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WETLAND DELINEATION REPORT

Kentucky Avenue Wellfield Site OU3
Horseheads, New York

Prepared For:

Viacom, Inc.
11 Stanwix Street
Pittsburgh, PA 15222-1384

Prepared By;

David C. Hails
Ecological Restoration, Inc.
311 Crooks Drive
Apollo, PA 15613

July, 2001

UMMINGS
ITER
CONSULTANTS, INC.

July 18, 2001
Project No. 98245.30/02

Ms. Isabel Rodrigues
U.S. Environmental Protection Agency
Region II
290 Broadway, 20th Floor
New York, NY 10007-1866

RE: TRANSMITTAL - WETLAND DELINEATION REPORT
INDUSTRIAL DRAINAGEWAY - KENTUCKY AVENUE WELLFIELD SITE
HORSEHEADS, NEW YORK

Dear Ms. Rodrigues:

At the direction of Mr. Leo Brausch and on behalf of Viacom Inc., successor in interest to CBS Corporation, enclosed herewith are three copies of the Wetland Delineation Report for the Industrial Drainageway Remediation project at the Kentucky Avenue Wellfield Superfund site.

If you have any questions, please contact Mr. Leo Brausch, Viacom Inc., at (412) 642-3922.

Respectfully submitted,
Cummings/RUer-Consultants, Inc.

Williata C. Sniith, P.E.
Proj ect Manager

WCS/cls

Enclosures

pc: New York Department of Environmental Conservation - (five copies)
Mr. Leo Brausch - Viacom Inc.

339 Haymaker Road • Parkway Building • Suite 201 • Monroeville, PA 15146
245L43 (412) 373-5240 • FAX (412) 373-5242 • E-Mail: crc@cummingsriter.com

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1.0 INTRODUCTION

This report presents the results of a wetland delineation conducted at the Kentucky Avenue Wellfield OU3 Site. The site is located in Chemung County, Horseheads, New York as shown on the general location map provided in Figure 1. Ecological Restoration, Inc. (ERJ) was contracted to complete the study.

The field data collection was completed by David Hails, Senior Ecologist in May, 2001. Qualifications of the delineators can be found in Appendix A. The wetland delineation study area included the Industrial Drainageway corridor (from the Chemung Street Outfall) to Koppers Pond and the pond shoreline in the vicinity of the drainageway outlet as shown in Figure 2.

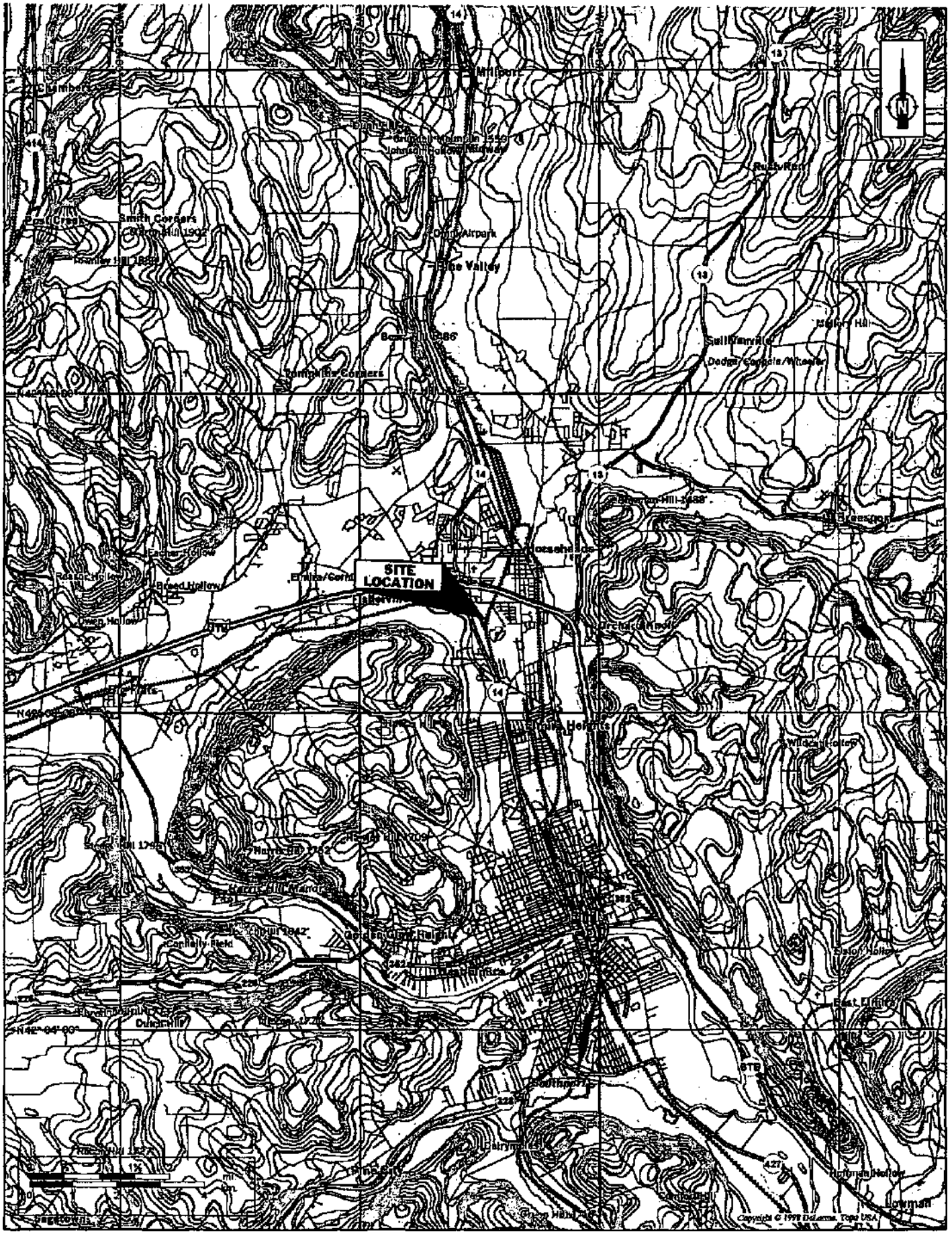

Figure 1 General Site Location

FIGURE 2

PROPOSED WETLANDS DELINEATION AREA

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR

CBS **CORPORATION**
PITTSBURGH, **PENNSYLVANIA**

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1 \ CONSULTANTS, INC.

DRAWING NUMBER
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DRAWN BY: *T.E. McKee* DATE *3-9-98*
CHECKED BY: *B. Geno* DATE *3-19-98*
APPROVED BY: *W. Smith* DATE *3-19-98*

REFERENCE:
MAPPING COMPLETED BY STEREOPHOTO GRAMMETRIC METHODS
BY WEILER ASSOCIATES FROM 1:4800 SCALE AERIAL FLOWN 11-09-91.

REVISION DATE DESCRIPTION

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2.0 METHODS

Jurisdictional wetland resources were identified and delineated on the project site. This report will substantiate this wetland findings by providing background information concerning the existing environment on the project site based on the interpretation of available secondary data and field investigation. Field work was based on the routine onsite wetland detennination method (three parameter approach) described in *Corps of Engineers Wetland Delineation Manual* (May, 1987, Manual) and pertinent "Public Notices" that have revised/updated the "Manual". The transect method was modified to include a complete scouring in a zigzag pattern by the two ecologists. Instead of transects through vegetative zones, the zigzag method proved more comprehensive for documenting complete vegetative makeup of the units.

A brief description of the technical criteria used in delineating the area is outlined below. Information was recorded on field data sheets. Field data sheets are included in Appendix B.

Vegetation

Wetland vegetation requires specific conditions relating to soils and hydrology in order to flourish. All plants associated with wetlands are catalogued in the U.S. Fish and Wildlife Service directories. These directories are specific to each region of the country and contain species listings, each with a wetland status indicator. These indicator designations are defined as follows:

1. *OBLIGATE* (OBL): plants that occur almost always (probability >99%) in wetlands under natural conditions.

2. *FACULTATIVE WETLAND* (FACW): plants that usually (probability 67-99%) occur in wetlands, but occasionally are found in nonwetlands.

3. *FACULTATIVE* (FAC): plants that are equally likely (probability 34-66%) to occur in wetlands or nonwetlands.

4. *FACULTATIVE UPLAND* (FACU): plants that usually (probability 67-99%) occur in nonwetlands, but occasionally are found in wetlands.

5. *UPLAND* (UPL): plants that occur almost always (probability >99%) in nonwetlands under natural conditions.

A positive (+) or negative (-) sign is often used with the facultative indicator categories to more specifically define the regional frequency of occurrence in wetlands. The positive sign indicates a frequency towards the higher end (greater probability) of the category (more frequently found in wetlands) and a negative sign indicates a frequency towards the lower end (lesser probability) of the category (less frequently found in wetlands).

Initially, vegetation units were established in the vegetated portions of the project area. Each unit consisted of different dominant vegetation. In each unit, the dominant vegetation was established in each of the strata present. The vegetative strata consisted of trees, shrubs and saplings, woody vines, and herbs. As defined in the 1987 Manual, hydrophytic (wetland) vegetation is considered present when more than 50 percent of the dominant species were OBL, FACW, or FAC.

Soils

A hydric soil is one that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation. These soils generally develop characteristics that are observable in the field. Soil samples were taken to a depth of 18 inches in each vegetation unit. Characteristics such as gleying, mottling, and organic layering were noted. Also, the U.S. Department of Agriculture, Soil Conservation Service's *Soil Survey of Chemung County, New York* was used as a reference for soil types of the area, which were then field verified. Hydric indicator observations, if any, were noted on the field data sheets. A final determination as to the hydric or non-hydric soil status in each vegetation unit was made based on the information recorded on the field data sheets.

Hydrology

Factors that influence the wetness of an area are soil permeability, depth to groundwater, precipitation, stratigraphy of underlying rocks, general topography and plant cover. Permanent inundation, periodic inundation, or soil saturation (at least seasonally) are major indicators of wetland hydrology.

In areas that are not obviously inundated or saturated, other hydrologic indicators, such as water marks on fixed objects, drift lines, and scoured areas from flooding could be present. Hydrologic characteristics were noted on the field data sheets.

3.0 DESCRIPTION OF PROJECT SITE

The project site is located within an industrial drainageway. The site is surrounded and influenced by industry. The study area consists of a long, narrow man-made channel (Industrial Drainageway) and the northen part of a man-made pond. The northernmost portion of the site is near Chemung Street at the point of the Chemung Street Outfall (a 74 inch diameter pipe). The southernmost portion of the study area is in Koppers Pond. To the east is industrial-use land and areas of fill (mostly overgrown). To the west of the study are various active railroad lines.

3.1 Soils

In general, soils were used only as a secondary indicator of wetlands due to their historically disturbed nature. There were no recent disturbances (other than deposition) that would require treating the site as an atypical situation. Previously mapped soil types were used as a reference only. Hydric inclusions (primarily gleying and mottling) were used as hydric soil indicators. No native soils were encountered during the field investigation. All soils were historically disturbed and contained fill material consisting of cinders, gravel, pieces of brick and other man-made constituents. The Koppers Pond and northern drainage swale areas contain recent depositional soil from upgradient sedimentation.

3.2 Surface Waters

All surface water within the study area appears to originate from the Chemung Street Outfall. There are two other drainage swales in the northernmost portion of the site. Both of these drainage swales were very dry and contained no wetlands during the field investigation. The dry drainage swales probably convey significant stormwater runoff during major events, but they do not hold water long enough to

support wetlands. Soils within the swales appear well drained and consist of silt, cinders, gravel and other depositional material.

The Chemung Street Outfall is the headwater for the Industrial Drainageway. From the outfall, the Industrial Drainageway flows south for about 200 feet then flows through a 60 inch culvert under a railroad spur. The Industrial Drainageway then continues a long straight run for about 1200 feet where it then begins to pond due to a clogged outlet culvert. This reach of the Industrial Drainageway dead-ends in the "V" of a main rail line and a rail spur and is forced at a 90 degree angle, through a 24inch high by 40 inch wide culvert, under the rail spur. The Industrial Drainageway continues for about 100 feet then bends 90 degrees again and once again flows south. The Industrial Drainageway continues for another long and straight run for about 600 feet until it again becomes impounded due to a man-made dam, forming a large pond. The depth of the pond apparently fluctuates greatly. During the field investigation, the pond level was very low.

3.3 Vegetation

Along the northern portion of the Industrial Drainageway exists a narrow corridor with mature trees (mostly Cottonwood) and scrub vegetation. The southern portion (from the rail spur to the pond) has less mature trees along the banks. Submerged aquatic vegetation is present in most of the Industrial Drainageway. The northern portion of the study area has little or no vegetation outside of the corridor. The southern portion of the site has a vegetated corridor and surrounding vegetated uplands. All upland areas outside of the corridor were found to be historically disturbed, containing fill soils and the low-diversity opportunistic vegetation.

Table 1 presents a composite list of the prevalent plant species that occur on upland areas at the project site. The common name, scientific name and wetland

Table 1

Composite List of Prevalent Plant Species
that Occur in Nonwetland (Upland) Areas at the Project Site

Scientific Name	Common Name	Indicator Status
Punus virginiana	Choke Cherry	FACU
Lonicera tartarica	Tartarian Honeysuckle	FACU
Populus deltoides	Cottonwood	FAC
Acer negunda	Boxelder	FAC+
Cornus stolonifera	Red Osier Dogwood	FACW+
Vitis labrusca	Fox Grape	FACU
Parthenocissus quinquefolia	Virginia Creeper	FACU

Indicator status (Based on plant species frequency of occurrence in wetlands, developed by Reed, 1988).

UPL = Upland (probability >99% found in uplands)

FACU = Facultative Upland (probability 67-99% found in nonwetlands, 1-33% in wetlands)

FAC = Facultative (Probability 34-66% found in wetlands)

FACW = Facultative Wetland (probability 66-99% found in wetlands)

OBL = Obligate Wetland Plant (probability >99% found in wetlands)

NI = No Indicator has been Established for this Species

indicator status for each plant species is included on Table 1. Prevalent vegetation in the delineated wetland areas will be discussed in the next section of this report.

The overall vegetative community on the project site is decidedly upland.

Wildlife habitat on the project site is poor. The evaluation and assessment on the project site revealed that there appears to be no critical habitat for any fish, amphibian, reptile, bird, or mammal of special concern that are on State or Federal lists of threatened or endangered species.

4.0 WETLAND DETERMINATION

The study addressed the identification, delineation and classification of jurisdictional wetland resources on the project site using the routine three-parameter approach. This investigation identified and delineated six distinct wetland areas that total 2.289 acres in size.

The delineated wetland boundaries were flagged in the field and transferred to the project basemap. The wetland units are designated as Wetland Areas A through F and are shown in Figure 3 - Delineated Wetlands on the Project Site.

Table 2 presents a composite list of the prevalent plant species found in the delineated wetland areas. Table 3 contains the size and wetland classification (Cowardin, 1979) for each of the wetland units.

Field Data Sheets that are indicative of the vegetation, soils and hydrology of the site are included in Appendix B. Representative photographs of the delineated wetlands and other site features are presented in Appendix C.

4.1 Description of Wetland Areas

Wetland A

Wetland A is located immediately below the Chemung Street Outfall and continues to the rail spur culvert. In this area, a small floodplain bench on both sides of the Industrial Drainageway contains a predominance of wetland vegetation consisting of *Solidago gigantea* (giant goldenrod), *Solarium dulcamara* (climbing nightshade) and *Impatiens pallida* (pale touch-me-not). The stream channel in this area has minimal vegetation consisting of *Chora vulgaris* (muskgrass).

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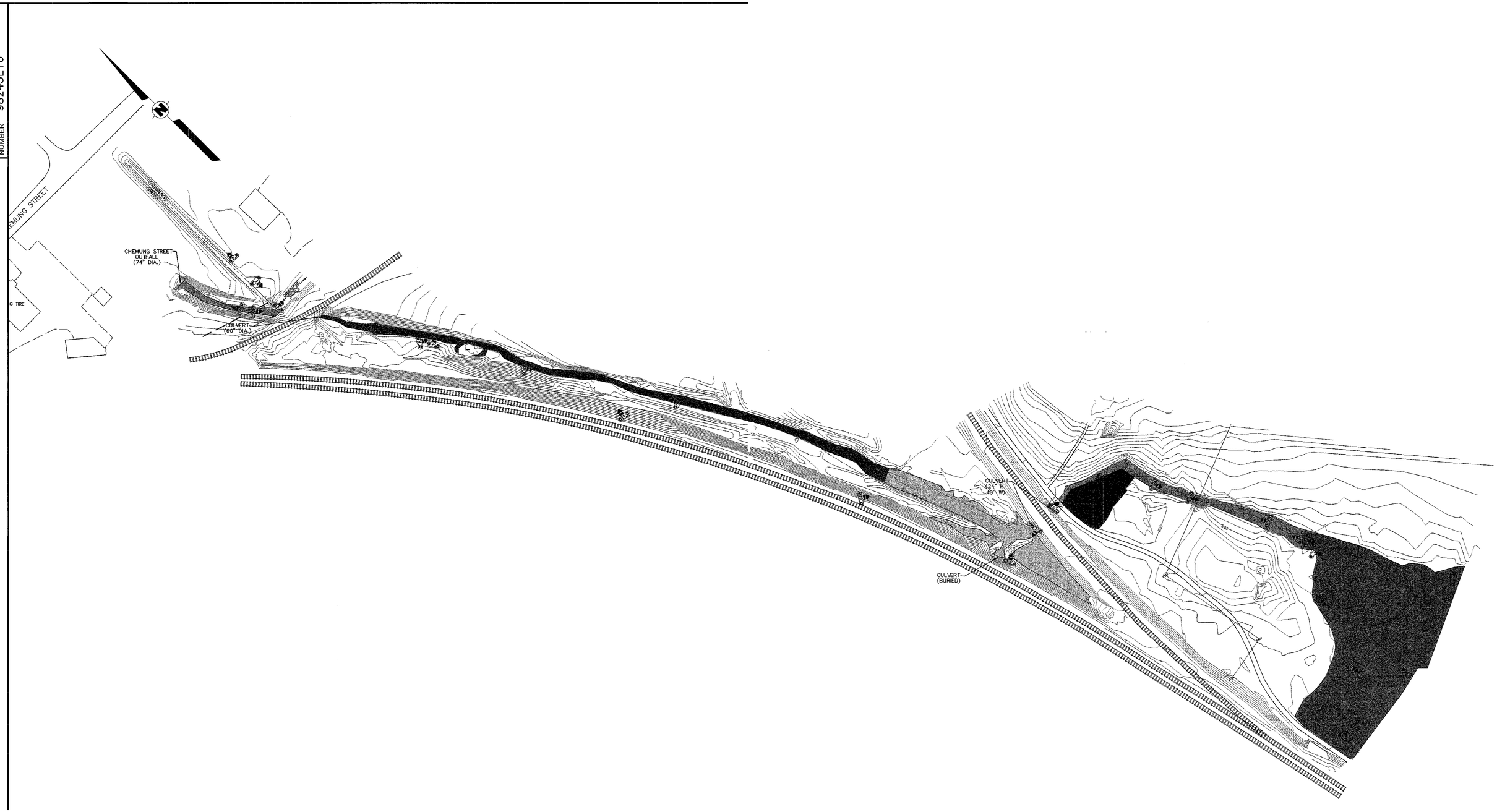

LEGEND

- WETLAND UNIT A
- WETLAND UNIT B
- WETLAND UNIT C
- WETLAND UNIT D
- WETLAND UNIT E
- WETLAND UNIT F

PLOT SCALE = 1

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

FIGURE 3

DELINEATED WETLANDS ON PROJECT SITE

KENTUCKY AVENUE WELLFIELD SITE - 0U3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

CUMMINGS CONSULTANTS INC.
CORPORATE HEADQUARTERS
339 Haymaker Road
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SCALE
100 100 200 FEET

DRAWN BY: T.N. Fitzroy
CHECKED BY: D. HAILS
APPROVED BY: D. HAILS

SIZE E | SCALE: 1" = 100' | REV. 0 | DRAWING NUMBER 98245E16

DATE: 7-12-01
DATE: 7-12-01
DATE: 7-12-01

Table 2

Composite List of Prevalent Plant Species

that Occur in Wetland Areas at Project Site

Scientific Name	Common Name	Indicator Status
Typha angustifolia	Narrowleaf Cattail	OBL
Salix nigra	Black Willow	FACW+
Solidago gigantea	Giant Goldenrod	FACW
Phalaris arundinacea	Reed Canarygrass	FACW+
Solarium dulcamara	Climbing Nightshade	FAC-
Impatiens pallida	Pale Touch-me-not	FACW
Chara vulgaris	Muskgrass	OBL
Populus deltoides	Cottonwood	FAC
Eupatorhim perfoliatum	Boneset	FACW+
Potomogeton pectinatus	Sago Pondweed	OBL
Najas gracillima	Threadlike Naiad	OBL
Leersia oryzoides	Rice Cutgrass	OBL
Carex lacustris	Lake Sedge	OBL
Fraxinus pennsylvanica	Green Ash	FACW

Indicator status (Based on plant species frequency of occurrence in wetlands, developed by Reed, 1988).

UPL = Upland (probability >99% found in uplands)

FACU = Facultative Upland (probability 67-99% found in nonwetlands, 1-33% in wetlands)

FAC = Facultative (probability 34-66% found in wetlands)

FACW = Facultative Wetland (probability 66-99% found in wetlands)

OBL = Obligate Wetland Plant (probability >99% found in wetlands)

Table 3

Size and Classification of Delineated Wetlands on Project Site

Delineated Wetland Units	Size		Classification
	Sq.ft.	Acres	
A	1,688.58	0.039	PEM
B	12,575.48	0.289	PEMH
C	14,943.94	0.343	PEMA2
D	6,546.95	0.150	PEM/FOC6
E	9,132.45	0.210	PEMH
F	54,834.88	1.259	PEM/FOH1

Key

P = Palustrine
EM = Emergent
FO= Forested
1 = Persistent
2 = Nonpersistent
6 = Broad-leaved Deciduous
A = Temporarily Flooded
H= Permanently Flooded
C= Seasonal

Wetland B

Located downstream from Wetland A, this unit consists of a very well defined channel with nonwetland banks. The channel is dominated by muskgrass, a highly opportunistic invader. The upland banks are dominated by *Populus deltoides* (cottonwood), *Prunus virginiana* (choke cherry), *Lonicera tartarica* (tartarian honeysuckle, *Acer negunda* (boxelder), *Cornus stolonifera* (red osier dogwood), *Vitis labrusca* (fox grape) and *Parthenocissus quinquefolia* (Virginia creeper).

Wetland C

Wetland C is a flooded area between the rail spur and the main rail line. The Industrial Drainageway dead-ends in this location and the water is forced through a culvert positioned perpendicular to the channel. During the field investigation, the culvert was clogged. Dominant plants in the wetland include *Phalaris arundinacea* (reed canary grass) and giant goldenrod. Fish were observed in the ponded area. *

Wetland D

Wetland D is a small meadow within the floodplain of the Industrial Drainageway. Soils are gleyed and mottled in this area. The wetland contains primarily *Eupatorium perfoliatum* (boneset) with cottonwood seedlings and *Salix nigra* (black willow) trees less dominant.

Wetland E

Wetland E is the continuation of the Industrial Drainageway. Again, the channel is well-defined and the wetland includes only the wetted perimeter and not the banks. Predominant vegetation includes *Potomogeton pectinatus* (sago pondweed), *Najas gracillima* (threadlike naiad) and musk grass.

Wetland F

Wetland F starts near the end of the Industrial Drainageway where the water is impounded. The wetlands are primarily along the northern and western perimeters of the pond. The eastern border of the pond has a steep bank and little or no wetlands. The western portion does not have a steep bank. The water level of the pond appears to fluctuate greatly. Wetlands have formed where water has receded. Currently water levels appear low. Soils are gleyed and silty (deposition and muck). Predominant vegetation includes reed canary grass, *Leersia oryzoides* (rice cutgrass), *Carex lacustris* (lake sedge), *Typha angustifolia* (narrow leaf cattail), pale touch-me-not, *Fraxinus pennsylvanica* (green ash) and boneset.

5.0 CONCLUSION

Six wetland units were identified in the study area. They provide limited values and functions that include, floodwater/stormwater retention and minimal wildlife habitat. None of the wetlands are exceptional value. All wetlands identified have low values and functions since they are recently formed, have low vegetative diversity and provide minimal wildlife habitat. All wetlands identified on the site are man-induced and are not naturally occurring.

6.0 REFERENCES

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Mitsch, W.J., and J.G. Goselink. 1993. *Wetlands* (2nd ed.) Van Nostrand Reinhold. New York, NY. 722 pp.

Reed, J. P., Jr. 1988. *National List of Plant Species That Occur in Wetlands; Northeast (Region 1).* National Wetlands Inventory, U.S. Fish and Wildlife Service, Biological Report 88 (26.1). St. Petersburg, FL.

Tiner, R., et.al. 1995. *Supplement to the List of Plant Species That Occur in Wetlands: Northeast (Region 1).* National Wetlands Inventory, U.S. Fish and Wildlife Service, Biological Report 88(26.1). St. Petersburg, FL

U.S.D.A.-Soil Conservation Service. 1991. *Hydric Soils of the United States.* In cooperation with the National Technical Committee for Hydric Soils. Washington, D.C.

U.S.D.A - Soil Conservation Service^l973. *Soil Survey of Chemung County,* New York. USDA - Soil Conservation Service, Washington, D.C. 157pp.

Appendix A

Qualifications of Senior Wetland Delineators

DAVID C. HAILS
Certified Ecologist

PROFESSIONAL HISTORY

Ecological Restoration, Inc., 1997-present *President/Senior Ecologist*
Wetland Supply CcAVetland Restoration Nursery, 1992-present, *Owner/Nursery Manager*
EAP Environmental, 1993 - 1996, *Senior Ecologist/Manager*
Ecotoxicology Testing Services, 1993-1997, *Research Director/Owner*
Chester Environmental, Inc., 1990-1993, *Ecology Dept Manager*
Keystone Environmental Resources, Inc., 1988-1990, *Ecology Dept. Manager*
Koppers Co., Inc., Environmental Services Division., 1986-1988, *Staff Ecologist*
RMC Environmental, Inc., 1985-1986, *Fisheries Biologist*
That Fish Place, Inc., 1984-1985, *Biological Consultant*
U.S. Department of the Interior, Office of Surface Mining, 1983, *Biological Technician*

EDUCATION

- B.S. Environmental Biology /Marine Biology, Millersville University of PA
- Three years of full time undergraduate study in Biology, Saint Vincent College, Latrobe, PA
- Additional Courses in Wetland Ecology, Oceanography, Marine Biology, Marine Ichthyology, Marine Invertebrates, and Wetland Ornithology from The Wallops Island Marine Science Consortium, VA and FL
- Additional Course in Federal Wetland Policy, Wetland Training Institute, MD

CERTIFICATIONS

Certified Ecologist, Ecological Society of America
Certified 40 Hour Training for Hazardous Waste Site Health and Safety Operations
Certified Supervisor for Hazardous Waste Site Health and Safety Operations
Certified by Red Cross for First Aid and CPR
Certified Nurseryman, Pennsylvania Department of Agriculture

AFFILIATIONS

Society of Wetland Scientists
American Society for Surface Mining Reclamation
North American Benthological Society
Ecological Society of America
Pennsylvania Water Environment Association
Western Pennsylvania Ecology Society
Water Environment Federation

TECHNICAL SPECIALTIES

* Wetlands - Delineation, Mitigation Design, Construction
* Land Use Planning Based on Ecological Parameters
* Habitat Evaluation for Hazardous Waste/Superfund Site Impact Assessment
* Ecological Risk Assessment
* Natural Resource Damage Assessment
* Streambank Restoration

LEGAL EXPERIENCE

Testified as an expert witness in aquatic ecology and wetland ecology in court on behalf of several clients.

REPRESENTATIVE PROJECT EXPERIENCE

Wetland Delineation and Land Use Analysis of 1,160 Acres of Bottomland in Harleyville, South Carolina: Senior project ecologist for a major land use study performed for a marl mining company to determine land suitable for mining that would avoid wetland impacts.

Aided in the Design and Construction of a Wastewater Treatment Facility, Frankfort Springs, Pennsylvania. Aided a client in removing metals from wastewater to reduce toxicity to aquatic organisms in the receiving stream. Designed and constructed an experinmental wetland polishing system.

Conducted a Wetland Impact Assessment at a 5 Acre Wetland Site that had been Illegally Filled near Pittsburgh, PA. Senior ecologist in charge of project.

Wetland Delineation and Habitat Evaluation of 500 Acres and Subsequent Wetland Mitigation Design and Construction and Aquatic Study near Pittsburgh, PA: Senior project ecologist and construction supervisor in charge of the entire project.

Endangered Species Survey, Wetland Delineation and Habitat Evaluation in and Adjacent to Silver Bow Creek, Butte, Montana: Senior project ecologist for a superfund site investigation where protected bird species were thought to be utilizing on site wetlands.

Wetland and Upland Habitat Assessment and Subsequent Ecological Risk Assessment at a Superfund Site in New Jersey: Senior ecologist in charge of entire assessment which included field surveys of dominant vegetation, birds, mammals, and fish; and preparation of a Preliminary Ecological Risk Assessment Report.

Conducted a Habitat Evaluation, Prepared and Implemented Wetland and Aquatic Habitat Mitigation Plans for a Superfund Site in Morrisville, North Carolina'. Senior ecologist in charge of entire study and habitat construction. Study included a fish survey using electrofishing and gill netting, fish tissue analyses and an an analyses of waterfowl utilizing the site, an ecological risk assessment, preparation of a plan to mitigate the resources lost as part of the site remediation effort and construction of replacement habitats.

Conducted a Habitat Evaluation at a Superfund Site in Salisbury, Maryland: Senior ecologist in charge of a study which included an evaluation of protected raptor species utilizing the site, identification of all wetland and upland habitats, and preparation of a preliminary ecological risk assessment. Currently involved in wetland replacement efforts at the site.

Conducted a Wetland Delineation and Habitat Assessment for a Real Estate Developer in Cartaret, New Jersey on 150 Acres: Senior ecologist responsible for determining the boundaries of all wetlands on the site and to provide an analysis of the usage of these wetlands by migratory waterfowl.

Performed an Ecological Risk Assessment, Wetland Delineation and Wetland Mitigation for a Superfund Site in Armstrong County, Pennsylvania: Ultimately responsible for all ecology-related work performed on this site for a 12 year period. Studies included wetland delineation and

mitigation, wildlife usage analysis, fish surveys, fish and crayfish tissue analyses, benthic macroinvertebrate investigations, and terrestrial biota studies. Currently involved in a Toxicity Identification Evaluation using bioassay.

Conducted a Wetland Delineation, Prepared and Implemented a Wetland Restoration Plan and Performed a Fish Survey and Fish Tissue Analyses for a Superfund Site in Massachusetts. Senior ecologist in charge of project for the past 8 years.

Conducted a Wetland Delineation and Habitat Evaluation at a Superfund Site in Carbondale, Illinois: Senior ecologist in charge of evaluating all habitat on the site for it's ability to support wildlife and to delineate the wetlands.

Conducted a Wetland Impact Assessment in two Wetland Areas that had been Illegally Filled Near Philadelphia, PA. Senior ecologist in charge of project.

Designed a Wetland for Municipal Wastewater Treatment, Sewickley Heights, PA: Provided professional consultation for the design of a wastewater treatment system that would treat sewage for twelve homes.

Performed an Ecological Risk Assessment at a Superfund Site in Charleston, South Carolina: Ultimately responsible for all work performed on this project for a two year period. The work included habitat evaluation, stream surveys, fish and crayfish tissue collection for analysis and preparation of an Ecological Risk Assessment Report.

Performed a Stream Survey, Fish and Crayfish Tissue Collection for Chemical Analysis, and a Wetland Delineation at a Superfund Site in Texarkana, Texas: Senior ecologist in charge of entire project.

Conducted a Habitat Evaluation at a Wood Treating Facility in Portsmouth, Virginia: Senior ecologist in charge of entire project.

Conducted a Habitat Evaluation and an Ecological Risk Assessment at a Superfund Site in Saint Paul, Minnesota: Conducted field sampling, terrestrial and aquatic toxicity tests, wetland and habitat assessments and prepared an Ecological Risk Assessment Report.

Developed a Environmentally Sensitive Area Protection Plan for a Wood Treating Facility in New Jersey: Prepared the plan for submittal to the jurisdictional Agencies.

Conducted a Land Use Study for a Coal Mining Company in Burgettstown, Pennsylvania: Conducted a wetland delineation and habitat evaluation on approximately 100 acres of land. Provided recommendations on avoiding ecologically sensitive areas.

Conducted a Habitat Evaluation at a Proposed Riverfront Park in Westmoreland County, PA: Aided in the design of a park system to avoid impact to endangered and threatened species of wildflowers and sensitive wetland areas.

Conducted a Wetland Delineation in Dolomite, Alabama for a Tar Plant: Delineated wetlands consisting mainly of bottomland hardwoods.

Appendix B

Field Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 CCE Wetlands Delineation Manual)

Project/Site: fo>nU^ kig-MJ^f|A <^* fy~?
Applicant/Owner: \/_a c^ r<^
Investigator: T) .tt-w.A*

Date: gW4~ °\
County: £kgrrwr>9
State: My ^

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: **W-A**
Transect ID:
Plot ID:

VEGETATION

Oominanr P'anr Soeeies	Stratum	Indicator	Dominant P'sm'Soecies	Stratum	Indicator
			9.		
			10.		
			It.		
4.			12.		
5.			13.		
6.			14.		
7.			IS.		
S.			16.		
Percent of Dominant Species that are OBL. FACW or *FAC* (excluding FACO.			*[do*		
Remarks:					

HYDROLOGY

___Recorded Data (Oescnbe in Remarks):
___Stream. Lake, or Tide Gauge
___Aeriei Photograph*
___Other
jc No Recorded Data Available

Field Observation!:

Depth of Surface Water: *(ci*.„nt* (in.)

Depth to Free Water in *Pivfenty* _ _ _ L ~ _ ' i n -)

Depth to Saturated Soil: On.)

Remerka:

Wetland Hydrology Indicator!:
Primary Indicators:
/* Inundated
Jr Saturated in Upper 1 2 Inches
___Water Marks
___Drift Lines
___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-Noutrel Test
___Other (Explain in Remarks)

SOILS

Mao Unit Nam*
(Sanaa and Phase): *JM,*

Taxonomy (Subgroup):

Oreinege Class:
Field Observations
Confirm Mapped Type? <*^«V)No

Prpfila Oejcnprifrn;

Otpth flncheji Hpoioff	Matrix Color tMunstll Mpratf	Mottl* Colors JMgnsetl Mont)	Mom* Abundance/Contrast	Texture. Concretions. Structure, eic.
Q-n	I'-r^r&l			

Mydno Soil indicators:

___Hiatosol
, Hiaoc Epipadon
__r Sulfidic Odor
__ Aquic Moisture Regime
___ Reducing Conditions
A Glayad or Low-Chroma Colon

___Concretions
.. High Organic Content *in* Surface Layer in Sandy Soil*
, , Organic Stracking in Sandy Soils
___Listed on Local Hydrio Soils List
._ Listed on National Hydhc Soiia List
M Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydropnyirc Vegetation Present? YoaJ No (Circle!
Wedend Hydrology Present? Y • 1 / No
Hydric Soils Pr eaent? Yee> No

(Circle)

Is thie Sampling Point Within a WsOsnd? (^VaT^No

Remarks:

Approved by

DATA FORM
ROUTINE WETLAND DETERMINATION
11987 CCE Wetlands Delineation Manual)

Project/Site: K e w U f a K i e M W I k f l ,) , ^ *0Q3*
Applicant/Owner: *\/\atorr*,* "
Investigator; *P J U o \ $ "

Oate: *Z'lk-Oj*
County: £kgrTsors<V
State: MV ^

Oo Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation}? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot 10:

VEGETATION			
Dominant Plant Soecies Stratum Indicator	**Oominant PignrSoacies**		
	9.		
	10.		
3. ^ ^	**I 1.**		
4.	**12.**		
5.	**13.**		
6.	**14.**		
7.	**IS.**		
8.	**16.**		
Parcant of Oominent Species that are OBL. FACW or PAC (excluding FAC-K		*iCO*	
Remarks:			

HYDROLOGY

___Recorded Oala (Oescribe in Remarktt:
___Stream. Lake. or Tida Gauge
Aerial Photograph*
___Other
y" No Recorded Oat* Available

field Obsarvationa:

Depth of Surface Water: Jin. I
Oepth to Fraa Watar in Pit: **fin.)**
OeQth To Saturated Soil: **(in.)**

Remertca:

Wetland Hydrology Indicators:
Phmarv Indicators:
T Inundated**
___Saturated in Upper 1 2 Inches
___Weter Merks
___Orirt Linae
___Sediment Deposits
___Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___Oxidized Root Channels in Upper 12 tnchea
___Water-Stained Leaves
___Local Soil Survey Data
___FACNeutral Teat
___Other (Explain in Remarks)

SOILS

Map Unit N«m#
(Sariit and Phaia): *AIM* */yjjj^/c*

Orainaga Class: _____
Fiald Observations
Confirm Mapped Type? Yas No

Taxonomy (Subgroup}:

Profits paacnpttgn;

Oapth (tnchai)	Horizon	Motnx Color tMunssli Moist)	Mortis Colors :Mynss» Moistt	Mora* Abundsnca/Contraat	T«tura. Concratipna, Stmcturs. ate.
6 #	*tra <*/*				

Hydno Soil Indicators:

___ Hiatoaol
___ Hiatic Epipadon
mm_ Sulfidie Odor
__ Aqmc Moisture Regime
___ Reducing Conditions
____Glayad or Low-Chroma Colors

____Cone rations
, High Organic Content *in* Surface Layer in Sandy Soili
„ Organic Streaking in Sandy Soils
____Listed on Local Hydrio Soila (Jtt
__ Uatad on National Hydnc Soila List
____Other (Explain in Remarks.)

Remarket

WETLAND DETERMINATION

Hydrophyte Vegetation Preeem? Yes No (Circle)
WatJand Hydrology Pra»ent? Yes No
Hydrtc Soiia Praaant? Yes No

(Circle)

(a this Sampling Point Within a Wetland? *f ^ * £ j H o*

Inundated

ftamarka:

DATA FORM
ROUTINE WETLAND DETERMINATION
[1987 CCE Wetlands Delineation Manual)

Project/Site: Kentucky Ave Wellfield Site OU3
Applicant/Owner: Viacom
Investigator: D. Hails

Date: 5-16-01
County: Chemung
State: NY

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: W-C
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Phalaris arundinacea	Herb	FACW
2. Solidago gigantea	Herb	FACW
3.		
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

p z r ; o ~ SO,C,_S •..... OBL ^ « '*C

100

Remarks:

HYDROLOGY

____Recorded Oata (Oescribe in Remark*):
— Straam. L*ke. or Tide Gauge
__ Aerial Photographs
____Othar
^ No Recorded Data Available

Field Observations:

Depth of Surfaca Water: ikl[1] Jin.)
Oepth to Free Watar in Pit: Jin.)
Depth to Saturated Soil: IL (in. J

Wetland Hydrology Indicator*:
Primary Indicators:
jg_ inundated
____Saturated in Upper 12 Inches
____Watar Marks
____Drift Li net
____Sediment Deposits
____Drainage Panama in Wetlands
Secondary Indicators (2 or mora required):
m Oxidized Root Channels in Upper 1 2 Inches
____Water-Stained Leaves
____Local Soil Survey Data
, FAC-Neutrel Teat
____Othar (Explain in Remarks)

Ramerk
%€^ ifiwJc™"*

SOILS

Map Unit Namt
(Sanaa and Phasat: LLiLn MUm Ja 37

Taxonomy (Subgroup!:

____Drainage Oats:
Field Observation*
Confirm Mapped Typo? '(•t^No

Profile Oejcnprion:

Oepth (Inch»a> Hphion	Matnx Color (Mupaatl Morat|	Mottle Color* iMqnaeil Moistf	Mottla Aburmanca/Qgntreyr	Texture. Conerationi. Strjcnira. etc.
ElA	*l^J^Sl*			

Hydno Soil indiearora:

mi Histoeof
it Hiatic Epipedon
__ Sulfidic Odor
^_ Aquie Moisture Regime
___ Reducing Conditions
__ Glayad or Low-Chroma Colors

____Coneraaona
,. High Orgamc Content *in* Surface Layer in Sandy Soils
__ Orgarao Streaking in Sandy Soiia
___Liatad on Local Hydrio Soils List
, Uitad on National Hydne SoiJa List
, Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegstation Present? Yes No (Circle)
WetJend Hydrology Present? Yes No
Hydric Soils Preaant? Yes No
Inundated

(Circle*
I* thia Sampling Point Within a Wetland? S> No

Remark*:

OATA FORM
ROUTINE WETLAND DETERMINATION
,1987 CCE Wetlanos Delineation Manual)

Project/Site: teftUfr-Y ^leMjfJlii^j^ ^le. OU3
Applicant/Owner: \f\atcrr>
investigator: T>.JV^Tu

Date: C-7&Q/
County: £kftT\ors*
State: m, V"
Community ID: L/-D
Transect ID:
Plot ID:

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation!? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

VEGETATION

ssssEssaacKK

Oominant Plant Soeeies	Stratum	Indicator	Oominant P'9rnSoec:es	Stratum	Indicator
1.					
2.					
3.,			11.		
4._			12._		
S..			13._		
6._			14.		
7._			IS..		
8			16.		

Percent of Dominant 5pecies that ars OBL. FACW or f AC (excluding *FAC~).* (0&

Remarks:

HYDROLOGY

Recorded Oata iOesenbe in Remarks):
___Stream, Lake, or Tide Gauge
___ Aerial Photograph!
___Other
No Recorded Oata Available
/ *

Field Observation!:

Depth of Surface Water:

Depth to Free Water in Pit: _2__"

Oeptn to Secure ted Soil: b- (in.)

Remertte:

Wetland Hydrology Indicators:
Primary Indicators:
inundated
Saturated in Upper \2 Inches
^ ___Water Mark*
___Orift Lines
___Sediment Deposits
___Drainage Patterns in Wetlands
Secondary Indicators (2 or mora required!:
___Oxidized Root Channels in Upper 12 Inchae
___Water-Stained Leaves
___Local Soil Survey Oata
___FAC-Neutral Teat
___Other IExplain in Remarks)

SOILS

Mao Unit Nam*
(Ssnas and Phssah L/>h <*r\

Taxonomy (Subgroup):

^ti Orainaga Oats:
Raid Obaarvatrom
_____ Confirm Maopsd Typa? (3 N <

Profits Oaaenotion;

Oapth {Inchqsj	Horizon	Matrix Color (Munss)i Morstf	Mottla Colors :MunasH Moistf	MORI* Abundancs/Comrast	Tsxtur*. Concrations, Stnictura.aie,
3,-fc	A*	7,rY^^ we-fiL		Kj^.n,^	Mf.

Hydno Soil Indicator*:

_, Histosei
____Hiitlc Epipvdon
____Sulffdic Odor
__ Aquic Molatur* R*gim*
Vf Raducing Conditions
±f. GUyad or Low-Chroma Colors

V Coneraoon*
im High Organic Contant in Surfaea Layar in Sandy Soili
_ Organto Straafcfng in Sandy Soils
__ Ustad on Local Hydric Soils List
, Listed on Nabonal Hydnc Soil* List
Othsr (Explain in Ramarfcs)

Ramarfcs:

WETLAND DETERMINATION

Hydrophyte Vagstsbon Prasam? No (Circle*
Wafland Hydrology Prasam? No
Hydnc Soils Preasnt? No

(Clrdol

Is this Sampling Point Within a Wadand? /^*Cy*o

Ramorka:

Approved by

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 CCE Wetlanas Delineation **Manual)**

Oate: _
Counry: — r ~ *
State: __ *Kt\J V*___

°-r s*^

'» *• area a *v o* ^ *& S* ™ , * £ > ™ S.-.u„,on,? *(yes)* **No**
j'f needed. explain on reverse, i Yes " ^
Yes

Community ID: *Uj— £~*
Transect ID: _____
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Potamogeton pectinatus	Herb	OBL	9.		
2. Najas gracillima	Herb	OBL	10.		
3. Chara vulgaris	Herb		11.		
4.			12.		
5.			13.		
6. all SAVs			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that ("eluding FAC-I. **•'• 08L. FACW or FAC** *f cro*

Romerks:

HYDROLOGY

____Recorded Data (Describe in Remarks):
____Stream. Lake. or Tida Gauge
ti **Aerial Photographs**
____Other
i/*No Recorded Oata Available

Field Observations:

Otpth of Surface Water: ***H*** ***Jin.}***

Oepth to Free Water in Pit: **.'in.J**

Depth to Saturated Soil: (in.)

Remarks;

Wetland Hydrology Indicators:
Primary indicators:
-^^-Inundated
. Saturated in Upper 12 Inches
____Water Merks
____Ohfi Lines
____Sediment Deposits
____Drainage Patterns in Wetlands
Secondary Indicators (2 or mora required):
: Oxidized Root Channels in Upper 12 Inches
____Watar-Stained Leaves
____Local Soil Survey Data
____FAC-Neutref Test
___ Other (Explain in Remarks!

SOILS

Map Unit N«m«
{Sarias and Phaaai: *j£* *)KS\)fJt>ftT^O*

Orainaga Claaa:
Raid ODsarvano
Confirm Mappad Typa? Y«» No

Taxonomy (Subgroup):

Profila paicpption;

Oapth tlnchaaj Horizon	Motnx Color iVunaall-Moiatj	Monia Colors jMijnaeK Moist)	Mottla Abur*da,nca/Contrait	Taxtura. Concrationt. Stnjcfyra. ate.

Hydno Soil indicators:

___ Hi»tO»Ol
Mll Hiitic Epipadon
____Sulfidie Odor
„_,Aquic Moiatura Ragimo
,. Raducing Condition*
____Glayad *or* Low-Chroma Colon
____Coneraoon*
___ High Organre Contant in Surfaca Lav*' in Sandy Soil*
., Organic StraaJdng in Sandy Soil*
M Littad on Local Hydrio Sofia Utt
1 Utrad on Nabonal Hydne Soils lift
___ Othar (Explain in Ramarfea)

Aamarka:

WETLAND DETERMIMATION

Hydrephytie Vagatabon Praaant? Yes No (Circla)
Wadand Hydrology Praaant?
Hydrlc Soifa Pfwant? Y.a^f) ,j It thia Sampling Point Within a WaOand? ICIrdat Ya«

Rama/ts:

T5p?ov»3T^Ql

DATA FORM

Pr0ject/Site: Kentucky Ave Wellfield Site OU3
Applicant/Owner: Viacom
investigator: D. Hanis

Date: S^A* <V
County; £kgyr>ors9
State: A<Y ^

Yes No
Yes No
Yes No

Communirv 'D: ^/ ~JT
Transect ID:
Plot (D:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Phalaris arundinacea	Herb	FACW+
2. Leersia oryzoides	Herb	OBL
3. Carex lacustris	Herb	OBL
4. Typha angustifolia	Herb	OBL
5. Impatiens pallida	Herb	FACW
		FAC

Ominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

* « • « or Dominant Spaci„ that are 08L FACW or FAC (excluding FAC-).

100

Remarks:

HYDROLOGY

____Recorded Oata (Describe in Remark*):
____Stream, Lett*, or Tide Gauge
mm AariaJ Photograph*
____Other
^}Q^ No Recorded Data Available

Field Observations:

Depth of Surface Water: Jin.)
Depth to *ft«9* Water in Pit: 'in.)
Depth to Seturated Soil: (in.)

Aemerks:

Wetland Hydrology Indicators:
Phmery Indicators:
____Inundated
^£ Saturated in Upper 12 Inches
____Water Marks
Orift tjnea
J^T Sediment Deposits
^- Drsinaga Patterns in Wetlands
Secondary Indicators (2 or mora required):
____Oxidized Root Channels in Upper 12 Inch**
____Water-Stained Leaves
, LocaJ Soil Survey Deta
____FAC-Neutral Test
____Other (Explain in Aemarks)

SOILS

Mao Unit Nam*
{Sarlaf and Phase): *Ut'Qgvs.*

Orainego Class:
Field Observations
Confirm Mappad Typo? ^ e y j No

Taxonomy (Subgroup):

Profile Description;

Ospth finches) Hohton	Matrix Color (Munacil Moist!	Mottle Colors (Mt^naeil Moiatf	Motne Abundance/Cgntreet	Texture. Concretions. Structure, etc.
/-ft- P\	x.viWpj	/Jor^		

Hydno Soil Indicators:

:ir. Hi»toaol
___Hiitic Epipedon
mmm Sulfidfe Odor
__ Aquic Moisture Regime
. Reducing Conditions
G-leyed or.Low-Chroma Colors
><-

Concretions
High Organtc Content in Surface Layer in Sandy Soila
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soila List
Other {Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present/  No (Circle) (Circle)
Wetland Hydrology Present? ____No
Hydric Soils Present? fa this Sampling Point Within a Wetland? > - * 5) No

Remarks:

Approved \>y«mkti\M

DATA FORM
ROUTINE WETLAND DETERMINATION
{1987 CCE Wetlands Delineation Manual)

Project/Site: ..
Applicam/Owner;
[nvesxigator:

Date: £~fc

State: AjO V

Do Normal Circumstances exi« «« K "
's the site significantly dlsturhlT. ' S«e?
- *• area a p o t ^ ^ ^ S S ^ ^ ^ *•"" » « '
L <" "eeded, explain on revere .

C?es? No
Yes (No)

Community ID: // — A
Transect ID: "^ •
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Populus deltoides	Tree	FAC
2. Prunus virginiana	Tree	FACU
3. Lonicera tartarica	Shrub	FACU
4. Acer negundo	Tree	FACt
5. Cornus stolonifera	Shrub	FACW
6. Vitis labrusca	Vine	FACU
7. Parthenocissus quinquefolia	vine	FACU
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 42

Remarks:

HYDROLOGY

— Racordad Oat. (Oescribe in Remarks,:
— Straam. Uka, or Tide Gauga
___Aerial Photograph*
___Othar
\C No Recorded Data Availabia

Field Observations:

Dapth of Surfaca Water: a fJL~ (in.)

Depth (o Free Water in Pit: Jin.}

Daptn to Saturated Sort: (in.)

Wettend Hydrology Indicators:
Primary indicators:
___inundated
—. Saturated in Upper 1 2 Inches
___Weter Marka
___Drift Lines
___Sediment Deposits
— Drainage Patterns in Wetlands
Secondary Indicators (2 or mora required):
___Oxidiied Root Chennele in Upper 1 2 Inches
___Water-Stained Leaves
___ Local Soil Survey Oata
___pACNeutral Teat
___Other (Explain *in* Remark*)

SOILS

Mao Unit Nam*
(Sanaa and Phaso): uA>MV-^

Orainaga Oats:
Fiald Obaarvation*
Confirm Mapped Type? " ^ ^ No

Taxonomy (Subgroup):

Profile Oaacnption:

0»pth (Inches)	Horizon	Main* Color (Munstll Moi»t[	Mottia Colors i.MunseiH Moi^n	Moffl# Atendance/Contrast	Texture. Concrttions. StP-JCTura. nc.
4-Vz			Ai^O	fa//	

Hydno Soil Indicator*:

_,.. Hiatoaoi
____HiatiC Epipadon
_ Sulfidtc Odor
, Aquie Moisture Ragima
m Reducing Conditions
____Glayvd or Low-Chroma Colors

Concretion*
High Organic Contant *in* Surface Layar in Sandy Soil*
Organic Straakfng in Sandy Soils
Listed on Local Hydno Soils List
Listed on National Hydne SoMa Lift
Othar (Explain in Rtmirki)

WETLAND DETERMINATION

Hydrophytie Vegetation Preeant? Yas (No) (Circle) (Clrda)
WaOend Hydrology Present? Yas (No)
Hydne Soil* Pfwant? Yas (No) la this Sampling Point Within a Wetland? Yaa / * 0

Remarket

TpprovSrE^JHl

OATA FORM
ROUTINE WETLAND DETERMINATION
1987 CCE Wetlands Delineation Manual)

Project/Sue: KeftkxJt? ftjfcN>U|fr»$
Applicant/Owner: \fig cc ro
Investigator: *Y>. 1W»\<

Date: _£j&Z-£f
County: £karrso^
State: A,/y CT

Oo Normal Circumstances exist on the si»> (Yes) No
Is the site significantly disturbed I A J - C Yes (No)
is the area a potential Probim ^ r " ' S,fuat,on,? Yes (No)
(If needed, explain on reverse.!

Transect ID: +•* zP -
Plot ID:

VEGETATION

Dominant Plant Ro^i—	Stratum	indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
			10.		
3. {QW.**I yoy$_t$^/)$_{QC}$.^..^..j^$_{La}$^f^Ai			11.		
			12.		
			13.		
			14.		
			15.		
			16.		

Parent o. Dominant Species that are 08L. FACW or fAC (excluding FAC-). 33

Remerfcs:

HYDROLOGY

— Recorded Data (Oescnbe in Remark*).
___Stream, Leke. or Tide Gauge
__ Aerie* Photographs
___Other
JQ No Recorded Oata Available

Field Observations:

Depth of Surface Water: AJ$_{O+fj*.}$

Oepth to Free Water in Pit: Jin.)

Depth to Seturated Soil: (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___Inundated
___Seturated in Upper 1 2 Inches
___Weter Marks
___Drift Li nee
___Sediment Oeposits
___Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___Oxidized Root Channels in Upper 12 Inches
___Wetar-Stained Leaves
___Local Soil Survey Data
___FACNeutrel Test
___Other (Explain in Remarks!

Remerks:

SOILS

Mao Unit Name (Sanaa and Phase): Ul/k*r"\

Drainage Class:

Taxonomy (Subgroup):

Field Observations

Confirm Mapped Type? ^yes^No

Profile peacriotton:

Depth (inchest	Horiion	Matrix Color {Munscll Moiail	Monle Colors (MunseH Moist)	Monte Abundance/Contrast	Texture. Concretions. Structure, etc.
/-10	A	fwu-fn			^o*J y//tf&A\

M\+*d Pill

Hydnc Soil Indicators:

___Histosol	Concretions
, Hisbc Epipfldon	High Organic Content in Surface Layer in Sandy Soils
___Sulfidic Odor	Organic Streaking in Sandy Soils
___Aquic Moisture Regime	Listed on Local Hydric Soils List
___Reducing Conditions	Listed on National Hydric Soils U»t
¡ Gleyed or Low-Chroma Colore	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophyte Vegetation Present?	Yes (No) (Circle!		(Circle)
Wetland Hydrology Present?	Yes (No)		
Hydnc Soils Present?	Yes (No)	It this Sampling Point Within a Wedand?	Yea (No^

Remarks:

Appendix C

Representative Photographs of Project Site

See Figure 3 for orientation of photographs

Photo 1 - Dry drainage swale to east

Photo 2 - Dry drainage swale to south

Photo 3 - Dry drainage swale to north

Photo 4 - Wetland A towards outfall

Photo 5 - Wetland A towards rail spur culvert

Photo 6 - Wetland B towards rail spur culvert

Photo 7 - Wetland B submerged aquatic vegetation - *Chara vulgaris*

Photo 8 - Wetland B facing downstream

Photo 9 - Wetland B, continuing downstream

Photo 10 - Wetland B, facing upstream

Photo 11 - Upland A - corridor

Photo 12 -Wetland C overview

Photo 13 - Wetland C close-up

Photo 14-Wetland B at southernmost point

Photo 15 - Clogged outlet of Wetland C

Photo 16 - Wetland E, immediately after culvert

Photo 17-Wetland D overview

Photo 18 - Wetland D to north, showing large black willow

Photo 19 - Wetland E downstream from Wetland D, facing downstream

Photo 20 - Wetland E, continuing downstream

Photo 21 - Wetland E, facing upstream from Wetland F

Photo 22 - Beginning of of Wetland F

Photo 23 - Overview of Wetland F to south

Photo 24 - Overview of Wetland F to south

Photo 25 - Overview of Wetland F to south

Photo 26 - Overview of Wetland F to south

Photo 27 - Overview of Wetland F to north

Photo 28 - Wetland F to west

PHOTO 1

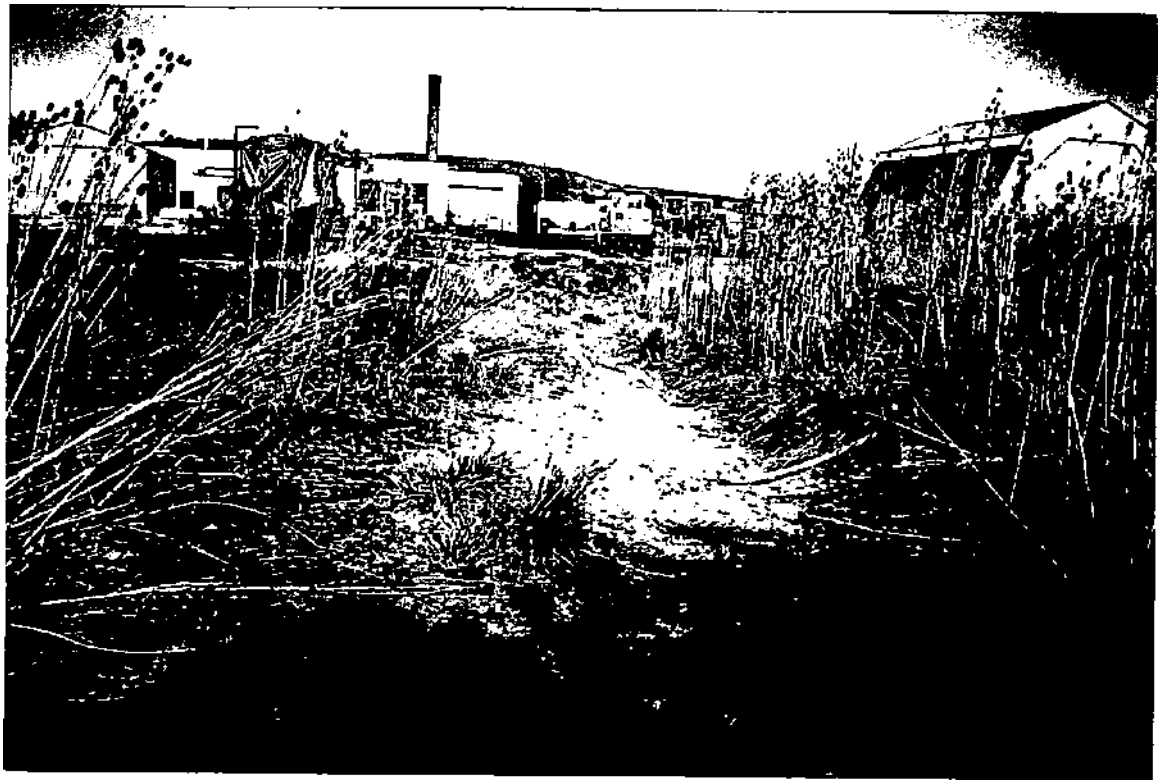

PHOTO 2

wte'-zi

g£

PHOTO 3

?**»**i'-n

~VA&i*3*«&

#

88S

PHOTO 4

*.

PHOTO 5

PHOTO 6

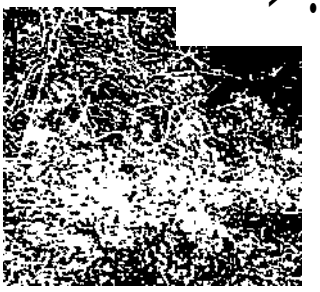

PHOTO 7

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PHOTO 8

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PHOTO 9

PHOTO 10

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PHOTO 11

PHOTO 12

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PHOTO 13

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PHOTO 14

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PHOTO 15

PHOTO 16

PHOTO 17

PHOTO 18

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PHOTO 19

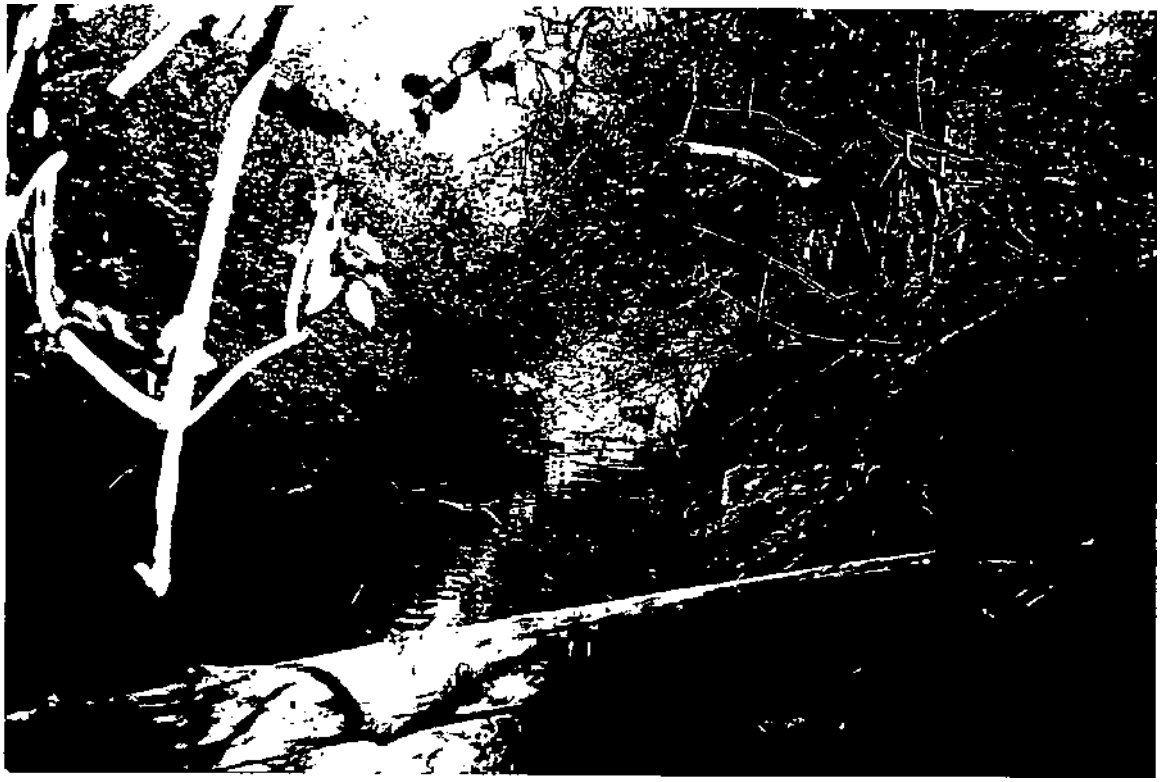

PHOTO 20

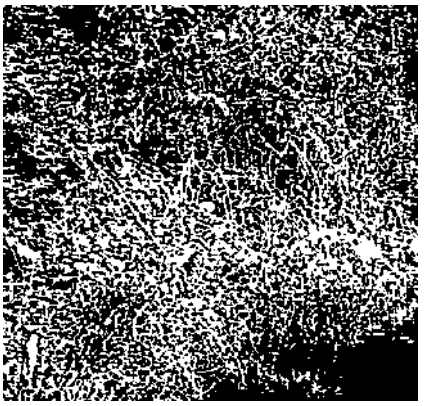

PHOTO 21

PHOTO 22

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PHOTO 23

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PHOTO 24

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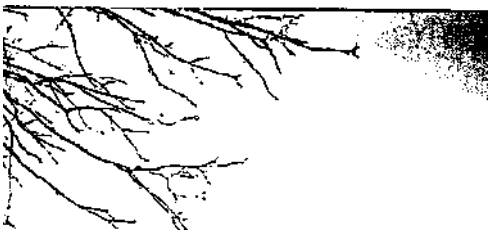
PHOTO 25

PHOTO 26

PHOTO 27



MmwMzk