITN HYDRI	(SOIL	
	•	:		

Project/Site: MILLCIUST - EASTWOOD Investigator: STEVE LANE (URS)	Date: 09/28/04 County: CLERMONT & BROWN State: OH
Is the site significantly disturbed (Atypical Situation)?	Yes) No Community ID: PGWPS/PF Yes (No) Plot ID: W2:
VEGETATION	
1. TYPHA ANGUSTIFOLIA M OBL 9. EUPAT 2. LEERSA VIRGINCA M PACW 10. 3. ULMUS RURRA TIS FAC 11. 4. ACER PURRUM TIS FACNT 12. 5. CAREY SPP M FINC-ORL 13. 6. IMPATIENS CAPEUSS H FACW 14.	Plant Species Stratum Indicator PRIVA PERFOLIATUM H FACKUT 100.90
Stream, Lake, or Tide Gouga Acrial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Comparison of Surface Water in Pit:	drology Indicators: Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Oralnage Patterns in Wedands Iny Indicators (2 or more required): Oxidited Root Channels in Upper 12 Inches Water-Steined Leaves Local Soil Survey Data FAC-Neutral Test
Remarks: WETLANN HYDROLOGY	Other (Explain in Remarks)

Map Unit Name (Series and Phase):			. PIEIU UUJBIY	
Taxonomy (Subgroup): Profile Description: Depth (Inches) Horizon ()-10	Matrix Color (Munsell Moist) [OYICH12 [OYICH12	Martie Calors (Munsell Molst) 7KYR5/5	Mottle	GENERALLY Texture, Concretions, Structure, etc.
Reducin	ipedon	"	Concretions figh Organic Content in Su Organic Streaking, in Sandy Isted on Local Hydric Soils Isted on National Hydric Si Other (Explain in Remarks)	List
VETLAND DETERM	MINATION			: \$
· Hydrophydc Vegetali Wedend Hydrology P Hydric Solls Present?	resent? (Ye	No (Circle) No No	ls this Sampling Point With	(Circle)
Remarke: WET-An ADO ACI	UD AREA A	LONG DRAIN RAIL LINE	JAGE PATHWA	Y SOUTH THUP

£.

Project/Site: HILLCREST -EASTWOOD Applicant/Owner: CINERGY . Investigator: STEVE LANE LURS)	Date: O'UZBIDY County: OERMONT & BROWN State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes No Community ID: Transect ID: Plot ID: VP2
VEGETATION	
Dominant Plant Species 1. LONICERA MANCKI S NI 2. DIPSACUS SYLVESTRIS II NI 3. PLANTAGO MATOR: II FACU 4. PLANTAGO LANCEOLATA "H UPL 5. DLMUS RUBRA T'S FAC 6. CIRSIUM ARKENSE H FACU 7. CRITS OCCIDENTALIS T'S PAYU 8. MBROSIA TRIFIDA H FAC Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). Romarks: UPLAND VESETATION	Dominant Plant Species 9. SOLIDAGO CANADENSS H FACU 10. LONICERA SAPONICA H FACT 11. 12. 13. 14. 15. 16. 10.0% 10.0%<
HYDROLOGY Recorded Data (Doscribe in Remarks):Stream, Leke, or Tide GeugeAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:	Wetland Hydrology Indicators: Primery Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sadiment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves A Local Soil Survey Date FAC-Neutral Test Other (Explain in Remarks)
Remarks: UPLAND HYDROLOGY ON	LY 1 SECONDARY LUDICATOR

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LS .	_		• .	A+ AP	
p Unit Name urles and Phasel:	sc-Blanches	SPER SILT LOA	Oreinage Cl		
xonomy (Subgroup):	TYPIC OCH	HOLOVALES	Confirm N	lapped Type? Yes No	
offic Description:	Matrix Color	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions,	
chest Horizon)-8 A	10YR4/2	7.54R4/4	FEW/FAINT	SILT LOAM	
5-18 B	10 YRLYZ	7/5YR415	COMMONYFAINT	SILTLOAM	
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Histosol Histic Epi		— н	oncretions oh Organic Content in Su capic Streeking in Sandy	ırlace Layer in Sandy Solis Solis	
Histosol Histo Epi Sulfidic C Aquic Mo		Hi ov Xu: XU:	oncretions gh Organic Content in Su ganic Streeking in Sandy sted on Local Hydric Solis sted on National Hydric S ther (Explain in Remarks)	Soils s Ust oils Ust	
Histosol Histosol Histosol Sulfidio C Aquic Ma Reducing Glayed o	Odor Disturo Regima Conditions	— Hi — Or — ∑U: — ∑U: — Ol	gh Organic Content in Su ganic Streaking in Sandy sted on Local Hydric Soil: sted on National Hydric S	Soils s Ust oils Ust	
Histic Epi Sulfidic C Aquic Mc Reducing Gleyed o	older alsture Regime Conditions r Low-Chroma Color SolL AS	— Hi — Or — ∑U: — ∑U: — Ol	gh Organic Content in Su ganic Streaking in Sandy sted on Local Hydric Soil: sted on National Hydric S	Soils s Ust oils Ust	: ‡3
Histosol Histic Epi Sulfidio C Aquic Mc Reducing Gleyed o	John AS JUNATION Present? Yes	MAPAED (Circle)	gh Organic Content in Su ganic Streaking in Sandy sted on Local Hydric Soil: sted on National Hydric S ther (Explain in Remarks)	Soils s Ust oils Ust	:4:
Histosol Histosol Histosol Sulfidic Co Aquic Mo Reducing Glayed on marks: HYDR((TLAND DETERM Ydrophydic Vegetatle Ydrology Pr ydric Solls Prosent?	older aisture Regime Conditions r Low-Chroma Color SolL AS IINATION	MAPAED (Circle)	gh Organic Content in Su ganic Streaking in Sandy sted on Local Hydric Soil: sted on National Hydric S ther (Explain in Remarks)	Soils s Ust ioils Ust (Circle)	:4:
Histosol Histosol Histosol Histosol Sulfidic Co Aquic Me Reducing Gleyed or Properties TLAND DETERM And Hydrology Properties And Hydrology Properties And Hydrology Properties And Hydrology Properties Herenand Hy	John Assistance Regime (Conditions of Low-Chroma Color Soll AS) IINATION IIINATION IIINATION	MAPAED (Circle)	gh Organic Content in Suganic Streaking in Sandy sted on Local Hydric Soli: sted on National Hydric S ther (Explain in Remarks)	Soils s Ust ioils Ust (Circle)	:4:
Histosol Histosol Histosol Histosol Sulfidic Co Aquic Me Reducing Gleyed or Properties TLAND DETERM And Hydrology Properties And Hydrology Properties And Hydrology Properties And Hydrology Properties Herenand Hy	Odor aisture Regime Conditions r Low-Chroma Color SolL AS MINATION on Present? esent? PLOT WI	MAPAED (Circle)	gh Organic Content in Suganic Streaking in Sandy sted on Local Hydric Soli- sted on National Hydric S ther (Explain in Remarks) this Sampling Point With	Soils s Ust ioils Ust (Circle)	:4:
Histosol Histosol Histosol Histosol Histosol Histosol Sulfidic C Aquic M Reducing Gleyed o TLAND DETERM Polydrophydo Vegetalle Peterd Hydrology Pr Pydric Solls Prosent?	John Assistance Regime (Conditions of Low-Chroma Color Soll AS) IINATION IIINATION IIINATION	MAPAED (Circle)	gh Organic Content in Suganic Streaking in Sandy sted on Local Hydric Solis sted on National Hydric S ther (Explain in Remarks) this Sampling Point With	Soils s Ust ioils Ust (Circle)	:4:

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Project/Site: HILLCREST -EXSTWOOD Applicant/Owner: CINGREY. Investigator: SRL (URS)	Date: OAKS/OH County: BROWN State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes (10) Community ID: PEM Transect ID: Yes (10) Plot ID: W3A B C, 410
VEGETATION	METLAND COMPLEX 3
Dominant Plant Species 1. PHALARIS ARUNDINACEA H FACW 2. LECTESIA VITCGINICA H FACW 3. JUNCUS EFFUSUS' H FACW 4. JUNCUS TENUIS "H FAC- 5. XANTHIUM STRUMARIUM H FAC- 6. DUCANTHELIUM 7. CLANDESTINUM H FACH 8. VERNONIA GIGANTBA H FACC Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Romarks: WETLAND VEGETATION, LA ALONG RAILWAY (EXCEPTION)	Dominent Plant Species 9. POLYGONUM 10. PENSYLVANICUM H FACW 11. 12. 13. 14. 15. 16. N96% PART OF W3C)
HYDROLOGY Recorded Data (Describe in Remarks):Stream, Lake, or Tide GaugeAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:[in.) Depth to Free Water in Pit: 8-718 [in.) Depth to Saturated Soil:	Wetland Hydrology Indicators: Primary Indicators: Inundated Satureted in Upper 12 Inches Water Marks Drift Unes Sediment Deposits IN PLACES Dreinage Patterns in Wetlands Secondary Indicators (2 or more required): Wouldized Roat Channels in Upper 12 Inches Water-Stained Leaves Local Soil Survey Date FAC-Neutral Test Other (Explain in Remarks)
Remarks: WETLAND HOYDROLOGY	

oils .	•			
-		INT SILT LOA	Field Observ	vetions
Taxonomy (Subgroup)	: Typic G	lossaqualt.	Confirm M	lapped Type? Yes No
Profile Description: Depth (inches) Horizon	Matrix Color	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7 A	7,545/2	164R414	FEW/DISTINCT	SILT LUMA
7-18 B	2.78615	10411516	com/ DISSINCT	SILT LOAM
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∑ Gleyed o	og Conditions or Low-Chroma Colo	rs	isted on National Hydric Sc Other (Explain in Remarks)	
'ETLAND DETERM	MINATION			: \$1
Hydrophytic Vegetati Wetlend Hydrology P Hydric Soils Present?	resent?	P No (Circle) No No	s this Sampling Point Withi	(Circle) in e Wetlend? (G3) No
Remarks:			•	
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WTI, 1995

Project/Site: HILL(REST-EXSTWOODS Applicant/Owder: CINERCH Investigator: STEVE LANE (VCS)		Date: OND County: BRO State: 0	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situat Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes No ion)? Yes No Yes No	Community ID: Transect ID: Plot ID:	UP3
VEGETATION		·	•
Dominant Plant Species 1. GLYCING MAK 2. LONKERA MAACKI S NI 3. ROSIA MULTIFIORA HS FACU 4. TOXICODENDION 5. RADICANS WS FAC 6. SOLIDAGO 7. CANACCUSIS H TACU 8. DIFSACUS SYLVESTRIS H NI Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). Remarks: MOSTLY BORDCRED BY SOXFEE HUNEYSUCKLE		7NMM H	FAC+
APPLAND HYDROLOGY Recorded Data (Describe in Remarks): Stream, Leke, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Fit: No Remarks: DALAND HYDROLOGY ONLY	Water Mar Drift Lines Sediment i Drainage P Secondery Indicators Oxidized R Water-Stai Lacel Soil FAC-Neutr Other (Exp	in Upper 12 Inches ks Deposits letterns in Wedends I (2 or more required) oot Channels in Upper ned Leeves Survey Date al Test lein in Remarks)	er 12 Inches
UPLAND HYDROLOGY ONLY SECONDARY INDICATOR	MADRED HADE	inc policy a	1 -3 -4-

OILS		·			
Map Unit I (Series and	Name d Phase):		ONT SILT LOP	← Field Obser	iless: PooR
Taxonomy	(Subgroup):	Typic G	ilossaqual-	Confirm I	Mapped Type? (Yes) No
Profile De: Depth (inches)	Horizon	Matrix Color (Munsell Moist) 2.54512	Mordie Colors (Munsell Maist) 7/5/16/4	Mottle Abundance/Contrest CVM / O/S/TNU-	Texture, Concretions, Structure, etc. SILT LOAM -
6-18	B		75486	COM/OISTINCT	SILTY CLAY LOTHING
	•				
	•	**			
Remarks:	Reducing KGleyed o		又 以 以 以 以 以 以 以 以 以 以 以 以 以 以 以 以 以 以 以	ligh Organic Content in Sindy Organic Streaking in Sendy Isted on Local Hydric Soil Isted on National Hydric S Other (Explain in Remarks)	s List
VETLANI) DETERM	IINATION			
Wetland I	de Vegetede lydrology Pr ils Present?	asant? Yes		s this Sempling Paint Wit	(Circle) hin e Wetland? Yes (16)
Remarke:	· 	upland	plot u	with hydric	soil
				100	roved by HQUSACE 3/92

Project/Site: Hillcrest - Eastwood Applicant/Owner: Cineray Investigator: Steve Dane (URS)	Date: <u>09 28 04</u> County: <u>Brown</u> State: <u>OH</u>
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse.)	(No) Transect ID:
VEGETATION	
1. Phalaris acundinacea H FACW 9. 2. Dichanthalium clandestinum H FACT 10. 3. CMEX SPP. H TACOBL 11. 4. IMPATIENS CAPTENSIS "H FACW 12. 5. VER NOWIA GIGANTEA H FAC 13. 6. ACER RUBRUM T/S FACW 14.	Stratum Indicator
Stream, Leke, or Tido Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Friend Gauge Primary Ind S S S S Secondary Ind S S Secondary Ind S S S S S S S S S S S S S S S S S S S	ilogy Indicators: ilicators: nundated laturated in Upper 12 Inches Vater Marks offit Lines lediment Deposits Indicators (2 or more required): Diddized Root Channels in Upper 12 Inches Vater-Stained Leaves acel Soil Survey Data AC-Neutral Test Inther (Explain in Remarks)
Remarks: Letland hydrology	

Profile Des Depth (inches)		Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	/ Mottle Abundance/Contrast	Mapped Type? Yes' No GENSTALLY Texture, Concretions, Structure, etc.
0-7	.A	2.5447	1042414	<u>CM/DISTIPLE</u>	SILTY CUTY LOAM
7-18	ß	2.146/2	10485/6	CM/DISTINCT	SILTY CLAY LIAM
		,		<u> </u>	
	Reducin	nobeqia	二. 文. 文.	ioncretions ligh Organic Content in S Irganic Streaking in Sand Isted on Local Hydric Soll Isted on Nacional Hydric S Ither (Explain in Remerks)	s Ust Soils Ust
	Histosol Histic Ep Sulfidic Aquic M Reducin Gloyed c	oipedon Odor oisturo Regimo g Conditions or Low-Chroma Colo Soll AS	MAPPEO (ligh Organic Content in S Organic Streaking in Sand Isted on Local Hydric Soll Isted on Nacional Hydric S Other (Explain in Remerks)	y soils s List soils List like most closely
Remarks:	Histosol Histic Er Sulfidic Aquic M Reducing Gloyed of HYDYU (eflec	oipedon Odor oisturo Regimo g Conditions or Low-Chroma Colo Soll AS	MAPPEO (ligh Organic Content in S Irganic Streaking in Sand Isted on Local Hydric Soli Isted on National Hydric S Ither (Explain in Remerks)	y soils s List soils List like most closely
Remarks: /ETLANI Hydrophy Wetland I	Histosol Histic Er Sulfidic Aquic M Reducing Gloyed of HYDYU (eflec	nipedon Odor oisture Regime g Conditions or Low-Chroma Colo Soll AS AS C+ Soi MINATION on Present?	MAPPED (Lype with	ligh Organic Content in S Organic Streaking in Sand Isted on Local Hydric Soll Isted on Nacional Hydric S Other (Explain in Remerks)	y soils s List Soils List Sile most closely SIONS. (Circle)

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Project/Site: Hillcrest Eastwoo Applicant/Owner: Cincry Investigator: Steve Law (URS)	Date: OR PS/04 County: Brown State: OH	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal is the area a potential Problem Area? (If needed, explain on reverse.)	ion]? Yes No Yes No	Community ID: Transect ID: Plot ID:
VEGETATION		
Dominant Plant Species 1. ACE! PUBLIM T/S FACU 2. SOLIDAGO (ANATOMISS H FACU 3. RUBUS ALLEGHENIENS S FACU 4. UTTS RIPARIA S FACU 5. UTTS ACSTIVALYS S FACU 6. CELTIS OCCINGUITALIS T/S FACU 7. TONIOSCHOROU RADICTUS M FAC 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). Remarks:	9	
HYDROLOGY Recorded Data (Describe in Remarks):Stream, Leke, or Tide GaugeAeriel PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:(in.) Depth to Free Water in Pit:>(%	Water Ma Drift Unes Sadiment Drinage I Secondary Indicator Oxidized F Water-Ste Local Soil	in Upper 12 Inches rks Deposits Patterns in Wetlands Is (2 or more required): loot Chennels in Upper 12 Inches Ined Leaves Survey Data ((+)
Remarks: UPLAND HYDROLOGY (ON	LY 1 SECONDA	ey I,WOI(ATOR)

OILS .	· · · · · · · · · · · · · · · · · · ·			
Map Unit Name	t-clermont	SILT LOAM.	-2%	Ct-POOR Hass: AVA-Somewhat
	C+ Tubic Cit	assagualfs.	Field Obse	rvetions . Pool
Texonomy (Subgroup)	: AvA - Aeric	Fragiaqualts	Confirm	Mapped Type? (Yes)No
Profile Description: Depth (inches) - Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moistl	Mottle Abundance/Contrast	GENERALLY Texture, Concretions, Structure, etc.
0-10 A	2.54412	104R414	FEW/FAINT	SILT LOAM -
10-18 B	2545/2	104105/6	FEW/FAINT	SILT LOAM
Romarks:	SOIL AS	MAPPEN.	Soil profile m	lost closely neflect
ct Soil	type uit	n AuA inch	121008.	
vetland detern	INATION			: 4:
Hydrophydc Vegetati Wedand Hydrology Po Hydric Soils Present?	esent? Yes	\ . .	s this Sampling Point Wit	(Circle)
Remarks:			•	
UPLAMO	AUT WITH	HABEIC	20172	
_	1		•	
			An	proved by HQUSACE 3/92

Project/Site: Hillcrest - Fast ward Applicant/Owner: Crneray Investigator: Stave Lake (VIRS) Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation in the site area a potential Problem Area? (If needed, explain on reverse.)	Date: Q/28/04 County: Brown State: ON Community ID: Pro/KS/FCM Transect ID: Plot ID: Ves No. Plot ID: Ves N
VEGETATION	
Dominant Plant Species 1. PARLARIS ARUNDI NACEA H FACH 2. Dicharthe Hom clandestinual FACH 3. Fraxinus pennsylvanica T FACW 4. ACER KUBRUM TS FACW 5. RODULUS DELTOIDES TS FAC 6. VERNONIA GICANTEA H FACU 7. EUPATORIUM MERFOLIATUM H FACW 8. EUPATORIUM REFOLIATUM H FACW Percent of Dominant Species that are OBL, FACW or FAC loxifuding FACI. Romarks: Wetland Vege	00minent Plant Species Stretum Indicator 9. 10×(006×1000 KADICANS H FAC 10. 11. 12. 13. 14. 15. 16. 70% 4 ation
HYDROLOGY Recorded Data (Describe in Remarks): Stream, Leke, or Tide Geuge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Weter: Depth to Free Water in Pit: Depth to Saturated Soil: Arthur Jin.)	Wetland Hydrology Indicators: Primery Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Unes Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves Local Soil Survey Date FAC-Noutral Test Other (Explain in Remarks)
Romarks: wetland hyd	rology

(Saries and Phase)	+- Clermon	4 8:1+ 7	x, Z-6% slope DAM Drainage of Field Obse	AWB2-80 newhat poor
Texonomy (Subgroup):	CE - Typic	ctragiaqualt.	LFS Confirm	Mapped Type? Yes No
Profile Description: Depth [inches] Herizon	Matrix Color	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	CENTRALLY Texture, Concretions, Structure, etc.
<u>0-6</u> A	2.5441	10.48414	CM/DISTNICT	SILTY (LAY LOAM
6-14 B	10412512	154RSK	<u>ch/bistact</u>	SILTY (UNY LOTIN
				,
	•			
∑ Gleyed or Remarks;	Conditions Low-Chroma Colors		sted en National Hydric S ther (Explain in Remerks)	
YETLAND DETERM	INATION			
ILICAND DETERM				:
Hydrophydic Vegetation Wedland Hydrology Pre Hydric Soils Present?	n Prosent?	No (Circle) No No	this Sampling Point With	(Circle) hin a Wetland? Yes No
Hydrophydic Vegetatlor Wedend Hydrology Pre Hydric Soils Present? Remarks:	n Prosent?	No.	s this Sampling Point With	(Circle)
Hydrophydic Vegetatlor Wedend Hydrology Pre Hydric Soils Present? Remarks:	n Prosont?	No.	this Sampling Point With	(Circle)

WTI, 1995

Project/Site: Hill crest - East wood	Date: 9/28/04
Applicant/Owner: Cineral	County: Brown
Investigator: Steve Lane (URS)	State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situa Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes No Community ID: Transect ID: Plot ID: VPS
/EGETATION	
Dominant Plant Species Stratum Indicator 1. DIPSACUS SYLVESTICIS H N 1	Dominant Plant Species Stratum Indicator 9
2. Elgeagnus species 5 FACU.	10
3. SOLIDAGO CAMOGNISIS M FACU	11
4. PLATAGO M AJUR "H FACU	12
5. PLANTAGO LANCEDIATA H UPL	13,
6,	14
7	15
8	16
Percent of Dominent Species that are OSL, FACW or FAC (excluding FAC-).	25%
Romerks: UPISTUS PLOT	4
IYDROLOGY	
Recorded Data (Describe in Remerks): Stream, Leke, or Tide Gauge Aerial Photographs Other No Recorded Data Available	Wedend Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Unes Sediment Deposits
Field Observations:	Drainage Patterns in Wedlands Secondary Indicators (2 or more required):
Depth of Surface Water:(in.)	Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit:	Local Soil Survey Date FAC-Neutral Test
Depth to Saturated Soil: 78 (in.)	Other (Explein in Remarks)
Remarks: ALTHE HYDROGY (OWLY 1	S-COMPARY INDICATOR)

S	0	۱	LS	

Map Unit Name (Series and Phase):			Field Ohso	Class: POOR rvetions Mapped Type? Yes No	
Profile Description: Depth (inches) Horizon O-12 (1 17-18 B	Matrix Color [Munsell Moist] ZKY5/2 ZKY6/2	Mottle Colors [Munsell Moist] 7/84/194	Mottle Abundance/Contrast FCW/D/SDWCT CW/D/SDWCT		
Hydric Soil Indicators: Histosol Histo Epipedon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Low-Chrome Colors High Organic Streaking in Sendy Soils Usted on Local Hydric Soils List Other (Explain in Remarks)					
Remarks: HYDA:	L SOIL A	s mappen			

Wedend Hy	: Vegetation Present? drology Present? : Present?	Yes (No.	(Circle)	Is this Sampling Point Within e Wedend?	(Circle)
Remarke:	UPLANO PUB	r MTU	НУрі	alc soils	· .

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WTI. 1995

Project/Site: Hillcrest - East wood Applicant/Owder: Cinergy Investigator: Stew Lake LURS)		Date: 4/78/04 County: 8rown State: OH
Do Normal Circumstances exist on the site? is the site significantly disturbed (Atypical Situals the area a potential Problem Area? (If needed, explain on reverse.)	(res No tion)? Yes (va. Yes (va.	Transect ID: PCM Plot ID: W6
/EGETATION	·	
Dominant Plant Species 1. SCIRPUS CUPGRINUS 2. MULARIS ARUNDINACEA H FACUT 3. CATCEX SPP H FAC-OBL 4. TUNCUS EFFUSUS H FACUT 5. PLANCUS TEN VIS U FAC- 6. FACUT 8. FACUT Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks:	9	Stratum Indicator
APDROLOGY Recorded Date (Describe in Remerks):Stream, Leke, or Tide GeugeAeriel PhotographsOtherNo Recorded Date Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: 6 (in.)	Water Mei □ Drift Lines □ Sediment □ Drainage F Secondary Indicator □ Oxidized F □ Water-Stei □ Local Soil	in Upper 12 Inches rks Deposits Patterns in Wedends s (2 or more required): loot Channels in Upper 12 Inches ined Leaves Survey Date
Remarks: METLYMO MYDRAOGY	•	

Map Unit Name (Series and Phase):	t-Clermont	SILT LO	AM Drzinage Cl	lass: POOR
Taxonomy (Subgroup	: Typic G	lossaqualf	Confirm N	Aspped Type? Yes No
Frofile Description: Depth (inches) Horizon	Matrix Color	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4 A	2.5741	1,54R5H	FEW/DISTINGT	SILTYCLAY LOAM
4-10 13	2.54412	1.54115/8	CM/DISTINCT	SNTY CLAYLOMA
				
Glayed Remarks:	ng Conditions or Low-Chroma Color		Other (Explain in Remarks)	
VETLAND DETER	MINATION			: **
Hydrophydic Vegetat Wadand Hydrology F Hydric Soils Presenti	Present?	No (Circle) No No	ls this Sempling Point With	(Circle) in a Watland? Yes No
Remarke: WETU	mo AREA		•	
	•	•		

SOILS

Mep Unit Name
(Series and Phase): Ct - Clermont SILT LOAM

Approved by HQUSACE 3/92

Project/Site: Hillcrest - EAST Wool Applicant/Owner: CINERCON Investigator: Steve Lane (URS)	Date: 9/28/04 County: Blown State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes (No Yes (No Yes (No Plot ID:
VEGETATION	
Dominant Plant Species 1. GLYCINE MAX H NI 2. JUNIUS TENUIS IM FACT 3. PLANTAGO MAJOR W FACU 4. Rumex Crispus " H FACU 5. 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Romerks: MOSTLY UPLAND VEGETATION AT PLOT LOCATION	Dominant Plant Species Stratum Indicator
HYDROLOGY Recorded Data (Describe in Remarks):Stream, Lake, or Tide GaugeAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:(in.) Depth to Free Water in Pit:(8 (in.))	Wetlend Hydrology Indicetors: Primary Indicetors: Inundated Saturated in Upper 12 Inches Water Marks Drift Unes Sediment Deposits Drainage Patterns in Wetlands Secondary Indicetors (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Steined Leeves Local Soil Survey Date FAC-Neutral Test Other (Explain in Remarks)
Romarks: LPLAWS HYDRULOCY (ONLY	I SECONDARY INDICATUR)

Map Unit Name (Series and Phase):		f Silt Loam ossagualfs	Field Obser		OR
Profile Description: Depth (inches) · Horizon	Matrix Color (Munsell Moist)	L Mottle Colors (Munsell Moist)	Mottle Abundance/Cantrast	Texture, Cond	
0-8 A	MIRHIT	1042414	FEW / PISTING	SILT	Lann-
8-18 B	while	715416	FEW/DISTING	SILT	Lopmi
•					
	5 ,				
Reducing Seleved or	isture Regime Conditions Low-Chroma Colors	; <u>— Od</u>	ted on Local Hydric Soil ted on National Hydric S ner (Explain In Remarks)	ioils List	
VETLAND DETERMI	INATION				
Hydrophydic Vegetatior Wedend Hydrology Pre Hydric Soils Present?	Present? Yes	ما ا	this Sampling Point Witi	nin a Wetland?	(Circle) Yes (No
			•		
Remarke:	n PLOT W	ATH MYDRIC	SOILS		•
• •, ,	ng PLOT W	ATH MYDRIC	SOILS		

Project/Site: Mill(rest-Eastwood) Applicant/Owner: Cinergy Investigator: Steuc Lanc (URS)	County: Brown State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situals the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes No Community ID: Pox Transect ID: Plot ID: W7
/EGETATION	
Dominant Plant Species 1. PHALARIS ARUADINACES H FACUT 2. SCIRPUS CYPERIAUS H FACUT 3. MUNCUS (FFUSUS U FACUT 4. CARREX SPD H FAC-ORL 5. 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks: WETLAWD VEGETATION (FC	10
HYDROLOGY Recorded Deta (Describe in Remarks):Stream, Lake, or Tide GaugeAeriel PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:	Wetland Hydrology Indicators: Primery Indicators: inundatedSaturated in Upper 12 InchesWater MarksDrift LinesSegment DepositsDepositsDeposits
Romarks: WETLAND MYDROLOGY	

Map Unit Namo (Series and Phase):	Ct - Typic C	ter silt LOAN	Field Opset	ct - POOR less: BC - POOR veilons : dapped Type? (es) No
Profile Description: Depth (inches) Horizon 0-6 A 6-8 8	Matrix Color (Munsell Moist) LOYPY/ L	Mortie Colors (Munsell Moist) 10/104/4 7/5/104/5	Mottle Abundance/Contrast CM1015/1 MCT FGW/D15/11MCK	CHEMERALLY TEXTURE, CONCROTIONS, STRUCTURE, ETC. SILTY CLAY LUARM SILTY CLAY LUARM
Reducir Glayed	pipedon Odor faisture Regime ig Conditions or Low-Chrome Colo	 	rganic Streeking in Sandy sted on Local Hydric Soil: sted on National Hydric S ther (Explain in Remarks)	s List Both Ctape
VETLAND DETER!		No (Circle)	·	(Circle)
Wetland Hydrology P Hydric Solls Present?	resent?	No	this Sampling Point With	in a Wetland? Yes No
Remarke:	hun IN	ACAMACNE P	nowe RAIL	LINE

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. WП. 1995

Approved by HQUSACE 3/92

Project/Site: Hillcrest - EAST WOOD Applicant/Owner: Cineray Invastigator: Steve Lanc (URS)	Date: 9128/04 County: BROWN State: OM	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situat Is the area a potential Problem Area? (If needed, explain on reverse.)	ion)? Yes No Yes No	Community ID: Transect ID: Plot ID:
VEGETATION	·	•
Dominant Plant Species 1. LONCERA JAPONICA 2. UTIS ACSTIVALIS 3. ROSA MULTIFURA 5. FACU 4. Phy folacia sp. "Y FACUT 5. LONCERA MARCHII S NI 6. SOLIOAGO CANDENSIS Y FACUT 7. SETARIA GUAVCA H FAC 8. GLYCINE MAX H NI Percent of Dominant Species that ero OBL, FACW or FAC (axeluding FAC). Ramarks: PLAND MEGETATION	9. 10. 11. 12. 13. 14. 15.	
HYDROLOGY Recorded Data (Describe in Remarks):Stream, Leke, or Tide GaugeAeriel PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:[in.] Depth to Free Water in Pit:	Water Mar Drift Unes Sediment i Drainage P Secondary Indicators Oxidized R Water-Stal Local Soil	in Upper 12 Inches ks Deposits externs in Wetlands t (2 or more required); cot Channels in Upper 12 Inches ined Leaves Survey Data
Remarks: KYDROLOGY (ONLY 1 S	ccompary (Noic	'ATOR)

takanani tagad	roup): BC-Ty	nc Glossaqualf Dic Ochraquali	Field Obse Confirm	Mapped Type? (Yes) No
Profile Description Depth (inches) · Horiz	Matrix Cold		Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7 4	7.545	12 7,54RS/S	FON/FAINT	SILT LOAM
7-18 1	7,54	6/2 104R616	l m/bisning	SILT LOAM
		••		· ;
		AS MAPPE	<i>`</i>	
Remarks: HYI VETLAND DET Hydrophydo Vag Wedand Hydrolo Hydric Soils Pres	ERMINATION etation Present? gy Present?	Yes ((Circle) Yes No		(Circle) hin a Wetland? Yas No
YETLAND DET Hydrophydc Veg Wedend Hydrolo Hydric Soils Pres	ERMINATION letation Present? ley Present? sent?	Yes: ((Circle)	ls this Sampling Point Wid	(Circle)
YETLAND DET Hydrophydc Veg Wedlend Hydrolo Hydric Soils Pres Remarke:	ERMINATION letation Present? ley Present? sent?	Yes (10 (Circle) Yes (No Yes No	ls this Sampling Point Wid	(Circle)

SOILS

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WTI. 1995

Project/Site: Hillcrest - Eastwood Applicant/Owder: Cineray Investigator: Steve Bank (URS) Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area?	(res) No	Date: 9/29/04 County: Brown State: OH Community ID: Pom Transect ID: Plot ID: US
(If needed, explain on reverse.)		
VEGETATION		
Dominant Plant Soccies 1. SUNCUS TENUIS H FACT 2. FULL ARIS ARUNDINACEA H FACUT 3. TYPHA ANGUSTIFOLIA H OBL 4. LYSIMACHIA 5. NUMMULARIA H OBL 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FACT). Remerks: WETVAND VEGETATION	9. 10. 11. 12. 13. 14. 15.	Stretum Indicator
HYDROLOGY		
Recorded Data (Describe In Remarks): Stream, Leke, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water:	Water Mar Drift Lines Sediment I Drainage P Secondary Indicators	In Upper 12 Inches ks
Depth to Free Water in Pit: 718 (in.) Depth to Seturated Soil: 14 (in.)	── Water-Stail	ned Leaves Survey Data
Remarks: HYIDROLOGY	•	

SOILS	V <u>:</u>	. W8
Map Unit Name (Series and Phase): Ct-Clermon Texonomy (Subgroup): Typic Gla		Dreinage Class: POOR Field Observations Confirm Mapped Type? (fee) No
Profile Description: Depth Matrix Color (Inches) Harizon (Munsell Moist) 0-8 A 7.544/2 8-14 3 7.546/2	Mottle Colors (Munsell Moist) LONIUS FEA	Texture, Concretions, snce/Contrest Structure, etc. /FAINT SILT LOAM - N/FAINT SILT LOAM
Hydric Soil Indicators: Histosol Histic Epipadon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Low-Chrome Color	Organic Str Listed on Le Listed on N Other (Explanation)	s ic Content in Surface Leyer in Sandy Soils recking in Sandy Soils ocal Hydric Soils List lationel Hydric Soils List ain in Remarks)

Hydrophytic Veg Wetland Hydrolo Hydric Soils Pres	gy Present?		No (Circle) No No	Is this Sampling Point Within a Wedland?	(Circle)
Remarks:	WET	ħ₩o	PLOT		. ,
	`				
				Approved by HQUS	ACE 3/92

. WTI. 1995

Project/Site: Hillcrest - East wood Applicant/Owner: Cineray Investigator: Steve Lawe (URS)	Date: 9/79/04 County: Brown State: OH Community ID:	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes Woi	Transact ID:Plot ID:
VEGETATION		
Dominant Plant Species 1. POA PRATENSIS IN FACU 2. SOLHOAGO (ANADENSIS IN FACU 3. IN PSACUS SYLVESTRIS IY NI 4. DAUCUS CAROTA IH UT 5. SECTIFICA GLAUCA IM FAC 6. ANDROPOGON 7. VIRGINICUS IN FACU 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). Remarks:	9	Stretum Indicator
HYDROLOGY Recorded Data (Describe in Remerks): Stream, Lake, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: 18 [in.]	Water Merks Drift Lines Sediment De Drainage Pat Secondbry Indicators (, Oxidized Roc Water-Stains	Upper 12 Inches posits terns in Wetlands 2 or more required); to Channels in Upper 12 Inches d Leaves rvey Data C+ Test
Remarks: NOLTHUN VIYBAULOGY		

DILS		· · · · · · · · · · · · · · · · · · ·		VP-8
Map Unit Name (Series and Phase): Texonomy (Subgroup)		nort Silt C Glossagualf	 Field Obse 	
Profile Description: Depth (Inches) Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	CENTURLY Texture, Concretions, Structure, etc. SILT I ANN
0-4 A 4-18 B	2,5/4/3 2,5/4/2	104944	FEW/FAINT	SILT LORM
Reducin	sipadon	H o Z U Z	oncretions igh Organic Content in S rganic Stresking in Sand sted on Local Hydric Soll sted on National Hydric S thar (Explain in Remarks)	ls Ust Soils Ust
Remarks: HVDRI	C SOPL AS	MAPPEN		

Hydrophytic Vegetation Present? Watland Hydrology Present? Hydric Solls Present?	No (Circle)	ls this Sempling Point Within a Wedend?	(Circle)
Remerke: UPLANO PLOT	WITH HYDI	RIC SOILS	• • •
•			•
		Approved by HQUS	100 60

WTI, 1995

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Project/Site: HillCrest - East wood Applicant/Owder: Cincrey Investigator: Stew Lane (URS		Date: Daltalo4 County: Brown State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	(reg No tian)? Yes (No) Yes (No)	Community ID: PEM Transect ID: Plot ID: WAA, B, C at
VEGETATION		
Dominant Plant Species 1. St. IRPUS CYPECINUS U FACUT 2. PMMATAIS ARUNDIUMEN H FACUT 3. TOX/CODENDRON 4. RADICANS H FAC 5. 1YPHA ANGUSTIFOLIA H OBL 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Romerks:	9. 10. 11. 12. 13. 14. 15.	Stratum Indicator
HYDROLOGY Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Dapth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	Water Mar Orift Lines Sediment i Prainage P Secondary Indicators Oddized R Water-Stai K Local Soil	in Upper 12 Inches ks Deposits letterns in Wetlands (2 or mare required): oot Channels in Upper 12 Inches ned Leeves Survey Date
Remarks: METLAWY HYDTULOGY		

SOILS		:	WAY D	,C, 4D
(Series and Phase): A	SC - Blanch St UA - Avon bura Ct - Typic Colo	JSSagualts .	Drzinago C Field Obso	BC, Ct - ROR Class: AJA - Somewhat Poor Investions Mapped Type? (es) No
Texonomy (Subgroup) Profile Description: Depth (Inches) Horizon 0-7 A 7-16 B		Fragiaqualfs Mottle Colors (Munsell Moist) 7.54R414 754R514	Mottle Abundance/Contrast (M / DYSTINCT	GENERALLY Texture, Concretions, Structure, etc. SILTY CLAY LOAM SILTY CLAY LOAM
Reducin	pipedon	— Hi — or — ui — Vui	oncretions gh Organic Content in St ganic Streaking in Sandy sted on Local Hydric Soil sted on National Hydric S thar (Explain in Remarks)	is List CF & BC
Remerks: NYDA	ic soil A	5 MARPED		

Hydrophytic Vegetedon Present? Wedend Hydrology Present? Hydric Soils Present?	Man No No No	(Circle)	(Circles Is this Sampling Point Within a Wedland?	No :
Remarke: WETLAND	LOT		•	

WETLAND DETERMINATION

Approved by HQUSACE 3/92

: i =

Project/Site: Hillcrest-Eastwood Applicant/Owner: Cineray Investigator: Steve Who (URS)	Date: 09/29/04 County: Grown State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	ion)? Yes No. Community ID: Yes No. Plot ID: Plot ID:
VEGETATION	
Dominant Plant Soccies 1. LONICERA JARONICA H/S FAC- 2. LONICERA MARCHII S NI 3. RUBUS 4. ALLEGHENENSIS S FACU- 5 CAMPSIS PACICANS H/S FAC 6. SULIVAGO (ANADONSIS H FACU 7. NAUCUS (AROTA H NI 8. Engeron annus H FACU Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC.), Remarks:	Dominant Plant Species Stratum Indicator 9.
HYDROLOGY Recorded Deta (Describe in Remarks):Stream, Leke, or Tide GeugeAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:[in.) Depth to Free Water in Pit:718[in.] Depth to Saturated Soil:718[in.]	Wedand Hydrology Indicators: Primery Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wedands Secondary Indicators (2 or more required): Water-Stained Leaves Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)

Drainage C Field Obse Confirm	
, 1	BELOW 8 INCHES
e/Contrast	Texture, Concretions, Structure, etc.
	SILT LOAM
FAINT	SILT LOM
	e stanting

·UP9

Concretions Histosol High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Usted on Local Hydric Soils Ust
Usted on National Hydric Soils Ust Histic Epipadon Sulfidic Odor Aquic Moisture Regime

Mottle Colors

(Munsell Moist)

10412414

Other (Explain in Remarks)

Mottle

Abundance/Contrast

FGW/FXINT

Reducing Conditions Gleyed or Low-Chroma Colors

SOIL AS MAPPED

HYDRIC

SOILS

Map Unit Name

(inches)

8-18

Texonomy (Subgroup): Profile Description: Depth

Hydric Soil Indicators:

Remarks;

· Horizon

(Series and Phase): Ct-Clermont Silt

Matrix Color

(Munsell Moist)

10/R-5/2

Hydrophytic	DETERMINATI Vegetation Present? Present?	nt? Ye	(Cir No	i i	this Sampling Point	Within a Wedend?	(Circle)
Remarks:	URLAWO	blot	WITH	HYDE	ic Soils		

Approved by HQUSACE 3/82

WTI. 1995

Project/Site: Hillcrest - EAST WOOD Applicant/Owder: Cincray Investigator: Steve Wane CURS		Date: 9/20/04 County: Brown State: 0H
Oo Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situals Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes No Yes No Yes No	Community ID: PCM Transect ID: ———————————————————————————————————
VEGETATION	·	• .
Dominant Plant Socies 1. LEERENA VIRGINICA M FACW 2. RANUNCULUS 3. RECURRITUS M FACT 4. RANUNCULUS 5. MISPIDIS M FAC 6. CAREX MYSTURCINA M OBL 7. PHALARIS MOUNDINACEA M FACW 8. ELECCHARIS OBNSA M OBL Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks:	9.	
HYDROLOGY Recorded Data (Describe in Remerks): Stream, Leke, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil:	A Water Mai Drift Unes Sediment Drainage F Secondary Indicators Oxidized R Water-Stai Local Soil	in Upper 12 Inches rks Deposits Patterns in Wedends s (2 or more required): laot Chennels in Upper 12 Inches ined Leaves Survey Data
Remarks: WETLAND MYDRULOGY		

W10

Hydric Soil Indicators:

Profile Description:

(inches) · Horizon

AIB

	Histosol
	Histic Epipadon
\overline{X}	Sylfidic Odor
	Aquic Moisture Regime
$\overline{\mathbf{z}}$	Reducing Conditions
pl	Glayed or Low-Chroma Colors
乏	Reducing Conditions

Texonomy (Subgroup): Aquic Fragiu

Matrix Color

25/3/1

Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils

Usted on Local Hydric Soils List Usted on National Hydric Soils List

Other (Explain in Remarks)

Mottle

Mottla Calars

7.5VR518

[Munsell Moist] (Munsell Moist)

Remarks:

SOILS

Depth

MAPPED KYDRIC SOIL NOT

WETLAND DETERMINATION Hydrophytic Vegetation Present?

Wedland Hydrology Present?

Hydric Soils Present?

(a) No (Circle) No No

Is this Sampling Point Within a Watland?

(Circle) You No : 1: ==

Remarke:

STREAM FURMER METLAND PLOT ALONG

Approved by HQUSACE 3/92

Project/Site: <u>Hillcrest - Eastwood</u> Applicant/Owner: <u>Cinergy</u> Investigator: <u>Steve Lane</u> (URS)	C	ate: 09/29/04 ounty: Brown tate: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situations) Is the area a potential Problem Area? (If needed, explain on reverse.)	on)? Yes (AG) Ti	ommunity ID:
VEGETATION		
DOMINANT Plant Species 1. POA PRATEWSIS 2. TUNGUS TEWUIS 3. PLANTAGO MAJOR: U FACU 4. PLATAGO LANCEOLATA "U "UPL 5. PHALARIS 6. ARUNDI NACEX H FACW+ 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). Remarks: UPLAMO VEGETATION WT	9	%
HYDROLOGY Recorded Data (Oescribe in Remarks):Stream, Leke, or Tide GaugeAeriel PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water:lin.) Depth to Free Water in Pit:>(8lin.) Depth to Saturated Soil:	Water Marks Drift Lines Sediment Dep Drainage Patts Secondary Indicators (2	osits oranic Medands or more required): Chennels in Upper 12 Inches Leaves vey Date est
Remarks: UPLANO MYDRULOGY		

UP 10

S	0	١	L	S

OILS	
Mep Unit Name (Seiles and Phase): RpC2 - Rassmoyne Silt Texonomy (Subgroup): Aquic Fragindal Fo	Pielo Uditaryations •
Profile Description: Depth (inches) Horizon O-9 A WRH/3 G-18 B OYR5/2 1.54R5/6	Mottle Texture, Concretions, Abundance/Contrest Structure, etc. SILT LOAM
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Lew-Chrome Colors Remarks: HYDRIC BELOW 9 INCH	Concretions High Organic Content in Surface Layer in Sandy Soils Organic Streaking in Sandy Soils Usted on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)

WETI	AND	DETERM	INATION
WEIL	עמט	DETERM	MAHON

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· 計畫

Hydrophydo Vegetation Present? Wedend Hydrology Present? Hydric Soils Present?	Yes (Gircle) Yes No	is this Sampling Point Within a Wetlend?	(Circle)
Remarke: VPLAWAD PLO-	r with H	YDRIC SULS	

. WTI. 1995

Project/Site: Hillcrest-Eastwood Applicant/Owner: Cineray Investigator: Steve Lane (URS)	Date: 4/79/04 County: Brown State: 0H
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	(ion)? Yes (No) Community ID: Pro/ISS/Per- Transect ID: Plot ID:
VEGETATION	
Dominant Plant Species 1. Fraxing Denn Sylvanica T FACW 2. ACER RUBRUM TIS EACHT 3. PADULUS deltoides S FAC 4. ACER MEGUNDO S FACT 5. IMPATIBUS CAPGUSIS M FACW 6. SCHRPUS CYPERINUS M FACW 7. MENTIA SPICATA W FACW 8. TYPHA LATIFICIA H OBL Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Romerks:	DOMINANT PLANT Species 9. PUPLANT ARUMONACEA H FACUT 10. JUNCUS EFFURIS N FACUT 11. CLECCUMUN OBTUSA H OBL 12. PULYGOMUM 13. PULYGOMUM 14. POLYGOMUM CIMPHI BLUM H OBL 15. LINCERA REWZOIN S FACW 16.
HYDROLOGY Recorded Data (Describe in Remarks):Stream, Lake, or Tide GaugsAerial PhotographsOtherNo Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: OOIin.)	Wedand Hydrology Indicators: Primery Indicators: A Invandated IN PLACES Saturated in Upper 12 Inches Water Marks Drift Lines Sediment Deposits Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Water-Stained Leaves Local Soil Survey Data FAC-Neutral Test Other (Explain in Romarks) (RNYSLI (HUMM)
Remerks: STRING WETZAMD HYD	

SOILS	;
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Map Unit Name (Series and Phase):			· Sield Ohee	iless: Poor rvations Mapped Type? (Fes.) No
Profile Description: Depth Ma (inches) Horizon (MA)	utrix Calor unsell Maist) ZSY4/(Motele Colors [Munsell Moist] 104R56	Mottle Abundance/Contrast	CENTRALLY Texture, Concretions, Structure, etc. SILTY CLAY LOAM SILT LOAM
Hydric Soil Indicators: Histosol Histoc Epipedo Sulfidic Oder Aquic Moistur Reducing Con Glayed or Lov	re Regime	₩ _ Hi _ Hi _ Hi	ncretions gh Organic Content In Si genic Streeking in Sand; sted on Local Hydric Soll sted on National Hydric S her (Explain in Remarks)	s Ust
Remarks: HYDPIC	SOIL AS	, mapped		

Hydrophytic Vegetation Present?	(No (Circle)	٠,	(Circle)
Wetlend Hydrology Present? Hydric Soils Present?	No No	Is this Sampling Point Within a Wedend?	. O N
Remarks:		•	_,
WENDING WITH	wooden con	APUNENTS	·
,		•	
		Approved by HQUS	ACE 3/92

WTI. 1995

Project/Site: Hillcrest - Eastwon Applicant/Owner: Cinergy Investigator: Steve Land CURS)	Date: 09/21/04 County: Brown State: 0H	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situat Is the area a potential Problem Area? (If needed, explain on reverse.)	ion)? Yes No Yes No	Community ID: Transect ID: Plot IO:
VEGETATION		
Dominant Plant Species 1. ACETT RUBRUM T FACU 2. Saloago (AMADENSIS H FACU 3. Papulus del toides S FAC 4. Peltis accidentalis T FACU 5. Prunus serotina T FACU 6. Quercus alba T FACU 7. 8. Percent of Dominant Species that ere OBL, FACW or FAC (excluding FAC). Remarks: Dutum VEGETATION WITH	9. 10. 11. 12. 13. 14. 15.	Stretum Indicator LHO% SPECICES
HYDROLOGY Recorded Data (Oescribe In Remerks):Stream, Leke, or Tide GaugeAerial PhotographsOtherNo Recorded Data Available Field Observations; Depth of Surface Water:(in.) Depth to Free Water in Pit:	Water Mar Drift Unes Sediment i Drainage F Secondary Indicators Oxidized R Water-Stai	in Upper 12 Inches ks Deposits atterns in Wetlands (2 or more required): oot Channels in Upper 12 Inches ned Leaves Survey Osta
Remarks: VALAMO HYBROLOGY		

Map Unit Name (Series and Phase):		<i>(</i>)	LOAM Dreinage C	rvauons	
Taxonomy (Subgroup	1: Typic Cole	<u>etlarposza</u>	Confirm I	Mapped Type? (res) No	_ '
Profile Description: Depth (inches) · Horizon	Matrix Color	Mottle Colors (Munsell Maistl	, Mottle <u>Abundance/Contrast</u>	Texture, Concretions, Structure, etc.	•
0-7 A	2.544/2	LOYRUH	FEW/FAINH	SILT LOAM	
7-18 B	254512	151R414	FGW/FAINT	SILT Lann	
·					
<u> </u>	٠,				.
			•		
Reducii Gleyed	Adisture Regime ug Conditions ar Low-Chroma Color (Soll A		rganic Streaking in Sandy sted on Local Hydric Soil sted on National Hydric S thar (Explain in Remarks)	s List oils List	
Hydrophytic Vegetat Watland Hydrology F Hydric Solls Present	on Present? Yes	No (Circle)	s this Sampling Point With	(Circle)	
Remarks:	AWIO PLAT L	MTU HYBRI	C SOILS		

SOILS

.

Project/Site: Hill crest - East wood Applicant/Owner: Cinerry Investigator: Steve Lane (URS)		Date: 9/19/04 County: Rrown State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situa Is the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes (No. Yes (No.	Community ID: PCM Transect ID: VIDAGS
VEGETATION	·	•
Dominant Plant Species 1. JUNK US TENNIS W FAC- 2. JUNGUS EFF USUS H FACW [†] 3. CAREX SPP H FAC-OBL 4. PHALARUS 5. ARUNDINACEA M FACW [†] 6. 7. 8. Percent of Dominant Species that ere OBL, FACW or FAC (excluding FAC-). Remarks: WETUMM NECETAT ION	8	Stratum Indicator
April Proceeding Proceded Proceded	Water Mar Drift Lines Sediment i X Drainage F Secondary Indicators X Oxidized R Water-Stal X Local Soil	in Upper 12 Inches rks Deposits Patterns in Wedends s (2 or more required): load Chennels in Upper 12 Inches ined Leaves Survey Date
Remarks: WETLAWD HYPROLOGY		

(Seiles and Phase):	Ct-clerm Typic Gl	_	Fill Ober	
Profile Description: Depth (inches) · Harizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	; Mottle <u>Abundance/Contrast</u>	GENERALLY Texture, Concretions, Structure, etc.
0-6 A	2,54512			SILT LOAM-
618 B	2.5462	10484/4	FEW/FAINS	SILT LOMM
· ·	***************************************			
Histosol			Concretions ligh Organic Content in St	urface Layer in Sandy Soils
Histic E Sulfidic Aquic M Reducin Gleyed	pipedon		concretions ligh Organic Content in St Organic Streaking in Sandy Isted on Local Hydric Soil Isted on National Hydric S Other (Explain in Remarks)	s List Soils List
Histic E Sulfidic Aquic M Reducin Gleyed	pipedon Odor Aaisture Regime Ig Conditions or Low-Chrome Calar		ligh Organic Content in Si Organic Streaking in Sandy Isted on Local Hydric Soil Isted on National Hydric S	y Soils s Ust Soils Ust
Histo E Sulfidic Aquic M Reducin Gleyed Remarka:	pipedon Odor Aaisture Regime Ig Conditions or Low-Chroma Calor C Salu AS MINATION on Present? resent?	MA (Circle)	ligh Organic Content in Si Organic Streaking in Sandy Isted on Local Hydric Soil Isted on National Hydric S	, Soils s Ust soils Ust (Circle)

8

Project/Site: Hillcrest - Eastwood Applicant/Owder: CINERCRY Investigator: Strue Lave (UPS) Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation of the site of the	GAS No	Date: 4/24/04 County: BYOLM State: OH Community ID: Transect ID: Plot ID: UP12
VEGETATION Dominant Plant Species Stratum Indicator		Stratum Indicator
1. GLYCINE MAY H NI 2. 3. SOYBENN FIELD 4. 5. 6. 7. 8.	10	
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks: UPLANNO NEGETATION	(SOY BE AWS)	· · · · · · · · · · · · · · · · · · ·
HYDROLOGY Recorded Data (Describe in Remarks): Stream, Leke, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: 18 (in.)	Water Mar Drift Lines Sediment i Drainage P Secondary Indicators Oxidized R Water-Stal	in Upper 12 Inches ks Deposits Patterns in Wetlands (2 or more required): oot Channels in Upper 12 Inches ined Leaves
Remarks: UPLAND HYPRULDGY	•	

OILS			·	V 2	υ ^ρ 12
	d Phase): <u>(</u>	Ct-Clermor :Typic Glo	nt Silt Los	. LISIC ODSO	
Profile Des Depthisinchest	scription:	Matrix Color [Munsell Moist] ZXYS/2 25Y6/2	Mottie Colors IMunsell Moistl VOYRH/4 LOYRSIG	Mottle Abundance/Contrast FEW/FAINT I=GW/FAINT	Texture, Concretions, Structure, etc. SILT LUTTO SILT LOTTO
Hydric So	Reducing Glayed o	pipadon	ns	concretions ligh Organic Content in S Drganic Stresking in Sand Isted on Local Hydric Soil Isted on National Hydric S Other (Explain in Remarks)	is Ust Soils Ust
	HARDKI	C SOIL MS	PONTED		

Wedland Hyd	Vegetation Present? irology Present? Present?	Yos (Ho Yos (Ha Yos No	(Circle)	Is this Sampling Point Within a Wedend?	(Circle)
Remarks:					
	UPLAMO PLOT	MM	MYDRIC	Solls	
•	•				
		·		Approved by HQUS	ACE 3/92

WTI. 1995

Project/Site: Hillcrest - East upoD Applicant/Owner: Cinergy Investigator: Steve Lane (URS)		Date: 9/24 County: Byo State: 0	
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situals the area a potential Problem Area? (If needed, explain on reverse.)	tion)? Yes (10) Yes (10)	Community ID: Transect ID: Plot ID:	HEM WISANTS
/FGETATION		•	
Dominant Plant Soccies 1. AMALARIS ARUNONNACEA Y FACUT 2. DUNCUS EFFUNC H FACUT 3. CARREX SPR Y FAC-OBL 4. 5. 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks:	10. 11. 12. 13. 14. 15. 16.		
AYDROLOGY Recorded Data (Describe in Remerks): Stream, Lake, or Tide Gauge Aerial Photographs Other No Recorded Data Available Field Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: 6 (in.)	Water Mar Drift Unes Sediment Dreinage F Secondary Indicators Water-Stal FAC-Neutr	in Upper 12 inches ks Deposits Patterns in Wetlends I (2 or more required) oot Chennels in Uppe ned Leaves Survey Date	: r 12 Inches
Romarks: WETLAND HUMBRULOGY		- Transcott Harman parameter or a consider to a	

OILS	• • • • • • • • • • • • • • • • • • •		:	MISAAB
(Series and Phase):	C- Typic oc	t Silt LOAI	· Field Observ	
Profile Description: Depth N (inches) · Horizon (N	latrix Color N	Mortio Colors (Munsell Moist) IDYICH 15 IDYICH 16	Mottle Abundance/Confrest CM/DISTINCT FEW/DISTINCT	Texture, Concretions, Structure, etc. SILTY CLAY LUMM SILT LOMMA
Reducing Co	r ura Regimo	— Hig — On — XiUs — X Us	ncretions In Organic Content in Su ganic Streaking in Sendy ted on Local Hydric Soils ted on National Hydric Sc her (Explain in Remerks)	Ust BCQC+
Romarks: HYDR1C	SOIL AS M	APPEN		

Remarks: WETLAND IN DRAINAGE CROSSING ROMA				
		drfinage c	crossing roma	•

WTI, 1995

Project/Site: Hillcrest - Eastwood Applicant/Owder: Cinergy Investigator: Steve Lane (URS)	County: Brawn State: OH
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situal Is the area a potential Problem Area? (If needed, explain on reverse.)	res (No Plot ID:
/EGETATION	
Dominant Plant Species Stratum Indicator 1. GLYCLNE MAY IN N1 2. 3. 4. 5. 6. 7. 8. Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks:	Dominant Plant Species Stratum Indicator 9.
YDROLOGY	T
Recorded Data (Describa in Remarks); Stream, Lake, or Tide Gaugs Aerial Photographs Other No Recorded Data Available	Wetland Hydrology Indicators: Primery Indicators: InundatedSaturated in Upper 12 InchesWater MarksDrift UnesSediment Deposits
Peld Observations: Depth of Surface Water: Depth to Free Water in Pit: Depth to Saturated Soil: The pin is a part of the pin is a	Drainage Patterns in Wetlands Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves & Local Soil Survey Data FAC-Neutral Test Other (Explain in Remarks)
Romerks:	

SOILS		UP 13
(Series and Phase): C+ - Clerm	Ochraqualfs Field	BC- POOR nage Class: <u>Lt - POOR</u> 1 Observations nffrm Mapped Type? (Fe) No
Profile Description: Depth Matrix Color (inches) Horizon (Munsell Moist	Mottle Colors Mottle (Munsell Moist) Abundance/Con	Texture, Concretions, Mest Structure, etc.
0-18 A/B 2.5Y4/2	104RS/S FEW/DIST	NOT SILT LOAM
Hydric Soil Indicators: Histosol Histoc Epipadon Sulfidic Odor Aquic Moisture Regime Reducing Conditions Gleyed or Low-Chroma C	Organic Streeking in Usted on Local Hyde Usted on National H	ric Soils List BC&CE lydric Soils List Bc&CE
Remarks:	ped hydric soil	

lydric Soils Present?	Yes 160 . Yes No	Is this Sampling Point Within a Wetlend?	No
lomarke:			
LALAND PLO	T WITH HYDR	K SOLS	

WTI, 1995

APPENDIX 07-3

OHIO EPA OHIO RAPID ASSESSMENT METHOD (ORAM) FOR WETLANDS V5.0 FORMS

Site:	WI		Rater(s):	GRLLUR	5)	Date: 09/28/04
}	M	etric 1. Wetland Ar	ea (size).			•
max 6 pts.	subtotal Sel	ect one size class and assign score				
		>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20				
	1	10 to <25 acres (4 to <10.1h 3 to <10 acres (1.2 to <4ha)			i	
	•	0.3 to <3 acres (0.12 to <1.2 X 0.1 to <0.3 acres (0.04 to <0				
		<0.1 acres (0.04ha) (0 pts)				
6	7 M	etric 2. Upland bul	fers and	surroundin	g land use.	,
max 14 pts.	subtotal 2a.	Calculate average buffer width. S				
	1	MEDIUM. Buffers average	25m to <50m (82	to <164ft) around w	tland perimeter (4)	
	,	NARROW, Buffers average VERY NARROW, Buffers a				
	2b.	Inlensity of surrounding land use. VERY LOW. 2nd growth or				
	5	oX LOW. Old field (>10 years),	shrubland, youn	g second growth for	rst (5)	laurente (2)
		MODERATELY HIGH. Res				low neid. (3)
14	21 M	letric 3. Hydrology.			•	
max 30 pts.		. Sources of Water. Score all that		3b. C	onnectivity. Score al	
		High pH groundwater (5) Other groundwater (3)		0	100 year floodol Between stream	ain (1) /lake and other human use (1
	6	× Precipitation (1)	o untre 731		Part of welland/	ipland (e.g. forest), complex
,		Seasonal/Intermittent surface Perennial surface water (lake	e or stream) (5)		uration Inundation/sa	r upland corridor (1) turation. Score one or dbi ct
	3c	. Maximum water depth. Select on >0.7 (27.6in) (3)	ly one and assign			nently inundated/saturated (4 ated/saturated (3)
	ţ	0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1)	(2)	4	Seasonally inun	
	3e	. Modifications to natural hydrologic				
	0	None or none apparent (12) Recovered (7)	Check all distu	rbances observed	point source (no	nstormwater)
	3	Recovering (3) Recent or no recovery (1)	tile dike	1	filling/grading road bed/RR tra	
		Lyersur or to recovery (1)	weir		dredging	
	,		stormwat	er input [Mother Laur	الصححة
14	25 IN	Metric 4. Habitat Al	teration a	nd Develo	ment.	
max 20 pts:	subtolal 4a	. Substrate disturbance. Score on	e or double check	and average.	•	
	1	None or none apparent (4) Recovered (3)		•		
	4	Recovering (2) Recent or no recovery (1)			•	
	4t	. Habitat development. Select only	y one and assign	score.		
		Excellent (7) Very good (6)			•	
	1	Good (5) Moderately good (4)		:		
	l	Fair (3)				
		Poor to fair (2) Poor (1)				
	: 40	. Habitat alteration. Score one or				 -
	1	None or none apparent (9) Recovered (6)	mowing	irbances observed	K shrub/sapling re	moval
	•	Recovering (3) X Recent or no recovery (1)	grazing clearcutti	no.	herbaceous/aqu sedimentation	ratic bed removal
		TEXTURESCIENCE IN INCOME! (1)	selective	cutling	dredging LIK	EN
	1~~!					
	25	•	toxic poli	ebds removal utants	larming nutrient enrichm	nent I

fast revised 1 February 2001 jim ORAM v. 5.0 Field Form Quantitative Rating

1

Site: W	Rater	(s): SRL	(UPS)	Date: 09/28/04
25]		,	
aubiotal first p	1			•
	ĭ			
0 25	Metric 5. Special Wetlar	ıds.		
max 10 pts. subtotat	Check all that apply and score as indicated.		•	
	Bog (10)			
	Fen (10) Old growth forest (10)			
	Malure forested wetland (5)			
	Lake Erie coastal/tributary wetland-	•	-, . ,	
	Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Oper	•	ogy (5)	
	Relict Wet Prairies (10)	907 (107		
•	Known occurrence state/federal thro			
	Significant migratory songbird/water Category 1 Wetland. See Question			
	Category 1 Wettake. Sae Coestical	.) Challeniae Li	and (-10)	* :
-2 23	Metric 6. Plant commun	ities, inte	erspersion, microte	nogranhy
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	sho@iahiiy.
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	471 acres) contiguous area
	Aquatic bed	1	Present and either comprises sm	
	Emergent Shrub		vegetation and is of moderate of significant part but is of low qua	
].	Forest	2	Present and either comprises sig	nificant part of wetland's
1	Mudflats		vegetation and is of moderate	uality or comprises a small
	Open water Other	3	part and is of high quality Present and comprises significan	t part ar more of welland's
	6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
	Select only one.			
	High (5) Moderately high(4)	Narrative De	scription of Vegetation Quality Low spp diversity and/or predom	nance of population or
	Moderate (3)	1011	disturbance tolerant native spe	
O	Moderately low (2)	mod	Native spp are dominant compon	
_	Low (1) X None (0)	•	although nonnative and/or distu can also be present, and speci-	
	6c. Coverage of invasive plants. Refer		moderately high, but generally	
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage Extensive >75% cover (-5)	high	A predominance of native specie	• •
س	Moderate 25-75% cover (-3)		and/or disturbance tolerant nati absent, and high spp diversity:	
-5	Sparse 5-25% cover (-1)		the presence of rare, threatene	
	Nearly absent <5% cover (0)	thurs on a	Once Water Olean Occultur	
	Absent (1) 6d. Microtopography,	O C	Open Water Class Quality [Absent <0.1ha (0.247 acres)	•
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	•
_	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	•
2	Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	High 4ha (9.88 acres) or more	•
	Standing dead >25cm (10in) dbh 2 Amphiblan breeding pools	Microtopog	raphy Cover Scale	
•		0	Absent	
		1	Present very small amounts or if of marginal quality	more common
		2	Present in moderate amounts, but	t not of highest
			quality or in small amounts of h	ighest quality
		3	Present in moderate or greater a and of highest quality	nounts

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wellend categories at the following address: http://www.epa.state.oh.uraidsw/461401.htm last revised 1 February 2001 jim

Site:	W2			Rate	r(s): 1	splcur?	<u>s)</u>		Date:	091	<u> </u>
		1									
3	3	Me	etric 1. Wetla	nd Area (size).						
mex 6 pls.	eriptotat		ct one size class and as	sign score.	'						
			>50 acres (>20.2h 25 to <50 acres (1		5 bis)					•	
	2		10 to <25 acres (4	to <10.1ha) (4 p	ls)						
	5		0.3 to <10 acres (1.3 0.3 to <3 acres (0.					. *			
			0.1 to <0.3 acres (0.04 to <0.12ha)							
		۱ ۱	<0.1 acres (0.04ha	i) (0 pts)							
15	8	Me	etric 2. Uplar	d buffers	and s	surround	ina	land use.			
mux 14 pts.	sublotel		Calculate everage buffe				_				
			WIDE. Buffers av MEDIUM. Buffers								
•	}		NARROW. Buffer	s average 10m 1	lo <25m (3	2ft to <82ft) arou	nd well	and perimeter (1)	1		
		24	VERY NARROW. Intensity of surrounding								
		20,	VERY LOW. 2nd	growth or older fo	orest, prairi	e, savannah, wik	dlife ar	ea, eto. (7)			
	4		∠ LOW. Old field (> ✓ MODERATELY H						ow field. (3)		
		٠.	HIGH. Urban, Ind								
13	21	Me	etric 3. Hydro	ology.				•			
mex 30 pts.	subtolal		Sources of Water. Sco			, 3b.	Conn	ectivity. Score all	that apply.		
			High pH groundwa	ster (5)				100 year floodpla	in (1)		
	ι	1	Other groundwate Precipitation (1)	r (3)		Z		Between stream/ Part of watland/u	ipland (e.g. f	oresi),	comple
		•	Seasonal/Intermit			3.d		Part of riparian or lon inundation/sat	rupland con	ridor (1) ordbi
		30				tooro ou.	20101	Semi- to perman			
		30.	Maximum water depth.	Delect of the party	and azzığı	3001E. 1					
	}	30.	>0.7 (27.6in) (3)	•	and azziğu	score.		Regularly inunda	ited/saturate		
	}		>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (to 27.6(n) (2)				Regularly inunda Seasonally inund Seasonally salur	ited/saturate Jated (2)	d (3)	
			>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (Modifications to natural	to 27.6(n) (2) i) hydrologic regim	e. Score c	ne or double che	ck and	Regularly inunda Seasonally inund Seasonally salur	ited/saturate Jated (2)	d (3)	
			>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (Modifications to natural None or none app Recovered (7)	to 27.6(n) (2) i) hydrologic regim	e. Score o ck ell distu dilch		ck and	Regularly inunda Seasonally inund Seasonally satur average.	ited/saturate Jated (2) rated in uppe	id (3) er 30cm	
	1	3 <u>e</u> .	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (: Modifications or natural X Recovered (7) X Recovering (3)	to 27.6in) (2) i) hydrologic regimerent (12)	e. Score c	ne or double che	ck and	Regularly inunda Seasonally inund Seasonally salur l average.	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
		3 <u>e</u> .	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (Modifications to natural None or none app Recovered (7)	to 27.6in) (2) i) hydrologic regimerent (12)	e. Score o ck all distu dilch tile dike weir	ne or double che rbances observe	d	Regularly inunda Seasonally inund Seasonally saluri average. point source (nor filling/grading road bed/RR trac dredging	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	}	3 <u>e</u> .	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (: Modifications or natural X Recovered (7) X Recovering (3)	to 27.6in) (2) i) hydrologic regimerent (12)	e. Score o ck all distu dich tile dike	ne or double che rbances observe	d	Regularly inunda Seasonally inund Seasonally salur average. point source (nor filling/grading road bed/RR trac	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
8.5	29,5	3e.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (Modifications to natural None or none app X Recovered (7) X Recovering (3) Recent or no reco	to 27.6in) (2) i) hydrologic regim earent (12) Eavery (1)	e. Score o ck all distu- ditch tite dike weir stormwate	ne or double che trances observed at Input	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trad dredging other	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
8.5 mex 20 ptu	29,5	39.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 O.4m (-15.7in) (Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovering (3) Return of the covering (3) Return of the covering (4) Return of the covering (4) Return of the covering (5) Return of the covering (6) Return of the covering (6) Return of the covering (6) Return of the covering (7) Return of	to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do	ie. Score c ck all distu ditch the dike weir stormwate	ne or double che trances observe er input	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trad dredging other	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bublista	3e.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4m (<15.7in) (Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovering (3)	to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do	ie. Score c ck all distu ditch the dike weir stormwate	ne or double che trances observe er input	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trad dredging other	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bublista	39.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <a hre<="" td=""><td>to 27.6in) (2) i) hydrologic regimerent (12) werent (12) tat Altera Score one or do varent (4)</td><td>ie. Score c ck all distu ditch the dike weir stormwate</td><td>ne or double che trances observe er input</td><td>d K</td><td>Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other</td><td>nted/saturate lated (2) lated in upper nstormwater</td><td>id (3) er 30cm</td><td></td>	to 27.6in) (2) i) hydrologic regimerent (12) werent (12) tat Altera Score one or do varent (4)	ie. Score c ck all distu ditch the dike weir stormwate	ne or double che trances observe er input	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bublista	3e. 5 M 4a.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4 m (<15.7in) (Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovering (3) None or none app Recovered (3) Recovered (3) Recovered (3) Recent or no recovered (3) Recent or no recovering (2) Recent or no recovering (2)	to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1)	ne. Score of ck all distuditch the dike welf stormwate tion a uble check	ne or double che rbances observed er Input nd Devel and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	nted/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bublista	3e. 5 M 4a.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <.4.0.4m (<15.7in) to 0.7m (15.7 .4.0.4m (<15.7in) to 0.7m (15.7 .4.0.4m (<15.7in) to 0.7m (<1	to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1)	ne. Score of ck all distuditch the dike welf stormwate tion a uble check	ne or double che rbances observed er Input nd Devel and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubbota 2	3e. 5 MA 4a. 5	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <a hre<="" td=""><td>to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1)</td><td>ne. Score of ck all distuditch the dike welf stormwate tion a uble check</td><td>ne or double che rbances observed er Input nd Devel and average.</td><td>d K</td><td>Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other</td><td>ated/saturate lated (2) lated in upper nstormwater</td><td>id (3) er 30cm</td><td></td>	to 27.6in) (2) i) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1)	ne. Score of ck all distuditch the dike welf stormwate tion a uble check	ne or double che rbances observed er Input nd Devel and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubbota 2	3e. 5 M 4a.	>0.7 (27.6in) (3) .4 to 0.7m (15.7 .4 0.4m (<15.7h); Modifications to natural None or none app Recovered (7) Recording (3) Recent or no reco etric 4. Habi Substrate disturbance. None or none app Recovered (3) Recovered (3) Recovered (3) Recovered (3) Recovered (6) Good (5) Moderately good	to 27.6in) (2) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1) Select only one a	ne. Score of ck all distuditch the dike welf stormwate tion a uble check	ne or double che rbances observed er Input nd Devel and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubbota 2	3e. 5 MA 4a. 5	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4 m (<15.7in) (Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovered (3) Substrate disturbence. None or none app Recovering (2) Recovering (2) Recovering (2) Recent or no recovering (2) Recent or no recovering (2) Recent or no recovering (2) Recovering (2) Recovering (2) Recent or no recovering (2) Recent or no recovering (2) Recent or no recovering (2) Recovering (2) Recent or no recovering (2) Recovering (2) 	to 27.6in) (2) hydrologic regimerent (12) wery (1) tat Altera Score one or do arent (4) every (1) Select only one a	ne. Score of ck all distuditch the dike welf stormwate tion a uble check	ne or double che rbances observed er Input nd Devel and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubbota 2	3e. M 4a. 5	>0.7 (27.6in) (3) .4 to 0.7m (15.7 .4 0.4m (<15.7h); Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovered (3) Recovering (2) Recovered (3) Recovered (3) Recovered (5) Recovered (6) Recovered (7) Very good (6) Good (5) Moderately good Fair (3) Poor (1)	to 27.6in) (2) hydrologic regimerent (12) that Altera Score one or do arent (4) elect only one a	e. Score of the disturble of the diske weir stormwate tion at the check and assigns	er input nd Develor and average.	d K	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubutai 2	3e. M 4a. 5 4b.	>0.7 (27.6in) (3) >0.4 to 0.7m (15.7 <0.4m (<15.7h); Modifications to natural None or none app Recovered (7) Recovering (3) Recent or no recovered (3) Recovering (3) Recovering (2) Recovering (2) Recovering (2) Recovering (2) Recovering (3) Recovering (2) Recovering (2) Recovering (3) Recovering (2) Recovering (3) Recovering (2) Recovering (3) Recovering (2) Recovering (2) Recovering (2) Recovering (2) Poor to rone condition (7) Very good (6) Good (5) Moderately good Fair (3) Poor to fair (2) Poor (1) Habitat atteration. Sco	to 27.6in) (2) hydrologic regimerent (12) that Altera Score one or do arent (4) select only one a	e. Score of the control of the check and check	er input nd Develor and average.	opn	Regularly inunda Seasonally inund Seasonally salur seerage point source (nor filling/grading road bed/RR trac dredging other	ated/saturate lated (2) lated in upper nstormwater	id (3) er 30cm	
	29,5 Bubutai 2	3e. M 4a. 5 4b.	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <.0.4m (<15.7in) (16.7 .0.4m (to 27.6in) (2) hydrologic regimerent (12) that Altera Score one or do arent (4) select only one a	e. Score cock all distribution of the distribu	one or double che rbances observed or input Ind Develo and average. score.	opn	Regularly inunda Seasonally in	nted/saturate dated (2) ated in uppe nstormwater)	
	29,5 Bubbota 2	3e. M 4a. 5 4b.	>0.7 (27.6in) (3) .4 to 0.7m (15.7 <.4.0.4m (<15.7in) (1) Modifications to natural None or none app Recovered (7) Recent or no rece etric 4. Habi Substrate disturbance. None or none app Recovered (3) Recovered (3) Recovered (3) Recovered (3) Recovered (5) Recovered (6) Good (5) Good (5) Moderately good Fair (3) Poor to fair (2) Poor (1) Habitat atteration. Sco	to 27.6in) (2) i) hydrologic regimerent (12) che wery (1) tat Altera Score one or do arent (4) wery (1) select only one a (4) re one or double parent (9)	e. Score cock all distudicts distudicts well distudicts well stormwate tion at the check and assign scheck and distudict all distudicts and distudicts and distudicts all distudicts and d	ne or double che rbances observe er input nd Devel and average. score. average.	opn	Regularly Inunda Seasonally In	nted/saturate dated (2) ated in uppe nstormwater)	
	29,5 Bubbital 2	3e. 5 M. 4e. 5 4b. 3	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4 to 0.7m (15.7) (16.7m) (1	to 27.6in) (2) i) hydrologic regimerent (12) che wery (1) tat Altera Score one or do arent (4) wery (1) select only one a (4) re one or double parent (9)	check and assign street	and average. Average, Thances observe	opn	Regularly inunda Seasonally in	nted/saturate dated (2) ated in uppe nstormwater)	
	29,5 Bubutai 2	3e. 5 M. 4e. 5 4b. 3	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 <0.4 to 0.7m (15.7) (16.7m) (1	to 27.6in) (2) i) hydrologic regimerent (12) che wery (1) tat Altera Score one or do arent (4) wery (1) select only one a (4) re one or double parent (9)	check and assign street	er input and Develor and average. score. average, rbances observe	opn	Regularly inunda Seasonally inunda Seasonally inund Seasonally saluri average. point source (nor filling/grading road bed/RR trackredging other. shrub/sapling rei herbaceous/equi sedimentation	nted/saturate dated (2) , ated in upper nstormwater Re)	

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Site:	MS		Rater(s): 51	reve linue (urs)	Date: 09/28/0-
	29.5				
	biotal first pa	·			•
0_	21.5	Metric 5. Special \	Vetlands.		
max 10 pts.	sublotal	Check all that apply and score as in	ndicated.		
		Bog (10) Fen (10)			
		Old growth forest (10)			•
		Mature forested welland Lake Erie coastal/tributa		t hydrolomi (10)	
		Lake Erie coastal/tributa			
		Lake Plain Sand Prairies			
		Relict Wet Prairies (10)	Kadaral throatanad ar :	endangered species (10)	
		Significant migratory son			
		Calegory 1 Wetland. Se	e Question 1 Qualitati	ve Rating (-10)	
Z	34.5	No. 1	141		
. 10	<u>L</u>	Metric 6. Plant co		•	otopograpny.
mex 20 pts.	eubtotel	6a. Wetland Vegetation Communi Score all present using 0 to 3 scale		Ion Community Cover Scale Absent or comprises <0 the	(0.2471 acres) contiguous area
<u>5</u>		Aquatic bed	· 1	Present and either comprise	s small part of welland's
* ·	\wedge	Emergent			rate quality, or comprises a
#	- 3	Shrub Torest		significant part but is of lo	w quality as significant part of wetland's
",	_	Muditats .	4		rate quality or comprises a small
		Open water		part and is of high quality	
		6b. horizontal (plan view) interspe	3	Present and comprises sign vegetation and is of high of	ificent part, or more, of wetland's
		Select only one.	(SIO).	1 400 organica marchina da trigia d	vosty
% .		High (5)		ve Description of Vegetation Qua	
	7.	Moderately high(4) Moderate (3)	lov	 Low spp diversity and/or pre- disturbance tolerant native 	
	1	Moderately low (2)	mo		
		Low (1)			disturbance tolerant native spp
2		None (0) 6c. Coverage of Invasive plants.	Dafar	can also be present, and a moderately high, but gene	species diversity moderate to
		to Table 1 ORAM long form for its		threatened or endangered	• •
•		or deduct points for coverage	hlg		
(C & C (m) \((0) \)		Extensive >75% cover (Moderate 25-75% cover	•	•	it native spp absent or virtually rsity and often, but not always.
een chunry	-1	Sparse 5-25% cover (-1	, .	• • • • • • • • • • • • • • • • • • • •	atened, or endangered spp
irliss and	,	Nearly absent <5% cov			
ARROW LEAF		Absent (1)	<u>Mudfla</u> 0	t and Open Water Class Quality Absent <0.1ha (0.247 acre	
CATTAIL		6d. Microtopography. Score all present using 0 to 3 sca	***************************************		
		Vegetated hummucks/t	ussucks 2	Moderale 1 to <4ha (2.47 t	0
	1	Coarse woody debris >		High 4ha (9.88 acres) or mo	ore
	•	Standing dead >25cm (Amphibian breeding po		opography Cover Scale	er un
-		Cambinition meeting by	0	Absent	
å			. 1		or if more common
ii fi				of marginal quality	te hid not of blakest
(2		
.•	•		3	Present in moderate or gre	
But	7			and of highest quality	
) 945	GRA	ND TOTAL (max 100 pt		Present in moderate amount quality or in small amount Present in moderate or great	s of highest quality

Refer to the most recent ORAM Score Calibration Report for the scoring breatpoints between wedend categories at the following address: http://www.epustata.ok.us/daw/481/401.html
last revised 1 February 2001 jim

	<u> NSA, B</u>	,C,AD	Rater(s):	seccues	<u>) </u>	Date: 09/28/04
२	3 Mc	stric 1 Wotland	l Aron (pizo)			
max 6 pts.	_	etric 1. Wetland ct one size class and assign		•		
	00.0	>50 acres (>20.2ha) (6	pls)			
	-	25 to <50 acres (10,1 t 10 to <25 acres (4 to <				
	3	3 to <10 acres (1.2 to 0.3 to <3 acres (0.12 to			. •	
	}	0.1 to <0.3 acres (0.04	to <0.12ha) (1 pt)			
	<u> </u>	<0.1 acres (0,04ha) (0	pts)			
		etric 2. Upland			•	
max 14 pts.	subtotal 2g. (Calculate average buffer wid WIDE. Buffers average	ith. Select only one a e 50m (164ft) or more	nd assign score. Do around wellend per	nol double check. meter (7)	
••	\cap	MEDIUM. Buffers ave	rage 25m to <50m (82	to <164ft) around w	etland perimeter (4)	
		NARROW. Buffers av VERY NARROW. Buf	fers average <10m (<	32ft) around wetland	perimeter (0)	
	26. 1	Intensity of surrounding land VERY LOW. 2nd grov				
	1	LOW. Old field (>10 y MODERATELY HIGH.	ears), shrubland, you	ng second growth for	est. (5)	ow field (3)
		HIGH. Urban, industri	al, open pasture, row	cropping, mining, co	struction (1) AG	FIELD & RAILH
10	14 ME	etric 3. Hydrolo	av.	•	•	* *
max 30 pts.		Sources of Water. Score all	that apply.	, 3b. Ç	onnectivity. Score at	
		High pH groundwater (Other groundwater (3)			100 year floodpl: Between stream	ain (1) Take and other human use (1
	4	Precipitation (1) Seasonal/intermittent			Part of wetland/u	pland (e.g. forest), complex (r upland corridor (1)
	_'	Perennial surface water	er (lake or stream) (5)	3d. C	uration inundation/sa	uration. Score one or dbl ch
•	3c.	Maximum water depth. Sele >0.7 (27.6in) (3)	ect only one and assig	n score.	Semi- to perman Regularly inunda	ently inundated/saturated (4) led/saturated (3)
•	1	0.4 to 0.7m (15.7 to 27 <0.4m (<15.7in) (1)	r.6in) (2)	∠	Seasonally inund	lated (2) aled in upper 30cm (12in) (1
	3e.	Modifications to natural hydr	-		and average.	
	2	None or none apparent	it (12) Check all dist	urbances observed	point source (no	ıstomwater)
-	<u>ر</u>	Recovering (3) Recent or no recovery	(1) tile		filling/grading road bed/RR trad	sir.
			weir	lau laurd	dredging	~
1			stormwa	rer input	other	
171	21 M	etric 4. Habitat	Alteration a	ind Develo	ment.	•
max 20 pts:	subtotal 4a.	Substrate disturbance. Sco		k and average.		
	7	None or none apparent Recovered (3)	IC (4)	•		
	×	Recovering (2) Recent or no recovery	m		•	
	4b.	Habitat development, Selection (7)	t only one and assign	score.	•	
		Very good (6)		٠		
	$\overline{}$	Good (5) Moderately good (4)				• •
	\mathcal{A}	Good (5) Moderately good (4) Fair (3)			•	· •
	2	Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	o oudushla kaabaa		· .	
	Ac.	Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score on				
	کر 4c. ۱	Good (5) Moderately good (4) Fair (3) Poor lo fair (2) Poor (1) Habitat alteration. Scare on None or none apparer Recovered (6)	nt (9) Check all dist	urbances observed	shrub/sapling re	
	2 4c.	Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score on None or none apparen	t (9) Check all dist mowing grazing (1) clearcut	urbances observed ing	herbaceous/aqui sedimentation	
Ĭ	3	Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score on Recovered (6) Recovering (3)	Check all dist mowing grazing clearcut selective	urbances observed ing	herbaceous/aqu	atic bed removal

ORAM v. 5.0 Field Form Quantitative Rating

Site: U3A B. C. & D Rater	(s): SR	L (URS)	Date: 9/28/04
ا ا		,	
sublotal first page			•
0 21 4 4 5 5 4 4 4 4 4	ě		
Metric 5. Special Wetlar	ids.		
max 10 pts. subtois! Check all that apply and score as indicated.			
8og (10) Fen (10)			
Old growth forest (10)			
Mature forested wetland (5)			
Lake Erie coastal/tributary wetland-			A Committee of
Lake Erle coastal/tributary wetland- Lake Plain Sand Prairies (Oak Ope	•	logy (5)	
Relict Wet Prairies (10)	imiga) (iv)		
Known occurrence state/federal thro	eatened or enda	angered species (10)	
Significant migratory songbird/water		* ' '	
Category 1 Wetland. See Question	1 Qualitative F	lating (-10)	٠ .
1-1 70 Martin O. Plant			
- 1 20 Metric 6. Plant commun		•	crotopograpny.
max 20 pts. subtotal 6a. Welland Vegetation Communities.		Community Cover Scale	C- M 0/11
Score all present using 0 to 3 scale. Aquatic bed	- 0		Tha (0.2471 acres) contiguous area ises small part of wetland's
[Emergent	•		derate quality, or comprises a
Shrub		significant part but is of	
Forest	2		ises significant part of wetland's
Mudflats . Open water		part and is of high qual	detale quality or comprises a sma
Other	3		ignificant part, or more, of wettand
6b. horizontal (plan view) Interspersion.		vegetation and is of hig	
Select only one.			
High (5) Moderately high(4)	Narrative D	escription of Vegetation C	tuality predominance of nonnative or
Moderate (3)	1011	disturbance tolerant na	-
Moderately low (2)	mod		component of the vegetation,
Low (1)	•		Vor disturbance tolerant native spo
Mone (0) 6c. Coverage of invasive plants. Refer			of species diversity moderate to enerally w/o presence of rare
to Table 1 ORAM long form for list, Add		threatened or endange	
or deduct points for coverage	high	A predominance of native	species, with nonnative spp
Extensive >75% cover (-5) Extensive >75% cover (-5) Moderate 25-75% cover (-3)			rant native spp absent or virtually
Sparse 5-25% cover (-3) Sparse 5-25% cover (-1)			iversity and often, but not always, reatened, or endangered spp
Nearly absent <6% cover (0)		1 are presented of fale, a	reateries, or citalingered opp
Absent (1)	Mudflat an	d Open Water Class Quali	<u>y</u>
6d. Microtopography.	0	Absent <0.1ha (0.247 ac	
Score all present using 0 to 3 scale. Vegelated hummucks/tussucks	1 2	Low 0.1 to <1ha (0.247 to Moderate 1 to <4ha (2.4	
Coarse woody debris >15cm (6in)	- 3	High 4ha (9.88 acres) or	
Standing dead >25cm (10in) dbh			
Amphibian breeding pools		raphy Cover Scale	
	0	Absent	
	. 1	Present very small amou of marginal quality	INS OF IT MOTO CUMMON
	2		ounts, but not of highest
			· · · · · · · · · · · · · · · · · · ·
		quality or in small amo	unts of highest quality
<u></u>	3		

Refor to the most recent ORAM Score Calibration Report for the scoring breakpoints between wellend categories at the following address: http://www.epu.state.ch.usidswi401/401.html fast revised 1 February 2001 jjm

Site:	WHA	390	Rater(s): SRL(urs)	Date: 9/78/	14
2	2 M	etric 1. Wetland	l Area (size).			
пах б різ.		ect one size class and assign >50 acres (>20.2ha) (6 25 to <50 acres (10.1) 10 to <55 acres (4 to < 3 to <10 acres (0.12 to 0.3 to <3 acres (0.12 to 0.1 to <0.3 acres (0.04ha) (0.1 acres (0.04ha) (0.1 acres (0.04ha) (0.1	score. ipts) o <20.2ha) [5 pts) 10.1ha) (4 pts) <4ha) (3 pts) > <1.2ha) (2pts) to <0.12ha) (1 pt)			
4	6 M	etric 2. Upland	buffers and surrou	nding land i	use.	
nax 14 pls.	subtotal 2a.	Calculate average buffer wic WIDE. Buffers average MEDIUM. Buffers ave MARROW. Buffers ave VERY NARROW. Buf Intensity of surrounding land VERY LOW. 2nd grow LOW. Old Reld (>10 y MODERATELY HIGH.	ith. Select only one and assign soc e 50m (164ft) or more around wells rage 25m to <50m (82 to <164ft) as terage 10m to <25m (32ft to <62ft) fers average <10m (<32ft) around to luse. Select one or double check th or older forest, prairie, savannal ears), shrubland, young second gro Residential, fenced pasture, park, al, open pasture, row cropping, min	ore. Do not double che and perimeter (7) cound wetland perimet around wetland perimeter (0) and average. n, wildlife area, etc. (7) with forest. (5) conservation tillage, r	er (4) er (1)	
11	17 M	etric 3. Hydrolo	gy.	•		. •
прх 30 pts.	4 3c.	Sources of Water. Score al High pH groundwater () Other groundwater () Precipitation (1) Seasonal/intermittent: Perennial surface water Maximum water depth. Selessing 15.0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.5] 0.4 m (<15.7in) (1) Modifications to natural hydrogeness of the purpose of the precipitation of the precipitation of the purpose of the p	5) surface water (3) or (take or stream) (5) cct only one and essign score.	Between Part of we Part of rip 3d. Duration inunda Semi- to r Regularly Seasonal Seasonal	floodplain (1) stream/lake and other human is stream/lake and other human is stream or upland corridor (1) tion/saturation. Score one or o permanently inundated/saturationundated/saturati	iplex (1) fbl check. ed (4)
	3	None or none apparer Recovered (7) Recovering (3) Recent or no recovery	t (12) Check all disturbances obs ditch tite dike weir stormwater input			.•
10	27 N	letric 4. Habitat	Alteration and Dev	elopment.		
nex 20 pts:	2. 5	Substrate disturbance. Sco None or none apparer Recovered (3) Recovering (2) Recent or no recovery Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4)	re one or double check and averag t (4)	•		
	· 4c	Poor to fair (2) Poor (1)	e or double check and average.		,	
	40.			erved		
	4.5	None or none appared Recovered (6) Recovering (3) Recent or no recovery	mowing grazing	shrub/sap herbaceo sedimenta oc dredging farming	iling removal us/aquatic bed removal ation [] PLACES informan	,

ORAM v. 5.0 Field Form Quantitative Rating

Site: W4 A	B & C Rater	(s): SR	L (URS)	Date: 9/28/04
27				
subtotal first	Ĩ	nde		
	Metric 5. Special Wetlar	ius.	•	
max 10 pts. subtotal	Check all that apply and score as indicated. Bog (10)			
	Fen (10)			
	Old growth forest (10)			
	Mature forested welland (5)			
	Lake Erie coestal/tributary wetland-	unrestricted hyd	irology (10)	
•	Lake Erie coestal/tributary welland-	-	logy (5)	•
•	Lake Plain Sand Prairies (Oak Ope	nings) (10)		
	Relict Wet Prairies (10) Known occurrence state/federal thr	notored or and	angoind espains (10)	4
	Significant migratory songbird/wate			
	Category 1 Welland. See Question			
	7			* ;
5 32	Metric 6. Plant commun	ities int	erenergion micr	otonographi
	المترو		•	otopograpity.
max 20 pts. subtotal	6a. Welland Vegetation Communities. Score all present using 0 to 3 scale.	Vedetation	Community Cover Scale	(0.2471 acres) contiguous area
<u></u>	Aquatic bed	1	Present and either comprise	
v.	1 Emergent	-	vegetation and is of moder	
ķ.	Shrub		significant part but is of lov	
4	Forest W ^{4C}	2	Present and either comprise	s significant part of wetland's
	Mudflats .			ate quality or comprises a small
	Open water		part and is of high quality	
	6b. horizontal (plan view) Interspersion.	3	vegetation and is of high q	ficant part, or more, of welland's
	Select only one.		1 regulation and to an indire	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
$\mathfrak{L}_{\mathbb{R}_+}$	High (5)	Narrative D	escription of Vegetation Qua	lity
	Moderately high(4)	low	Low spp diversity and/or pre-	
	Moderate (3)		disturbance tolerant native	
	Moderately low (2) Low (1)	mod	Native spp are dominant con	nponent of the vegetation, disturbance tolerant native spp
	None (0)			pecies diversity moderate to
•	6c. Coverage of invasive plants. Refer		moderately high, but gener	
	to Table 1 ORAM long form for list. Add		threatened or endangered	
	or deduct points for coverage	high	A predominance of native sp	
	Extensive >75% cover (-5)		4	native spp absent or virtually
on convey color	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	-	the presence of rare, threa	sity and often, but not always,
FO CHUNRY GRASS	Nearly absent <5% cover (0)		are breserve or tote, mass	terieu, or endangeled Spp
•	Absent (1)	Mudflat an	d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.	47
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	
:	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or mo	re
-	Standing dead >25cm (10in) dbh	Migantar	nembu Cayor Casta	
	Amphiblan breeding pools	Microtopo	Absent	
2		- 1	Present very small amounts	or if more common
e di		,	of marginal quality	er er mand administrati
3		2	Present in moderate amount	s, but not of highest
			quality or in small amounts	•
		3	Present in moderate or great	ter amounts
			and of highest quality	
I ≺ ⊃ IGRA	(ND TOTAL (max 100 pts)			

Refer to the most recent CRAM Score Calbration Report for the scoring breakpoints between welland categories at the following address: http://www.eps.state.oh.us/dsw401/401.html
last revised 1 February 2001 jim

	w	5		Rater(s):	spl lur	<u>s)</u>	Date:	9/28/04
2	2	Metric 1	Wetland A	Area (size).				•
rmax 6 pts.			lass and assign so:					
new yes.	soona.		res (>20.2ha) (6 pla					
			50 acres (10.1 to <					
	\supset		25 acres (4 to <10. 0 acres (1.2 to <4h					
	\sim	0.3 to	<3 acres (0.12 to <1	1.2ha) (2pts)				
			<0.3 acres (0.04 to cres (0.04ha) (0 pls					
1	7			•				
4	6	Metric 2.	Upland by	uffers and s	urroundin	g lànd use.		
max 14 pts.	sublotal			Select only one and				
.,	,			0m (164fi) or more a e 25m to <50m (82 to				
		NARR	OW. Buffers avera	ge 10m to <25m (32	ft to <82ft) around w	reliand perimeter (1)	•	
				average <10m (<32 e. Select one or do				
	_	VERY	LOW. 2nd growth	or older forest, prairie	ı, savannah, wildike	area, etc. (7)		
		く 図Low.	Old field (>10 year	s), shrubland, young	second growth fore:	st (5) Nac tillaga agustat	nt.4 (%)	
				esidential, tericed pai open pasture, row Cri		ation tillage, new fall truction, (1)	OW 1181G. (3)	•
IA	17			, ,				
10	1.6		Hydrolog	-			•	
enax 30 pts.	subtotal		Water. Score all tha H groundwater (5)	at apply.	. 35. ௸	nnectivity. Score all		
	χ	Other	groundwater (3)		· -	Between stream.	lake and oil	ner human use
	4		Itation (1)	(v=t /2)	Ç	Part of wetland/u	ipland (e.g. f	arest), complex
	•		nal/intermittent suri nial suriace water (i		3d. Du	Part of riparian or ration inundation/sat	r upland con bration. Sco	naor (1) ore one or dbl c
		3c. Maximum w	ater depth. Select	only one and essign		Semi- to perman	ently inunda	ted/saturated (
			27.6in) (3) 0.7m (15.7 to 27.6ii	n) (2)	2 H	Regularly inunda Seasonally inunda		a (3)
		<0.4m	{<15.7in} (1}		~ E	Seasonally satur		ır 30cm (1 <i>2i</i> n) (
				gic regime. Score or 2) Check all distur		nd sverage.		
	2		ered (7)	ditch	E	point source (no	nstormwater)
			anina M	III Title		filling/grading		R
	~) X Recov			T		-l-	B
	~) X Recov	t or no recovery (1)		4	road bed/RR trad	ck	
	~) X Recov		dike	rinput	road bed/RR trad	ck	
0	- Dail	Recen	it or no recovery (1)	dike weir stormwate		road bed/RR traidredging other	ck	
8	24	Metric 4.	t or no recovery (1) Habitat A	dike web stormwate	nd Develop	road bed/RR traidredging other	ck	
max 20 pts.	24 subtotal	Recor Recor Metric 4.	Habitat A	dike web stormwate	nd Develop	road bed/RR traidredging other	ck	
8 max 20 pts:		Metric 4.	Habitat A sturbance. Score (or none apparent (4) ered (3)	dike web stormwate	nd Develop	road bed/RR traidredging other	ck	
Franc 20 pts.		Metric 4. 4a. Substrate di Recov	Habitat A sturbance. Score or none apparent (4 ered (3)	dike weir stormwate stormwate or double check (s)	nd Develop	road bed/RR traidredging other	ck	
8 max 20 pts.		Metric 4. 4a. Substrate di None Recou	Habitat A sturbance. Score or none apparent (4 ering (2) t or no recovery (1)	dike weir stormwate stormwate or double check (s)	nd Develop and average.	road bed/RR traidredging other	ck	
Mex 20 pts.		Recor Recen Recen Aa. Substrate di None Recov Recov A Recor 4b. Habital devi	Habitat A isturbance. Score of pr none apparent (4 ered (3) ering (2) it or no recovery (1) elopment. Select of ent (7)	dike weir stormwate stormwate literation arone or double check	nd Develop and average.	road bed/RR traidredging other	ck	
Max 20 pts.		Metric 4. 4a. Substrate di None / Recov / Rec	Habitat A sturbance. Score of the control of the co	dike weir stormwate stormwate literation arone or double check	nd Develop and average.	road bed/RR traidredging other	ck	
Max 20 pts.		Metric 4. 4a. Substrate di Recov Reccer 4b. Habitat devi Excelt Very s Good Moder	Habitat A sturbance. Score or none apparent (4 ered (3) ering (2) t or no recovery (1) elopment. Select o ent (7) lood (5) (5) ately good (4)	dike weir stormwate stormwate literation arone or double check	nd Develop and average.	road bed/RR traidredging other	. <u> </u>	
max 20 pts.		Recover Recent Recover	Habitat A isturbance. Scene (4) ered (3) ering (2) et or no recovery (1) elopment. Select o ent (7) eod (6) (5) ately good (4))	dike weir stormwate stormwate literation arone or double check	nd Develop and average.	road bed/RR traidredging other	. <u> </u>	
max 20 pts.		Metric 4. 4a. Substrate di None Recov Recen Ab. Habital dev Excell Good Moder Poor (Poor (Habitat A sturbance. Score of prince apparent (4) ered (3) entry (2) elopment. Select of ent (7) elopment. Select of (5) (5) alely good (4)) o fair (2) 1)	dike weir stormwate stormwate or double check stormwate stormwate stormwate or double check stormwate stor	nd Develop and average. core.	road bed/RR traidredging other	. <u> </u>	
max 20 pts.		Metric 4. 4a. Substrate di None Recov Recen Ab. Habital devi Excell Yery Good Moder Poor t Poor 4 Ac. Habital atter	Habitat A sturbance. Score of prince apparent (4 ered (3) ething (2) storn recovery (1) elopment. Select of ent (7) locd (6) (5) atlety good (4)) o fair (2) 1) ation, Score one of	dike weir stormwate stormwate or double check and assign stormwate stormwate check and assign stormwate check and assign stordouble check and	nd Develop and average. core.	road bed/RR traidredging other	ck	
max 20 pts.		Metric 4. 4a. Substrate di None Recov Rec	Habitat A sturbance. Score or none apparent (4 ered (3) ering (2) st or no recovery (1) elopment. Select o ent (7) lood (5) (5) ately good (4) l) o fair (2) ration. Score one o or none apparent (5)	dike weir stormwate stormwate stormwate of double check show or double check and assign stormwate check and a sign or double check and distured to the sign of double check and double check and double check and double check and double check an	ad Develop and average. core.	road bed/RR traidredging other.		
max 20 pts.		Metric 4. 4a. Substrate di None Recov	Habitat A sturbance. Score of cor none apparent (4 ered (3) ering (2) storn to recovery (1) elopment. Select of ent (7) lood (6) (5) atety good (4)) of air (2) 1) ation. Score one of cor none apparent (6) ering (3)	dike weir stormwate stormw	ad Develop and average. core.	road bed/RR traidredging other		oval
max 20 pts.		Metric 4. 4a. Substrate di None Recov	Habitat A sturbance. Screent (4) ered (3) ering (2) et or no recovery (1) elopment. Select o ent (7) eod (6) (5) atlety good (4) e) o fair (2) 1) atlon, Score one o or none apparent (6) ered (6)	dike weir stormwate stormwate stormwate of double check and assign stormwate or doubl	ad Develop and average. core.	road bed/RR traidredging other other. Thrub/sapling reinerbaceous/aquisedimentation		oval
mex 20 pts.	,	Metric 4. 4a. Substrate di None Recov	Habitat A sturbance. Score of cor none apparent (4 ered (3) ering (2) storn to recovery (1) elopment. Select of ent (7) lood (6) (5) atety good (4)) of air (2) 1) ation. Score one of cor none apparent (6) ering (3)	dike weir stormwate stormwate stormwate stormwate of double check stormwate or double check and a salph or double check all distured mowing grazing check all distured in selective control sele	ad Develop and average. core.	road bed/RR traddredsing other other. **Thrub/sapiling reinerbaceous/aquisedimentation directions**	moval alic bed rem	oval
	24	Recover Recove	Habitat A sturbance. Score of cor none apparent (4 ered (3) ering (2) storn to recovery (1) elopment. Select of ent (7) lood (6) (5) atety good (4)) of air (2) 1) ation. Score one of cor none apparent (6) ering (3)	dike weir stormwate stormwate stormwate stormwate of double check stormwate or double check and a salph or double check all distured mowing grazing check all distured in selective control sele	and Develop and average. core. everage. bances observed outling dis removal	road bed/RR traidredging other other. Thrub/sapling reinerbaceous/aquisedimentation	moval alic bed rem	oval
	,	Recover Recove	Habitat A sturbance. Score of cor none apparent (4 ered (3) ering (2) storn to recovery (1) elopment. Select of ent (7) lood (6) (5) atety good (4)) of air (2) 1) ation. Score one of cor none apparent (6) ering (3)	dike weir stormwate stormwate stormwate stormwate stormwate or double check sit sit stormwate stormwate or double check sit sit stormwate stormwat	and Develop and average. core. everage. bances observed outling dis removal	thrub/sapling reinerbaceous/aquisedimentalion dredging at the same	moval alic bed rem	oval

ţ

1	Site:	<u>w5</u>		Rater(s):	SRL	(URS)	Date: 9/28/04
. : 	80	24 ibiotal first pa					
	0	24	Metric 5. Special W	letlands.			
-	ex 10 pts.	subtotal	Check all that apply and score as ind	icaled		•	
	Ť		Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5)		·	
		-(2)	Lake Erie coasial/iributary	welland-unrestri	cted hydrolog	y (10)	
		P	Lake Erie coastaVtributary	wetland-restricte	id hydrology ((5)	
			Leke Plain Sand Prairies (C	Dak Openings) (10)		
		٠	Relict Wet Prairies (10) Known occurrence state/fe	dotal throatened	l ac andanasi	ad an esta - 440)	
			Significant migratory songt	derar urreatened ind/water fowl h	or encanger abitat orusan	ed species (10) 4 (10)	
_			Category 1 Wetland. See	Question 1 Qual	Itative Rating	(-10)	
Γ	1	00				1 1-7	*
. L	4	28	Metric 6. Plant com	munities	, inters	persion, microt	opography.
ÿ	ex 20 pts.	sublotal	6a. Welland Vegetation Communitie Score all present using 0 to 3 scale.	s. <u>Veg</u>	etation Com	munity Cover Scale	
ij			Aquatic bed	-	0 Ab:	sent or comprises <0.1ha (0.2	471 acres) contiguous area
1) 4:	•		Emergent		' 1	sent and either comprises an egetation and is of moderate	nali pari of welland's
ţ.		\mathcal{L}	Shrub		s	ignificant part but is of low qui	quality, or comprises a
ıį.		\sim	Forest		2 Pre	sent and either comprises sig	milicant ned of wallands
			Mudflats .		l v	egetation and is of moderate	GUSİİY OF COMONISAS 12 SMƏH
			Open water			ert and is of high quality	
			Other	-	3 Pre	sent and comprises significan	It part, or more, of welland's
			6b. horizontal (plan view) Interspersi	on	j v	egetation and is of high qualit	Υ
٤			Select only one.				
•••			High (5) Moderately high(4)	Nau	ative Descrip	otion of Vegetation Quality	
		_			low Lov	v spp diversity and/or predom	nance of nonnative or
		Q	Moderately low (2)		mod Nat	isturbance tolerant native spe	cles
			Low (1)			live app are dominant compor Ithough nonnative and/or dist	ient of the vegetation,
:			None (0)			an also be present, and speci	aroance tolerant nauve spp
			6c. Coverage of invasive plants. Ref	'er	m	oderately high, but generally	Wio oresence of mre
			to Table 1 ORAM long form for list. A	\dd	t	reatened or endangered spp	ma branching of Adic
			or deduct points for coverage		high Ap	redominance of native specie	s, with nonnative spo
			Extensive >75% cover (-5)	_	1 4	nd/or disturbance tolerant nati	Ve sop absent or virtually
reed churk	S CAR	14	Moderate 25-75% cover (-3)	· al	beent, and high spp diversity a	and often, but not always,
	1 010	.,	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)	,	1 8	e presence of rare, threatene	d, or endangered spp
			Absent (1)		fish and One	n Water Class Quality	
			6d. Microlopography.	Maa	0 Abs	ent <0.1ha (0.247 acres)	•
			Score all present using 0 to 3 scale.	********	1 Low	0.1 to <1ha (0.247 to 2.47	-
			Vegetated hummucks/tussi	ucks	2 Mod	derale 1 to <4ha (2.47 to	
·		١	Coarse woody debris >15cr	n (6in)		h 4ha (9.88 acres) or more	•
•		1	Standing dead >25cm (10in) dbh			
•			Amphiblan breeding pools	Micr		Cover Scale	
±					0 Abs		
The Carton					1 Pre	sent very small amounts or If	more common
6						marginal quality	
ij.					2 Pres	sent in moderate amounts, bu	t not of highest
	•	•			3 Pres	iality or in small amounts of h	ghesi quality
r-					J Pre	sent in moderate or greater ar nd of highest quality	nounts
1.	28 I	GRANI	D TOTAL (max 100 nts)		ar	or thirtiest drauth	

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between welland categories at the following address: http://www.eps.siata.ch.us/disw/401/hbit last revised 1 February 2001 jjm

	MP		Rater(s):	Sallure	5)	Date:	9/28/04
- A	4						
Ø	\emptyset M	etric 1. Wetland	Area (size).	•			
max 6 pls.	enplotal Sel	lect one size class and assign s					
	,	>50 acres (>20.2ha) (6 p 25 to <50 acres (10.1 to					•
	α	10 to <25 acres (4 to <10 3 to <10 acres (1.2 to <4			<i>:</i>		
,	4	0.3 to <3 scres (0.12 to	<1.2ha) (2pts)				
		0.1 to <0.3 acres (0.04 to <0.1 acres (0,04ha) (0 pi					
10	77	TN-1 serie cores leterated (a be	141				
1	_ <u></u> _M	letric 2. Upland b	uffers and	surrounding	g land use.		
max 14 pts.	subjotal 2a.	Calculate average buffer width WIDE. Buffers average					
	£	MEDIUM, Buffers avera	ge 25m to <50m (82	to <164it) around we	iand perimeter (4)		
	P	NARROW. Butters aver					
	2b.	. Intensity of surrounding land u	ise. Select one or d	ouble check and ever	age		
	,	VERY LOW. 2nd growth LOW. Old field (>10 year					
	1	MODERATELY HIGH, I	Residential, fenced p	esture, park, conserv	ation tillage, new fall	ow field. (3)	
		HIGH. Urban, Industrial	, open pasture, row o	ropping, mining, cons	truction. (1)		
151	6 M	letric 3. Hydrolog	gy.		•	, ,	
rranx 30 pts.		. Sources of Water. Score all ti	hat apply.	3b. Co	nectivity. Score all		
		High pH groundwater (5) Other groundwater (3)			100 year floodpla Between stream/		er human use (
	1	Precipitation (1) FLOW	STARTS EAST	HERE DE	Part of wetland/u	pland (e.g. f	orest), complex
		Seasonal/intermittent su Perennial surface water		3d. Du	Part of riparian or ration linundation/sat		
	3¢.	Maximum water depth. Select >0.7 (27.6in) (3)	t only one and assign	score.	Semi- to perman Regularly inunda		
	1	0.4 to 0.7m (15.7 to 27.6	5in) (2)	11	Seasonally inund	lated (2)	• •
	3e	 <0.4m (<15.7in) (1) Modifications to natural hydrol 	logic regime. Score	La one or double check t	Seasonally satured by Seasonally	ated in uppe	r 30cm (12in) (1
		None or none apparent	(12) Check all distu				
		Recovered (7) Recovering (3)	ditch	}-	point source (not filling/grading	istormwater))
		Recent or no recovery (*	1) dîke weir	Į ū	road bed/RR trac	k	
			stormwat	er input	dredging other		
					·. ·		== ==
		fletric 4. Habitat /		•	ment.		
6	subjeta! 4:a	 Substrate disturbance. Score 		and average			
6 max 20 pts:	andion: 45			. and areingo.			
тви 20 pls.	2 Explore	None or none apparent Recovered (3)		· una areigo.			
глах 20 раз.	2	None or none apparent Recovered (3) Recovering (2)	(4)	· · · · · · · · · · · · · · · · · · ·			
6 max 20 pls.	2	None or none apparent Recovered (3) Recovering (2) Recent or no recovery ((4) 1)	· ,			
глах 20 pls.	2	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7)	(4) 1)	· ,			
FTSEX 20 plus.	2	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6) Good (5)	(4) 1)	· ,			
тан 20 pls:	2	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6)	(4) 1)	· ,			
мах 20 різ:	2	None or none apparent	(4) 1)	· ,			
мах 20 різ.	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (: Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Feir (3)	(4) 1) only one and assign	score.	,	· <u>-</u>	
глан 20 pls.	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Feir (3) Poor to fair (2) Poor (1) Habitat alteration. Score one	(4) 1) only one and assign or double check and (9) Check all dist	score. sverage. sverage.	A		ì
мах 20 різ:	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (3) Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score one None or none apparent Recovered (6)	(4) 1) only one and assign or double check and (9) Check all dish mowing	score. sverage. sverage.	Shrub/sapling ref		oval
тах 20 pts.	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Feir (3) Poor to fair (2) Poor (1) Habitat alteration. Score one	or double check and (9) Check all distrumowing grazing (1)	average. Irbances observed	herbaceous/aqua sedimentation		oval
тах 20 pts.	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Feir (3) Poor to fair (2) Poor (1) Habitat atteration. Score one None or none apparent Recovered (6) Recovering (3)	or double check and (9) Check all dish grazing clearcuti selective woody de	score. sverage. irbances observed ing cutting sbrls removal	herbaceous/aqua sedimentation	alic bed rem	oval
	2 46	None or none apparent Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Feir (3) Poor to fair (2) Poor (1) Habitat atteration. Score one None or none apparent Recovered (6) Recovering (3)	or double check and (9) Check all dist mowing grazing clearcutic pelective	score. sverage. irbances observed ing cutting sbrls removal	herbaceous/aqua sedimentation	alic bed rem	oval

ed hydrology (10) I hydrology (5) I) or endangered species (10) silat or usage (10) sithe Rating (-10) interspersion, microtopography. tation Community Cover Scale O Absent or comprises <0.1ha (0.2471 acres) contiguous 1 Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality 2 Present and either comprises significant part of wetlan vegetation and is of moderate quality or comprises a part and is of high quality 3 Present and comprises significant part, or more, of we
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vegetation and is of moderate quality or comprises a part and is of high quality
3 Present and comprises significant part, or more, of well
vegetation and is of high quality
1 Aederanos sun is of lifet desira
tive Description of Vegetation Quality
low Low spp diversity and/or predominance of nonnalive or
disturbance tolerant native species
nod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native
can also be present, and species diversity moderate
moderately high, but generally who presence of rare
threatened or endangered spp
high A predominance of native species, with normative app
and/or disturbance tolerant native app absent or virtu absent, and high app diversity and often, but not always
the presence of rare, threatened, or endangered spp
lat and Open Water Class Quality
0 Absent < 0.1ha (0.247 acres)
1 Low 0.1 to <1ha (0.247 to 2.47
3 High 4ha (9.88 acres) or more
otopography Cover Scale
0 Absent
Present very small amounts or if more common
of marginal quality Present in moderate amounts, but not of highest
quality or in small amounts, but not of tightest
3 Present in moderate or greater amounts
and of highest quality
1

Refer to the most recent ORAM Score Celibration Report for the scoring breakpoints between waitend categories at the following eddress: http://www.eps.state.ch.usfd#w4014401.html
last revised 1 February 2001 jim

CATEGORY 1

Metric 1. Wetland Area (size). Metric 2. Wetland Area (size). Metric 2. Upland buffers and surrounding land use. 1. Subsets of series (10 to 16 the) (spin) 1. Subsets (20 to 20 to 16 the) (spin) 1. Subsets (20 to 16 the) (spin) 1. Subsets (20 to 16 the) (spin) 2. Subsets	Site:	w7		Rater(s):	SRLLUES')	Date: 9/28/0-
Select of the size and assign score. Solid care (20.2 https: (20.1 https: (20.2	2						
250 extres 220, 2014 (5 pts) 250 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10 to 10, tha) (4 pts) 10 to <25 exts (10,	٨).		
25 to <50 acres (10.1 bis <20.2 hay (5 pixs) 10 pixs (2.2 to <4 hb) (2 pixs) 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to <4 hb) (2 pixs) 2 to 10 pixs (2.2 to 10 pixs)	max 6 pts.	sublets Se	lect one size class and assign	SCOTE.			
Sin c10 acres (12 to c4ha) (3 pix) C o 12 min (2 pix) C o 12 min (,
Continued Cont		7	10 to <25 acres (4 to <	10.1ha) (4 pts)		:	
C. 1 to <.0.3 scess (0.04 to <0.1 2/m²) (1 pt)		~	13 to <10 scres (1.2 to	<4na) (3 pts) o <1.2ha) (2ots)		. •	
Metric 2. Upland buffer's and surrounding land use. 2a. Catoulate everage buffer width. Select only one and assign score. Do not double chack. WIDE. Buffers average 50m (164ft) or more stround wellsand perimeter (7) MARROW. Buffers average 50m (164ft) or more stround wellsand perimeter (4) NARROW. Buffers average 50m (164ft) or more stround wellsand perimeter (1) VEYEV NARROW. Buffers average 10m to <25m (32ft to <62ft) around wellsand perimeter (1) VEYEV NARROW. Buffers average 10m to <25m (32ft to <62ft) around wellsand perimeter (1) VEYEV LOW. 2nd provider of very 10m (52ft) around wellsand perimeter (1) VEYEV LOW. 2nd provider of very 10m (52ft) around wellsand perimeter (1) VEYEV LOW. 2nd provider of very 10m (52ft) around wellsand perimeter (1) VEYEV LOW. 2nd provider (3) Netric 3. Hydrology. Select one or double check and swerage. Netric 3. Hydrology. Sources of Water. Score all that apply. HIGH. Urban, industrial, open pastule, row cropphilip, mining, construction, (1) Seasonal/Intermittent surface water (3) Peramial surface water (8) Part of reparametry from plant double check and select only one and assign score. 100 (72 (73,61) (3) Advantums water depth. Select only one and assign score. 100 (72 (73,61) (3) Recovered (7) Recovering (3) Recovering (3) Recovering (4) Recovering (5) Recovering (7) Recovering (7) Recovering (7) Recovering (7) Recovering (8) Recovering (8) Recovering (9) Recovering (1) Rev			0.1 to <0.3 scres (0.04	to <0.12ha) (1 pt)			
max 14 pts. evibous 2a. Calculate everage buffer width. Select only one and assign acons. Do not double check. WIDE. Buffers everage 50m (154/h) or more strond wetland perimeter (1) MCDIUM. Buffers average 50m to <20m (32 to <164/h) around wetland perimeter (4) NARROW. Suffers average 10m to <20m (32 to <164/h) around wetland perimeter (7) Zb. Intensity of surrounding land use. Select one or double check and average. LOW. Culf faller (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			<0.1 acres (0.04ha) (0	pls)			
max 14 pts. without 2s. Calculate everage buffer width. Select only one and assign acon. Do not double chuck. WIDE. Buffers average 50m (154/h) or more strond wellard perimeter (1) MCDIUM. Buffers average 50m (154/h) or more strond, wellard perimeter (1) MARROW. Buffers average 50m (154/h) or more strond, wellard perimeter (1) Zo. Intensity of surrounding land use. Select one or double check and average. LCOW. Old falle (1-10 years), shrubland, young second growth forest; (5) MODERATELY Hold. Residential, peed-prestup, pank, widdle area, etc. (7) LCOW. Old falle (1-10 years), shrubland, young second growth forest; (5) MODERATELY Hold. Residential, peed-prestup, pank, widdle area, etc. (7) LCOW. Old falle (1-10 years), shrubland, young second growth forest; (6) Mother grouphwater (3) High- th groundwater (3) Personal surface water (3) Additional water depth. Select only one and assign score. None or none apparent (12) Recovering (3) Recovering (6) Recovering (7) Very good (6) Recovering (7) Very good (6) Recovering (7) Very good (6) Recovering (7) Very good (6) Recovering (7) Recovering (7) Recovering (7) Very good (6) Recovering (7) Recovering (7) Recovering (8) Recovering (9) Recovering (9) Recovering (9) Recovering (1) Recovering (1) Recovered (1) Recovered (1) Recovering (1) Recover	11	3 M	letric 2. Upland	buffers and	surroundi	ng land use.	•
MEDIUM, Buffers average 25m to <50m (82 to <16M) around wetland perimeter (4) MARROW. Buffers average of the <50m (52 to <50m) around wetland perimeter (8) MARROW. Buffers average <10m (<50m) around wetland perimeter (9) MARROW. Buffers average <10m (<50m) around wetland perimeter (9) Markow of the forest, perime, savannah, wildfile erea, etc. (7) MODERATELY HIGH. Residential, fepsed preating, park, conservation tillage, new fallow field. (3) Metric 3. Hydrology. MIGH. Urban, industrial, open pastude, row cropphilip, mining, construction, (1) Moderate of Water. Score ell that apply. Migh pht groundwater (5) Other groundwater (3) Pertential surface water (4) Pertential surface water (4) Pertential surface water (4) Pertential surface water (5) Pertential surface wa	max 14 pts.		. Calculate average buffer wid	lth. Select only one	and assign score. Do	not double check.	
NARROW. Buffers average 10m to <2m (32th o 42th) around welland parlmeter (1)		,					
Theresity of surrounding land use. Select one or double check and average. LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (seet. (5) LOW. Old field (>10 years), shrubland, young second growth (>10 years), conspiled (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), complexity (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (seed. of shrubland) (>10 years), shrubland (seed. of shrubland) (seed. o		0	NARROW. Buffers av	erage 10m to <25m	(32ft to <82ft) around	wetland perimeter (1))
VERY LOW. 2nd growth or older forest, preirie, savamanh, wildlife area, etc. (7) LOW. 2nd field (1-10 years), shrubband, young second growth forest. (8) MODERATELY HIGH. Residential, fepsed-pasting, park, conservation tiliage, new fallow field. (3) HIGH. Urban, inclusifial, open pastue, row cropphigh miring, construction, (1) Metric 3. Hydrology. 3a. Sources of Water. Score all that apply. High pt igroundwater (3) Prepricipitation (1) Seasonal/Intermittent surface water (alse or stream) (5) 3c. Maximum water depth. Select only one and assign score. 90.7 (27, 67) (6) 3d. Duration hundation/soluration of Regularly frundated/saturated Regularly frundated/saturated Regularly frundated/saturated Regularly frundated/saturated (3) 90.4 (16.75.7h) (1) 3easonally sturated in upper 30cm (12in) None or none apparent (12) Recovered (3) Recovering (3) Recovering (3) Recovering (3) Recovered (3) Recovered (4) Recovered (3) Recovered (4) Recovered (3) Recovered (3) Recovered (3) Recovered (4) Recovered (3) Recovered (3) Recovered (4) Recovered (3) Recovered (4) Recovered (3) Recovered (3) Recovered (4) Recovered (3) Recovered (4) Recovered (3) Recovered (4) Recovered (3) Recovered (6) Recove		26	VERY NARROW. But	fers average <10m ((32it) around wetland	perimeter (0)	
MODERATELY HIGH. Residential, (speed prasting, park, conservation titiage, new fatow field. (3) Metric 3. Hydrology. 3a. Sources of Water. Score all that apply. High pti groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Part of weitending deg. forest), comple Part of ripertan or upland confloor (1) Part of veitending deg. forest), comple Part of ripertan or upland confloor (1) 3c. Maximum water depth. Select only one and assign score. 9-0-7 (27.6in) (2) 3d. Maximum water depth. Select only one and assign score. 9-0-7 (27.6in) (3) 9-0-7 (27.6in) (3) 9-0-7 (37.6in) (3							
Metric 3. Hydrology. ***max 39 pa.** subsect 3a. Sources of Water. Score all that apply. High pit groundwater (5) Perchalation (1) Regulerly hundated (3) Seasonally hundated (4) Seasonally hundated (4) Regulary hundated (4) Seasonalation hundated (4) Seasonalation		1	LOW. Old field (>10 y	ears), shrubland, you	ng second growth fo	est (5)	
wex 30 pix. sobiesal 3a. Sources of Water. Score all that apply. High ptl groundwater (3)		<i>م</i> د	HIGH. Urban, industri	al, open pasture, row	cropping/mining, co	rvauon usage, new rai nstruction. (1)	low field. (3)
wex 30 pix. sobiesal 3a. Sources of Water. Score all that apply. High ptl groundwater (3)	14	17 1	latria 2 . Uvrávale			•	1 5
High ptl groundwater (5) Other groupshyster (3) Precipitation (1) Seasonal/intermittent surface water (3) Perental surface water (fake or stream) (5) 3c. Maximum water depth. Select only one and assign score. -0-7. (27, 6in) (3) -0.4 to 0.7m (15.7 to 27.6in) (2) 3. Modications to netural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score.	10		-		3h (onearththe Sacrant	I that annia
Part of wetland/upland (e.g. forest), comple Part of metland/upland (e.g. forest), comple Part of metland/upland (e.g. forest), comple Part of metland/upland (e.g. forest), comple Part of methand comition (1)	пикогра.	andstatt 19			. 39. (
Perennial surface water (3) 3d. Dural contidor (1) 3d. Dural cont					B		
Perennal surface water (take or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7 m (15.7 to 27.6in) (2) 20.4 m (<15.7in) (1) 3e. Modifications to netural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) 4b. Habitat disturbance. Score one or double check and average. None or none apparent (4) Recovering (2) Recovering (3) Recovering (4) Recovering (4) Recovering (4) Recovering (4) Recovering (5) Recovering (5) Recovering (6)		4		surface water (3)			
Do.A to 0.7m (15.7 to 27.5in) (2) 30.4 to 0.7m (15.7 to 27.5in) (2) 30.4 to 0.7m (15.7) to 12.5in) (2) 30.4 to 0.7m (15.7) to 27.5in) (2) 30.4 to 0.7m (15.7) to 12.5in) (2) 30.4 to 0.7m (12.1) 30.4 to 0.7m (12.1) 30.5 to 0.7m (12.1) 30.6 to 0.7m (12.1) 30.6 to 0.7m (12.1) 30.7 to 0.7m (12.1) 30.7 to 0.7m (12.1) 30.8 to 0.7m (12.1) 30.8 to 0.7m (12.1) 40.8		١.	Perennial surface water	er (take or stream) (5	3d. (uration inundation/sa	turation. Score one or dbl
Out to 0.7m (15.7 to 27.6in) (2) Seasonally information (2) Seasonally naturated (2) Seasonally saturated in upper 30cm (12in)		30		ect only one and assi			
Mone or none apparent (12) Check all disturbances observed Recovering (3) Recent or no recovery (1) Check all disturbances observed Point Source (nonstormwater) Recovering (3) Check all disturbances observed Recovering (4) Check all disturbances observed Recovering (4) Recovering (5) Recovering (6) Recovering (7) Check all disturbances observed Recovering (8) Recovering (9) Recovering (1) Check all disturbances observed Recovering (1) Recovering (3) Recovering (4) Recovering (5) Recovering (6) Recovering (6) Recovering (7) Recovering (8) Recovering (9) Recovering (1) R		1	0.4 to 0.7m (15.7 to 2	7.6in) (2)	~	Seasonally inun	dated (2)
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Recent or no recovery (1) Coad bed/RR track Gredging Great G					lurbances observed	- 44	
Metric 4. Habitat Alteration and Development. Ala Substrate disturbance Score one or double check and average		2					nstormwater)
Metric 4. Habitat Alteration and Development. 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovered (7) Check all disturbances observed moving grazing moving grazing moving grazing learcutting sedimentation freeding 12 Pount ES tarming nutrient anrichment		\mathcal{O}	Recent or no recovery				ck (
### As Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovering (2) Recent or no recovery (1)				18	ater input		
### As Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recent or no recovery (1)							الكتكا
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4b. Hebital development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habital alteration. Score one or double check and everage. None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (4) Recovering (5) Recovering (6) Recovering (6) Recovering (7) Recovering (8) Reco		2	Recovering (2)			•	
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Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recovering (4) Recoverin		40		e or double check s	d average.		•
Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Selective cutting Woodly debris removal toxic pollutants Toxic pollutants Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (4) Recovering							
Recent or no recovery (1) Clearcutting Selective cutting Woody debris removal toxic pollutants Recent or no recovery (1) Selective cutting Woody debris removal toxic pollutants							
woody debris removal farming toxic pollutents mutrient enrichment		.3		III I JI GERING			ANA NON LOUISINGS
toxic pollutants nutrient enrichment		3					
		3 5 5		selecth	e cutting	図dredging / ルリ	PLACES
		3 20		selective woody	e cutting debris removal	区 dredging いい	

Site:	W7	Rater(s):	SRL	(URS)	Date: 9/28/0
	20				
	~0				
30	blotsi firsi page				
) N-4-1-5 0	. ! 141			
		cial Wetlands.			
max 10 pls.	subtotal Check all that apply and s	core as Indicated.			
	Bog (10)				
	Fen (10) Old growth fore:	n (40\			
	Majure forested	• •			
		al/tributary wetland-unrestri	cled hydrolo	gy (10)	
	Lake Erie coast	al/tributary welland-restricte	ed hydrology	(5)	
		d Prairies (Oak Openings) (10)		
	Relict Wet Prair	• •			
		nce state/federal threatened atory songbird/water fowl ha			
		atory songularwater fow its tland. See Question 1 Qual			
		alla. Oob epoolon i elon		g (1-7)	:
111	2) Metric 6. Plan	at communities	inter	spersion, microt	modranhu
				amunity Cover Scale	spograpity.
mex 20 pts.	Score all present using 0			bsent or comprises <0.1ha (0.2	471 perse) continuo e per
	Aquatic bed			resent and either comprises an	
•	Emergent			vegetation and is of moderate	
	O Shrub			significant part but is of low qu	
	Forest			resent and either comprises sig	•
	Mudflats . Open water			vegetation and is of moderate : part and is of high quality	luality or comprises a sm
	Other			resent and comprises significar	t part or more of wettan
	6b. horizontal (plan view)	Interspersion.		vegelation and is of high qualit	
	Select only one.				
	High (5)			ription of Vegetation Quality	
	Moderately high	1(4)	low L	ow spp diversity and/or predom	
	Moderate (3) Moderately low	· (2)	mod N	disturbance tolerant native spe ative spp are dominant compor	
	Z Low(1)	1~ /	·····	although nonnative and/or dish	
	None (0)			can also be present, and speci	•
	6c. Coverage of Invasive		1	moderately high, but generally	w/o presence of rare
	to Table 1 ORAM long for		high A	threatened or endangered spp	a with connection can
	or deduct points for cover Extensive >75%	-	18911	predominance of native specie and/or disturbance tolerant nat	• • •
canary				absent, and high spp diversity	
Calicalia	_ Z Sparse 5-25%	cover (-1)		the presence of rare, threatene	d, or endangered spp
	Nearly absent				
	Absent (1)	Mu		pen Water Class Quality	•
	6d. Microlopography. Score all present using 0	to 3 scale		bsent <0.1ha (0.247 acres) ow 0.1 to <1ha (0.247 to 2.47	•
		mucks/lussucks		loderate 1 to <4ha (2,47 to	•
	Coarse woody	debris >15cm (6in)	3 F	ligh 4ha (9.88 acres) or more	•
	Standing dead	>25cm (10in) dbh			
	Amphibian bre	eding pools Mic		hy Cover Scale	
		****		bsent very small amounts as it	more common
			1 P	resent very small amounts or it of marginal quality	mora CountOff
		_	2	resent in moderate amounts, b	it not of highest
.*			- 1	quality or in small amounts of I	lighest quality
		_			
			3 F	resent in moderate or greater a and of highest quality	mounts

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between welfand categories at the following address: http://www.apa.state.oh.us/dew/401/401.htm fast revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: W	18	Rater(s): SR	L (URS)	Date: 9 69 /14
Б	9 <			17-1701
<u>L</u>	1.0			
aubtol	al first page			·
19.51	1.5 Metric 5. Special	Wetlands.		
max 10 pts. e	ubictal Check all that apply and score as	indicated.	•	
	Bog (10)			
	Fen (10)			
	Old growth forest (10)			
	Mature forested wetland	(6)		
• *	Lake Erie coastal/tribute	ry welland-unrestricted hydro ry welland-restricted hydro	Irology (10)	
. · ·	Lake Plain Send Prairies	ry weusiki-restricted hydro • (Cak Cosninne) (10)	logy (5)	
	Relict Wet Prairies (10)	(toek obermide) (to)		
		Kederal threatened or enda	Mideral species (10)	
	Significant migratory sor	gbird/water fowl habitat or	usane (10)	
	Category 1 Wetland. Se	e Question 1 Qualitative R	ating (-10)	
	ا اسم			*
- (-(-()	8.5 Metric 6. Plant co	mmunities, int	erenereion micros	onograph.
mex 20 pts.	ubutu 6a. Welland Vegetation Communi	Hoe Vendellen	oroperatori, milicial	opograpny.
•	Score all present using 0 to 3 scale	vegeration	Community Cover Scale	
	O Aqualic bed	" - 1 -	Absent or comprises <0.1ha (0.: Present and either comprises an	24/1 acres) contiguous area
	i Emergent	•	vegetation and is of moderate	nail part or wetland's
	6 Shrub		significant part but is of low qu	quality, or comprises a
	Forest	2	Present and either comprises si	policant part of wellow-re
	Mudflats ,		vegetation and is of moderate	QUality or comprises a small
	Open water	···	part and is of high quality	
	Other	3	Present and comprises significa	nt part, or more, of wetland's
	 horizontal (plan view) Interspe Select only one. 	/510n.	vegetation and is of high qualit	у
	High (5)	Namether D.		• .
	Moderately high(4)	low	escription of Vegetation Quality Low spp diversity and/or predom	
	Moderate (3)	W#	disturbance tolerant native spe	inance of nonnative or
	Moderately low (2)	mod	Native spp are dominant compo	nent of the vegetation
	∠ Low (1)	•	although nonnative and/or dist	utbance tolerant native enn
	None (0)		can also be present, and speci	es diversity moderate to
	6c. Coverage of invasive plants. F	Refer	moderately high, but generally	w/o presence of rare
	to Table 1 ORAM long form for list, or deduct points for coverage		threatened or endangered spo	
_	Evigration 3750/ annual	high 5)	A predominance of native specie	s, with nonnative spp
CHURRY GIV	Moderate 25-75% cover		and/or disturbance tolerant nat	ive spp absent or virtually
_	- 2 Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threatene	end often, but not always,
	Nearly absent <5% cove		The presents of face, dispatche	o, or endangered spp
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	•
	Score all present using 0 to 3 scale		Low 0.1 to <1ha (0.247 to 2.47	-
	Vegelated hummucks/lu		Moderate 1 to 4ha (2.47 to	
	Coarse woody debris >1		High 4ha (9.88 acres) or more	•
	Standing dead >25cm (1 Amphibian breeding pool			
	Carpinolan preeding pool		aphy Cover Scale	
		01	Absent	
		1	Present very small amounts or if of marginal quality	more common
		2	Present in moderate amounts, bo	throt of blab at
		•	quality or in small amounts of h	n ma til mignest Inheel aveille
	•	3	Present in moderate or greater as	nounts
10			and of highest quality	
1/8.0[G	RAND TOTAL (max 100 pts	1)		

Refer to the most recent CRAM Score Cethration Report for the scoring breakpoints between welland categories at the following address: http://www.eps.state.oh.us/dew/401/401/html [ast revised 1 February 2001]jim

Site:	NAY B'C &D		Rater(s):	SPLLUR	2)	Date: 9129	1/04
							•
ス	∠ Metric 1.	Wetland A	rea (size)				
Friex 6 pts.		class and assign score) .				
		cres (>20.2ha) (6 pts) <50 acres (10.1 to <20),2ha) (5 pts)			•	
		<25 acres (4 to <10.1) (10 acres (1.2 to <4ha)			;		
	₩ 0.3 kg	<3 acres (0.12 to <1.2	žha) (2pts)	CONTINUES	AT WAD		
		<0.3 acres (0.04 to <0 acres (0.04ha) (0 pts)).12ha) (1 pt)				
		asico (a.ania) (a pia)					
1	ろ Metric 2	. Upland but	ffers and	surroundi	ng land use.	1	
max 14 pts.		verage buffer width. S					
		E. Buffers average 50r IUM, Buffers average					
		ROW. Buffers average Y NARROW. Buffers a			wetland perimeter (1)).	
	2b. Intensity of	surrounding land use.	Select one or	louble check and av	erage.		
		Y LOW. 2nd growth or . Old field (>10 years)					
	T MOD	ERATELY HIGH. Res	idential, fenced	pasture, park, conse	rvation tillage, new fal	low field. (3)	
		I. Urban, industrial, op	en pasture, low	cropping, mining, co	instruction, (1)		
10	3 Metric 3	. Hydrology		•		. 1	
mex 30 pts.	subtolal 3a, Sources of	Water. Score all that		. 3ե. (Connectivity. Score at		
		pH groundwater (5) r groundwater (3)		at.	100 year floodpl	ain (1) /lake and other hum	nan use (1)
	A Prec	pitation (1)		ø	Part of wetland/o	ıpland (e.g. forest),	complex (1)
		onal/intermittent surfa nnial surface water (lak		3d. I	[] Part of npenan c Duration inundation/sa	or upland comidor (1 Iuralion, Score one	
		water depth. Select on (27.6in) (3)	ly one and assig	_		nently inundated/sat sted/saturated (3)	lurated (4)
	0.41	0.7m (15.7 to 27.6in)	(2)	2	Seasonally inun	daled (2)	
		m (<15.7in) (1) ins to natural hydrologi	c regime. Score	one or double chec		rated in upper 30cm	1 (12ln) (1)
	None	or none apparent (12)	Check all disl				
		overed (7) overing (3)	ditch		point source (no filling/grading	nstormwater)	
		ent or no recovery (1)	dike weir		road bed/RR tra	ck waD	1
				ter input	other		
4 -							,
4.5	17.5 Metric 4	. Habitat Al	teration a	and Develo	pment.		
max 20 pts:		disturbance. Score on e or none apparent (4)	e or double ched	k and average.			
	Reco	overed (3)		,			
		overing (2) ent or no recovery (1)					
	4b. Habital de	velopment. Select only	y one end assign	score.	•		
		ellent (7) good (6)					
	Goo	d (5)		:		-	
	Fair				•		
	Poor	to fair (2)					
		eration. Score one or	double check an	d average.			•
	, p	e or none apparent (9) overed (6)	Check all dis	lurbances observed	shrub/sapling re		
	√ ✓ Become Become Become Become Become Become Become Become Become Become Become Become B	overing (3)	grazing		herbaceous/aqu	alic bed removal	
	Rec	ent or no recovery (1)	clearcut		sedimentation dredging		I
	125		WOOdy o	lebris removal	Islaming 4	NORTH EMS	of WE
•	リナ。) Bubliolal this page		toxic po	lutants	nutrient enrichm	ent	

Site: W 1 A	B, C, & D Rater	(s): SRL	· (URS)	Date: 9 /29/6
175	·			/
17.5				
subtotal first pr	o .		4	,
	 .			
0 17.5	Metric 5. Special Wetlar	ids.		
max 10 pts. subtotal	Check all that apply and score as indicated.		•	
•	Bog (10)			
	Fen (10)			
	Old growth forest (10)			,
	Mature forested welland (5)			
. 9	Lake Erie coastal/tributary wetland-			
. : '	Lake Erie coastal/tributary wetland-		logy (5)	
	Lake Plain Sand Prairies (Oak Oper	nings) (10)		
	Relict Wet Prairies (10)			
	Known occurrence state/federal three			
	Significant migratory songbird/water Category 1 Wetland. See Question			,
	L Category 1 Wenantic See Coesinon	I GOSHSHAR V	enig f. in)	•
1-1/165	Matric & Dlant same			
L	Metric 6. Plant commun	ities, int	erspersion, mic	rotopography.
max 20 pts. subtotal	6a. Welland Vegetation Communities.	Vegetation	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1	na (0.2471 acres) conliguous area
•	Aquatic bed	1	Present and either compris	es small part of wetland's
/	Emergent			erale quality, or comprises a
	O Shrub Forest	2	significant part but is of i	ow drauty
	Mudflets .	4	venetation and in of mind	ses significant part of wetland's
	Open water		part and is of high quality	erate quality or comprises a small
	Other	3	Present and comorises sin	milicant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.	-	vegetation and is of high	
	Select only one.			
	High (5)	Narrative D	escription of Vegetation Qu	
	Moderately high(4)	low		redominance of nonnative or
1	Moderate (3)		disturbance tolerant nath	
لب	Moderately low (2)	mod	Native spp are dominant o	omponent of the vegetation,
	K Low (1)	•		or disturbance tolerant native spp
	None (0) 6c. Coverage of invasive plants. Refer			species diversity moderate to
	to Table 1 ORAM long form for list. Add		threatened or endangers	erally w/o presence of rare
	or deduct points for coverage	high		Species, with nonnative spp
	Extensive >75% cover (-5)	*****		int native spp absent or virtually
D CAWARY GRI				ersity and often, but not always,
A MYGOSTIPAL	0		the presence of rare, thr	eatened, or endangered spp
h WOODSI ILST				
	Absent (1)	Mudflat and	Open Water Class Quality	
	6d. Microlopography.	0	Absent <0.1ha (0.247 acro	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to	
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or m	ore
1-	Standing dead >25cm (10in) dbh Amphiblan breeding pools	**********	andre Carret Carls	et 🖦
. 9		Microtopog	raphy Cover Scale Absent	
. 9			[Unsalii	
. 9	Campunian proconil boos		Procent year small amount	e or if more commen
. 9	Carlymolan discount process	1	Present very small amount of marring quality	s or if more common
. 9	Sauthunian meenilä boos	1	of marginal quality	
. 5	Sauthunian meenilä boos	1 2	of marginal quality Present in moderate amou	nts, but not of highest
9	Sauthunian meenilä beera	1	of marginal quality	nts, but not of highest ils of highest quality

Refer to the most recent ORAM Score Cethration Report for the scoring breakpoints between wellend categories at the following address: http://www.apa.state.oh.ualdew/461/461.nbml

Site:	MIO		Rater(s):	Sprins	5)	Date: 9	129/04
	\overline{a}	_		-			
2		etric 1. Wetland /	٠,				
max 6 pls.	subtotal Sele	ect one size class and assign so 50 acres (>20,2ha) (6 pt	ore. ->			-	
		25 to <50 acres (10.1 to =	20.2ha) (5 pts)			-	•
	2	10 to <25 acres (4 to <10 3 to <10 acres (1.2 to <4)					
	~	0.3 to <3 acres (0.12 to <	1.2ha) (2pls)				
		0.1 to <0.3 acres (0.04 to <0.1 acres (0.04ha) (0 pts					
5	₹		•				
2		etric 2. Upland b			_		
.max 14 pls.	PUDIDUM 28,	Calculate average buffer width. WIDE. Buffers average 5				:K.	
•	Ø	MEDIUM. Buffers average NARROW. Buffers average	e 25m to <50m (6:	2 to <164ft) aroun: 2 to <164ft) aroun:	wetland perimeter	(4)	
	,	VERY NARROW. Buffer	s average <10m (<	32ft) around wetta	nd perimeter (0)	NOW-EXISTE	WT
	26.	Intensity of surrounding fand us VERY LOW. 2nd growth					
	3	LOW. Old field (>10 year	rs), shrubland, you	ng second growth	forest. (5)		PASTURE
		MODERATELY HIGH. R HIGH. Urban, Industrial,				w tallow field. (3)	1. V. 21 ACE
1/	21				•		
16		etric 3. Hydrolog	•	0 L	Damas all de . Sas		
ат их 30 різ.	subtotal 3a.	Sources of Water. Score all the High pH groundwater (5)	at apply.	. 30.	Connectivity. Scc		
	/	Other groundwater (3)		Q		ream/lake and other and/upland (e.g. for	
	6	Seasonal/Intermittent sur			Part of ripe	rian or upland comd	or (1)
	30	Perennial surface water (Maximum water depth. Select				on/saturation. Score emanently inundate	
	~ ·	>0.7 (27.6in) (3)	-	.3	Regularly in	rundated/saturated	
	~	0.4 to 0.7m (15.7 to 27.6) <0.4m (<15.7in) (1)	n) (2)	3		inundated (2) saturated in upper	30cm (12kn) (1)
	. 3e.	Modifications to natural hydrological			eck and average.		
		None or none apparent (Recovered (7)	(12) Check all dist	lurbances observe		e (nonstormwater)	
	٠ ح	to Recovering (3)	tile		filling/gradi	ng .	
	_	Recent or no recovery (1	dike welr		road bed/R dredging	н маск	l
			stormwa	ater input	other		
7	28 M	letric 4. Habitat A	Utoration :	and Daval	anmont		
mux 20 pts:		. Substrate disturbance, Score			opinent.		
		None or none apparent (
	\supset	Recovered (3) Recovering (2)			,	•	
	46	Recent or no recovery (1 Habitat development, Select of		2 0000			
	40.	Excellent (7)	viil auc euo essiăi	r gooro.			•
		Very good (6) Good (5)		,			
	γ	Moderately good (4)					
	~	Fair (3) Poor to fair (2)			•		
	4-	Poor (1)		d			
	4C.	Habitat alteration, Score one of None or none apparent (o average. Iurbances observe	d		=
	3	Recovered (6)	mowing		shrub/sapil		
	ب	Recovering (3) Recent or no recovery (1	grazing clearcut		herbaceous sedimental	s/aquatic bed remov ion	al
]	20		selectiv	e cutting	dredging		
	38		woody of toxic po	debris removal illutants	farming K nutrient en	richment SOME	HRON U
51	biotal this page						

	Site: WIC)	Rater(s): SRU	CURS	Date: 9/29/04
*	2 8	ᆋ			
	00	Metric 5. Special W	etlands.		
	max 10 pts. subtota	•		•	
		Bog (10)			
		Fen (10)			1 to 1
		Old growth forest (10)			
		Mature forested welland (5)			
	. 0	Lake Erie coastal/tributary			
	· . * *	Lake Erie coasial/tributary v	•	(5)	
		Leke Plain Sand Prairies (C Relict Wet Prairies (10)	ak Openings) (10)		* 4
		Known occurrence state/iec	loral threatened or and	annamed enactor (40)	
		Significant migratory songb			
		Category 1 Welland. See (•
	1 A 1	7	,		*
	14132	Metric 6. Plant com	munifies inf	erenersion microt	onogranhi
	max 20 pts. subtota				ohogiahiiy.
ş	max zu pos. subicica	Score all present using 0 to 3 scale.	s. <u>vegetation</u> 0	Community Cover Scale	494
2		Aquatic bed		Absent or comprises <0.1ha (0.2 Present and either comprises sm	4/ 1 BCres) conliguous area
×	•	Emergent	,	vegetation and is of moderate	Hall by or commission a
ł,		Shrub		significant part but is of low qua	qvang, or comprises a
11	6	Prorest	2	Present and either comprises sig	milicant nart of wetland's
		Mudflats .	•	vegetation and is of moderate	Quality or comprises a small
		Open water		part and is of high quality	the state of the s
		Other	_ 3	Present and comprises significan	nt part, or more, of wetland's
		6b. horizontal (plan view) Interspersion	on.	vegetation and is of high qualit	
		Select only one.			
1.		High (5)		escription of Vegetation Quality	
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predom	
		Moderately low (2)	mod	Native spp are dominant compor	CIBS
	,	Low(1)		although nonnative and/or dista	ient of the vegetation,
		None (0)		can also be present, and speci	
		6c. Coverage of invasive plants. Ref	er	moderately high, but generally	W/O Dresence of rare
		to Table 1 ORAM long form for list. A		threatened or endangered spp	
•		or deduct points for coverage	high	A predominance of native specie	s, with nonnalive spp
		Extensive >75% cover (-5)	_	and/or disturbance tolerant nat	ive spp absent or virtually
SOME	REGO CAWARY	Moderale 25-75% cover (-3		absent, and high spp diversity	and often, but not always,
	Carass	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threatene	d, or endangered spp
	GIOL 20	Absent (1)	•	d Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	•
		Score all present using 0 to 3 scale.		Low 0.1 to <1ha (0.247 to 2.47	•
		Vegetated hummucks/tusse	ucks 2	Moderate 1 to <4ha (2.47 to	•
		Coarse woody debris >15cr		High 4ha (9.88 acres) or more	•
,		Standing dead >25cm (10in	n) dbh		
		Amphiblan breeding pools	Microtopo	raphy Cover Scale	
,			0	Absent	
			1	Present very small amounts or if	more common
5				of marginal quality	
1			2	Present in moderate amounts, bu	A not of highest
.:			- 3	quality or in small amounts of the Present in moderate or greater at	
			•	and of highest quality	maarks
	32 GRA	ND TOTAL (max 100 pts)	 	I must at tableses decire)	

Roler to the most recent ORAM Score Celoration Report for the scoring breakpoints between welland categories at the following address: http://www.epu.state.oh.usidaw401MQ1.html last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: WI)	R	later(s): SP	(VRS)	Date: 9/29/04
25.5 aubtotal first pa	90	÷		
0 25.5	Metric 5. Special We	etlands.		
max 10 pls. subtotal	Check all that apply and score as indic			
	Bog (10)			
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5)			1.1
<i>(</i> X	Lake Erie coastal/tributary w			
· P	Lake Erie coastal/tributary w		gy (5)	•
	Lake Plain Sand Prairies (O Relict Wet Prairies (10)	ak Openings/(10)		
	Known occurrence state/fed	eral threatened or endan	igered species (10)	
	Significant migratory songbi	rd/water fowl habitat or u	sage (10)	
والمستناس والمستناس	Category 1 Watland. See C	uestion 1 Qualitative Ra	ting (-10)	•
9 34.5	Metric 6. Plant com		•	topography.
erren 20 pts. subtotal	 Wetland Vegetation Communities Score all present using 0 to 3 scale. 	. <u>Vegetation C</u>	ommunity Cover Scale Absent or comprises <0.1ha (0	2471 acres) continuous area
	Aquatic bed		Present and either comprises	
•	2 Emergent		vegetation and is of moderate	
\sim	Shrub		significant part but is of low of	
·	2 Forest	2	Present and either comprises a	
	Mudflats Open water		part and is of high quality	e quality or comprises a small
	Other	. 3	Present and comprises signific	ant part, or more, of wetland's
	6b. horizontal (plan view) interspersion	n	vegetation and is of high qua	Rty
	Select only one.	Manuelius Da	and the state of t	•
	High (5) Moderately high(4)	low	scription of Vegetation Quality Low spp diversity and/or predo	
•	Moderate (3)		disturbance tolerant native s	
	Moderately low (2)	mod	Native spp are dominant comp	
	Low(1)	•	1 7	sturbance tolerant native spp
	None (0) 6c. Coverage of invasive plants. Ref	or	can also be present, and spe moderately high, but general	
	to Table 1 ORAM long form for list. A		threatened or endangered s	•
	or deduct points for coverage	high	A predominance of native spec	
	Extensive >75% cover (-5)		and/or disturbance tolerant re	• • • • • • • • • • • • • • • • • • • •
REGOCHWARY GRASS	Moderate 25-75% cover (-3 Sparse 5-25% cover (-1)		absent, and high spp diversit the presence of rare, threate	
	Nearly absent <5% cover ())		
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	ucks 2	Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to	
	Vegetated hummucks/tuss/ Coarse woody debris >15c		High 4ha (9.88 acres) or more	
,	Standing dead >25cm (10in			
	Amphiblan breeding pools	Microtopoge	raphy Cover Scale	
	_	0	Absent Present very small amounts of	· F mare common
		1	of marginal quality	HING COMMON
		2	Present in moderate amounts,	but not of highest
			quality or in small amounts of	of highest quality
		3	Present in moderate or greate	r amounts
24 < 024	ND TOTAL (max 100 pts)	<u> </u>	and of highest quality	
I カゲ 〜 I UKA	IND TOTAL HIBBA TOU DIST			

Refer to the most recent GRAM Score Ceithration Report for the scoring breakpoints between wellend categories at the following address: http://www.aps.state.oit.usiden/401/401.html last revised 1 February 2001 jim

<u> </u>	ND A	ब ह	Rater(s):	Spelles)	Date: 9	29/04
	\bigcap	latria d. 187-41	al Ausa /s!= \			
14		letric 1. Wetland				
max 6 pts.	enpipolal Se	lect one size class and assig >50 acres (>20.2ha) ((6 pts)		i	
	_	25 to <50 acres (10.1 10 to <25 acres (4 to	to <20.2ha) (5 pts)			
	17)	3 to <10 acres (1.2 to	<4ha) (3 pts)			
	P	0.3 to <3 acres (0.12 0.1 to <0.3 acres (0.0		•		
		<0.1 acres (0.04ha) (
11	1 M	letric 2. Upland	buffers and	surroundina	land use.	
mex 14 pts.	البسسانيين	. <u>Calculate average buffer wi</u>	idth. Select only one an	d assign score. Do not	double check.	
	A		ge 50m (164ft) or more: erage 25m to <50m (82			
	ϕ		verage 10m to <25m (3	2ft to <82ft) around wel	land perimeter (1)	
	2b	. Intensity of surrounding lan	id use. Select one or de	suble check and averag	e	
	Λ		rwith or older forest, prais years), shrubland, youn			
	سلة	MODERATELY HIGH	i. Residential, fenced p	asture, park, conservati	on tillage, new fallow field. (3)	
1	۲.	HIGH. Urban, Industr		- S ROAD	icuon. (1)	
لِيُّا		letric 3. Hydrol			and the O	
rrex 30 pts.	subtotal 3a	Sources of Water. Score a High pH groundwater		, 36. Conn	ectivity. Score all that apply. 160 year floodplain (1)	
	1	Other groundwater (3 Precipitation (1)) `	ØF	Between stream/lake and other hu Part of wetland/uplend (e.g. forest)	man use (
•	سله	Seasonal/Intermittent		′ 🗀	Parl of riperian or upland comidor (1)
	30	Perennial surface wa Maximum water depth. Se	ter (lake or stream) (5) lect only one and assion		ion inundation/saturation. Score on Semi- to permanently inundated/sa	
	Λ	>0.7 (27.6in) (3)	,	1 -	Regularly inundated/saturated (3)	
	1	0.4 to 0.7m (15.7 to 2 <0.4m (<15.7in) (1)			Seasonally inundated (2) Seasonally saturated in upper 30cr	n (12in) (1
	Эе	Modifications to natural hyd	orologic regime. Score ont (12) Check all distu		1 average.	7
	1	Recovered (7)	ditch		point source (nonstormwater)	1
	سلد	Recovering (3) Recent or no recover	y(1) tile	~	filling/grading (road bed/BR track	1
			weir	v innet	dredging other	1
			Storiwal	er input	Tonies]
	(1.1					
13	8 1	lletric 4. Habita	t Alteration a	na Developn	ient.	
3 mex 20 pts.		. Substrate disturbance. Sc	ore one or double check	•	ient.	•
3 mex 20 pts.		None or none appare Recovered (3)	ore one or double check	•	ient.	
3 mex 20 pts.		None or none appare Recovered (3) Recovering (2)	ore one or double check ant (4)	•	ient.	
3 mex 20 pts.	subtotal 4a	None or none appare Recovered (3) Recovering (2) Recent or no recover	ore one or double check ant (4) by (1)	and average.	ient.	•
mex 20 pts.	subtotal 4a	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele	ore one or double check ant (4) by (1)	and average.	ient.	•
3 max 20 pts.	subtotal 4a	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (5) Good (5)	ore one or double check ant (4) by (1)	and average.	ient.	•
3 mex 20 pts.	subtotal 4a	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (5) Good (5) Moderately good (4) Fair (3)	ore one or double check ant (4) by (1)	and average.	ient.	•
3 mex 20 pts.	subtotal 4a	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	ore one or double check ant (4) by (1)	and average.	ient.	
3 mex 20 pts.	subidal Aa	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (5) Good (5) Moderately good (4) Fair (3)	ore one or double check ent (4) ny (1) ect only one and assign:	and average.	ienţ.	
3 mex 20 pts.	subidal Aa	Substrate disturbance. So None or none appare Recovered (3) Recovering (2) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (5) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat atteration. Score of None or none appare	ore one or double checkent (4) y (1) act only one and assign: one or double check and ant (9) Check all dists.	and average. score. average. rbances observed		7
mex 20 pts.	subidal Aa	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score of Recovered (6) Recovering (3)	one or double checkent (4) y (1) act only one and assigns one or double check and ant (9) Check all dist.	and average. score. average, rhances observed	shrub/sapling removal herbaceous/aquatic bed removal	
3 mex 20 pts.	subidal 42	Substrate disturbance. So None or none appare Recovered (3) Recovered (3) Recovered (2) Recovering (2) Recent or no recover. Hebitat development. Sele Excellent (7) Very good (5) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score of Recovered (6)	one or double checkent (4) (4) (4) (4) (7) (1) (a) (a) (b) (c) (c) (d) (d) (d) (d) (d) (d	everage.	shrub/sapling removal herbaceous/aquatic bed removal sedimentation	
3 mex 20 pts.	subidal Aa	Substrate disturbance. Sc. None or none appare Recovered (3) Recovering (2) Recent or no recover. Habitat development. Sele Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score of Recovered (6) Recovering (3)	one one or double checkent (4) y (1) act only one and assign: one or double check and ant (9) Check all distr mowing grazing y (1) Check all distr clearcutil selective	and average. score. average. rbances observed cutting bris removal	shrub/sapling removal herbaceous/aquatic bed removal	

last revised 1 February 2001 jim ORAM v. 5.0 Field Form Quantitative Rating

Site: WIRA2B Rater	(s): Sk	L (URS)	Date: 9/29/04
Subblail first page	.1.		
6 8 Metric 5. Special Wetlar	ıas.	•	
max 10 pis. subjets! Check all that apply and score as indicated. Bog (10)			
Fen (10) Old growth forest (10)			
Mature forested wetland (5)			
Lake Erie coestal/tributary wetland-			,
Lake Erie coastal/tributary wetland-		ogy (a)	•
Relict Wet Prairies (10)			
Known occurrence state/federal thro	eatened or enda	ingered species (10)	
Significant migratory songbird/water			
Category 1 Watland. See Question	1 Qualitative R	ating (-10)	
2 10 Metric 6. Plant commun	ities, int	erspersion, micr	otopography.
mex 20 pts. subtotal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
Score all present using 0 to 3 scale.			(0,2471 acres) contiguous area
Aquatic bed	1	Present and either comprises vegetation and is of modern	
1 Shrub		significant part but is of low	
Forest	2	Present and either comprises	
Mudflats .			ate quality or comprises a small
Open water		part and is of high quality	
Other	3		icant part, or more, of wetland's
6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high qu	Jawy
1 High (5)	Narrative D	escription of Vegetation Qual	ltv
Moderately high(4)	low	Low spp diversity and/or pred	
Moderate (3)		disturbance tolerant native	
Moderately low (2)	mod	Native spp are dominant con	
Low(1)			disturbance tolerant native spp
None (0) 6c. Coverage of invasive plants. Refer		moderately high, but gener	pecies diversity moderate to
to Table 1 ORAM long form for list. Add		threatened or endangered	
or deduct points for coverage	high	A predominance of native sp	
Extensive >75% cover (-5)			native spp absent or virtually
Moderate 25-75% cover (-3)			sity and often, but not always,
Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threa	tened, or endangered spp
X Absent (1)	Mudflat an	d Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	
Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or mor	<u>e</u>
Slanding dead >25cm (10in) dbh	Messees		
Amphibian breeding pools	MICTOTOPOS	raphy Cover Scale Absent	
		Present very small emounts	or If more common
	•	of marginal quality	
	2	Present in moderate amount	s, but not of highest
		quality or in small amounts	of highest quality
·	3	Present in moderate or great	ter amounts
GRAND TOTAL (max 100 pts)		end of highest quality	
I/() IGRAND IDIAL (max 100 pts)			

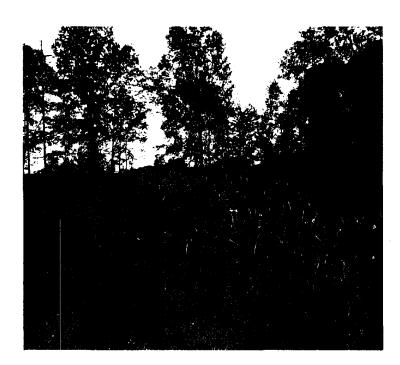
Refer to the most recent ORAM Score Cethration Report for the scoring breakpoints between welland categories at the following address: http://www.eps.state.oh.us/daw/401/401/hhml.last revised 1 February 2001 jjm

Site: VI3 A & B Rater(s	s): SR	L (URS) Date:	9/29/04
subjoidal first page			
0 13 Metric 5. Special Wetland	ds.		
max 10 pts. subtate! Check all that apply and score as indicated,	-0.	•	
Bog (10)			
Fen (10) Old prowth forest (10)			
/ Mature forested welland (5)			
Lake Erie coastal/tributary wetland-us			•
Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi		ogy (5)	•
Relict Wet Prairies (10)	idəl (iv)		
Known occurrence state/federal threa			
Significant migratory songbird/water to			
Category 1 Watland. See Question 1	i cinsinstata iz	emit (-10)	•
Metric 6. Plant communi			iphy.
max 20 pts. subtout 6a. Welland Vegetation Communities. Score all present using 0 to 3 scale.	Vegetation	Community Cover Scale Absent or comprises <0.1ha (0.2471 acres)	save anomolino
Aqualic bed	1	Present and either comprises small part of w	
T Emergent		vegetation and is of moderate quality, or co	imprises a
Shrub	2	significant part but is of low quality Present and either comprises significant part	of welland's
Mudflets .	_	vegetation and is of moderate quality or co	
Open water		part and is of high quality	-
OlherOlherOlher_persion.	3	Present and comprises significant part, or m vegetation and is of high quality	ore, of welland's
Select only one.	***************************************	1 redetation and is or right downs	
High (5)	Narrative D	escription of Vegetation Quality	
Moderately high(4)	low	Low spp diversity and/or predominance of no disturbance tolerant native species	annative or
Moderate (3) Moderately low (2)	mod	Native spp are dominant component of the v	egetation.
- X Low(1)		although nonnative and/or disturbance tole	
None (0)		can also be present, and species diversity	
6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally w/o present threatened or endangered spp	se or rare
or deduct points for coverage	hìgh	A predominance of native species, with none	ative spp
Extensive >75% cover (-5)		and/or disturbance tolerant native sop abs	•
RECED CAWARY GRASS Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity and often, be the presence of rare, threatened, or endan	
Nearly absent <5% cover (0)		The presence of the state of the state of	34.04.050
Absent (1)		Open Water Class Quality	•
6d. Microtopography. Score all present using 0 to 3 scale.	-0	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47	
Vegetated hummucks/tussucks		Moderate 1 to <4ha (2,47 to	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
Standing dead >25cm (10in) dbh	4414		
Amphiblan breeding pools	Microtoboo	raphy Cover Scale Absent	-
		Present very small amounts or if more comm	non
		of marginal quality	
	2	Present in moderate amounts, but not of hig quality or in small amounts of highest qual	
	3	Present in moderate or preater amounts	ny
		and of highest quality	
GRAND TOTAL (max 100 pts)			

Refer to the most recent ORAM Score Calbration Report for the scoring breakpoints between wellend categories at the following address: http://www.epu.state.ch.us/daw/401401.html
last revised 1 February 2001 jjm

APPENDIX 07-4

SELECTED PHOTOGRAPHS



Photograph 1: View of Wetland 1 from the east.



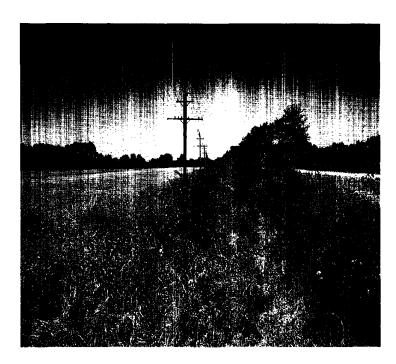
Photograph 2: View of Wetland 2 facing east-southeast.



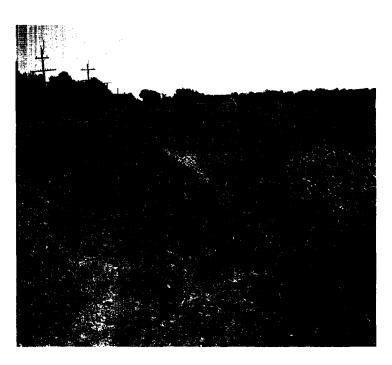
Photograph 3: View of Wetland 2 from the east. This location is immediately south of the Norfolk and Western Railroad.



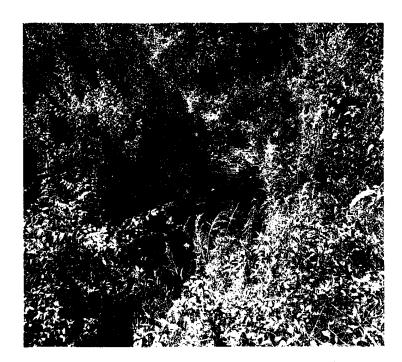
Photograph 4: Another view of Wetland 2 facing west. This photograph was taken from a location east of Photograph 3.



Photograph 5: View of Wetland 3A facing west-northwest.



Photograph 6: View of Wetland 3B facing east.



Photograph 7: View of Stream 1A from the north (UT to Indian Camp Run).



Photograph 8: View of Wetland 4B facing east.



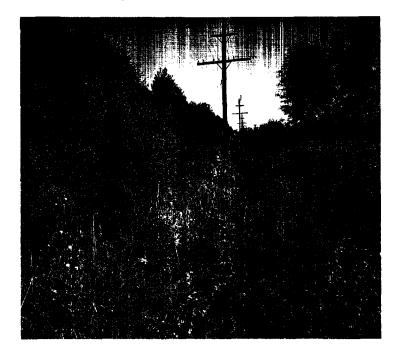
Photograph 9: View of Wetland 4C from the Norfolk and Western Railroad, facing south.



Photograph 10: View of Wetland 5 facing east.



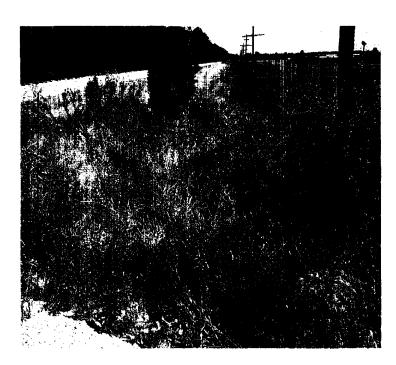
Photograph 11: View of Wetland 5 from the north.



Photograph 12: View of Wetland 6 from a generally west direction.



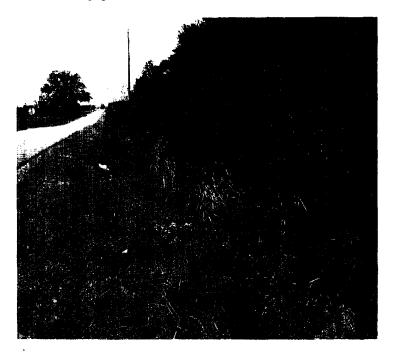
Photograph 13: View of Wetland 7 from a generally east direction.



Photograph 14: View of Wetland 8 facing south-southeast.



Photograph 15: View of Wetland 9A from the southwest.



Photograph 16: View of Wetland 9B facing north-northeast.



Photograph 17: View of Wetland 9C from the south-southwest.



Photograph 18: View of Stream 3 (UT to Sterling Run) from the southeast.



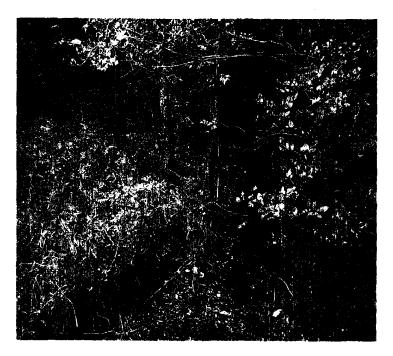
Photograph 19: View of Wetland 10 from the southeast.



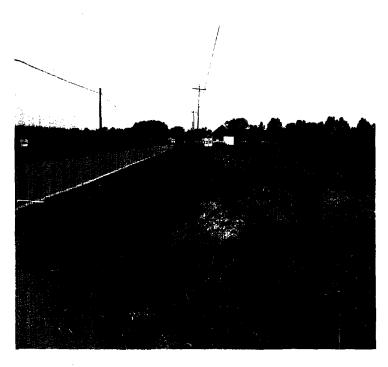
Photograph 20: View of Wetland 11 facing east.



Photograph 21: View of Stream 4A (UT to Sterling Run) facing east-northeast, along the south side of Waits Road.



Photograph 22: View of Stream 5A (UT to Sterling Run) facing southeast.



Photograph 23: View of Wetland 12A from a generally east direction.



Photograph 24: View of Wetland 12B facing north.