COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Molly Joseph Ward
Secretary of Natural Resources

John M.R. Bull
Commissioner

October 6, 2014

James River Water Authority
Attn: Steven Nichols, Fluvanna County Administrator
c/o Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225

Re: VMRC #14-0343

Dear Mr. Nichols,

On March 19, 2014, our office formally requested additional information to complete this application request (correspondence enclosed). To date, this information has not been received; therefore we are now formally inactivating the application request. Please be advised that should you proceed without future Commission authorization you may be in violation of Section 28.2-1203 of the Code of Virginia.

You may also require future authorization from the Army Corps of Engineers and the Department of Environmental Quality. If you have any questions regarding this matter or the submittal of a new application, please feel free to call me at (757) 247-8063.

Sincerely,

Justin D. Worrell
Environmental Engineer, Sr.

JDW/lra
HM
Enclosure
cc: Department of Environmental Quality #4
U.S. Army Corps of Engineers #2
Applicant

COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

March 19, 2014

James River Water Authority
Attn: Steven Nichols, Fluvanna County Administrator
c/o Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225

Re: VMRC #14-0343

Dear Mr. Nichols:

I am writing to acknowledge receipt of your application describing a proposed project that **will** require a permit from the Marine Resources Commission. The above-referenced processing number has been assigned to your proposal. Please refer to this number in all future correspondence pertaining to this project.

A review of your application reveals that additional information and/or drawings will be necessary to enable the regulatory agencies to thoroughly evaluate your project. Specifically, the information required to facilitate a timely review of your proposal includes:

- Confirm if the intake authorized under VWP #04-0805 was installed and operational. Our agency reviewed application #04-0805 and authorized the project, however, a final permit was never issued for the project.
- Complete Section 10 – the property owner needs to sign the JPA.
- Confirm the maximum withdrawal velocity. Please note that the recommended maximum velocity is 0.25 feet per second.
- Submit final set construction drawings. We are unable to make a permit decision for an intake structure based on conceptual drawings. Please include temporary impacts associated with the construction activity (e.g. cofferdams).

Please be advised that you may also need a permit from the Virginia Department of Environmental Quality and the U.S. Army Corps of Engineers. Your application has been forwarded to these agencies for processing. If I may be of further assistance, please do not hesitate to call me at (757) 247-8028 or to e-mail me at juliette.giordano@mrc.virginia.gov.

Sincerely,

Juliette Giordano
Environmental Engineer

cc: Virginia Depart of Environmental Quality
U.S. Army Corps of Engineers #2

- Pending addt'l info. (sent letter 3/19/14)
- DEQ has taken lead & recently requested addt'l info (including info we need) on 7/8/14.
- Coordinating w/ Sarah Marsala on this intake

Albemarle: nothing
Amelia: nothing
Amherst: nothing
Bedford City/County:

- Two outstanding river sand mining operations

Buckingham: nothing
Charlottesville: nothing
Cumberland: nothing
Fluvanna:

14-0343: James River Water Authority- proposed water intake structure on the James ... near its confluence with the Rivanna River. Requested additional information on 3/19/2014. Coordinated with Sarah Marsala (DEQ) on this application; she requested additional information from them on 7/8/2014. Agreed to coordinate with DEQ on a joint public notice for the intake. No notice has been given because of the pending additional information request.

Goochland: nothing
Greene:

- Timothy Baugher: Mr. Baugher excavated the bottom of the South River in August 2013 and built a dam across a side channel meander of the river that has eroded away his land. His neighbor, Mr. Jimmy Hazel (co-owner of Angler Environmental) called me to report the excavation; Mr. Baugher also cut a part of Mr. Hazel's bank in the process. I have made three separate site visits to Mr. Baugher's property to discuss restoration plans. We have not issued a Sworn Complaint or NTC because Mr. Baugher received verbal authorization from the Corps prior to conducting the work; Mr. Baugher said Vinny Pero (Corps) had given him the go ahead to do the work and did not notify him of our agency (my conversations with Vinny have led me to believe that Vinny gave some sort of approval but I cannot figure out why he did not notify Mr. Baugher of the need for our permit). Tony has advised that we are OK to work with Mr. Baugher to allow him to conduct a restoration on the area that was excavated and bermed to remediate his violation. Judy Okay (Dept of Forestry) and Richard Jacobs (Culpepper Soil & Water Conservation District) have agreed to develop a restoration for Mr. Baugher's violation. Mr. Baugher understands that if he does not agree to implement the restoration, we will proceed with a violation. Most recently, Mr. Hazel hired an attorney to represent him; Mr. Hazel's attorney, Ryan Rakness, submitted a map identifying the stretch of bank Mr. Hazel wants repaired (DOF and SWCD requested this map). I forwarded the map to them so that they can design the restoration with that area in mind.

Louisa: nothing
Lynchburg: nothing
Nelson: nothing
Orange:

- 14-0727: Lake of the Woods Association- application to repair a dam causeway. APO, News, and Agency comment periods have all expired. We are waiting on DCR's Division of Dam Safety and Floodplain Management to issue a dam modification permit prior to issuing our permit and comments from VDOT. VDOT received the agency notification request later then the other agencies (my fault – I did not notify them in the original request); they have until Aug 3 to respond. Assuming VDOT has no issues and DCR approves the dam modification request, the application is ready for a permit. I drafted the permit in permit tracking; assuming no changes arise from VDOT's or DCR's Dam Safety review, permit is ready to go to Tony for approval.
    - VDOT comment period expires: 8/3/2014

Howell, Beth (MRC)

From: Giordano, Juliette (MRC)
Sent: Wednesday, July 16, 2014 3:12 PM
To: Howell, Beth (MRC)
Subject: FW: DEQ Add info request - James River Water Supply Project (JPA No. 14-0343)
Attachments: 14-0343_cor_JRWA Add Info_2014-07-08.pdf

DEQ correspondence for 14-0343. Thank you!

From: Marsala, Sarah (DEQ)
Sent: Tuesday, July 08, 2014 2:48 PM
To: Giordano, Juliette (MRC); Steven.A.Vanderploeg@usace.army.mil
Subject: DEQ Add info request - James River Water Supply Project (JPA No. 14-0343)

Hi,

DEQ met with the applicant and their consultant for the James River Water Supply project (JPA No. 14-0343) today to discuss our questions on their application and additional information submittal dated June 11, 2014. The additional information we requested is summarized in the attached document. We requested they provide a response by Aug. 15th.

Respectfully,

Sarah K. Marsala

Surface Water Withdrawal Project Manager
Office of Water Supply
VA Dept. of Environmental Quality
13901 Crown Court, Woodbridge, VA 22193
703-583-3898 (direct)
703-583-3821 (fax)
sarah.marsala@deq.virginia.gov
www.deq.virginia.gov

James River Water Authority - James River Water Supply Project
Joint Permit Application No. 14-0343
Second Additional Information Request
July 8, 2014

1. The purpose and need identified in the water supply plans for Fluvanna and Louisa Counties encompasses larger project than that of the project proposed under Joint Permit Application (JPA) No. 14-0343. Please narrow the scope of the project's purpose and need to that associated with this application.

2. Based upon our understanding of the information provided to date, the proposed intake will service some, but not all, service areas identified in the water supply plans for each County. Please identify which service areas are proposed to be serviced by the proposed James River water intake. If there is a proposed phasing schedule to provide water to the service areas or if a service area is operated by another entity, please provide that information as well, including any formal agreements between James River Water Authority and entities to which water will be provided.

3. Discuss any discrepancies or updates with the water supply plans for both Counties with that of the proposed project.

4. Justify the proposed peak factor of 1.85 for used for both the maximum day and monthly volumes. The standard used by DEQ is a peak day factor of 1.6 and a peak month factor of 1.25.

5. The requested average day volume is inconsistent in the JPA. The table under Section 27 requests 3.06 million gallons per day (mgd) while the table entitled "Summary of County Approved Water Supply Plans with Projected Demands" requests 3.30 mgd. DEQ will review the proposed water demands for the project and withdrawal limits will be developed based those demands that are justified for the scope of the 15-year permit term.

6. In the JPA, it says that new infrastructure associated with the project includes an intake structure, pump station, raw water transmission piping and electrical/control building. Section 9 of the JPA appears to indicate that only surface water impacts associated with the intake structure is proposed in this application. However, based upon the site plan provided in the JPA entitled "Sheet No. EX-3, Raw Water Intake and Pump Station" and the study limits of the wetland delineation, additional activities may be proposed as part of this application, such as construction of the pump station. Please clearly state which activities are proposed to be reviewed and authorized under this JPA No. 14-0343 and provide plan views (and cross-sectional drawing s, if applicable) depicting those activities and any proposed surface water impacts. For activities that are proposed to be permitted separately, provide a brief justification.

7. Provide a map that clearly identifies the boundaries of the project site. This boundary should include all proposed activities that are requested to be authorized under this application.

8. Provide the linear feet of the James River that is proposed to be impacted by the cofferdam and the intake structure.

9. The proposed intake velocity is proposed to be less than 0.5 feet per second (fps). DEQ has coordinated with the Virginia Department of Game and Inland Fisheries (DGIF), which has recommended an intake

velocity of no more than 0.25 fps. DEQ anticipates including a condition in any draft permit requiring that the intake comply with an intake velocity of 0.25 fps.

10. DGIF has recommended a mussel survey and relocation be performed 100 meters upstream through 400 meters downstream of impact areas in the James River six months prior to construction. DGIF also recommended a time of year restriction from March 15 through June 30 of any year on all instream work. DEQ anticipates including those recommendations in any draft permit.

DATE 3/19/14

APPLICANT: JAMES RIVER WATER AUTHORITY
VMRC # 14-0343 EE CODE 27
OLD VMRC #
DATE REC'D 3-13-14

Corps of Engineers ROD (#2)
[ ] VMRC e-mailed COE MAR 13 2014
[ ] VMRC rec'd from COE
[ ] Applicant/Agent sent to COE
[ ] LWB sent to COE

Local Wetlands Board:
[ ] VMRC e-mailed LWB
[ ] VMRC rec'd from LWB
[ ] Applicant/Agent sent to LWB
[ ] Corps sent to LWB

[ ] VMRC e-mailed VIMS ~~MAR 13 2014~~
[ ] VMRC e-mailed DEQ#4
[ ] Applicant/Agent sent to VIMS
[ ] Applicant/Agent sent to DEQ

_____ [ ] No Permit Necessary
_____ [ ] No Action Necessary
_____ [ ] Prepare Field Check
_____ [ ] Notify for Agency Comments:
[ ] DEQ [ ] VHD-BWE [ ] VHD-BSS [ ] VDGIF [ ] VDCR [ ] VDHR
_____ [ ] Notify FYI Only:
[ ] DEQ [ ] VHD-BWE [ ] VHD-BSS [ ] VDGIF [ ] VDCR [ ] VDHR
[ ] PDC [ ] VDOT [ ] MPO [ ] Other
_____ [ ] Notify Adjoining Property Owners
_____ [ ] Prepare OPG Check
_____ [ ] Notify OPG Leaseholder(s)
_____ [ ] Notify FFD Licensee(s)
_____ [ ] Newspaper Notice: [ ] Subaqueous [ ] Wetlands [ ] Dunes/Beaches
[ ] Issue
[ ] Hold
Correspondence → 14-0343_addinfo
[ ] VIMS Report Printed
3/19 [✓] Acknowledgement Letter: [ ] Form Letter [✓] Attached Letter AddInfo
_____ [✓] Project Description Completed/Entered by Engineer N37°44.9687 W78°10.2167
_____ [ ] File

raw water intake in James River Fluvanna County.

Rev 4-13

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

TRANSMITTAL

TO: Virginia Marine Resource Commission
Habitat Management Division
2600 Washington Avenue, 3rd Floor
Newport News, VA 23607

Date: 3/12/2014 Job #: 34967 U01
Project:
Reference:
Copies Sent To:

☒ ENCLOSED PLEASE FIND:
☐ WE ARE SENDING UNDER SEPARATE COVER:

COPIES	DATE	NUMBER	DESCRIPTION
1			JRWA Joint Permit App

THESE ITEMS ARE TRANSMITTED: UPS
If enclosures are not as noted, please notify us at once.

COMMENTS:

For submission and review. If you have any questions, please feel free to contact David Saunders at 804.200.6388.

Thank you!

RECEIVED
MAR 13 2014
MARINE RESOURCES COMMISSION

SIGNED:

3/12/14

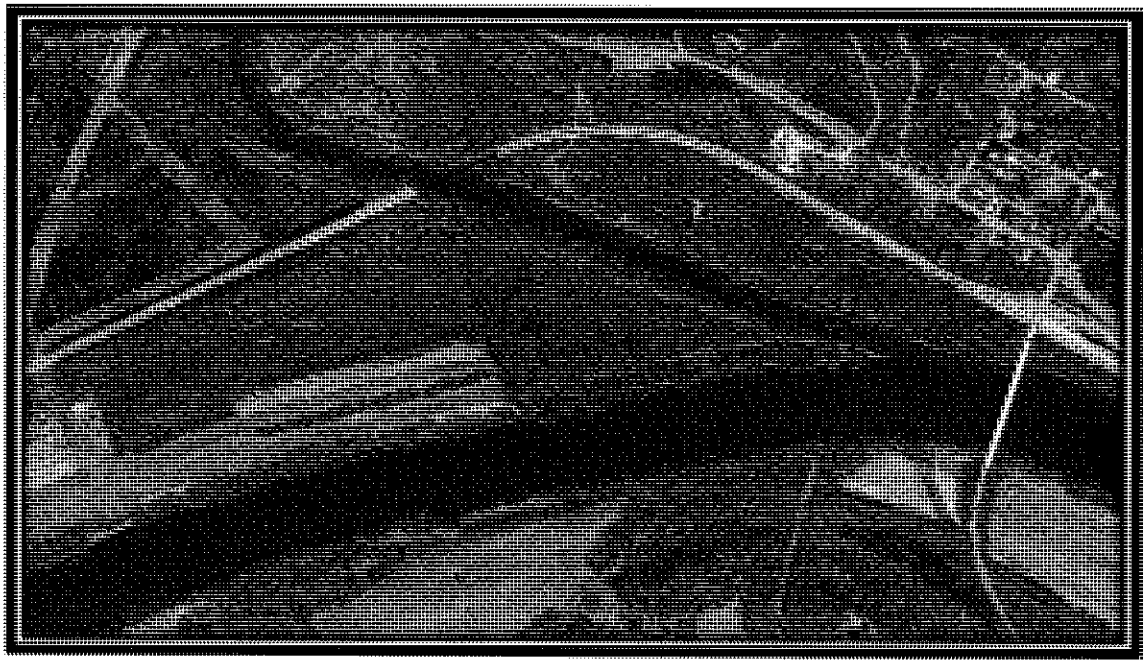
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016
www.timmons.com

PREPARED ON BEHALF OF:
JAMES RIVER WATER AUTHORITY
132 MAIN STREET, P.O. BOX 540
PALMYRA, VA, 22963

JAMES RIVER WATER SUPPLY PROJECT

JOINT PERMIT APPLICATION

MARCH 12, 2014



PREPARED BY:
TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 BOULDERS PARKWAY, SUITE 300
RICHMOND, VIRGINIA 23225
PHONE: 804.200.6500
FAX: 804.560.1648
WWW.TIMMONS.COM
TIMMONS GROUP PROJECT NO. 34967

EXECUTIVE SUMMARY

The James River Water Authority submits this Joint Permit Application Package for a new water withdrawal to be located near the Town of Columbia. This withdrawal permit will replace the existing VWP Individual Permit Number 04-0805, dated June 12, 2006 for a withdrawal at Bremo Bluff.

The proposed point of withdrawal is located in Fluvanna County on the north bank of the James River, just upstream of the confluence with the Rivanna River. The primary objective of the new raw water intake is to meet the water demands associated with the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April 2010 and June 2011 respectively.

Generally, the new infrastructure associated with this project will include an intake structure, pump station, raw water transmission piping and electrical/control building.

PROJECT INFORMATION SHEET

General

Project Name:	James River Water Supply Project
State:	Virginia
County:	Fluvanna

Applicant

Name:	James River Water Authority
Address:	c/o Fluvanna County Administrator 132 Main Street, P.O. Box 540, Palmyra, VA, 22963
Contacts:	Goodman B. Duke, Chairman of JRWA Email: Bbd304@comcast.net Phone: (540) 894-7982
	Steven M. Nichols, County Administrator, Fluvanna County Email: snichols@fluvannacounty.org Phone: (434) 591-1910
	Robert Dubé, County Administrator, Louisa County Email: RDube@louisa.org Phone: (540) 967-3400

Consultant/Agent

Name:	Timmons Group
Address:	1001 Boulders Parkway, Suite 300, Richmond, VA 23225
Contact:	David J. Saunders, PE Email: David.Saunder@timmons.com Phone: (804) 200-6388 Joseph C. Hines, PE Email: Joe.Hines@timmons.com Phone: (804) 200-6380

PLEASE PRINT OR TYPE ALL ANSWERS. If a question does not apply to your project, please print N/A (not applicable) in the space provided. ***If additional space is needed, attach extra 8 ½ x 11 inch sheets of paper.***

CHECK ONE, if applicable:	Pre-Construction Notification (PCN) ☒ *(For Nationwide Permits ONLY)*	SPGP ☐

1. PROJECT LOCATION INFORMATION
(Attach a copy of a detailed map, such as a USGS topographic map or street map showing the site location and project boundary, so that it may be located for inspection. Include an arrow indicating the north direction.)

Street Address	City/County/Zipcode
See Vicinity Map (Appendix A)	Fluvanna County
Subdivision	Lot/Block/Parcel #
N/A	53-A-62C

Name of water body(ies) within project boundaries and drainage area (acres or square miles)

James River. Drainage area: approx.10,236 square miles (overall); approx. 5,076 square miles (at proposed point of withdrawal)

Tributary(ies) to: Chesapeake Bay
Basin: James River Subbasin: Upper Middle James River
(*Example: Basin: James River Subbasin: Middle James River*)

Special Standards (based on DEQ Water Quality Standards 9VAC25-260 et seq.): N/A

Project type (check one)
___ Single user (private, non-commercial, residential)
x Multi-user (community, commercial, industrial, government)

Latitude and longitude at center of project site: 37 - 44 - 58 / 78 - 10 - 13

USGS topographic map name: Columbia and Lakeside Village USGS maps

8- digit USGS Hydrologic Unit Code (HUC) for your project site (See http://cfpub.epa.gov/surf/locate/index.cfm): 02080203
If known, indicate the 10-digit and 12-digit USGS HUCs (see *http://dswcapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm* :
0208020315 020802031502

Name of your project (*Example: Water Creek driveway crossing*) The James River Water Supply Project

Is there an access road to the project? X Yes __ No. If yes, check all that apply: __ public X private __ improved X unimproved

Provide driving directions to your site, giving distances from the best and nearest visible landmarks or major intersections:
See Directions to Project Site (Appendix B)

Does your project site cross boundaries of two or more localities (i.e. cities/counties/towns)? __ Yes X No
If so, name those localities:

FOR AGENCY USE ONLY

Notes:

RECEIVED
MAR 13 2014
MARINE RESOURCES COMMISSION

JPA# 14-0343

Revised: July 2012

2. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION

The applicant(s) is/are the legal entity to which the permit may be issued. The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please use the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

Applicant(s) (For a company, use SCC-registered name)			Agent (if applicable) (For a company, use SCC-registered name)		
James River Water Authority			David Saunders, P.E.		
Mailing address			Mailing address		
c/o Stevan Nichols, Fluvanna County Administrator			Timmons Group, 1001 Boulders Parkway, Suite 300		
City 132 Main St, P.O. Box 540	State	Zip Code	City	State	Zip Code
Palmyra	VA	22963	Richmond	VA	23225
Phone number w/area code	Fax		Phone number w/area code	Fax	
(434) 591-1910	(434) 591-1911		(804) 200-6388	(804) 560-1438	
Mobile/pager	E-mail		Mobile/pager	E-mail	
434-825-7589	snichols@fluvannacounty.org		(804) 592-8271	David.Saunders@timmons.com	
State Corporation Commission ID number (if applicable)			State Corporation Commission ID number (if applicable)		
07083447			02640431 (Timmons Group)		

Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: N/A

Property owner(s), if different from applicant (For a company, use SCC-registered name)			Contractor, if known (For a company, use SCC-registered name)		
Point of Fork Farm, LP			N/A		
Mailing address			Mailing address		
P.O. BOX 847; Attn: Barbara S. Gillam, POF Development Corp.			N/A		
City	State	Zip code	City	State	Zip code
Columbia	VA	23038	N/A	N/A	N/A
Phone number w/area code	Fax		Phone number w/area code	Fax	
N/A	N/A		N/A	N/A	
Mobile/pager	E-mail		Mobile/pager	E-mail	
N/A	N/A		N/A	N/A	
State Corporation Commission ID number (if applicable)			State Corporation Commission ID number (if applicable)		
L0113136			N/A		

3. PROVIDE A DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY PURPOSES, PROJECT NEED, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use and/or proposed future use of residual land
- Describe the physical alteration of surface waters
- Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For major surface water withdrawals, public surface water supply withdrawals, or projects that will alter in-stream flows, include the water supply issues that form the basis of the proposed project.

See the Joint Permit Application Narrative (Appendix C)

3. PROVIDE A DESCRIPTION OF THE PROJECT (Continued)

Date of proposed commencement of work (MM/DD/YYYY)	Date of proposed completion of work (MM/DD/YYYY)
Spring 2015	Spring 2016
Are you submitting this application at the direction of any State, local, or Federal agency? _____Yes __X__No	Has any work commenced or has any portion of the project for which you are seeking a permit been completed? _____ Yes __X__ No

If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings.

N/A

Are you aware of any unresolved violations of environmental law or litigation involving the property? _____Yes __X__No
(If yes, please explain)

N/A

4. PREVIOUS SITE VISITS AND/OR PERMITS RELATED TO THE PROPOSED WORK (Include all Federal, State, and Local pre-application coordination or previous permits)

Agency	Activity	Permit/Project number, and explanation of non-reporting Nationwide permits previously used	Action taken ** and Date of Action	If denied, give reason for denial
N/A				

** Issued, denied, site visit

5. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: $ 5.9 Million

Approximate cost of only the portion of the project affecting State waters (below mean low water in tidal areas and below ordinary high water mark in nontidal areas): $ 250,000

6. PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property owner's name	Mailing address	City	State	Zip code
See the Joint Permit Application Narrative (Appendix C)	See Public Notice Information and Adjacent Property Owner Acknowledgment (Appendix D)			

Name of newspaper having general circulation in the area of the project: The Daily Progress
Address and phone number (including area code) of newspaper 685 West Rio Rd, Charlottesville, VA, 22901; Main: 434-978-7200

Have adjacent property owners been notified with forms in Appendix A? X Yes _____ No (attach copies of distributed forms)

7. THREATENED AND ENDANGERED SPECIES INFORMATION

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or your Corps' waters and wetlands delineation confirmation. Contact information for the Virginia Department of Game and Inland Fisheries and the Virginia Department of Conservation and Recreation, Division of Natural Heritage can be found on page 4 of this package. See Threatened and Endangered Species Information (Appendix E)

8. HISTORIC RESOURCES INFORMATION

Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

Are any historic properties located within or adjacent to the project site? X Yes _____ No _____ Uncertain
If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site? _____ Yes _____ No X Uncertain
If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district? X Yes _____ No _____ Uncertain
If Yes, please indicate which district: Rivanna Canal District

See Historic Resource Information (Appendix F)

8. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?
__X__ Yes ____ No ____ Uncertain

If Yes, please provide the following information: Date of Survey: See the Joint Permit Application Narrative (Appendix C)

Name of firm: _____

Is there a report on file with the Virginia Department of Historic Resources? __X__ Yes ____ No ____Uncertain

Title of Cultural Resources Management (CRM) report: See the Joint Permit Application Narrative (Appendix C)

Was any historic property located? ____ Yes ____ No __X__ Uncertain

9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 18.

	Impact site number 1	Impact site number 2	Impact site number 3
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO *(Example: F, NT, PE, V)*	Riverine Open Water/ Coffer Dam NT, TE, PR, SB, NV	Riverine Open Water Intake Structure S, NT, PE, PR, SB, NV	
Wetland/waters impact area (square feet)	3,200	415	
Dune/beach impact area (square feet)	N/A	N/A	
Stream dimensions at impact site (length and average width in linear feet, and area in square feet)	James River ~ 150' Wide	James River ~ 150' Wide	
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)	TBD	TBD	
Cowardin classification of impacted wetland/water or geomorphological classification of stream *Example wetland: PFO;* *Example stream: wide; bank eroding; braided channel;* *Example stream: 'C' channel*	Riverine Open Water (ROW)	Riverine Open Water (ROW) Sub-aqueous Bottom	
Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second)	5,905	5,905	
Contributing drainage area (acres or square miles)	5,076 square miles	5,076 square miles	

9. WETLANDS/WATERS IMPACT INFORMATION (Continued)

DEQ classification of impacted resource(s): Estuarine Class II Non-tidal waters Class III Mountainous zone waters Class IV Stockable trout waters Class V Natural trout waters Class VI Wetlands Class VII	Non-Tidal waters Class III		

For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map[4] – see the Footnotes section in the form instructions.

See Wetland Information (Appendix G)

For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.

See Wetland Information (Appendix G)

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, U.S. Army Corps of Engineers, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Is/Are the Applicant(s) and Owner(s) the same? ___ *Yes* _×_ *No*

Applicant's name & title (printed or typed) Goodman B. Duke, Chairman of JRWA	Second applicant's name & title, if applicable (printed or typed) N/A
Applicant's signature	Second applicant's signature N/A
Date 17 Mar 14	Date N/A
(Required for VMRC permit actions only) Property owner's name, if different from Applicant Point of Fork Farm (Attn: Barbara S. Gillam)	*(Required for VMRC permit actions only)* Second property owner's name, if applicable N/A
Owner's signature, if different from Applicant	Second owner's signature
Date	Date

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)
If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT'S(S') BEHALF (IF APPLICABLE)

I (we), Goodman B. Duke (and) N/A,
APPLICANT'S NAME(S) – *complete the second blank if more than one Applicant*

hereby certify that I (we) have authorized David J. Saunders (and) N/A
AGENT'S NAME(S) – *complete the second blank if more than one Agent*

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge.

Applicant's signature	Second applicant's signature, if applicable N/A
Date 17 Mar 14	Date
Agent's signature and title	Second agent's signature and title, if applicable
Date 3/12/14	Date

CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)

I (we), N/A (and) N/A,
APPLICANT'S NAME(S) – *complete the second blank if more than one Applicant*

have contracted N/A (and) N/A
CONTRACTOR'S NAME(S) – *complete the second blank if more than one Contractor*

to perform the work described in this Joint Permit Application, signed and dated N/A.

I (we) will read and abide by all conditions as set forth in all Federal, State, and Local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable Federal, State, and Local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.

In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

Contractor's name or name of firm (printed/typed)	Contractor's or firm's mailing address	
Contractor's signature and title	Contractor's license number	Date
Applicant's signature	Second applicant's signature, if applicable	
Date	Date	

Note: Joint Permit Application Sections 11 - 25 do not apply to this project and are not included in this application.

END OF GENERAL INFORMATION

The following sections are activity-specific. Fill out only the sections that apply to your particular project.

25. OUTFALLS NOT ASSOCIATED WITH PROPOSED WATER WITHDRAWAL ACTIVITIES

Type and size of pipe(s): N/A

Daily rate of discharge: _____mgd

If the discharge will be thermally-altered, provide the maximum temperature: _____

Contributing drainage area: _____square miles

Average daily stream flow at site:_____cfs

Have you received a Virginia Discharge Elimination System (VPDES) permit for the proposed project? ___ Yes ___ No.
If yes, please provide the VPDES permit number: _____.
If no, is there a permit action pending? ___ Yes ___ No. If pending, what is the facility name? _____.

The following sections are typically related to surface water withdrawal activities; Federal Energy Regulatory Commission license projects; or impacts likely to require instream flow limits. Examples of such projects include, but are not limited to, reservoirs, irrigation projects, power generation facilities, and public water supply facilities that may or may not have associated features, such as dams, intake pipes, outfall structures, berms, etc.

If completing these sections, enter "N/A" in any section that does not apply to the project.

26. INTAKES, OUTFALLS, AND WATER CONTROL STRUCTURES (INCLUDING ALL PROPOSED WATER WITHDRAWAL ACTIVITIES)

For intakes:
- Type and size of pipe(s): Ductile iron pipe; 36" to 42"
- Type and size of pump(s): Vertical Turbine; 5.7 MGD (total)
- Daily rate of withdrawal: Avg: 3.06 MGD; Pk: 5.7 MGD mgd
- Velocity of withdrawal: less than 0.5 fps fps
- Screen mesh size: 0.04 inches / 1 mm
- If other sizing units, please specify: N/A
- Contributing drainage area at withdrawal point(s): 5,076 square miles
- Average daily stream flow at withdrawal point(s): 5,914 cfs
- Average annual stream flow at withdrawal point(s): 5,899 cfs
- Latitude and longitude of withdrawal point(s) (degrees, minutes, seconds): 37°44'58"N; 78°10'13"W

For outfalls:
- Type and size of pipe(s): N/A
- Daily rate of discharge: N/A mgd
- If the discharge will be thermally-altered, provide the maximum temperature: N/A
- Contributing drainage area at discharge point(s): N/A square miles
- Average daily stream flow at discharge point(s): N/A cfs
- Latitude and longitude of discharge point(s) (degrees, minutes, seconds): N/A

For intakes and dams, use the table below to provide the median monthly stream flows in cubic feet per second (cfs) at the water intake or dam site (not at the stream gage; if there is not a gage at the intake or dam site, you will need to interpolate flows to the intake or dam site based upon the most closely related watershed in which there is an operational stream gage monitored by the United States Geologic Survey (USGS)). Median flow is the value at which half of the measurements are above and half of the measurements are below. Median is also sometimes referred to as the '50% exceedence flow'. The median flow generally must be calculated from USGS historical data. Please do not provide *mean (average)* flow.

Month	Median flow (cfs)	Month	Median flow (cfs)
January	5,022	July	2,090
February	5,840	August	1,685
March	7,250	September	1,418
April	6,124	October	1,588
May	5,512	November	2,730
June	3,232	December	4,378

26. INTAKES, OUTFALLS, AND WATER CONTROL STRUCTURES (Continued)

For interbasin transfer of water resources proposed from either the Chowan River, New River, Potomac River, Roanoke River, Big Sandy River, or Tennessee River basins to another river basin, provide the following information:

For the destination location (discharge point) of the transfer:
8- digit USGS Hydrologic Unit Code (HUC) (See http://cfpub.epa.gov/surf/locate/index.cfm): N/A
If known, indicate the 10-digit and 12-digit USGS HUCs (see http://dswcapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm:
N/A N/A

Latitude and Longitude: _____- _____- _____/ _____- _____- _____

Describe the stream flow gages used, the type of calculations used (such as drainage area correction factors), and the period of record that was used to calculate the median flows provided in the table above. Generally, the period of record should span a minimum of 30 years.

See the Joint Permit Application Narrative (Appendix C)

Provide any available historical low-flows at the intake or dam site.

See the Joint Permit Application Narrative (Appendix C)

Describe how the proposed withdrawal at the intake or dam site will impact stream flows in terms of rates, volumes, frequency, etc. (i.e. percent of the flow to be withdrawn, percent of withdrawal returned to the original source, etc.).

See the Joint Permit Application Narrative (Appendix C)

Describe how the withdrawal of water will vary over time. For example, will the withdrawal vary by the time of year, by the time of day, or by the time of week? Examples of projects that should describe variable withdrawals include, but are not limited to: power plant cooling withdrawals that increase and decrease seasonally; golf course irrigation; municipal water supply; nurseries; ski resorts that use water for snowmaking; and resorts with weekend or seasonal variations.

See the Joint Permit Application Narrative (Appendix C)

Provide the amount of water that will be lost due to consumptive use. For the purpose of this application, consumptive use means the withdrawal of surface waters without recycling of said waters to their source or basin of origin. Examples of consumptive uses are water that is evaporated in cooling towers or by other means in power plants; irrigation water (all types); residential water use that takes place outside of the home; and residential water use both inside and outside of homes for residences served by septic systems. Projects that propose a transfer of water from one river basin to another and/or localities that sell water to other jurisdictions, should document the portion of the withdrawal that is not returned to the originating watershed.

Proposed monthly consumptive volume: _____ See the Joint Permit Application Narrative (Appendix C)

Attach a map showing the location of the withdrawal and the location of the return of flow.

See the Louisa County Water Return Map (Appendix H)

26. INTAKES, OUTFALLS, AND WATER CONTROL STRUCTURES (Continued)

For withdrawals proposed on an impoundment, provide a description of flow or release control structures. Include type of structure, size, capacity, and the mechanism used to control release. Provide a description of available water storage facilities. Include the volume, depth, normal pool elevation, unusable storage volume and dimensions. If applicable, stage-storage relationship at the impounding structure and volume or rate of withdrawals from the storage facility.

N/A

For withdrawals proposed on an impoundment, provide a description of flow or release control structures. Include type of structure, size, capacity, and the mechanism used to control release.

N/A

27. WATER WITHDRAWAL USE, NEED, AND ALTERNATIVES

Describe the proposed use of the water withdrawal.

See the Joint Permit Application Narrative (Appendix C)

Provide the following information at the water intake or dam site. Specify the units of measurement (i.e. million gallons per day, gallons per minute, cubic feet per second, etc.).

Proposed maximum instantaneous withdrawal: 8.55 MGD (5.7 MGD * 24 hr/16 hr duty cycle)

Proposed average daily withdrawal: 3.06 MGD

Proposed maximum daily withdrawal: 5.7 MGD (average daily withdrawal multiplied by peaking factor of 1.85)

Proposed maximum monthly withdrawal: 170 million gallons (3.06 MGD * 1.85 peak factor * 30 days/month)

Proposed maximum annual withdrawal: 1,117 million gallons (average daily withdrawal * 365 days/year)

Describe how the above withdrawals were calculated, including the relevant assumptions made in that calculation and the documentation or resources used to support the calculations, such as population projections, population growth rates, per-capita use, new uses, changes to service areas, and if applicable, evapotranspiration data and irrigation data.

See the Joint Permit Application Narrative (Appendix C)

27. WATER WITTHDRAWAL USE, NEED AND ALTERNATIVES (Continued)

For major surface water withdrawals, public water supply withdrawals, and projects that will alter instream flows, provide information to establish the local water supply need:

Existing supply sources, yields, and demands: _____

Peak day withdrawal: _____
Average daily withdrawal: _____
Safe yield: _____
Lowest daily flow of record: _____
Types of water uses:

See the Joint Permit Application Narrative (Appendix C)

_____

Existing water conservation measures and drought response plan, including what conditions trigger implementation:

_____

Projected demands over a minimum 30-year planning period:

_____

Projected demands in local or regional water supply plan (9 VAC 25-780 et seq.) or demand for the project service area, if that is smaller in area:

_____

Statistical population (growth) trends: _____
Projected demands by use type: _____
Projected demands without water conservation measures: _____
Projected demands with long-term water conservation measures: _____

For surface water withdrawals other than public water supply, provide information or documentation that demonstrates alternate sources of water are available for the proposed project during times of reduced instream flow.

N/A

Provide information from the water supply plan that covers the area in which the proposed water withdrawal project is located. Include information from the plan that pertains to projected demand, analysis of alternatives, and water conservation measures. Discuss any discrepancies between the water supply plan and the proposed project. For projects that propose a transfer of water resources from the Chowan River, New River, Potomac River, Roanoke River, Big Sandy River, or Tennessee River basins to another river basin, information should be provided from the water supply plans for both the source and receiving basins.

See the Joint Permit Application Narrative (Appendix C)

Provide an alternatives analysis for the proposed water withdrawal project, including the required range of alternatives to be analyzed; a narrative outlining the opportunities and status of regional efforts undertaken; and the criteria used to evaluate each alternative. The analysis must address all of the criteria contained in 9 VAC 25-210-115 C 2 and 9 VAC 25-210-115 C 3.

See the Joint Permit Application Narrative (Appendix C)

27. WATER WITTHDRAWAL USE, NEED AND ALTERNATIVES (Continued)

Describe any existing, flow-dependent beneficial uses along the affected stream reach. Include both instream and offstream uses. Describe the stream flow necessary to protect existing beneficial uses, how the proposed withdrawal will impact existing beneficial uses, and any measures proposed to mitigate any adverse impacts that may arise. For projects that propose a transfer of water resources from the Chowan River, New River, Potomac River, Roanoke River, Big Sandy River, or Tennessee River basins to another river basin, this analysis should include both the source and receiving basins. For the purposes of this application, beneficial instream uses include, but are not limited to: the protection of fish and wildlife habitat; maintenance of waste assimilation; recreation; navigation; and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to: domestic (including public water supply); agriculture; electric power generation; commercial; and industrial.

See the Joint Permit Application Narrative (Appendix C)

Describe the aquatic life known to be present along the affected stream reach. Describe aquatic life that may be impacted by the proposed water withdrawal. Include the species' habitat requirements. For projects that propose a transfer of water resources from either the Chowan River, New River, Potomac River, Roanoke River, Big Sandy River, or Tennessee River basins to another river basin, this analysis should include both the source and receiving basins.

See the Joint Permit Application Narrative (Appendix C)

28. PUBLIC COMMENTS/ISSUES FOR MAJOR WATER WITHDRAWALS OR INTERBASIN TRANSFERS

For new or expanded major surface water supply projects, use separate sheets of paper to summarize the steps taken to seek public input per 9 VAC 25-210-75, and identify the issues raised during the public information process.

For interbasin transfer of water resources proposed from either the Chowan River, New River, Potomac River, Roanoke River, Big Sandy River, or Tennessee River basins to another river basin, if public input was not required per 9 VAC 25-210-75, summarize on separate sheets of paper any coordination and/or notice provided to the public, local/state government, and interested parties in the affected river basins and identify any issues raised. See the Joint Permit Application Narrative (Appendix C)

Note: This project is not located within Tidewater Virginia.
Therefore, the requirements of the Bay Act Regulations do not apply.

PROPOSED
PROJECT
LOCATION
(APPROXIMATE)

RIVANNA RIVER

Compressor Station

Memorial Cem

Columbia

Point of Fork

Boat Landing

CHESAPEAKE AND OHIO

FLUVANNA CO

CUMBERLAND CO

JAMES RIVER

RIVER

Creek

NOTES
1. MAP(S) SHOWN ARE BASED ON USGS DATA

THIS DRAWING PREPARED AT THE
Corporate Headquarters
1001 Boulders Parkway | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

REVISION DESCRIPTION

DATE

YOUR VISION ACHIEVED THROUGH OURS.

DATE 2/28/2014
DRAWN BY J. COYNE
DESIGNED BY D. SAUNDERS
CHECKED BY D. SAUNDERS
SCALE 1"=1000'

TIMMONS GROUP

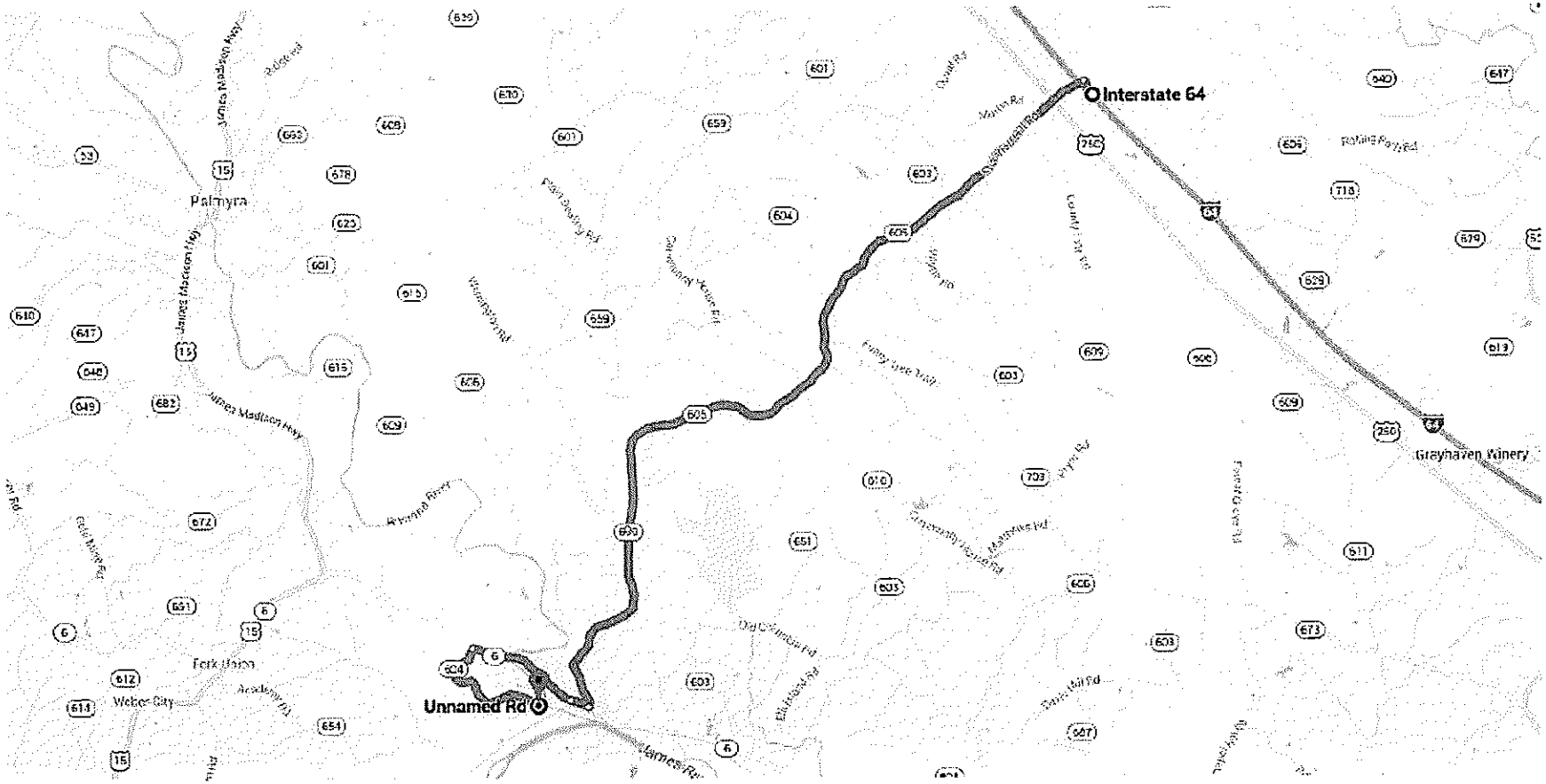
JAMES RIVER WATER SUPPLY PROJECT
JAMES RIVER WATER AUTHORITY
PROJECT VICINITY MAP

JOB NO. 34967
SHEET NO. APP. A

L:\20134967 - JRWA - Joint Permit Application\DWG\20121210 - JPA Vicinity Map.dwg | Plotted on 2/28/2014 3:32 PM | by Jeff Coyne

Google

Directions from Interstate 64 to Unnamed Rd



Interstate 64

Louisa, VA 23093

1. Head north on Exit 148 toward State Rte 605/Shannon Hill Rd

0.2 mi

2. Turn left onto State Rte 605/Shannon Hill Rd

10.7 mi

3. Turn left onto State Rte 659/Stage Junction Rd

3.1 mi

4. Turn right onto St James St

0.3 mi

5. Continue onto VA-6 W/E River Rd

Continue to follow VA-6 W

1.7 mi

6. Turn left onto State Rte 656

0.4 mi

7. Slight left onto State Rte 624

1.6 mi

8. Continue along gravel road, across rail road tracks

0.5 mi

9. Slight right to continue on gravel road

0.2 mi

10. Arrive at destination

JOINT PERMIT APPLICATION NARRATIVE

1. Project Location Information

Narrative information unnecessary. See Joint Permit Application.

2. Applicant, Agent, Property Owner, and Contractor Information

Narrative information unnecessary. See Joint Permit Application.

3. Provide A Description of the Project

a. Project Primary and Secondary Proposes, Project Need, Intended Use, and Alternatives Considered

The James River Water Authority submits this Joint Permit Application Package for a new water withdrawal to be located near the Town of Columbia. This withdrawal permit will replace the existing VWP Individual Permit Number 04-0805, dated June 12, 2006 for a withdrawal at Bremo Bluff. The existing permitted withdrawal location is at the end of Route 657 off Route 15, on Tax Parcel # 58-A-10, within Fluvanna County.

The proposed point of withdrawal is located in Fluvanna County on the north bank of the James River, just upstream of the confluence with the Rivanna River at the end of Route 624 on tax parcel 53-A-62C.

The primary objective of the new raw water intake is to meet the water demands associated with the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April 2010 and June 2011 respectively. While there are no specific industrial or commercial users identified at this time, usage characteristics may change in the future as development occurs within the Counties.

Generally, the new infrastructure associated with this project will include an intake structure, pump station, raw water transmission piping and electrical/control building. This infrastructure will be owned by James River Water Authority member Counties.

Generally, the following infrastructure components are included in the proposed raw water supply project:

- cylindrical stainless steel wedge wire screen
- air burst cleaning manifold and blower assembly (for preventing debris buildup on the screen)
- intake structure
- pipe to convey "screened" raw water to the pump station wet well
- pump station wet well to receive "screened" raw water
- pump station
- raw water piping

- electrical and control building

Measures will be taken during construction to minimize adverse environmental/ecological impacts to the maximum extent practicable, including, but not limited to:

- utilizing a general contractor that has significant experience constructing raw water intake structures (with minimal impacts to surrounding environment)
- utilizing construction techniques specifically designed to minimize adverse impacts
- utilizing the wetland delineation (and other environmental analyses) as a guide during the construction process
- maintaining coordination with the engineer and the local government to reduce the likelihood for rework/reconstruction

Three total locations were evaluated for the proposed withdrawal location relocation in consideration of reducing or avoiding potentially negative development ramifications, including:

1) upstream of the confluence of the James and Rivanna Rivers on tax parcel 53-A-62C
2) downstream of the confluence of the James and Rivanna Rivers and the Town of Columbia
3) upstream of the confluence of the James and Rivanna Rivers at the Colonial Pipeline crossing

The three alternatives were ranked based on criteria including (in no specific order):

- proximity to a maintained all weather road
- proximity to power source
- proximity to gas utilities (in case of need for blasting)
- contributing area to watershed
- level of security
- potential for impact to river health (stream bottom, stream bank, etc.)
- potential for disruption to railroad operations
- potential for disruption to agricultural activities
- potential for wetland impact
- willingness of political entity to support construction of the facility

Based on an evaluation utilizing this set of criteria, the location upstream of the confluence of the James and Rivanna Rivers on tax parcel 53-A-62C was selected as the most optimal withdrawal relocation candidate.

For decades, the implementation of a surface water withdrawal on the James River has been identified as a means to provide a sustainable raw water supply to meet the needs of

the Counties of Fluvanna and Louisa. This surface water withdrawal will decrease the dependency on ground water resources that the Counties currently rely on.

4. Previous Site Visits

Narrative information unnecessary. See Joint Permit Application.

5. Project Costs

Narrative information unnecessary. See Joint Permit Application.

6. Public Notification

a. Property Owner Information

The following table presents contact information for the property owners adjacent to the proposed project site.

Property location	Property owners name	Mailing address	City	State	Zip code
Fluvanna County	*Point of Forks Farm LP (Attn: Barbara S. Gillam)*	*POF Development Corp. P.O. BOX 847*	*Columbia*	*VA*	*23038*
Fluvanna County	*David S. Haney, Sr. et al*	*615 Tepee Town Rd*	*Bremo Bluff*	*VA*	*23022*
Cumberland County	*R. Franklin Hardy*	*417 Park Street*	*Charlottesville*	*VA*	*22902*

The Applicant submitted Adjacent Property Owner's Acknowledgement Forms to adjacent property owners (see Appendix D).

7. Threatened and Endangered Species Information

A query of available on-line threatened and endangered species information was performed to gain insight regarding the presence of sensitive flora and fauna in association with the proposed project. Searches of the Department of Game and Inland Fisheries (DGIF) database of the Virginia Fish and Wildlife Information Service and the U.S. Fish and Wildlife Services (FWS) Information, Planning and Conservation System (IPaC) database were performed to identify known threatened and endangered species within a 2-mile radius of the project area. A species list report was generated and is attached for your review. The DGIF list identified six species: the state endangered brook floater (Alasmidonta varicosa); state threatened upland sandpiper (Bartramia longicauda), loggerhead shrike (Lanius ludovicianus), green floater (Lasmigona subvirdis), Atlantic pigtoe (Fusconia masoni), and migrant loggerhead shrike (Lanius ludovicianus migrans). The brook floater, green floater, and Atlantic pigtoe have all previously been confirmed within the vicinity of the project area.

The IPaC database search for the project area identified the potential for the federally endangered James spinymussel (Pleurobema collina) to exist in the geographic location of the James River.

No additional threatened or endangered species were confirmed in the vicinity of the project by the VaFWIS or IPaC database queries. The results of these database queries are included as Appendix E. Based on the results of the database searches for this project a survey for Freshwater Mussel Habitat will be conducted to determine the presence of any habitat for protected freshwater mussel species.

8. Historic Resources information

A query of the Virginia Department of Historic Resources (DHR) V-Cris database was performed for the Project area and the vicinity (0.25 miles from Project boundaries) to determine the effect, if any, that the Project would have on cultural resources. The following sites are located near or within the proposed project corridor.

Site 44FV0022
Site 44FV0022 is a Late Woodland hamlet. Laurence W. Lindberg first identified the site in 1980 during a Phase I survey. He noted that no subsurface testing was conducted and that the site contained approximately 84 artifacts found on the surface. He did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0024
Site 44FV0024 is a Native American camp. Laurence W. Lindberg first identified the site in 1980 during a Phase I survey. He noted that no subsurface testing was conducted and that the site contained approximately 12 artifacts found in backfill material. He also noted that the site was partially destroyed by construction of a pipeline. He did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0025
Site 44FV0025 is a Native American camp and lithic quarry. Laurence W. Lindberg first identified the site in 1980 during a Phase I survey. He noted that no subsurface testing was conducted and that the site contained approximately five artifacts found on the surface. He did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. In 1997, the William and Mary Center for Archaeological Research (WMCAR) noted that the site had been extremely disturbed by construction of a pipeline, although it is unclear if they conducted a Phase I survey of the site, or just a walkover of the site. They also did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. According to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0032
Site 44FV0032 is a 19th century canal lock. In 1981, Martha McCartney map projected the site from an historic map. At that time, she did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. The site has never been field verified and according to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0033
Site 44FV0033 is an aqueduct. In 1981, Martha McCartney map projected the site from an historic map. At that time, she did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. The site has never been field verified and according to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0036
Site 44FV0036 is a 19th century aqueduct. In 1981, Martha McCartney map projected the site from an historic map. At that time, she did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. The site has never been field verified and according to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0065
Site 44FV0065 is a 19th century canal bridge. VDHR noted that W. E. Trout made them aware of the site in 1984. At that time, he did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. The site has never been field verified and according to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 44FV0067
Site 44FV0065 is a 19th century dam. VDHR noted that W. E. Trout made them aware of the site in 1984. At that time, he did not make any recommendations as to the site's eligibility for listing on the National Register of Historic Places. The site has never been field verified and according to the VDHR V-CRIS form, to date no further survey work has occurred on the site.

Site 032-0024
Site 032-0024 is the circa 1820 Point of Fork Plantation. E. B. Gale first identified the site in 1958 and conducted a Historic American Building Survey (HABS) of the site. The site was listed on the Virginia Landmark Register (VLR) in 1974 and on the National Register of Historic Places that same year. In June 2011, Cultural Resources Inc. (CRI) conducted a Phase I survey for a proposed Route 6 bridge replacement over the Rivanna River and re-surveyed the site. They noted that the site encompassed approximately 265 acres and included one house, one smokehouse, one office, and one slave quarters/kitchen. They further noted that the house and outbuildings have been maintained and preserved in their original setting with a high degree of architectural integrity.

Site 032-0036

Site 032-0036 is the circa 1854 Rivanna Canal Navigation Historic District. The site encompasses the approximately four-and-a-half-mile canal along with houses, canal locks, and dams. W. E. Trout first identified the site in 1973 during the course of a Phase I survey. Two years later, in 1975, Professor Ben Howland re-surveyed the site during an exploratory survey of the Rivanna River. Ten years later, in 1985, Lindsay Nolting conducted a survey of the Gum Creek Aqueduct within the district. Land and Community Associates, Inc. also conducted a Phase I survey of the site in 1993 and in 1996 the Fluvanna County Historical Society drafted a Preliminary Information Form (PIF) for the district. In June 2011, CRI conducted a Phase I survey for a proposed Route 6 bridge replacement over the Rivanna River and re-surveyed the site. VDHR determined that the site was eligible for listing on the National Register of Historic Places in 1974 and 1994 and CRI suggested that the site was still eligible for listing in 2011.
The results of the database search indicate the project area has having a high probability to contain Native American and historic resources based on what has been located in the past. Due to the potential for these resources to exist a Phase I survey will be performed. The results of the V-Cris search are provided in Appendix F.

9. Wetlands, Waters, and Dunes/Beaches Impact Information

On behalf of the applicant, Timmons Group is submitting this Pre-Construction Notification (PCN) for unavoidable temporary and permanent riverine, open water impacts associated with the construction of a raw water intake within the James River. These impacts are proposed to be authorized under the requirements of a Nationwide Permit (NWP) 12 from the U.S. Army Corps of Engineers and a sub-aqueous bottom permit from the Virginia Marine Resources Commission (VMRC). This permit application is being submitted only for the water intake structure, as the final design plans for the associated water transfer lines have not been completed. Any additional wetland impacts associated with the water transfer lines will be avoided, or permitted at a future date if they are unavoidable.

The project area was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual; the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, and subsequently issued COE regulatory guidance letters regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. During the delineation of the Site, approximately 1.62 acres (70,757 sq. ft.) of riverine open-water (ROW), 6,135 linear feet (L.F.) of perennial stream, 253 L.F. of intermittent stream, 0.49 acres (21,528 sq. ft.), of palustrine forested (PFO) wetlands, 0.02 acres (846 sq. ft.) of palustrine scrub-shrub (PSS) wetlands, 0.30 acres (12,917 sq. ft.) of palustrine emergent (PEM) wetlands, and 0.10 acres (4,568 sq. ft.) of palustrine open water (POW) wetlands were identified onsite. A jurisdictional determination request has been submitted to the U.S. Army Corps of Engineers and is currently waiting on Corps Confirmation. Additional

wetland delineation information is provided in Appendix G. The wetland confirmation letter will be provided, once received.

Jurisdictional impacts associated with the construction of the raw water intake will result in temporary impacts to 3,200 sq. feet of riverine open water as a result of construction activities installing the structure. Permanent sub-aqueous bottom impacts to 415 square feet of riverine open water will result from the physical placement of the intake structure over the bottom of the river. Mitigation is not proposed, as permanent impacts are less than $1/10^{th}$ of an acre. Wetland impact detail drawings are provided in Appendix G. The permanent intake structure shall consist of a cylindrical stainless steel wedge wire screen, air burst cleaning manifold and blower assembly, intake structure, 36" pipe to convey "screened" raw water to the pump station wet well and a concrete debris diversion wall. The intake structure and length of ductile iron transfer pipe have been positioned as close as possible to the bank to of the James River to minimize encroachments over state owned sub-aqueous bottom and reduce recreational and ecological impacts to river to the maximum extent practicable. The proposed raw water intake is not anticipated to have adverse effects to existing aquatic life. A wedgewire screen with a slot size of 1 mm and designed to prevent impact to aquatic life will cover the proposed raw water intake pipe. Furthermore, the intake flow velocity of the proposed intake is expected to be less than 0.5 fps. A habitat survey for the presence of protected mussels will be conducted to clear the area of potential effect prior to any Site disturbance.

A general contractor with significant experience will be selected to construct the raw water intake structure as an additional protection measure to minimize disturbance within the river. Construction techniques specifically designed to minimize impacts to the river will be utilized. Additional stabilization measures and extreme care will be taken when working in proximity to the bank of the river to prevent any sloughing off of the banks and sedimentation to the River. A turbidity curtain will be used for construction of a cofferdam. The cofferdam will allow the intake structure to be constructed in the dry and avoid additional turbidity in the river. In accordance with State and County erosion and sediment control law, erosion and sediment control measures will be utilized in order to prevent sediment releases from the project area. These measures are being implemented to aid in the minimization of any secondary impacts that could result from the Project.

10. Applicant, Agent, Owner, and Contractor Certifications

Narrative information unnecessary. See Joint Permit Application.

*****Sections 11 through 25 do not apply to this project*****

26. Intakes, Outfalls, and Water Control Structures

a. Describe the stream flow gages used, the type of calculation used, and the period of record that was used to calculate the median flows provided in the table of median flows.

Gauge number 02035000 (James River at Cartersville, VA) was used for analysis during completion of this application.

Certain values reported in this application (for example stream flow and drainage area at the proposed point of withdrawal) were developed through analysis of the flow gauge data, the watershed at the flow gauge, and the watershed at the proposed point of withdrawal. The ratio of the watershed area at the proposed point of withdrawal (5,076 square miles) to the watershed area at the flow gauge (6,252 square miles) served as the gauge data correction factor (0.81). In order to estimate certain flow characteristics associated with the proposed point of withdrawal (e.g. median monthly flows, average annual stream flows, etc.), the correction factor was applied to gauge data. For the median flow table provided in the Joint Permit Application, a 44 year period of record was used during analysis (1970 – 2013).

b. Provide any available historical low flows at the intake or dam site

Low Flow Parameter	Gauge Flow (cfs)	Corrected Flow (cfs)	Corrected Flow (gpm)	Corrected Flow (MGD)
1 Q 10	581	472	211,745	305
1 Q 20	484	393	176,394	254
1 Q 30	440	357	160,263	231
1 Q 50	392	318	142,864	206

Note: See above for a description of the calculation method.

c. Describe how the proposed withdrawal at the intake or dam site will impact stream flows in terms of rates, volumes, frequency, etc.

Generally, the additional impact of the new intake is expected to be minimal. The requested raw water withdrawal rates described in this application for intake relocation are based on the current water withdrawal permit #04-805, dated June 9, 2006, for the existing withdrawal located 2,000' downstream of US Route 15 on the James River at Bremo Bluff. This permit was issued to Fluvanna County, but ultimately transferred to the James River Water Authority. Because this withdrawal rate will essentially transfer from the existing withdrawal location to the proposed/relocated intake (once it is constructed and operable), the additional impact of the new intake is expected to be minimal.

Numerically (and specifically at the proposed intake location), the approximate average daily stream flow is 5,914 cfs (3,822 MGD), and the estimated average daily withdrawal is 3.06 MGD. Therefore, the remaining average daily stream flow at the proposed intake location after accounting for the new withdrawal is about 3,819 MGD, a difference of about 0.07%. As stated above, however, because this withdrawal rate would essentially transfer from the existing intake to the proposed/relocated intake (once it is constructed and operable), the additional impact of the new intake is expected to be minimal.

d. Describe how the withdrawal of water will vary over time

During normal operation, the expected average daily withdrawal is 3.06 MGD. Generally, a slight increase in municipal demand and withdrawal is expected in warmer months. More specifically, the peak daily flow may reach 5.7 MGD. Two pumps operating concurrently (with on pump on standby) will be required to meet this demand.

Under extreme and rare circumstances (e.g. a water line failure that severely diminishes the available water supply), the expected peak flow of 5.7 MGD may be exceeded as three pumps may be required to meet the emergency demand.

e. Provide the amount of water that will be lost due to a consumptive use

Water withdrawn from the proposed intake will be utilized by both Fluvanna and Louisa Counties. Small portions of Louisa County are within the Rivanna Watershed and the Middle James-Willis Watershed, which may return flow to the James River. Most of Louisa County is within the Pamunkey Watershed. The South Anna River and North Anna Rivers, the Pamunkey River, and the York River (and ultimately the Chesepeake Bay) will receive water utilized in this portion of Louisa County. Additionally, there is potential for future growth in the North Anna River service area; water consumed in this region will likely be returned to the North Anna River.

Fluvanna County has three different watersheds: the Middle James-Buffalo Watershed, the Middle James-Willis Watershed, and the Rivanna Watershed. All three watersheds return flow to the James River.

At this time, neither County has identified an industrial or commercial customer whose activities will result in consumptive uses beyond that normally experienced by a typical public water supply customer.

27. Water Withdrawal Use, Need, and Alternatives

a. Describe the proposed use of the water withdrawal

See Section 3-a above.

b. Describe how the above withdrawals were calculated, including the relevant assumptions made in that calculation and the documentation or resources used to support the calculations

The withdrawal information is based on information contained in the water supply plans for both Fluvanna and Louisa Counties (e.g. population and water usage projections). See Appendix I for pertinent flow information from the two water supply plans used to estimate withdrawal associated with this project.

c. For major surface water withdrawals, public supply withdrawals, and projects that will alter in-stream flows, provide information to establish the local water supply need.

The local water supply need is based on information contained in the water supply plans for both Fluvanna and Louisa Counties (e.g. population and water usage projections). See Section 27-b above.

d. For surface water withdrawals other than public water supply, provide information that demonstrates alternate sources of water are available for the proposed project during times of reduced in-stream flow.

See Appendix I for pertinent flow information from the two water supply plans used to estimate withdrawal associated with this project.

e. Provide information from the water supply plan that covers the area in which the proposed project is located. Include information from the plan that pertains to projected demand, analysis of alternatives, and water conservation measures. Discuss any discrepancies between the water supply plan and the proposed project.

See Appendix I for pertinent flow information from the two water supply plans.

f. Provide an alternatives analysis for the proposed water withdrawal project, including the required range of alternative to be analyzed; a narrative outlining the opportunities and status of regional efforts undertaken; and the criteria used to evaluate each alternative.

A full analysis of alternatives can be found in the water supply plans for both Fluvanna and Louisa Counties. Generally, the three principal options to address long term water supply needs include ground water withdrawal, surface water withdrawal, and a tie-in to an existing water supply. According to the studies, both ground water withdrawal and a tie-in to an existing water supply are expected to be unsustainable given the future growth expected in the Counties. Furthermore, the studies indicated that implementing a surface water withdrawal is the most prudent option.

g. Describe any existing, flow dependent beneficial uses along the affected stream reach. Include both in-stream and off-stream uses.

In-stream beneficial uses include: recreational boating, fishing, and serving as marine habitat. Off-stream beneficial used include: utilization at power plant cooling towers, domestic supply, commercial uses, and industrial uses.

Due to the immense volume of water contained in the James River at any given time, the relatively minimal volume requested for withdrawal as a part of this application, and the

fact that this proposed withdrawal will replace an existing permitted withdrawal, adverse impact to the previously mentioned beneficial uses not expected.

h. Describe any aquatic life known to be present along the affected stream reach. Describe aquatic life that maybe impacted by the proposed withdrawal. Include species' habitat requirements.

Based on the project scope of work it is not anticipated that this project will have an effect on anadromous fish reaches. Fresh water mussels are likely to be present.

Minimal impact on existing aquatic life due to the proposed raw water intake is expected. A wedgewire screen with a slot size of 1 mm and designed to prevent impact to aquatic life will cover the proposed raw water intake pipe. Furthermore, the intake flow velocity of the proposed intake is expected to be less than 0.5 fps.

28. Public Comments/Issues for Major Water Withdrawals

a. Summarize steps taken to seek public input

Staff from Louisa County, Fluvanna County, and Timmons Group met with Virginia DEQ staff (Scott Kudlas, Director of the Office of Surface and Ground Water Supply Planning) during an informal meeting held on December 18, 2013. The purpose of the meeting was to seek guidance from DEQ staff regarding the intake relocation project. *Note: this meeting did not serve as a pre-application meeting.*

In order to seek public input regarding the proposed project, the Applicant placed public notice information in The Daily Progress newspaper for the following dates: 1/13/2014 through 1/19/2014 (See Appendix D).

Additionally, on February 4, 2014, the Applicant hosted a Public Comment Meeting regarding the proposed project. During this meeting, the Applicant's representatives gave a presentation (see Appendix J) regarding the proposed project and requested written comments (to be received during the seven days following the meeting). No comments were received by the Applicant during that meeting or during the following seven days.

ORANGE COUNTY REVIEW The Madison Eagle The Daily Progress GREENE COUNTY RECORD THE NEWS VIRGINIAN

Central Virginia Newspapers Review Order Confirmation for Ad #0003198297-01

Client	COUNTY OF LOUISA	**Payor Customer**	COUNTY OF LOUISA	**Acct. Exec**	skey
Client Phone	540-967-0401	**Payor Phone**	540-967-0401		
Account#	3309338	**Payor Account**	3309338		
Address	PO BOX 160 LOUISA VA 23093 USA	**Payor Address**	PO BOX 160 LOUISA VA 23093	**Ordered By**	April Lowe
Fax					
EMail	alowe@louisa.org				

Total Amount	**$301.45**
Payment Amt	**$0.00**
Amount Due	**$301.45**

Payment Method

Status

Materials

Tear Sheets	Proofs	Affidavits	PO Number	Blind Box
1	0	1		

Text:

Order Notes:

Ad Number	Ad Type	Color	Production Color
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Pick Up Number	**Ad Size**	**Production Method**	**Production Notes**
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Product	Placement/Class	Position	# Inserts
Run Schedule Invoice Text			
Run Dates			
Tag Line			

CVL Daily Prog CLP:: _Legal Ads - CLP **_Legal Notices-Legal-CLP** 1

PUBLIC NOTICE The James River Water Authority (JRWA) intends to apply for reissuance of a Virginia Water Protection Permit pursuant to

1/13/2014

PUBLICNOTICETHEJAMESRIVERWATERAUTHORITYJRWAINTENDSTOAPPLYFORREISSUANCEOFAVIRGINIAWATERPROTECTIONF

CVL dailypro CLP.com:Onl Any: _Legal Ads - CLP **_Legal Notices-Legal-CLP** 7

PUBLIC NOTICE The James River Water Authority (JRWA) intends to apply for reissuance of a Virginia Water Protection Permit pursuant to

1/13/2014, 1/14/2014, 1/15/2014, 1/16/2014, 1/17/2014, 1/18/2014, 1/19/2014

PUBLICNOTICETHEJAMESRIVERWATERAUTHORITYJRWAINTENDSTOAPPLYFORREISSUANCEOFAVIRGINIAWATERPROTECTIONF

ORANGE COUNTY REVIEW The Madison Eagle The Daily Progress GREENE COUNTY RECORD THE NEWS VIRGINIAN

Central Virginia Newspapers Review Order Confirmation for Ad #0003198297-01

Ad Content Proof Actual Size

PUBLIC NOTICE

The James River Water Authority (JRWA) intends to apply for reissuance of a Virginia Water Protection Permit pursuant to 9 VAC 25-210 in order to relocate its proposed intake structure on the James River under existing VWP Permit #04-0805. The location of the proposed intake structure under the existing permit is just downstream of State Route 15 in the vicinity of Bremo Bluff. JRWA intends to relocate the proposed intake structure further downstream in the general vicinity of Columbia on the north side of the James River just upstream of the State Route 690 bridge in Fluvanna County, Virginia.

In addition to the proposed intake structure, the proposed project will consist of a raw water pump station and a raw water pipeline to be constructed from the intake structure in the general vicinity of an existing Colonial Pipeline easement to a location just north of State Route 6. This project is intended to be a primary source of water for both Fluvanna and Louisa Counties to serve their designated growth areas as outlined in the current Water Supply Plans developed and approved by each County.

The JRWA will hold a public information meeting on February 4, 2014, at 10:30 a.m. in the meeting room at the Spring Creek Sports Club, 181 Clubhouse Way, Zion Crossroads, Virginia. An overview of the project will be provided at this meeting as well as an opportunity for the public to provide comments.

Interested parties seeking additional information or wishing to submit written comments may contact or submit such comments to:

Steve Nichols, Fluvanna County Administrator
132 Main Street
P.O. Box 540
Palmyra, VA 22963
phone: (434) 591-1910
e-mail: snichols@cofluvanna.va.us

or

Robert Dube, Louisa County Administrator
1 Woolfolk Avenue
P.O. Box 160
Louisa, VA 23093
Phone: (540) 967-3400
e-mail: rdube@louisa.org

Comments related to the project made during the public information meeting and written comments received within seven (7) days following the public information meeting will be evaluated by the JRWA and considered during the application process.

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

March 12, 2014

Point of Fork Farm
Attention: Barbara S. Gillam
POF Development Corp.
P.O. Box 847
Columbia, VA 23038

RE: James River Water Supply Project – Raw Water Intake and Pump Station

Dear Ms. Gillam:

On behalf of the James River Water Authority, we respectfully submit conceptual drawings pertaining to the proposed raw water intake and pump station associated with the James River Water Supply Project.

This proposed withdrawal, located in Fluvanna County on the north bank of the James River, just upstream of the confluence with the Rivanna River, will replace the existing withdrawal associated with VWP Individual Permit Number 04-0805, dated June 12, 2006 for a withdrawal at Bremo Bluff. The primary objective of the new raw water intake is to meet the water demands associated with the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April, 2010 and June, 2011 respectively.

The objective of the notification is to inform the property owner (Point of Fork Farm) of the proposed infrastructure (see exhibits EX-1, EX-2, and EX-3) per the requirements of the Joint Permit Application. We request that the Point of Fork Farm property owner review the Adjacent Property Owner's Acknowledgment Form (see Appendix A), complete as directed, and return back to Timmons Group in the enclosed envelope.

If you have any questions feel free to contact us.

Respectfully submitted,

Timmons Group

David J. Saunders, P.E.
Principal

Enclosures (4): Adjacent Property Owner's Acknowledgement Form
Raw Water Intake and Pump Station – conceptual plan view drawing
Raw Water Intake and Pump Station – conceptual section view drawing
Raw Water Intake and Pump Station – conceptual site plan drawing

APPENDIX A

Adjacent Property Owner's Acknowledgement Form

I, Point of Fork Farm LP, own land next to/ across the water from/ in the same cove
(print adjacent property owner's name)

as the land of the James River Water Authority Project .
(print applicant's name)

I have reviewed the applicant's project drawings dated February, 2014 to be submitted for all
(date of drawings)

necessary Federal, State, and Local permits.

_____ I have no comment regarding the proposal

_____ I do not object to the proposal

_____ I object to the proposal

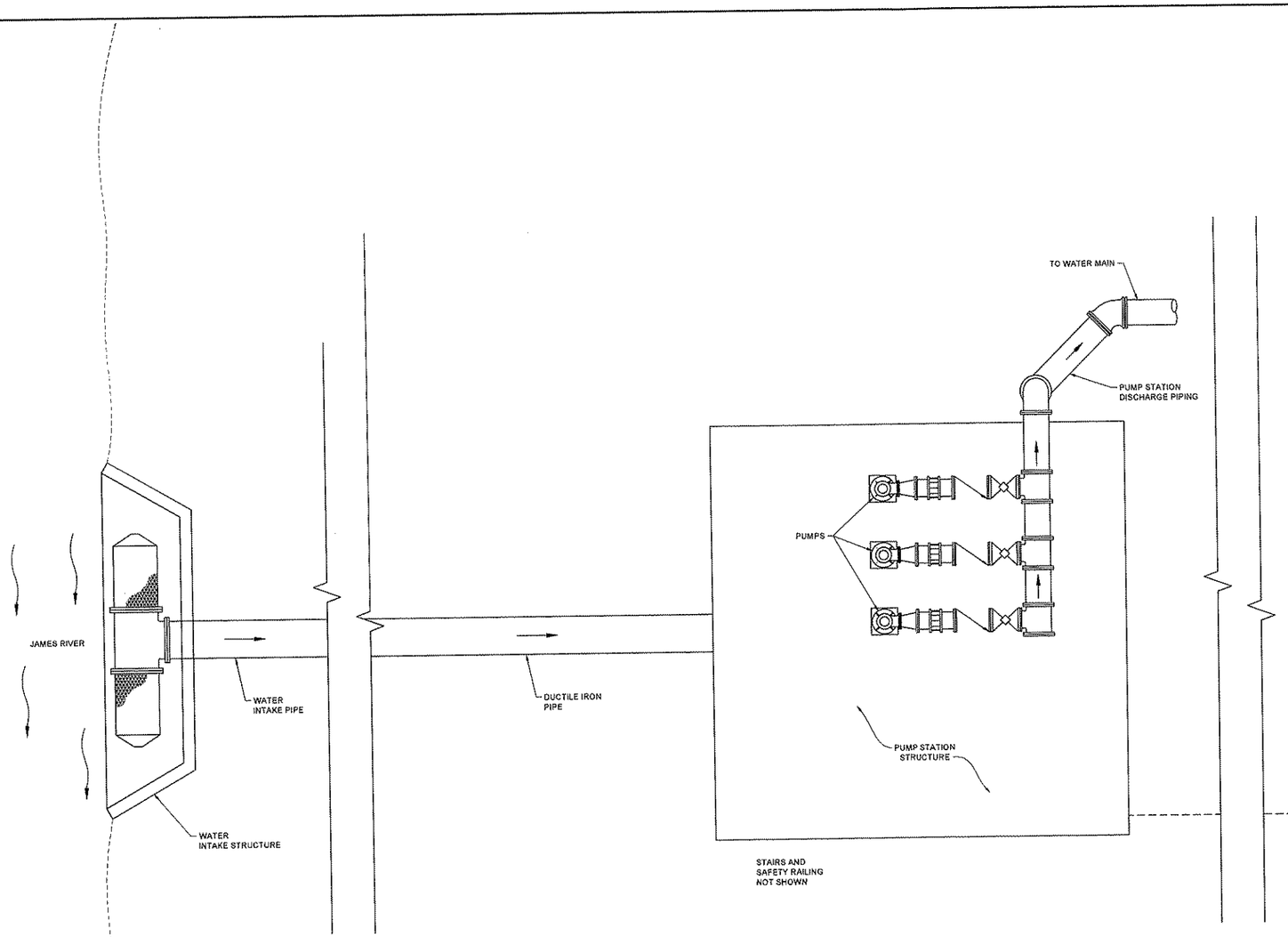
The applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.

(Before signing this form, please be sure that you have checked the appropriate option above)

_____
Adjacent property owner's signature

_____
Date

NOTE: IF YOU OBJECT TO THE PROPOSAL, THE REASON(S) YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO VMRC IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN A DENIAL OF A PERMIT FOR THE PROPOSED WORK. HOWEVER, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.



RIVER WATER INTAKE

PUMP STATION

ELECTRICAL BUILDING

INTAKE AND PUMP STATION - PLAN
SCALE: NONE

NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE CORPORATE OFFICE
1001 BOULDERS PARKWAY, SUITE 300, RICHMOND, VA 22225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

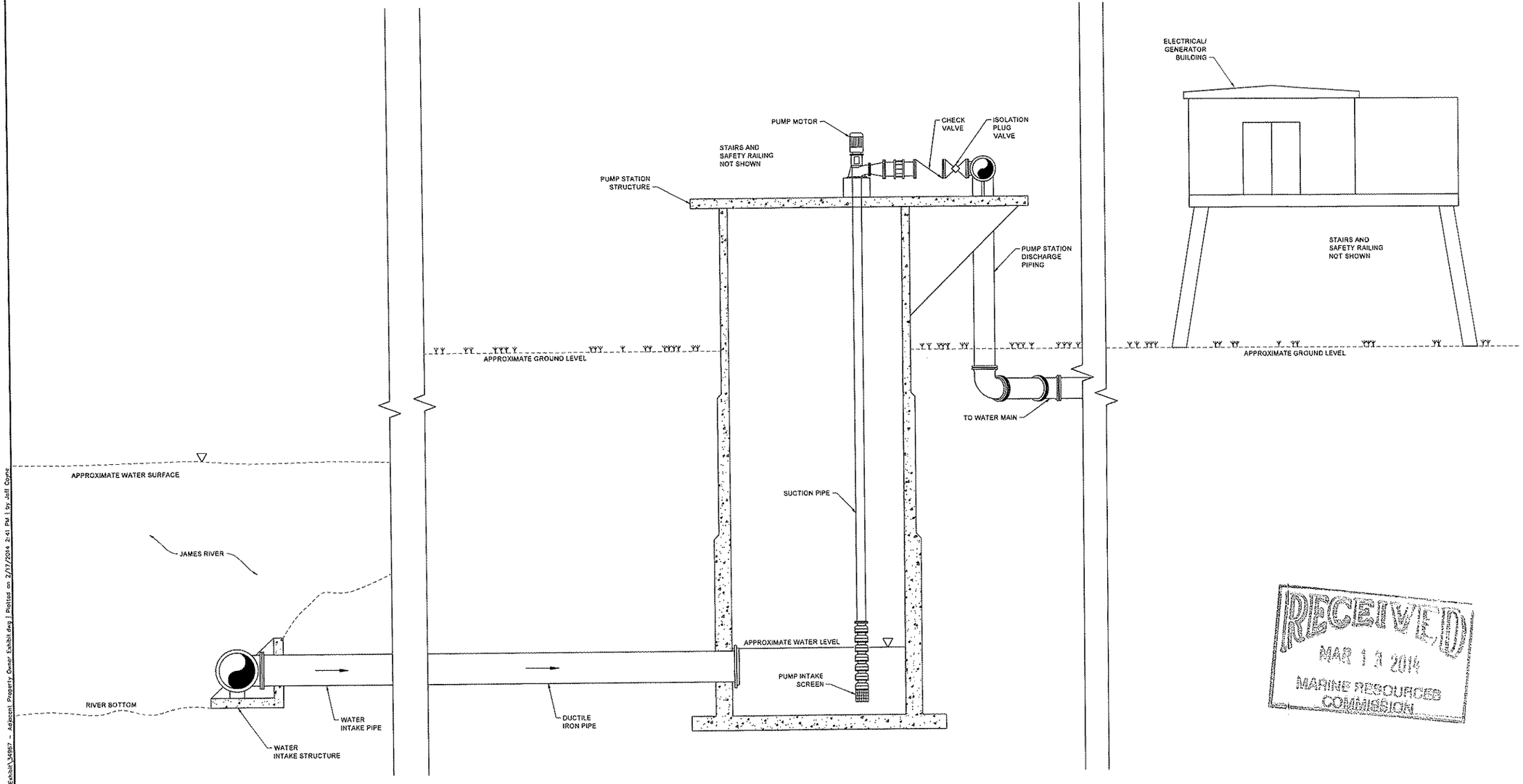
DATE: FEBRUARY 2014
DRAWN BY: J. COYNE
DESIGNED BY: D. SAUNDERS
CHECKED BY: D. SAUNDERS
SCALE: NONE

TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

JOB NO. 34967
SHEET NO. EX-1

CONCEPTUAL DESIGN



RIVER WATER INTAKE

PUMP STATION

ELECTRICAL BUILDING

INTAKE AND PUMP STATION - SECTION
SCALE: NONE

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

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NO.	REVISION DESCRIPTION	DATE

DATE: FEBRUARY 2014
DRAWN BY: J. COYNE
DESIGNED BY: D. SAUNDERS
CHECKED BY: D. SAUNDERS
SCALE: NONE

TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

JOB NO. 34967
SHEET NO. EX-2

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

TIMMONS GROUP

JAMES RIVER WATER PROJECT

RAW WATER INTAKE AND PUMP STATION

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

March 12, 2014

David S. Haney Sr.
615 Tepee Town Road
Bremo Bluff, VA 23022

RE: James River Water Supply Project – Raw Water Intake and Pump Station

Dear Mr. Haney:

On behalf of the James River Water Authority, we respectfully submit conceptual drawings pertaining to the proposed raw water intake and pump station associated with the James River Water Supply Project.

This proposed withdrawal, located in Fluvanna County on the north bank of the James River, just upstream of the confluence with the Rivanna River, will replace the existing withdrawal associated with VWP Individual Permit Number 04-0805, dated June 12, 2006 for a withdrawal at Bremo Bluff. The primary objective of the new raw water intake is to meet the water demands associated with the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April, 2010 and June, 2011 respectively.

The objective of the notification is to inform the property owner (David S. Haney) of the proposed infrastructure (see exhibits EX-1, EX-2, and EX-3). We request that you review the Adjacent Property Owner's Acknowledgment Form (see Appendix A), complete as directed, and return back to Timmons Group in the enclosed envelope.

If you have any questions feel free to contact us.

Respectfully submitted,

Timmons Group

David J. Saunders, P.E.
Principal

Enclosures (4): Adjacent Property Owner's Acknowledgement Form
Raw Water Intake and Pump Station – conceptual plan view drawing
Raw Water Intake and Pump Station – conceptual section view drawing
Raw Water Intake and Pump Station – conceptual site plan drawing

APPENDIX A

Adjacent Property Owner's Acknowledgement Form

I, David S. Haney Sr., own land next to/ across the water from/ in the same cove
(print adjacent property owner's name)

as the land of the James River Water Authority Project .
(print applicant's name)

I have reviewed the applicant's project drawings dated February, 2014 to be submitted for all
(date of drawings)

necessary Federal, State, and Local permits.

_____ I have no comment regarding the proposal

_____ I do not object to the proposal

_____ I object to the proposal

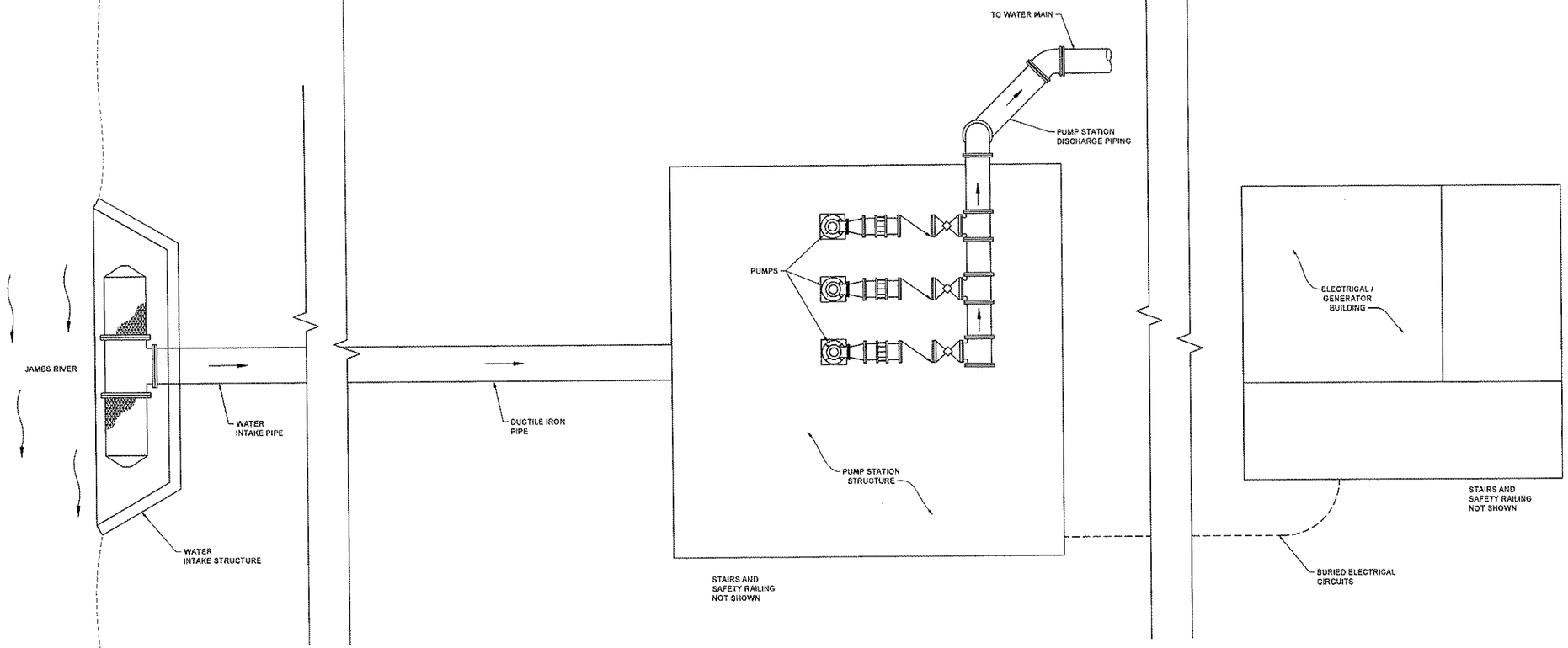
The applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.

(Before signing this form, please be sure that you have checked the appropriate option above)

_____
Adjacent property owner's signature

_____
Date

NOTE: IF YOU OBJECT TO THE PROPOSAL, THE REASON(S) YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO VMRC IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN A DENIAL OF A PERMIT FOR THE PROPOSED WORK. HOWEVER, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.



RIVER WATER INTAKE

PUMP STATION

ELECTRICAL BUILDING

INTAKE AND PUMP STATION - PLAN
SCALE: NONE

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

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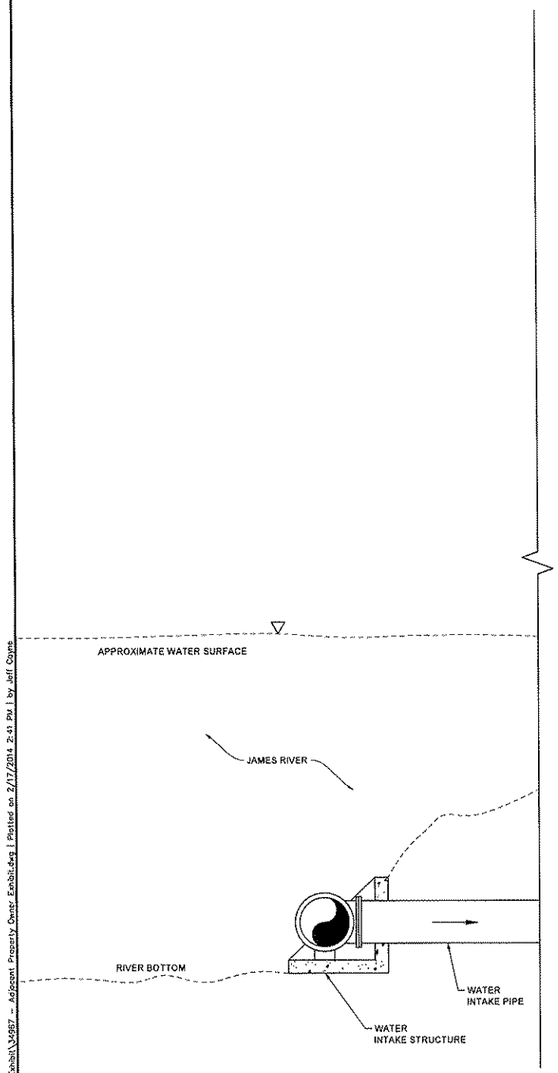
REVISION DESCRIPTION | DATE

DATE: FEBRUARY 2014
DRAWN BY: J. COYNE
DESIGNED BY: D. SAUNDERS
CHECKED BY: D. SAUNDERS
SCALE: NONE

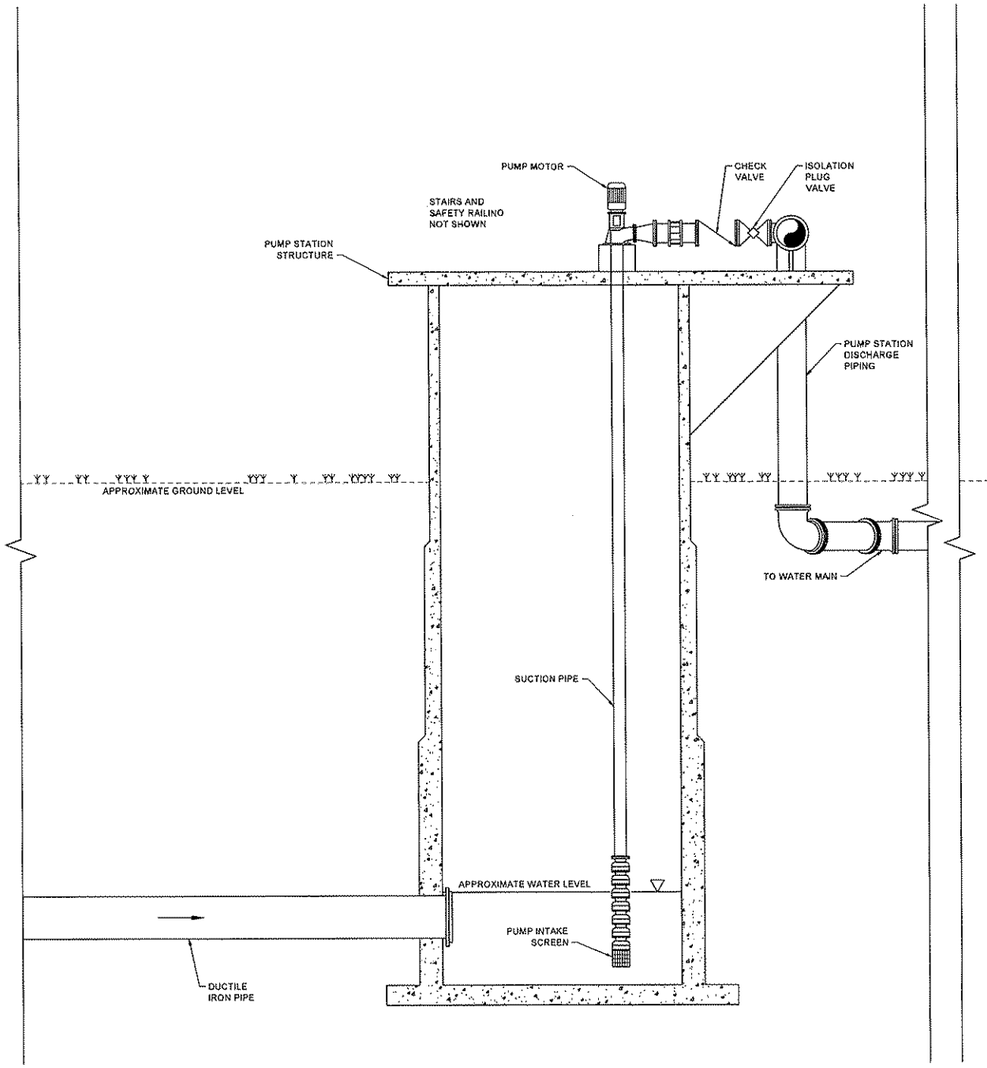
TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

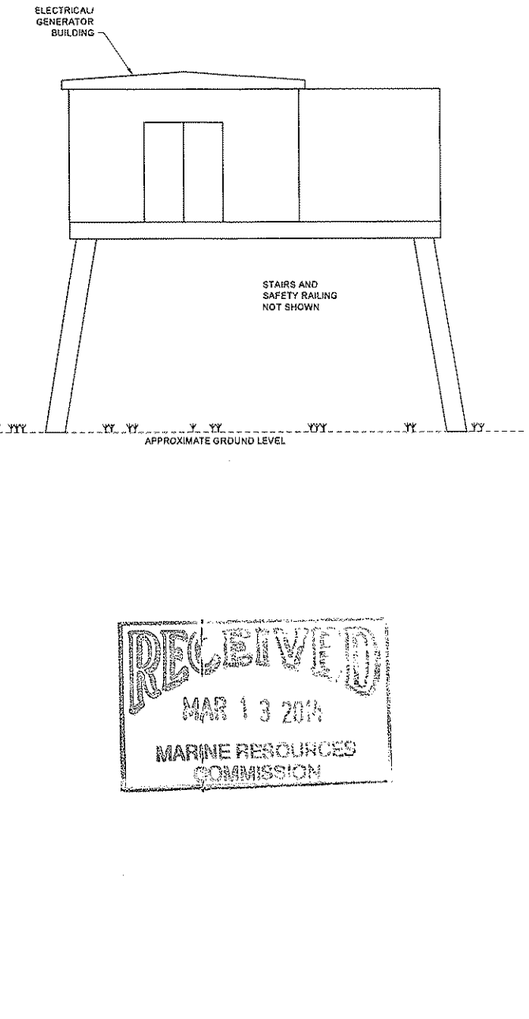
JOB NO. 34967
SHEET NO. EX-1



RIVER WATER INTAKE



PUMP STATION



ELECTRICAL BUILDING

INTAKE AND PUMP STATION - SECTION
SCALE: NONE

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

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REVISION DESCRIPTION

DATE

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SCALE: NONE

TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

JOB NO. 34967
SHEET NO. EX-2

NOT FOR CONSTRUCTION

CONCEPTUAL DESIGN

TIMMONS GROUP

JAMES RIVER WATER PROJECT

RAW WATER INTAKE AND PUMP STATION

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

March 12, 2014

R. Franklin Hardy
417 Park Street
Charlottesville, VA 22902

RE: James River Water Supply Project – Raw Water Intake and Pump Station

Dear. R. Franklin Hardy:

On behalf of the James River Water Authority, we respectfully submit conceptual drawings pertaining to the proposed raw water intake and pump station associated with the James River Water Supply Project.

This proposed withdrawal, located in Fluvanna County on the north bank of the James River, just upstream of the confluence with the Rivanna River, will replace the existing withdrawal associated with VWP Individual Permit Number 04-0805, dated June 12, 2006 for a withdrawal at Bremo Bluff. The primary objective of the new raw water intake is to meet the water demands associated with the Counties of Fluvanna and Louisa as outlined in their adopted water supply plans dated April, 2010 and June, 2011 respectively.

The objective of the notification is to inform the property owner (R. Franklin Hardy) of the proposed infrastructure (see exhibits EX-1, EX-2, and EX-3). We request that you review the Adjacent Property Owner's Acknowledgment Form (see Appendix A), complete as directed, and return back to Timmons Group in the enclosed envelope.

If you have any questions feel free to contact us.

Respectfully submitted,

Timmons Group

David J. Saunders, P.E.
Principal

Enclosures (4): Adjacent Property Owner's Acknowledgement Form
Raw Water Intake and Pump Station – conceptual plan view drawing
Raw Water Intake and Pump Station – conceptual section view drawing
Raw Water Intake and Pump Station – conceptual site plan drawing

APPENDIX A

Adjacent Property Owner's Acknowledgement Form

I, R. Franklin Hardy, own land next to/ across the water from/ in the same cove
(print adjacent property owner's name)

as the land of the James River Water Authority Project .
(print applicant's name)

I have reviewed the applicant's project drawings dated February, 2014 to be submitted for all
(date of drawings)

necessary Federal, State, and Local permits.

_____ I have no comment regarding the proposal

_____ I do not object to the proposal

_____ I object to the proposal

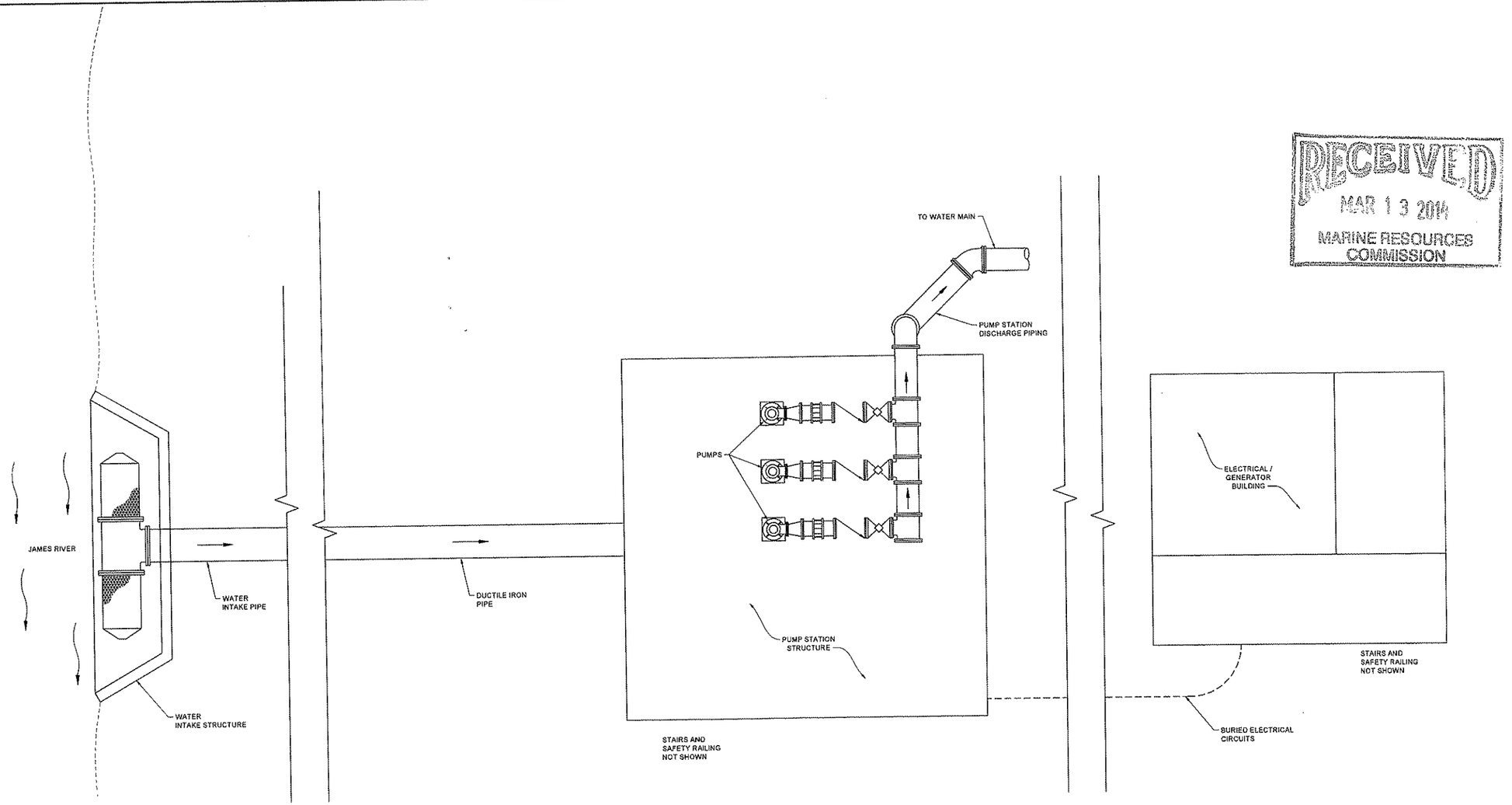
The applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.

(Before signing this form, please be sure that you have checked the appropriate option above)

_____
Adjacent property owner's signature

_____
Date

NOTE: IF YOU OBJECT TO THE PROPOSAL, THE REASON(S) YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO VMRC IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN A DENIAL OF A PERMIT FOR THE PROPOSED WORK. HOWEVER, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.



RIVER WATER INTAKE

PUMP STATION

ELECTRICAL BUILDING

INTAKE AND PUMP STATION - PLAN
SCALE: NONE

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE CORPORATE OFFICE
1001 BOULDERS PARKWAY, SUITE 300, RICHMOND, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

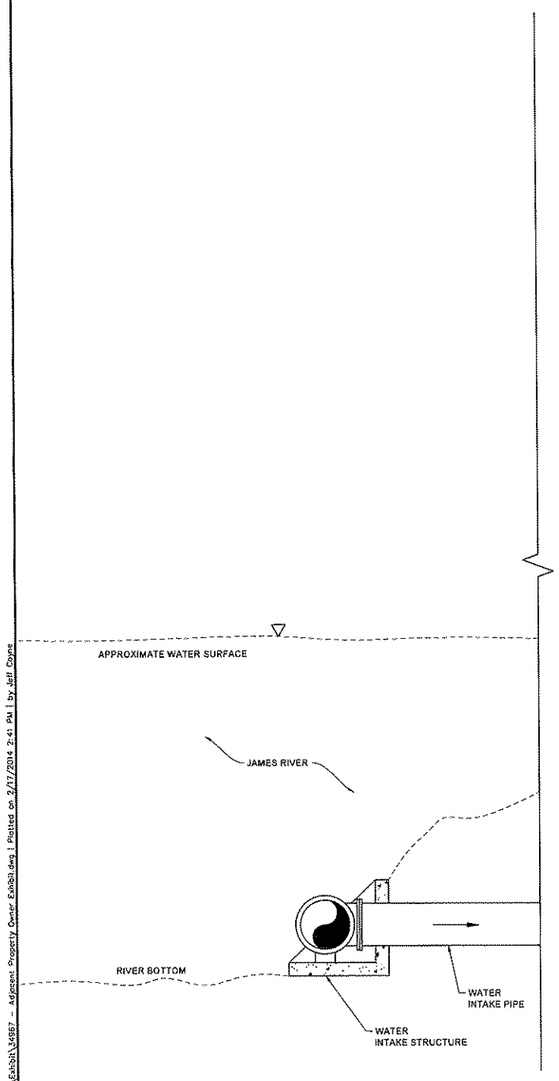
REVISION DESCRIPTION	DATE

DATE: FEBRUARY 2014
DRAWN BY: J. COYNE
DESIGNED BY: D. SAUNDERS
CHECKED BY: D. SAUNDERS
SCALE: NONE

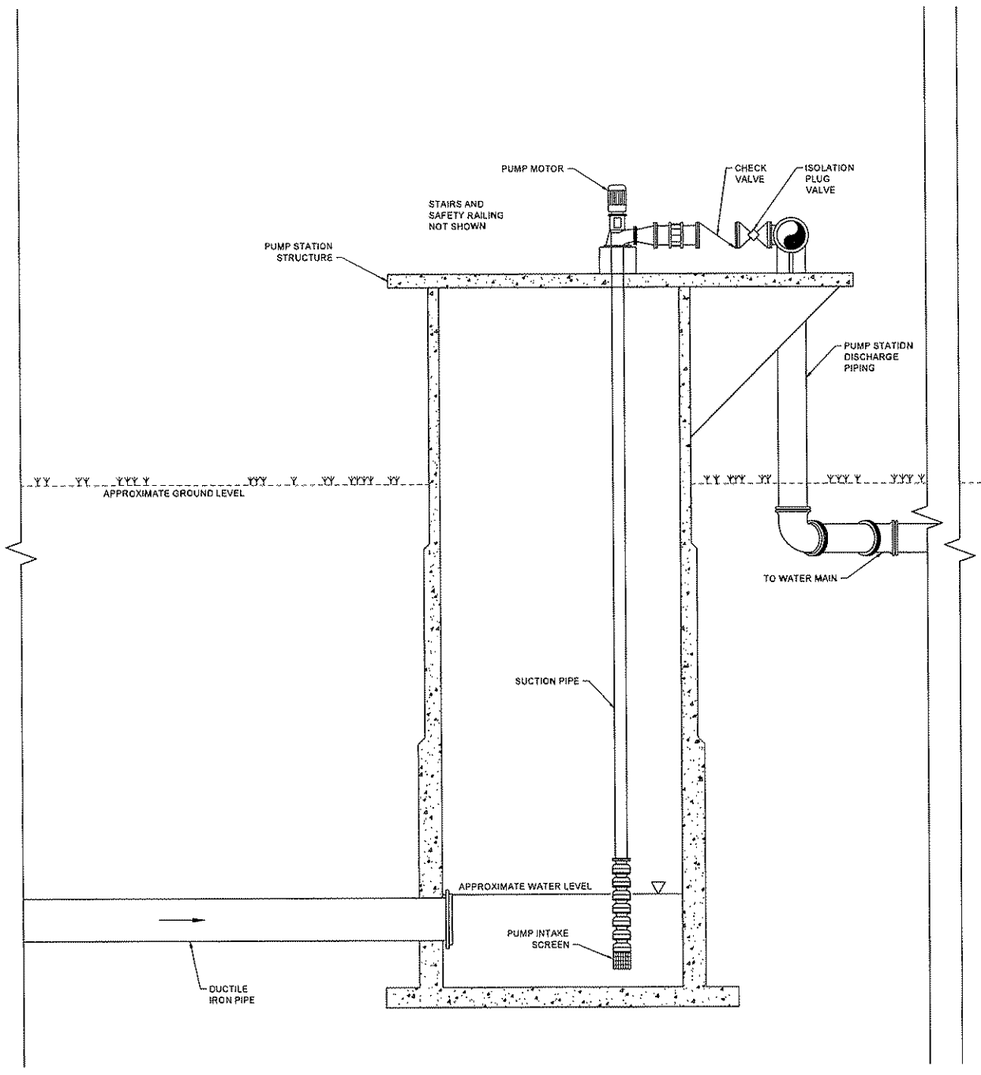
TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

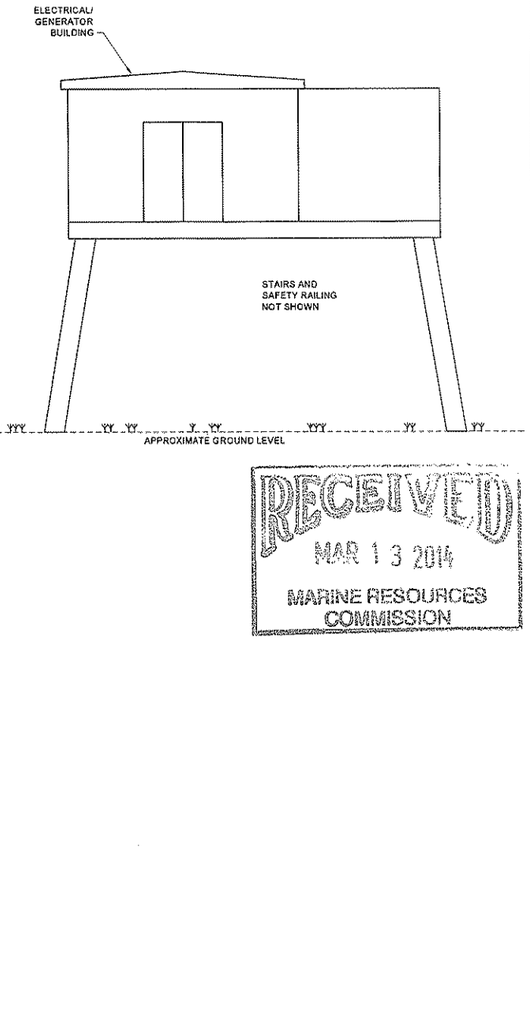
JOB NO. 34967
SHEET NO. EX-1



RIVER WATER INTAKE



PUMP STATION



ELECTRICAL BUILDING

INTAKE AND PUMP STATION - SECTION
SCALE: NONE

CONCEPTUAL DESIGN

NOT FOR CONSTRUCTION

THIS DRAWING PREPARED AT THE CORPORATE OFFICE:
1001 BOULDERS PARKWAY, SUITE 300, RICHMOND, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

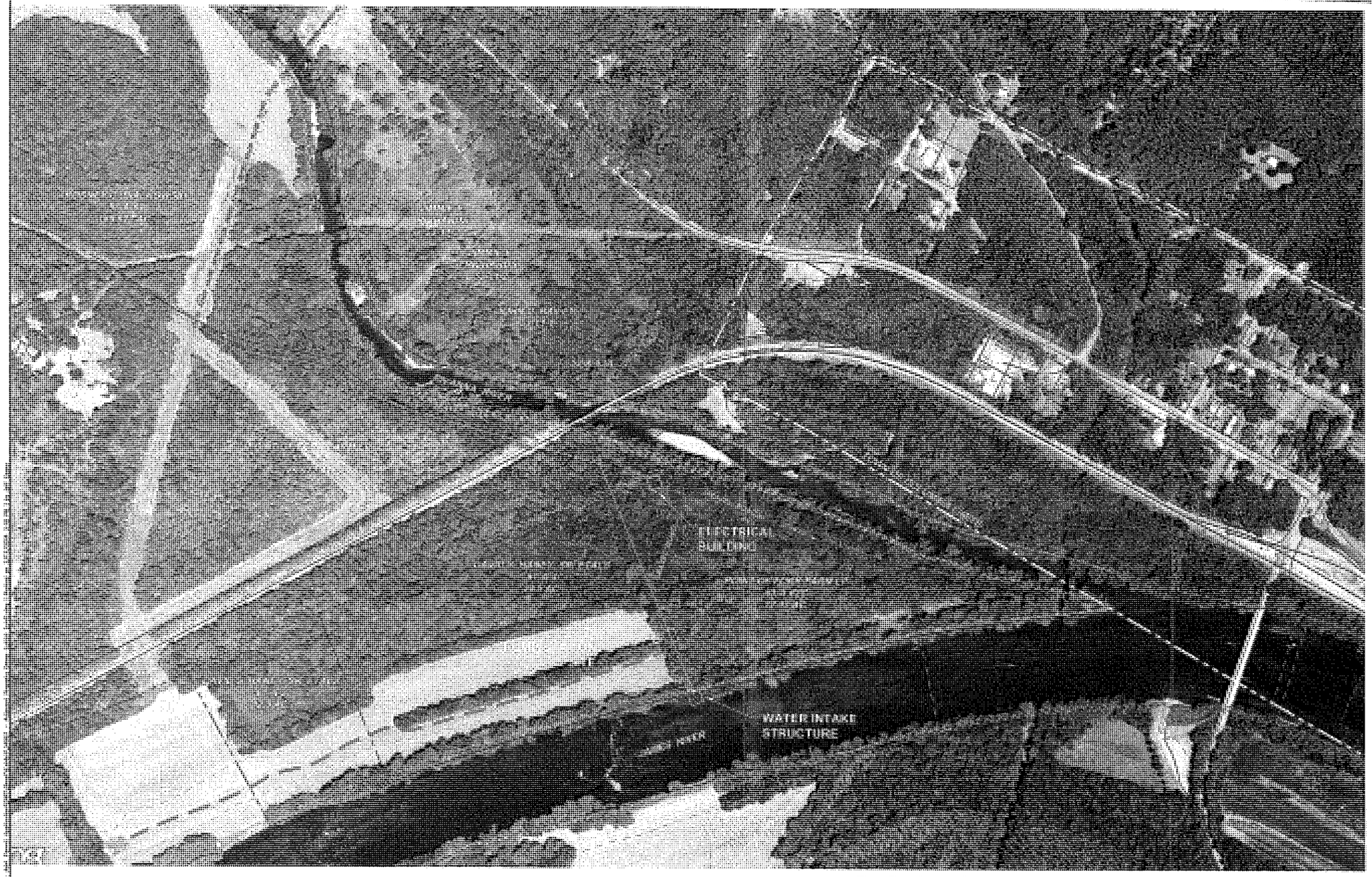
DATE: FEBRUARY 2014
DRAWN BY: J. COYNE
DESIGNED BY: D. SAUNDERS
CHECKED BY: D. SAUNDERS
SCALE: NONE

TIMMONS GROUP

JAMES RIVER WATER PROJECT
JAMES RIVER WATER AUTHORITY
RAW WATER INTAKE AND PUMP STATION

JOB NO. 34967
SHEET NO. EX-2

NOT FOR CONSTRUCTION



CONCEPTUAL DESIGN

TIMMONS GROUP

JAMES RIVER WATER PROJECT

RAW WATER INTAKE AND PUMP STATION

Anadromous Fish Use Streams

37,45,06.6 -78,10,02.4
is **the Search Point**

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, Anadromous

Map Overlay Legend

Anadromous Fish Reach
Confirmed
Potential
123 **Impediment**
Position Rings 1 mile and 1/4 mile at the Search Point
2 mile radius Search Area

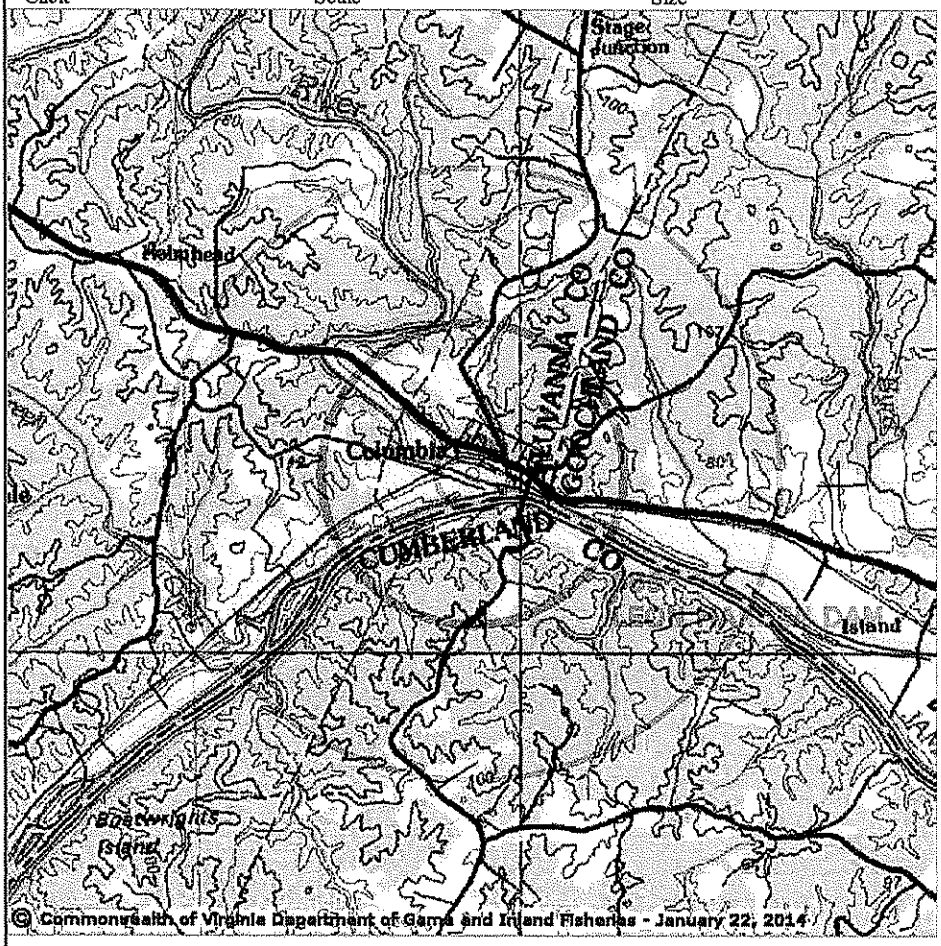
Refresh Browser Page

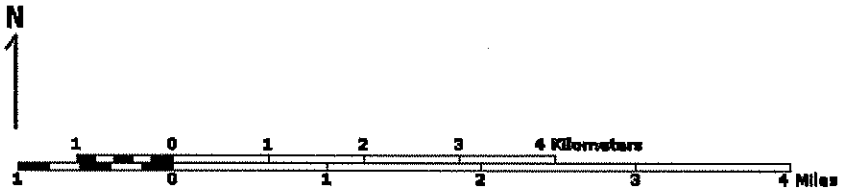
Map Click: Pan | Id

Map Scale: In | Zoom | Out

Screen Size: Small | Size | Big

Help





Point of Search 37,45,06.6 -78,10,02.4
Map Location 37,45,06.6 -78,10,02.4

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 744762 and top 4186860. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2014-01-22 09:38:11 (qa/qc December 5, 2012 8:04 - tn=516475.0 dist=3218.688 I)
$poi=37.7518333 -78.1673333

2 Bald Eagle Nests

37,45,06.6 -78,10,02.4
is the Search Point

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, BAEANests

Map Overlay Legend

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Bald Eagle nests 660 and 330 foot management zones

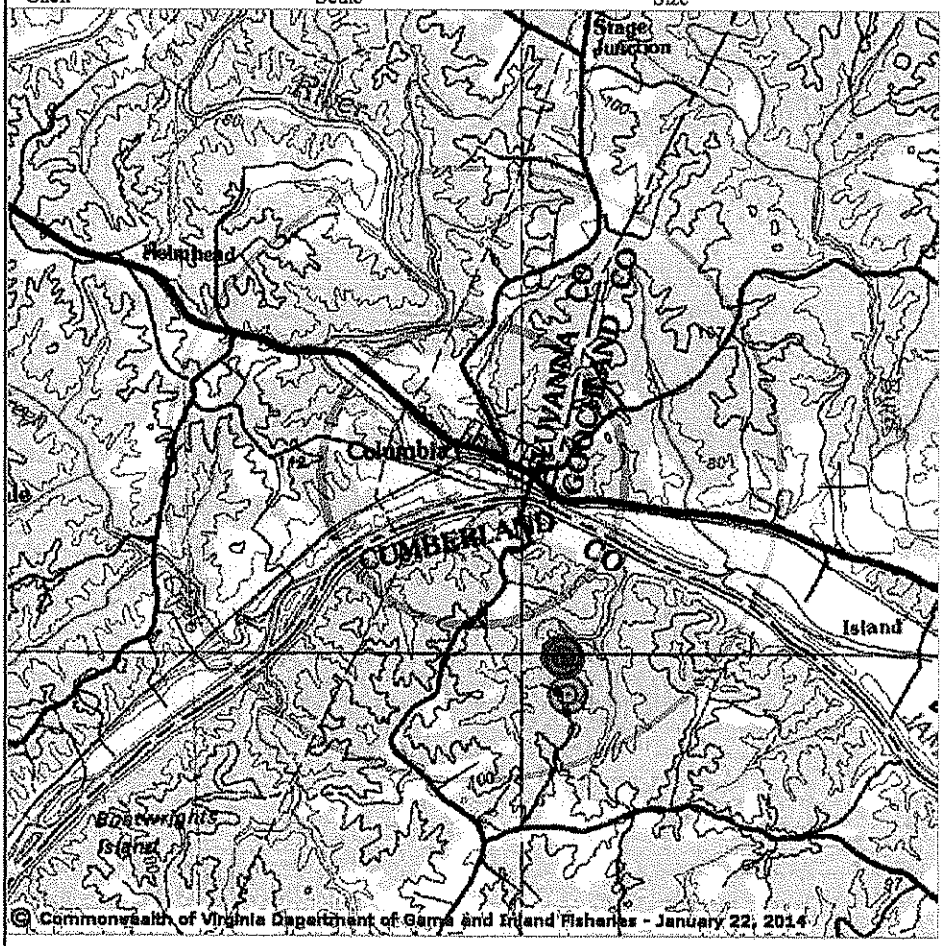
Refresh Browser Page

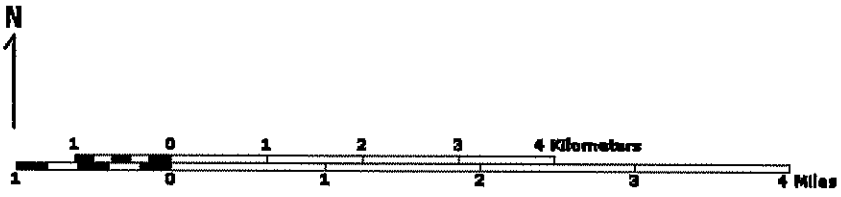
Map Click: Pan | Id

Map Scale: In | Zoom | Out

Screen Size: Small | Size | Big

Help





Point of Search 37,45,06.6 -78,10,02.4

Map Location 37,45,06.6 -78,10,02.4

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 744762 and top 4186860. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display

represents 51501 feet east to west by 51501 feet north to south for a total of 53.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
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All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2014-01-22 09:37:14 (qa/qc December 5, 2012 8:04 - tn=516475.0 dist=3218.688 I)
$poi=37.7518333 -78.1673333

VaFWIS Search Report Compiled on 1/22/2014, 9:31:08 AM

Help

Known or likely to occur within a **2 mile radius around point 37,45,06.6 -78,10,02.4** in **049 Cumberland County, 065 Fluvanna County, 075 Goochland County, VA**

View Map of Site Location

439 Known or Likely Species ordered by Status Concern for Conservation (displaying first 20) (18 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes	TEWaters,Habitat
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
060081	ST	II	Floater, green	Lasmigona subviridis	Yes	TEWaters,Habitat,HU6
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	Yes	BOVA,TEWaters,Habitat,SppObs,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Yes	BOVA,BAEANests,HU6
060029	FS	III	Lance, yellow	Elliptio lanceolata	Yes	BOVA,SppObs,HU6
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA,HU6
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA,HU6
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA

060084		I	Pigtoe, Virginia	Lexingtonia subplana		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040029		II	Heron, little blue	Egretta caerulea caerulea		BOVA
040105		II	Rail, king	Rallus elegans		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA
030068		III	Turtle, eastern box	Terrapene carolina carolina		BOVA,HU6
040094		III	Harrier, northern	Circus cyaneus		BOVA,HU6

To view **All 439 species** View 439

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Speeies of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II=VA Wildlife Aetion Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams (2 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
P133	Rivanna river	Potential	0			Yes
P189	James River 4	Potential	0			Yes

Impediments to Fish Passage (1 records)

View Map of All Fish Impediments

ID	Name	River	View Map
685	LEON HANSEN DAM	HOPPER ROCK CREEK	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (4 Reaches)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (02080203)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (02080205)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (02080205)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Rivanna River (02080204)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests (2 records)

View Map of All Query Results
Bald Eagle Nests

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
CM0401	2	May 1 2004	HISTORIC	Yes
CM1001	1	May 10 2010	UNKNOWN	Yes

Displayed 2 Bald Eagle Nests

Species Observations (82 records - displaying first 20, 8 Observations with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
3551	SppObs	Jan 1 1900	Div. Natural Heritage	1	FSST	II	Yes
311815	SppObs	Aug 30 2005	Savidge, Timothy	10	FS	III	Yes
8692	SppObs	Sep 24 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes
8691	SppObs	Sep 23 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes
8689	SppObs	Sep 23 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes
8687	SppObs	Sep 23 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes
8690	SppObs	Sep 23 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes
8686	SppObs	Sep 22 1992	M T O'CONNELL, VPI/SU, ANN UZEE, VPI/SU	2	FS	III	Yes

311816	SppObs	Aug 31 2005	Savidge, Timothy	8		III	Yes
315603	SppObs	Aug 30 2005	T. Savidge, T. Dickinson, S. Garriock, K. Montieth	5		III	Yes
375474	Aquatics	Aug 27 1998	M. McGregor, P. Burgess, Sheila Harpster	15		III	Yes
375244	Aquatics	Oct 4 2007	B. T. Watson, M. E. Bradley	5		IV	Yes
315604	SppObs	Aug 31 2005	T. Savidge, T. Dickinson, S. Garriock, K. Montieth	2		IV	Yes
311818	SppObs	Aug 31 2005	Savidge, Timothy	6		IV	Yes
65573	SppObs	Sep 18 2001	JOHN M. ALDERMAN (PRINCIPLE PERMITTEE)	2		IV	Yes
67829	SppObs	Jul 5 2001	Rick Browder (Principle Permittee)	4		IV	Yes
11623	SppObs	Sep 11 2000	ANGERMEIER ET AL	29		IV	Yes
340254	SppObs	Aug 20 1998	K. Woodward, P. Wheeler	19		IV	Yes
11624	SppObs	Sep 12 1990	ANGERMEIER ET AL	37		IV	Yes
11622	SppObs	Sep 10 1990	ANGERMEIER ET AL	22		IV	Yes

Displayed 20 Species Observations

Selected 82 Observations View all 82 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (6 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (20802031)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
					Pigtoe,	Fusconaia	

		060173	FSST	II	Atlantic	masoni	
James River (20802032)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (20802051)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
James River (20802052)	FSSE	060006	SE	II	Floater, brook	Alasmidonta varicosa	Yes
		060081	ST	II	Floater, green	Lasmigona subviridis	
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Rivanna River (20802041)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Rivanna River (20802042)	FSST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks (1 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
45116	Columbia, SE	66		IV	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
049	Cumberland	348	FSST	I
065	Fluvanna	346	FSST	I
075	Goochland	389	FSST	I

USGS 7.5' Quadrangles:
Lakeside Village
Columbia

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
JM58	James River-Bear Garden Creek	54	FSST	II
JM60	Middle Byrd Creek	47	FSST	II
JM62	James River-Hooper Rock Creek	56	FSST	II
JR22	Rivanna River-Carys Creek	48	FSST	II

Compiled on 1/22/2014, 9:31:08 AM 1516470.0 report=all searchType= R dist= 3218.688 poi= 37,45,06.6 -78,10,02.4

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Threatened and Endangered Waters

37,45,06.6 -78,10,02.4
is the Search Point

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, TEWaters

Map Overlay Legend

T & E Waters
Federal
State

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

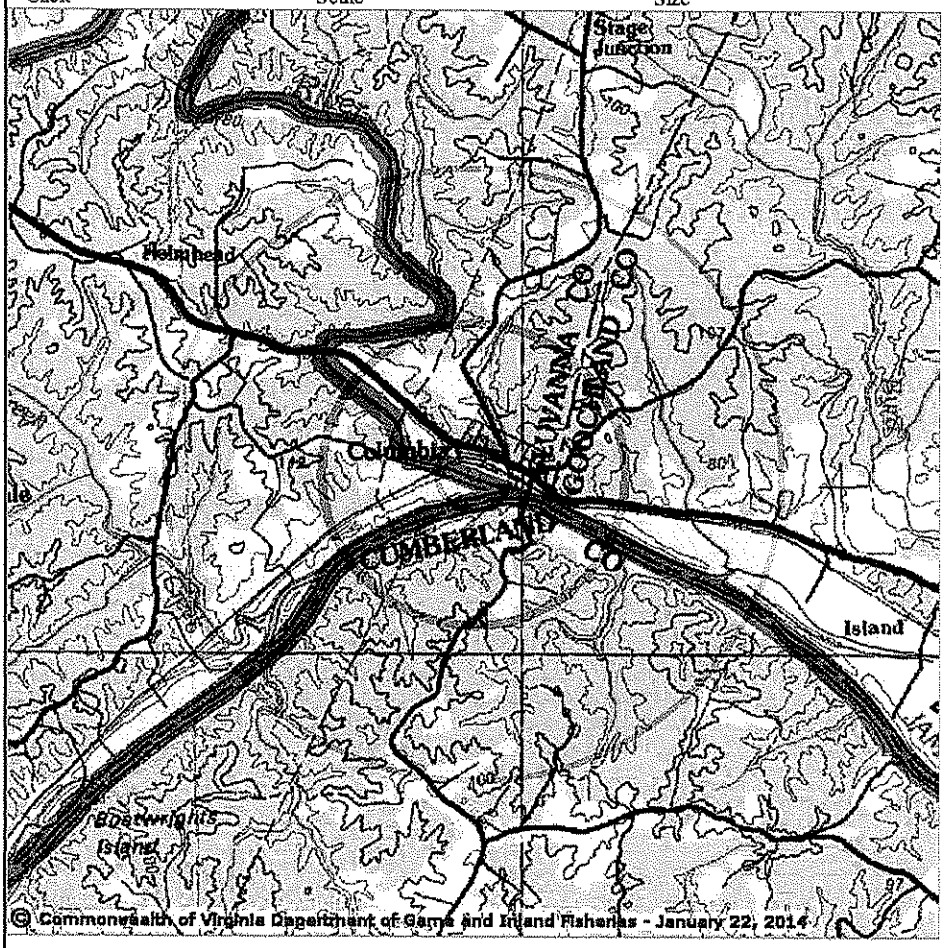
Refresh Browser Page

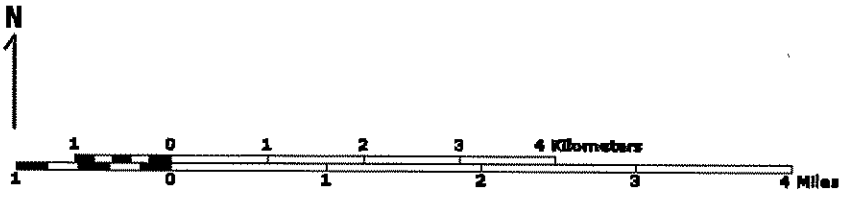
Map Click: Pan Id

Map Scale: In Zoom Out

Screen Size: Small Size Big

Help





Point of Search 37,45,06.6 -78,10,02.4
Map Location 37,45,06.6 -78,10,02.4

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 744762 and top 4186860. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

represents 31301 feet east to west by 31301 feet north to south for a total of 35.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
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All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2014-01-22 09:36:33 (qa/qc December 5, 2012 8:04 - tn=516475.0 dist=3218.688 I)
$poi=37.7518333 -78.1673333

IPaC - Information, Planning, and Conservation System

Environmental Conservation Online System

Step 1 (/ipac/wizard/chooseLocation!prepare.action)
Location
Step 2 (/ipac/wizard/chooseActivities!prepare.action)
Activities
Step 3
Trust resources list
Step 4
Conservation measures

Natural Resources of Concern

Save o

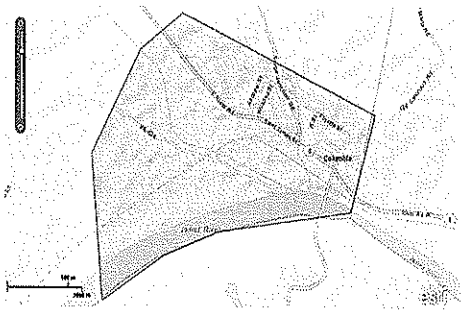
An online Endangered Species Act species list IS available on this page for your project area, represented by the office(s) listed below.

ll ava

The Endangered Species Act species list below is for planning purposes only -- it is not an official species list. To request an official species list, click the **Request an Official Species list** link to the right and follow the instructions.

Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/ (http://www.fws.gov/northeast/virginiafield/)

Project Location Map:



Note: The map reflects the map layers selected on the Step 1 Location page. To change what appears on this map, return to the Location page and adjust the map layers.

Project Counties:
Cumberland, VA | Fluvanna, VA | Goochland, VA

Project type: Water Supply / Delivery

Endangered Species Act Species List (USFWS Endangered Species Program (http://www

There are a total of 1 threatened, endangered, or candidate species on your species list. Species on this list should be consic species that exist in another geographic area. For example, certain fishes may appear on the species list because a proje habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats w** lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Clams	Status	
James spinymussel (*Pleurobema collina*) Population: Entire	Endangered	species info (/ipac/wizard/speciesInformation!showSpeciesInformation.action?spcode

Don't see a species you expect to see? (#)

Critical habitats within your project area:
There are no critical habitats within your project area.

Trust Resources

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program (http://refuge

There are no National Wildlife Refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program (http://www.fws.gov/migratorybirds/)

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C protection under the Bald and Golden Eagle Protection Act (http://www.fws.gov/midwest/eagle/protect/laws.html) Concern (2008) (http://library.fws.gov/Bird_Publications/BCC2008.pdf) report identifies species, subspacies, and pc additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C

Migratory bird information is not available for your project location.

NWI Wetlands (USFWS National Wetlands Inventory (http://www.fws.gov/wetlands/)).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and sta Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/F relationship of these requirements to their project with the Regulatory Program of the appropr (http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx).

The following wetlands intersect your project area.

To see these wetlands relative to your project area, return to Step 1 and enable the relevant NWI Wetlands map layer.

Wetland Types	NWI Classification Code	Approximate Acres
Freshwater Forested/Shrub Wetland	PFO1A (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PFO1A)	2.21582
Freshwater Forested/Shrub Wetland	PFO1C (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PFO1C)	1.650493
Freshwater Forested/Shrub Wetland	PFO1A (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PFO1A)	4.307808
Freshwater Forested/Shrub Wetland	PSS1C (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PSS1C)	1.560878
Freshwater Forested/Shrub Wetland	PFO1C (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PFO1C)	0.275104
Freshwater Pond	PUBHh (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PUBHh)	0.726369
Riverine	R2UBH (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=R2UBH)	3640.521059
Freshwater Emergent Wetland	PEM1C (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PEM1C)	0.178971
Freshwater Pond	PUBHx (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PUBHx)	0.173213
Freshwater Forested/Shrub Wetland	PSS1/EM1Ad (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PSS1/EM1Ad)	41.501291
Freshwater Pond	PUBHx (http://137.227.242.85/Data/interpreters/wetlands.aspx?CodeURL=PUBHx)	0.334449

Back Continue...

Last updated: January 22, 2014

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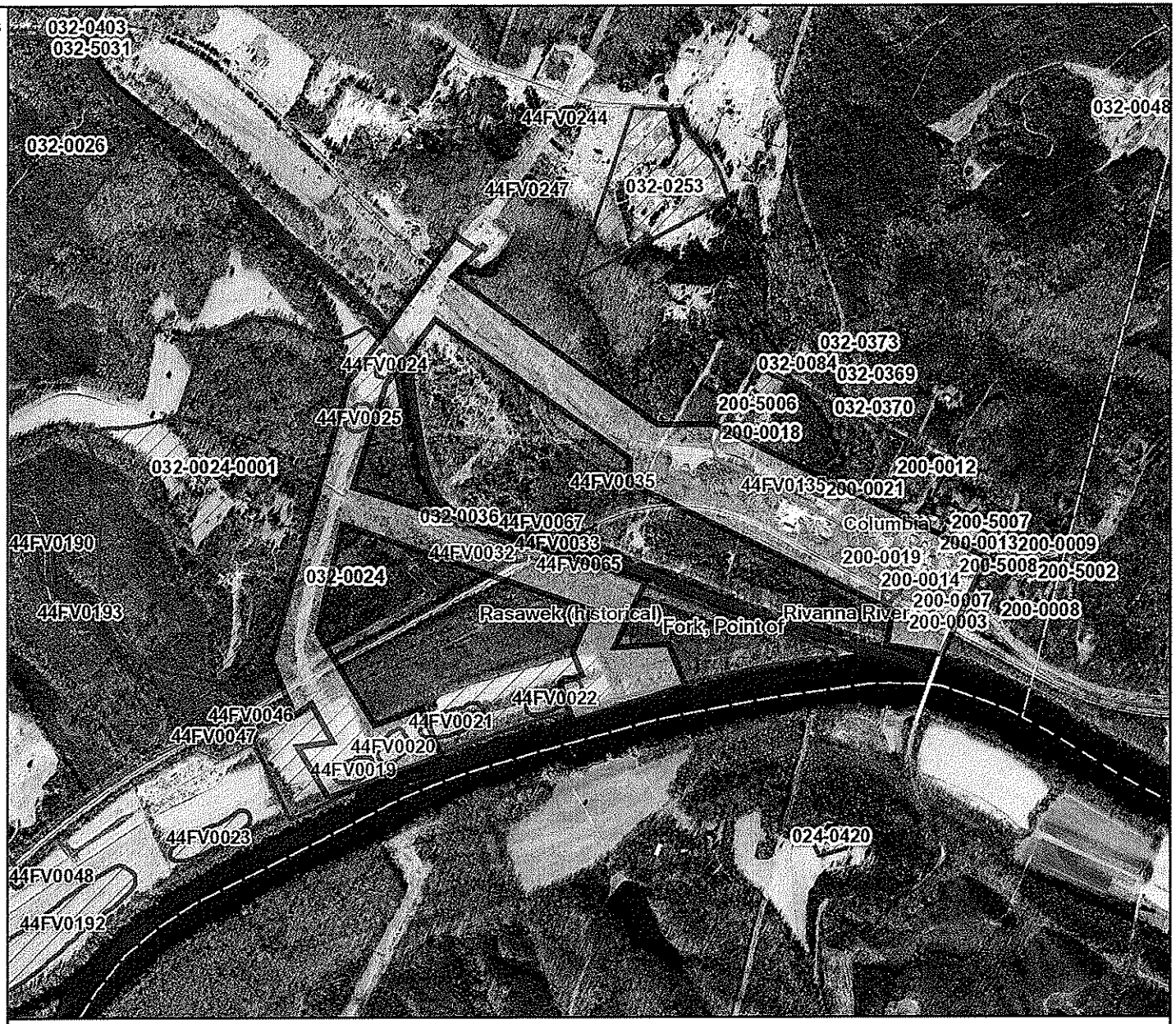
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Lahels
- USGS GIS Place names
- County Boundaries



N

Feet

0 500 1000 1500 2000

1:18,056 / 1"=1,505 Feet

Title:

Date: 1/21/2014

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Property Information

Property Names

Name Explanation	Name
Historic/Current	Point of Fork Plantation

Property Addresses

Alternate - Route 624

Property Evaluation Status

NRHP Listing
VLR Listing

County/Independent City(s): Fluvanna (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): COLUMBIA

Additional Property Information

Architecture Setting: Rural
Acreage: 265

Site Description:

June 2011: The house sits on a rise down a long gravel driveway which terminates in a circle in front of the former rear, now front entry to the plantation house. Surrounding the house is a large expanse of manicured lawn with large cedar and other trees as well as shrubs.

June 2011: A smokehouse, office and slave/servant's quarters/kitchen are located to the northwest of the house.

Surveyor Assessment:

June 2011: The Point of Fork Plantation was listed on the NRHP in 1974. The house and outbuildings have been maintained and preserved in their original setting and with a high degree of architectural integrity. It is therefore, in the opinion of the surveyor, that the Point of Fork Plantation retain its NRHP listed status.

Surveyor Recommendation: Legacy

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
Date of Construction: 1820Ca
Historic Time Period: Early National Period (1790 - 1829)
Historic Context(s): Architecture/Landscape, Domestic
Architectural Style: Federal/Adamesque
Form: *No Data*
Number of Stories: 2.0
Condition: Good
Interior Plan: *No Data*
Threats to Resource: Transportation Expansion

Architectural Description:

Architecture Summary, 1974: In good to fair condition at the time the nomination was drafted.

June 2011: The house is an imposing two-story, five-bay, hipped-roof brick dwelling on a raised parged foundation. The front entry porch, now used as the rear entrance, is ornamented with a dentiled cornice, fluted Doric columns and multi-light sidelights and transom. The rear porch, now used as the front entry consists of full-height masonry Doric columns on masonry piers and a dentiled cornice. Other features include four brick chimneys and six-over-six wood double-hung sash windows.

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Sash, Double-Hung	Wood	6/6
Roof	Hipped	Asphalt	Shingle
Foundation	Solid/Continuous	Unknown	Parged
Porch	2-story, 3-bay	Other	Columns, Doric
Chimneys	Interior	Brick	Cap, Corbeled
Structural System and Exterior Treatment	Masonry	Brick	Bond, Flemish
Porch	1-story	Wood	Columns, Doric

Secondary Resource Information

Secondary Resource #1

Resource Category: Commerce/Trade
Resource Type: Office/Office Building.
Architectural Style: Federal/Adamesque
Form: *No Data*
Date of Construction: 1820
Condition: Good
Threats to Resource: Transportation Expansion
Architectural Description:

Architecture Summary, 1974: Brick office is in a temple form with a wooden facade in the form of a somewhat crude Doric portico in antis. In good condition at time of survey.

June 2011: The office is a one-story, front gable, brick and frame building with Doric columns flanking the front entry. The frame portions of the building are sheathed in weatherboards and the roof in asphalt shingles.

Number of Stories: 1

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Smoke/Meat House
Architectural Style: No Discernable Style
Form: *No Data*
Date of Construction: 1820
Condition: Good
Threats to Resource: Transportation Expansion
Architectural Description:

June 2011: The smokehouse is a one-story frame building supported by a brick foundation. The exterior is sheathed in weatherboards and the pyramidal roof in standing seam metal.

Number of Stories: 1

Secondary Resource #3

Resource Category: Domestic
Resource Type: Slave/Servant Quarters
Architectural Style: Other
Form: *No Data*
Date of Construction: 1820
Condition: Good
Threats to Resource: Transportation Expansion
Architectural Description:

June 2011: The building is a two-story, five-bay dwelling/kitchen with a shed-roofed wing. The exterior walls are brick and the roof is clad in asphalt shingles. Other features include interior end brick chimneys, masonry lintels and six-over-six wood double-hung sash windows.

Number of Stories: 2

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2011-1156
Investigator: CRI
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 6/1/2011
Dhr Library Report Number: FV-020
Project Staff/Notes:

A Cultural Resources Survey for the Proposed Route 6 Bridge Replacement Over the Rivanna River, Fluvanna County, Virginia (VDOT Project No. 0006-032-108, B603, C501, P101, R201; PPMS/UPC/CSC No.: 77321).

Surveyed by: Sandra DeChard and Berek Dore
Architectural Description and Data Entry by: Sandra DeChard

Event Type: NRHP Listing

DHR ID: 032-0024
Staff Name: NPS
Event Date: 8/13/1974
Staff Comment

No Data

Event Type: VLR Listing

DHR ID: 032-0024
Staff Name: VHLC
Event Date: 4/16/1974
Staff Comment

No Data

Event Type: NRHP Nomination

DHR ID: 032-0024
Staff Name: Loth, Calder C.
Event Date: 3/1/1974
Staff Comment

VHLC Staff

Event Type: Survey:HABS Inventory

Project Review File Number: *No Data*
Investigator: Gale, E. B.
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 9/12/1958
Dhr Library Report Number: FV-020
Project Staff/Notes:

No Data

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

Name: CRI
DHR CRM Report Number: FV-020
Record Type: Report
Bibliographic Notes: FV-020: A Cultural Resources Survey for the Proposed Route 6 Bridge Replacement Over the Rivanna River, Fluvanna County, Virginia, August 2011. #2011-1156

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
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- Archaeological Resources
- Archaeology Labels
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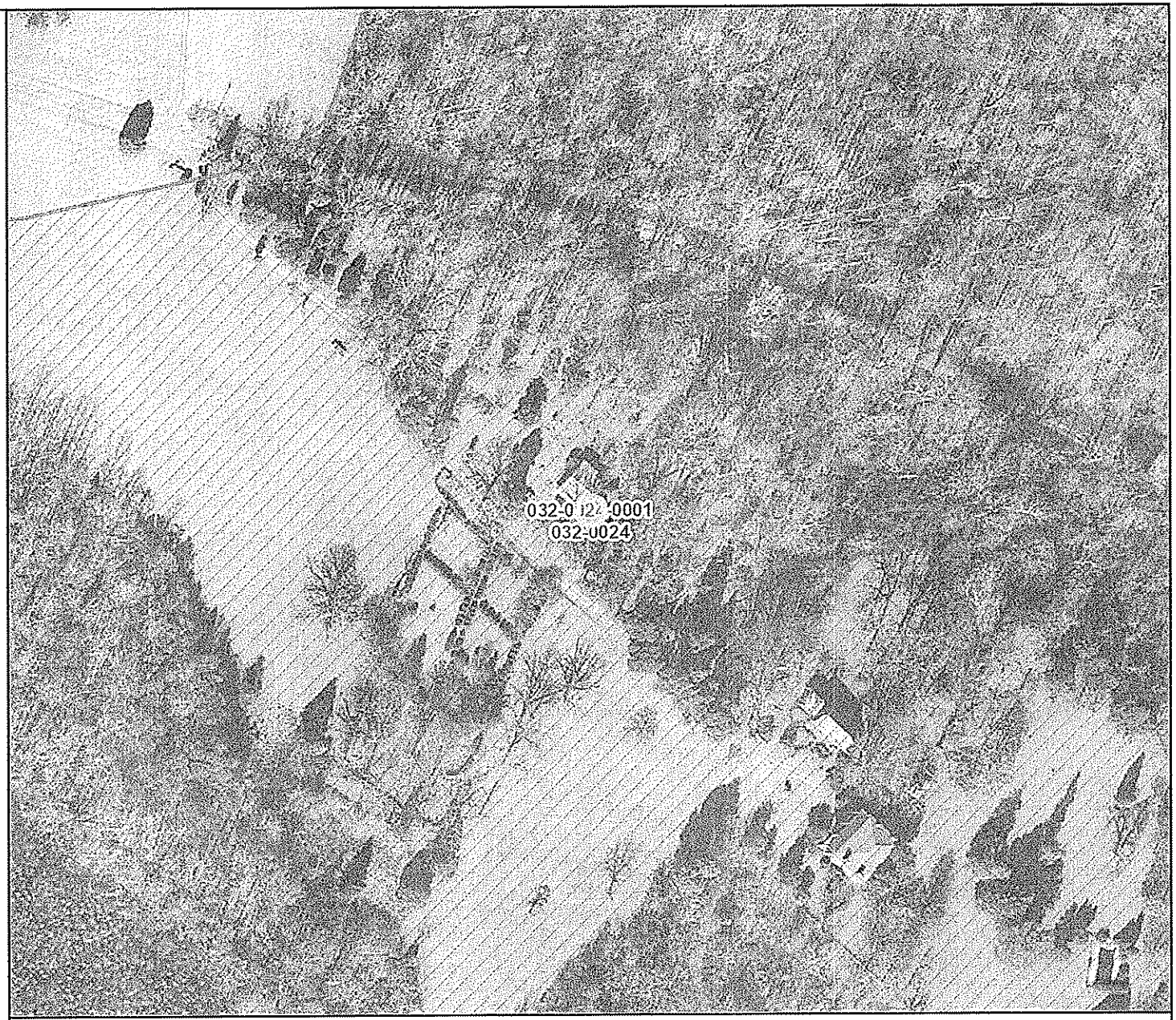
- County Boundaries



N

Feet

0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Architecture Labels

Date: 2/25/2014

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Property Information

Property Names

Name Explanation	**Name**
Historic/Current	Point of Fork Servants Quarters

Property Evaluation Status

Not Evaluated

County/Independent City(s):	Fluvanna (County)
Incorporated Town(s):	*No Data*
Zip Code(s):	*No Data*
Magisterial District(s):	*No Data*
Tax Parcel(s):	*No Data*
USGS Quad(s):	COLUMBIA

Additional Property Information

Architecture Setting:	*No Data*
Acreage:	*No Data*

Site Description:

No Data

Surveyor Assessment:

No Data

Surveyor Recommendation: *No Data*

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Slave/Servant Quarters
Date of Construction:	1820Ca
Historic Time Period:	Early National Period (1790 - 1829)
Historic Context(s):	Domestic
Architectural Style:	*No Data*
Form:	*No Data*
Number of Stories:	2.0
Condition:	Poor
Interior Plan:	Central Passage, Single Pile
Threats to Resource:	Deterioration

Architectural Description:

Architecture Summary: Slave quarters. Two-Story five bay brick structure in a poor state of repair.

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Sash, Double-Hung	Wood	6/6
Roof	Gable	Asphalt	Shingle
Chimneys	Interior End	Brick	*No Data*
Structural System and Exterior Treatment	Masonry	Brick	Bond, Flemish

Secondary Resource Information

Secondary Resource #1

Resource Category: *No Data*
Resource Type: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:
No Data

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: DHR ID Number Change

DHR ID: 032-0024-0001
Staff Name: Wellford, Drury
Event Date: 3/5/2007
Staff Comment
Originally recorded as DHR file number 032-0025.

Event Type: Survey:HABS Inventory

Project Review File Number: *No Data*
Investigator: Gale, E. B.
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 9/12/1958
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Bibliographic Information

Bibliography:
No Data
Property Notes:
No Data
Project Bibliographic Information:
No Data

Virginia Dept. of Historic Resources

V-CRIS

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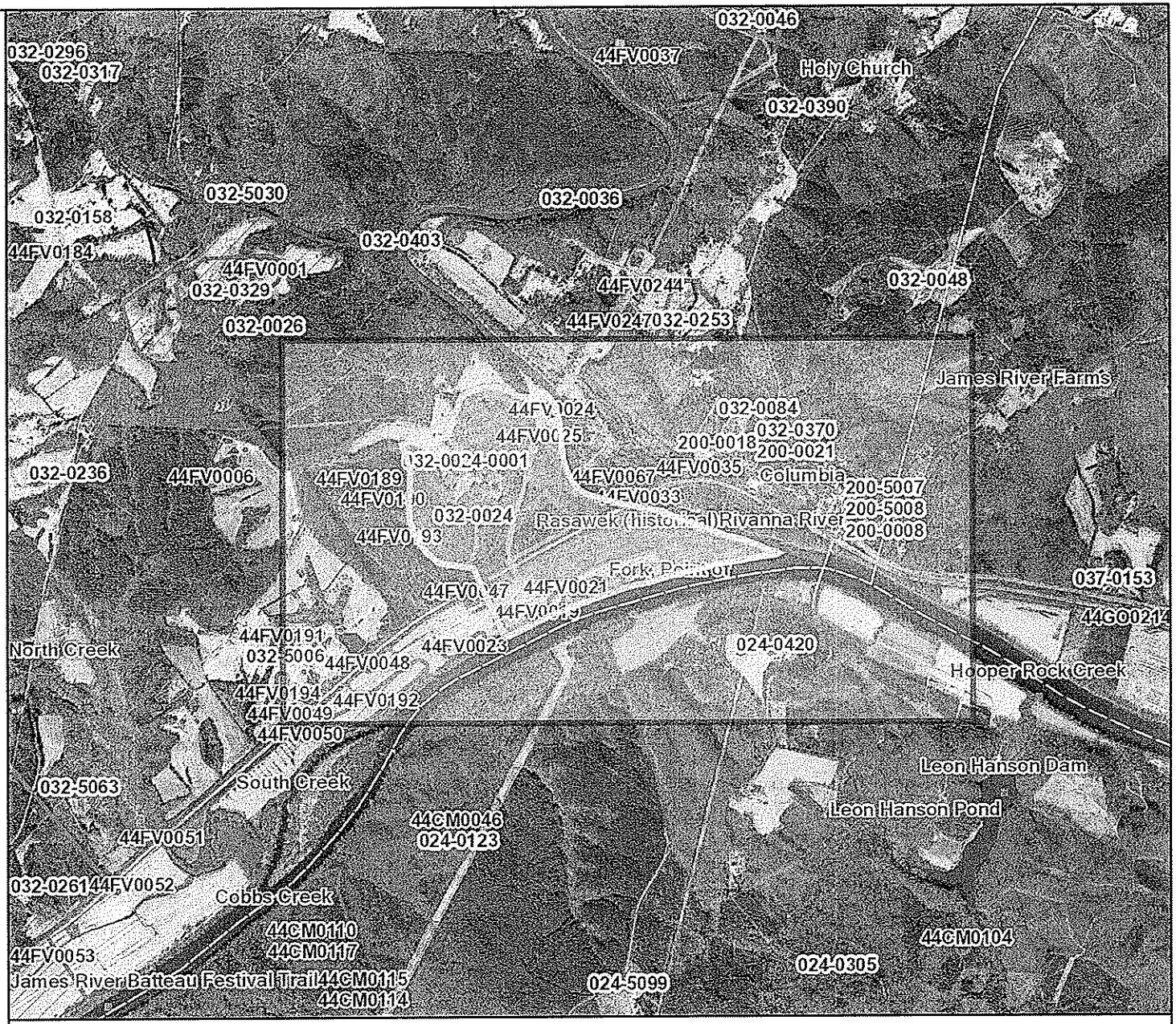

N

Feet

0 600 1200 1800 2400

1:36,112 / 1"=3,009 Feet

Title: Architecture Labels

Date: 2/25/2014

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Property Information

Property Names

Name Explanation	Name
Historic	Rivanna Navigation
Historic/Current	Rivanna Canal Navigation Historic District

Property Addresses

- Rivanna River

Property Evaluation Status

DHR Staff: Eligible

This Property is associated with the Rivanna Navigation System Historic District.

County/Independent City(s): Fluvanna (County)
Incorporated Town(s): *No Data*
Zip Code(s): 22963
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): BOYD TAVERN, COLUMBIA, LAKESIDE VILLAGE, PALMYRA

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*

Site Description:

1972: The Rivanna Connection is a 4 1/2 mile canal designed for horse-drawn canalboats, extending from a dam on the Rivanna River at Rivanna Mills to its junction with the James River and Kanawha Canal at Columbia on the James.

. . . Because the Rivanna Connection was functionally part of the Rivanna Navigation, also remarkably preserved and significant architecturally, the lock and canals on the navigation must be noted.

See survey for additonal details.

June 2011: The landscape surrounding the canal includes areas of open fields as well as wooded and overgrown areas and the Rivanna River.

June 2011: Secondary resources associated with the canal were not visible within the current project area.

Surveyor Assessment:

1972: The Rivanna Connection, completed in 1851 by the James River and Kanawha Company, is the climax of a series of navigation improvements on the Rivanna begun by Thomas Jefferson in 1763. The Connection does not stand alone, however, and must be considered along with the Rivanna Navigation, of which it is a functionally a part. The Rivanna Navigation, completed by 1854 under John Couty, is the best preserved entire navigation in Virginia, with all of its locks apparently fully intact, and its major canal, at Union Mills, almost perfectly preserved. There are even substantial remains of the lock gates and of a canalboat with paddle wheels once run by a steam engine. The navigation is the only one in the state to have good remains of both batteau and canalboat locks, and these illustrate a variety of styles.

Active for over a century, the series of navigation improvements on the Rivanna River were vital commercial arteries for central Virginia. The quality of workmanship in the climactic, canalboat stages is worthy of its founder, Thomas Jefferson, and its engineer, John Couty.

. . . After the abandonment of the JR&K Canal to the Richmond and Alleghany Railroad (C&O) in 1880, the Rivanna Connection continued to operate as a branch line, maintained by the railroad, until it was replaced by the Virginia Air Line Railroad (C&O) through Palmyra in 1909, making the Connection the last canalboat navigation in operation in Virginia, except for the Richmond Dock, which is still in operation, and the canals in the Dismal Swamp. Rivanna Mills continued to be an active commercial center until around World War I. Since that time, the Rivannan Navigation and the Rivanna Connection have remained undisturbed by progress and remain as they were in the 1850's, the best preserved complete navigation in Virginia.

See survey for additional detail.

June 2011: Though portions of the canal have been filled-in and other sections silted in, the canal remains a rare and important transportation-related resource. In the opinion of the surveyor the canal should maintain its NRHP eligiblity status.

Surveyor Recommendation: Legacy

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resonrce Information

Resource Category: Other
Resource Type: Historic District
Date of Construction: 1854Ca
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Technology/Engineering, Transportation/Communication
Architectural Style: *No Data*
Form: *No Data*
Number of Stories: *No Data*
Condition: Excellent
Interior Plan: *No Data*
Threats to Resource: *No Data*
Architectural Description:

Architecture Summary, 1972: One of the best preserved canals in Virginia, it is an excellent example of the most sophisticated form of navigation improvement in 19th century America, incorporating a variety of masonry works including a guard lock with dam abutment and mill foundations, a lift lock, two large arched culverts and at least two stone box culverts. The canal embankments are in excellent condition and appear to be capable of restoration to operating condition.

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Single Dwelling
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: Deterioration
Architectural Description:

Architecture Summary: Palmyra Mills.

June 2011: This resource does not appear to be within the current project area.

Number of Stories: *No Data*

Secondary Resource #2

Resource Category: Domestic
Resource Type: Single Dwelling
Architectural Style: No Discernable Style
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:

Architecture Summary: Stone covered bridge piers.

June 2011: The bridge piers do not appear to be located within the current project area.

Number of Stories: *No Data*

Secondary Resource #3

Resource Category: Industry/Processing/Extraction
Resource Type: Dam
Architectural Style: Other
Form: *No Data*

Date of Construction: 1813
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:

Architecture Summary:

June 2011: No obvious dam was located within the current project area.

Secondary Resource #4

Resource Category: Transportation
Resource Type: Canal Lock
Architectural Style: Other
Form: *No Data*
Date of Construction: 1850
Condition: Fair
Threats to Resource: Deterioration, Neglect, Transportation Expansion
Architectural Description:

Architecture Summary:

June 2011: Remnants of one of the canal lock walls with iron bracket was surveyed and consisted of a dressed low granite block wall. An additional wall with iron bracket was constructed of fieldstones and a tall masonry wall partially obscured with overgrowth was also observed.

Secondary Resource #5

Resource Category: Transportation
Resource Type: Canal
Architectural Style: No Discernable Style
Form: *No Data*
Date of Construction: 1854
Condition: Poor
Threats to Resource: Deterioration, Erosion, Neglect, Transportation Expansion
Architectural Description:

June 2011: The canal in sections has silted in and in other areas has been completely filled-in and is now part of a field. Although the condition of the canal in areas outside the project area is unknown, the condition of the resource within the current study area is reflected on the current form.

Secondary Resource #6

Resource Category: Industry/Processing/Extraction
Resource Type: Dam
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:

No Data

Historic District Information

Historic District Name: Rivanna Navigation System Historic District
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2011-1156
Investigator: CRI
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 6/1/2011
Dhr Library Report Number: FV-020
Project Staff/Notes:

A Cultural Resources Survey for the Proposed Route 6 Bridge Replacement Over the Rivanna River, Fluvanna County, Virginia (VDOT Project No. 0006-032-108, B603, C501, P101, R201; PPMS/UPC/CSC No.: 77321).

Surveyed by: Sandra DeChard and Berek Dore
Architectural Description and Data Entry by: Sandra DeChard

Event Type: DHR Staff: Eligible

DHR ID: 032-0036
Staff Name: VDHR
Event Date: 8/19/1996
Staff Comment

Rated at the regional level of significance under criteria A (Transportation) and C (Architeture/Engineering), and a POS of 1813-? and 1828-1850, and found to be eligible with a rating score of 35. Note on rating sheet indicates that the district should not include the Pettit Bridge (circa 1930).

Event Type: PIF

Project Review File Number: *No Data*
Investigator: Miyagawa, Ellen
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 7/22/1996
Dhr Library Report Number: FV-020
Project Staff/Notes:

Fluvanna Co. Historical Society

Event Type: DHR Staff: Eligible

DHR ID: 032-0036
Staff Name: VDHR
Event Date: 9/26/1994
Staff Comment

Rivanna Navigation, Fluvanna County (DHR Number 32-36), was rated at the regional level for significance in the area of transportation. It was found to be eligible with a score of 40.
Period of significance is noted on the rating sheet as being from 1805-1887.

Event Type: Survey:Phase II/Intensive

Project Review File Number: *No Data*
Investigator: Land and Community Associates
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 5/1/1993
Dhr Library Report Number: FV-020
Project Staff/Notes:

No Data

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*

Investigator: Nolting, Lindsay
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 3/1/1985
Dhr Library Report Number: FV-020
Project Staff/Notes:
survey of Gum Creek Aqueduct

Event Type: Survey:Phase II/Intensive

Project Review File Number: *No Data*
Investigator: Howland, Professor Ben
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 9/19/1975
Dhr Library Report Number: FV-020
Project Staff/Notes:
7th Year Design Studio - an exploratory survey of the Rivanna River

Event Type: DHR Staff: Eligible

DHR ID: 032-0036
Staff Name: VHLC
Event Date: 12/1/1974
Staff Comment
Register Committee found the Rivanna Canal to be eligible, and began work with the Park Authority of Fluvanna County in the task of getting the property owners to agree to the nomination.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Trout, III, W.E.
Organization/Company: Unknown (DSS)
Sponsoring Organization: *No Data*
Survey Date: 6/10/1973
Dhr Library Report Number: FV-020
Project Staff/Notes:
Includes papers on the Rivanna Connection and Rivanna Navigation written in 1966 and 1972.

Bibliographic Information

Bibliography:
No Data

Property Notes:
No Data

Project Bibliographic Information:

Name: CRI
DHR CRM Report Number: FV-020
Record Type: Report
Bibliographic Notes: FV-020: A Cultural Resources Survey for the Proposed Route 6 Bridge Replacement Over the Rivanna River, Fluvanna County, Virginia, August 2011. #2011-1156

Name: Rowe, Megan
DHR CRM Report Number: Charlottesville Daily Progress
Record Type: Article
Bibliographic Notes: "History, Washing Away: Built by Jefferson and the Rivanna Company, river's navigation system in state of disrepair." Sunday July 30, 2006

Name: CRI
DHR CRM Report Number: AB-107
Record Type: Report
Bibliographic Notes: AB-107: Phase I Cultural Resources Survey of 0.07 acres for a proposed temporary access road to the Woolen Mills Dam,

Albemarle County, Virginia. September 2006

Prepared by: Darby O'Donnell, PI, CRI, with contributions by Ashley Neville and John Salmon.

Snapshot

Date Generated: March 05, 2014

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 1000 - 1606
Site Type(s): Hamlet
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad: LAKESIDE VILLAGE
County/Independent City: Fluvanna (County)
Physiographic Province: No Data
Elevation: No Data
Aspect: No Data
Drainage: No Data
Slope: No Data
Acreage: No Data
Landform: Other
Ownership Status: No Data
Government Entity Name: No Data

Site Components

Component 1

Category: No Data
Site Type: No Data
Cultural Affiliation: Native American
DHR Time Period: Late Woodland
Start Year: 1000
End Year: 1606
Comments: No Data

Component 2

Category: Domestic
Site Type: Hamlet
Cultural Affiliation: No Data
DHR Time Period: No Data
Start Year: No Data
End Year: No Data
Comments: House or Hamlet?

Bibliographic Information

Bibliography:
No Data
Informant Data:
No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:
No Data

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: Lindberg, Laurence W.
Survey Date: 5/20/1980
Survey Description:
No subsurface tests were excavated on the site. Similar sites on the same landform appear to be deeply stratified.

Current Land Use	Date of Use	Comments
Agricultural field	*No Data*	Site is under cultivation at present but probably extends onto the tip of "point of fork", which is in pasture at present.l

Threats to Resource: No Data
Site Conditions: Site Condition Unknown
Survey Strategies: Surface Testing
Specimens Collected: No
Specimens Observed, Not Collected: No
Artifacts Summary and Diagnostics:
5 flakes jasper, 20 flakes and 16 chunks quartzite, 3 flakes quartzite (many flakes and chunks are utilized) 1 stemmed quartzite pp. 2 triangular quartz pp and 1 triangular quartzite pp. , 36 sherds pottery (most sand tempered ord marked or fabric impressed)
Summary of Specimens Observed, Not Collected:
Few FCR's
Current Curation Repository: No Data
Permanent Curation Repository: No Data
Field Notes: No
Field Notes Repository: No Data
Photographic Media: No Data
Survey Reports: No Data
Survey Report Information:
No Data
Survey Report Repository: No Data
DHR Library Reference Number: No Data
Significance Statement: No Data
Surveyor's Eligibility Recommendations: No Data
Surveyor's NR Criteria Recommendations, : No Data
Surveyor's NR Criteria Considerations: No Data

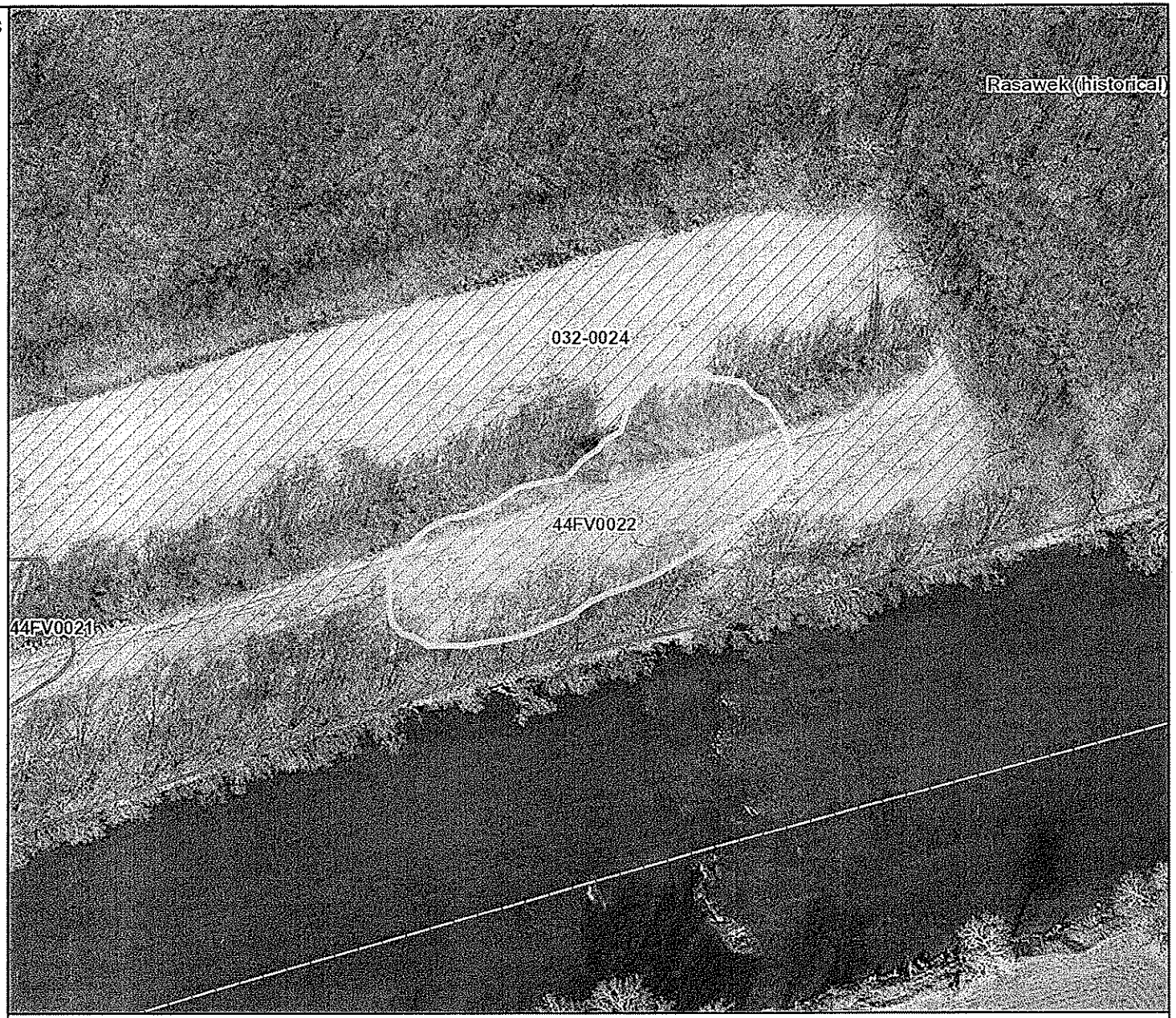
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries



N

Feet

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1:2,500 / 1"=208 Feet

Title: Archaeological Resources **Date: 3/5/2014**

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Snapshot

Date Generated: March 05, 2014

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	15000 B.C. - 1606 A.D.
Site Type(s):	Camp
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	COLUMBIA
County/Independent City:	Fluvanna (County)
Physiographic Province:	No Data
Elevation:	No Data
Aspect:	No Data
Drainage:	No Data
Slope:	No Data
Acreage:	No Data
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Native American
DHR Time Period:	Prehistoric/Unknown
Start Year:	-15000
End Year:	1606
Comments:	No Data

Component 2

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	Historic/Unknown
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Component 3

Category:	DSS Legacy
Site Type:	Camp
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Component 4

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

No Data

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Unknown (DSS)

Investigator: Lindberg, Laurence W.

Survey Date: 5/20/1980

Survey Description:

Site consists of a few quartz flakes observed in back fill and on graded surfaces during pipeline construction. Material appeared to be distributed from 1-3 m. below previous ground but no profile was prepared to ascertain exact stratification, if any. Most of the site, such as it is, is probably still intact. The historic material appeared to be in a topsoil buried during previous pipeline construction.

Current Land Use	Date of Use	Comments
Other	*No Data*	Portion of site destroyed by pipeline construction. Most of the site is protected by heavy mantle of alluvium.

Threats to Resource: No Data

Site Conditions: Unknown Portion of Site Destroyed

Survey Strategies: Surface Testing

Specimens Collected: No

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

4 fragments oyster shell, 4 sherds green bottle glass, 3 quartz flakes, 1 quartz chunk.

Summary of Specimens Observed, Not Collected:

Several additional flakes and FCR observed at various depths.

Current Curation Repository: No Data

Permanent Curation Repository: No Data

Field Notes: No

Field Notes Repository: No Data

Photographic Media: No Data

Survey Reports: No Data

Survey Report Information:

No Data

Survey Report Repository: No Data

DHR Library Reference Number: No Data

Significance Statement: No Data

Surveyor's Eligibility Recommendations: No Data

Surveyor's NR Criteria Recommendations, : No Data

Surveyor's NR Criteria Considerations: No Data

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

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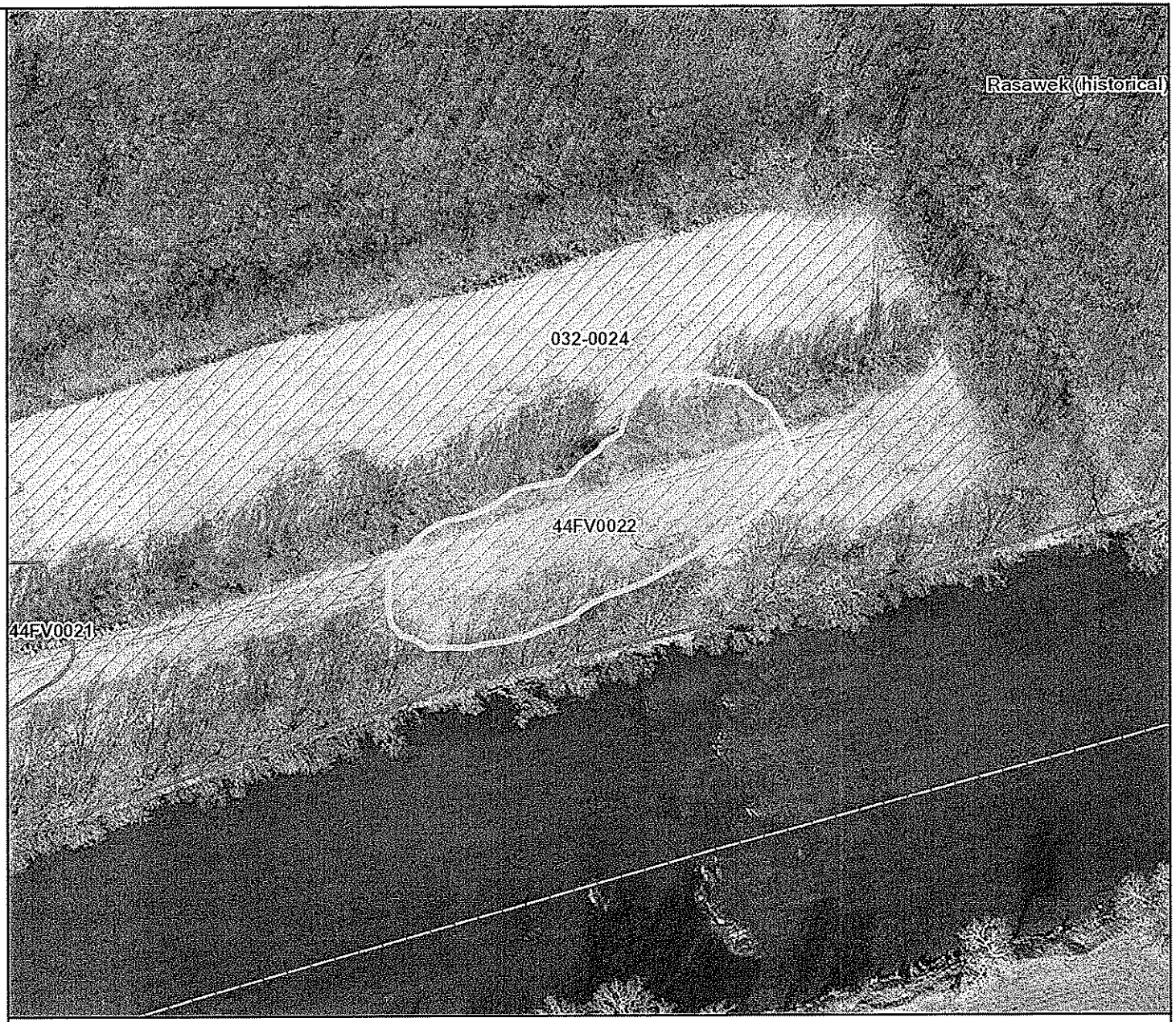

N

Feet

0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Archaeological Resources **Date: 3/5/2014**

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Snapshot

Date Generated: March 05, 2014

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	15000 B.C. - 1606 A.D.
Site Type(s):	Camp, Lithic quarry
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	COLUMBIA
County/Independent City:	Fluvanna (County)
Physiographic Province:	No Data
Elevation:	No Data
Aspect:	No Data
Drainage:	No Data
Slope:	No Data
Acreage:	No Data
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Native American
DHR Time Period:	Prehistoric/Unknown
Start Year:	-15000
End Year:	1606
Comments:	No Data

Component 2

Category:	DSS Legacy
Site Type:	Camp
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Component 3

Category:	DSS Legacy
Site Type:	Lithic quarry
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Other

Project Staff/Notes:

Temporal designation changed from Archaic to Prehistoric /Unknown due to lack of diagnostic evidence listed.

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: WMCAR
Survey Date: 3/18/1997

Survey Description:

Site appears to have been confined to the surface or has been rendered a surface site by deflation. Western portion is destroyed by pipeline construction and center section is extrensively disturbed.

Current Land Use	Date of Use	Comments
Other	*No Data*	Deflated. Western portion destroyed by construction, center disturbed.

Threats to Resource: No Data
Site Conditions: Unknown Portion of Site Destroyed
Survey Strategies: Surface Testing
Specimens Collected: No
Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

3 quartz utilized flakes, 1 quartz biface, 1 ovate biface white silicified siltstone, quartzite mortar or grinding stone.

Summary of Specimens Observed, Not Collected:

quartz flakes and chunks, and numerous FCR.

Current Curation Repository: No Data
Permanent Curation Repository: No Data
Field Notes: No
Field Notes Repository: No Data
Photographic Media: No Data
Survey Reports: No Data

Survey Report Information:

No Data

Survey Report Repository: No Data
DHR Library Reference Number: No Data
Significance Statement: No Data
Surveyor's Eligibility Recommendations: No Data
Surveyor's NR Criteria Recommendations, : No Data
Surveyor's NR Criteria Considerations: No Data

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:

No Data

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: Lindberg, Laurence W.
Survey Date: 5/20/1980

Survey Description:

No Data

Threats to Resource: No Data

Site Conditions:	No Data
Survey Strategies:	No Data
Specimens Collected:	No Data
Specimens Observed, Not Collected:	No Data
Artifacts Summary and Diagnostics:	
No Data	
Summary of Specimens Observed, Not Collected:	
No Data	
Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No Data
Field Notes Repository:	No Data
Photographic Media:	No Data
Survey Reports:	No Data
Survey Report Information:	
No Data	
Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

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N

Feet

0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Archaeological Resources

Date: 3/5/2014

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Snapshot

Date Generated: March 05, 2014

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 1800 - 1899
Site Type(s): Canal lock
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad: COLUMBIA
County/Independent City: Fluvanna (County)
Physiographic Province: No Data
Elevation: No Data
Aspect: No Data
Drainage: No Data
Slope: No Data
Acreage: No Data
Landform: Other
Ownership Status: No Data
Government Entity Name: No Data

Site Components

Component 1

Category: No Data
Site Type: No Data
Cultural Affiliation: Indeterminate
DHR Time Period: 19th Century
Start Year: 1800
End Year: 1899
Comments: No Data

Component 2

Category: Technology/Engineering
Site Type: Canal lock
Cultural Affiliation: No Data
DHR Time Period: No Data
Start Year: No Data
End Year: No Data
Comments: Lock and dam

Bibliographic Information

Bibliography:
No Data
Informant Data:
No Data

CRM Events

Event Type: Other

Project Staff/Notes:
No Data

Project Review File Number:	No Data
Sponsoring Organization:	No Data
Organization/Company:	Unknown (DSS)
Investigator:	VDHR-Martha McCartney; Aschman
Survey Date:	9/1/1981

Survey Description:
No Data

Threats to Resource:	No Data
Site Conditions:	Site Condition Unknown
Survey Strategies:	Historic Map Projection
Specimens Collected:	No
Specimens Observed, Not Collected:	No

Artifacts Summary and Diagnostics:
No Data

Summary of Specimens Observed, Not Collected:
No Data

Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No
Field Notes Repository:	No Data
Photographic Media:	No Data
Survey Reports:	No Data

Survey Report Information:
No Data

Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

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Feet

0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Archaeological Resources **Date: 3/5/2014**

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Snapshot

Date Generated: March 05, 2014

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Other
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	COLUMBIA
County/Independent City:	Fluvanna (County)
Physiographic Province:	No Data
Elevation:	No Data
Aspect:	No Data
Drainage:	No Data
Slope:	No Data
Acreage:	No Data
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	DSS Legacy
Site Type:	Other
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	Aqueduct

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Other

Project Staff/Notes:
No Data

Project Review File Number:	No Data
Sponsoring Organization:	No Data
Organization/Company:	Unknown (DSS)
Investigator:	VDHR-Martha McCartney; Aschman
Survey Date:	9/1/1981

Survey Description:
No Data

Threats to Resource:	No Data
Site Conditions:	Site Condition Unknown
Survey Strategies:	Historic Map Projection
Specimens Collected:	No
Specimens Observed, Not Collected:	No

Artifacts Summary and Diagnostics:
No Data

Summary of Specimens Observed, Not Collected:
No Data

Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No
Field Notes Repository:	No Data
Photographic Media:	No Data
Survey Reports:	No

Survey Report Information:
No Data

Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

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Snapshot

Date Generated: March 05, 2014

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 1800 - 1899
Site Type(s): Bridge
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad: COLUMBIA
County/Independent City: Fluvanna (County)
Physiographic Province: No Data
Elevation: No Data
Aspect: No Data
Drainage: No Data
Slope: No Data
Acreage: No Data
Landform: Other
Ownership Status: No Data
Government Entity Name: No Data

Site Components

Component 1

Category: No Data
Site Type: No Data
Cultural Affiliation: Indeterminate
DHR Time Period: 19th Century
Start Year: 1800
End Year: 1899
Comments: No Data

Component 2

Category: DSS Legacy
Site Type: Bridge
Cultural Affiliation: No Data
DHR Time Period: No Data
Start Year: No Data
End Year: No Data
Comments: Canal Bridge

Bibliographic Information

Bibliography:
No Data
Informant Data:
No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:
No Data

Project Review File Number:	No Data
Sponsoring Organization:	No Data
Organization/Company:	Unknown (DSS)
Investigator:	VDHR-Rutherford
Survey Date:	3/15/1984

Survey Description:
Informant: Dr. Wm. Trout.

Threats to Resource:	No Data
Site Conditions:	Site Condition Unknown
Survey Strategies:	Informant
Specimens Collected:	No
Specimens Observed, Not Collected:	No

Artifacts Summary and Diagnostics:
No Data

Summary of Specimens Observed, Not Collected:
No Data

Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No
Field Notes Repository:	No Data
Photographic Media:	No Data
Survey Reports:	No Data

Survey Report Information:
Dr. Trouts's future book on Virginia canals, and Radziminsky maps

Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

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0 50 100 150 200

1:2,500 / 1"=208 Feet

Title: Archaeological Resources

Date: 3/5/2014

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Snapshot

Date Generated: March 05, 2014

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	1800 - 1899
Site Type(s):	Dam
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad:	COLUMBIA
County/Independent City:	Fluvanna (County)
Physiographic Province:	No Data
Elevation:	No Data
Aspect:	No Data
Drainage:	No Data
Slope:	No Data
Acreage:	No Data
Landform:	Other
Ownership Status:	No Data
Government Entity Name:	No Data

Site Components

Component 1

Category:	No Data
Site Type:	No Data
Cultural Affiliation:	Indeterminate
DHR Time Period:	19th Century
Start Year:	1800
End Year:	1899
Comments:	No Data

Component 2

Category:	DSS Legacy
Site Type:	Dam
Cultural Affiliation:	No Data
DHR Time Period:	No Data
Start Year:	No Data
End Year:	No Data
Comments:	No Data

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:
No Data

Project Review File Number:	No Data
Sponsoring Organization:	No Data
Organization/Company:	Unknown (DSS)
Investigator:	VDHR-Rutherford
Survey Date:	3/15/1984

Survey Description:
Informant: Dr. Wm. Trout.

Threats to Resource:	No Data
Site Conditions:	Site Condition Unknown
Survey Strategies:	Informant
Specimens Collected:	No
Specimens Observed, Not Collected:	No

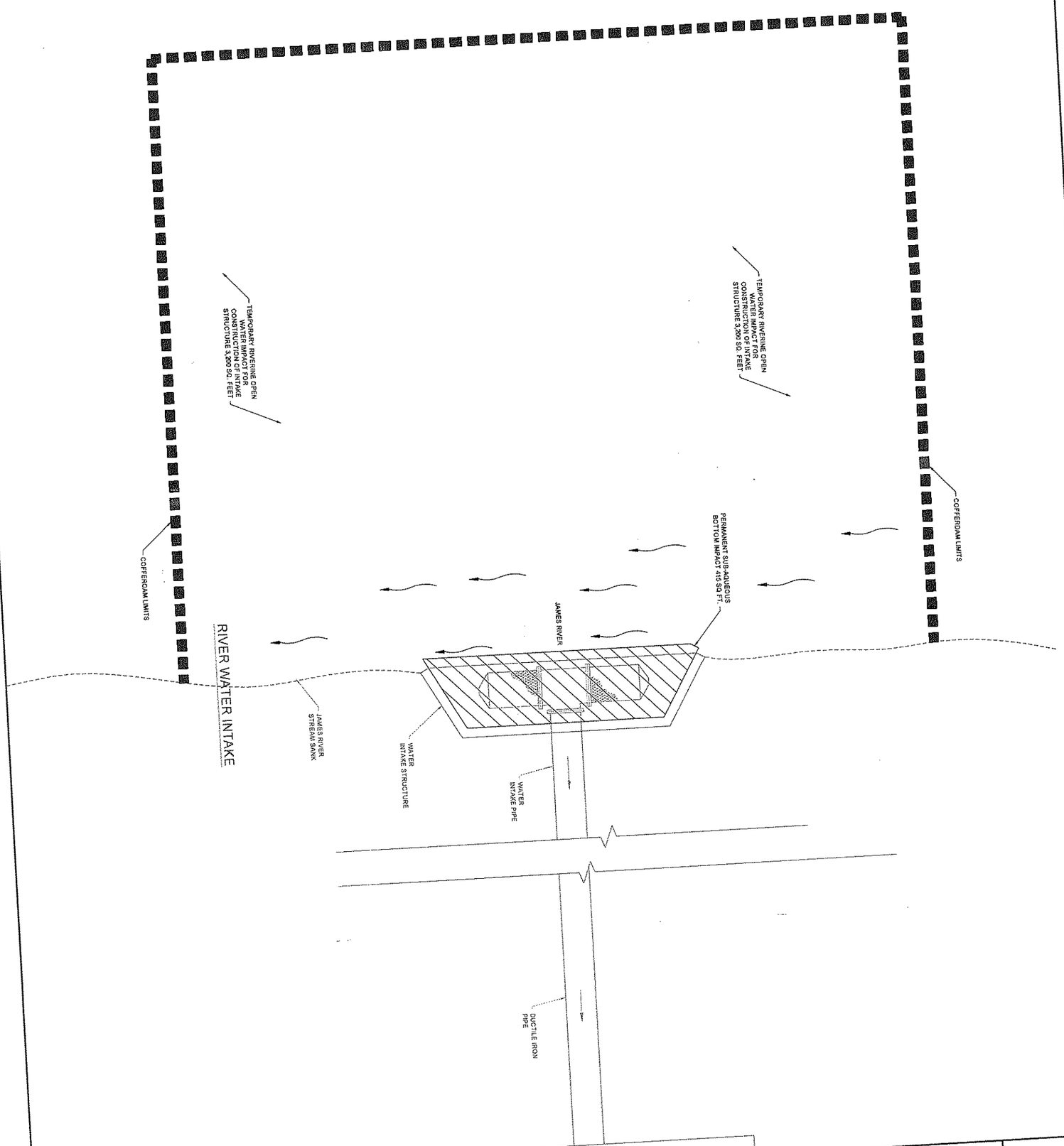
Artifacts Summary and Diagnostics:
No Data

Summary of Specimens Observed, Not Collected:
No Data

Current Curation Repository:	No Data
Permanent Curation Repository:	No Data
Field Notes:	No
Field Notes Repository:	No Data
Photographic Media:	No Data
Survey Reports:	No Data

Survey Report Information:
Dr. Trouts's future book on Virginia canals, and Radziminsky maps

Survey Report Repository:	No Data
DHR Library Reference Number:	No Data
Significance Statement:	No Data
Surveyor's Eligibility Recommendations:	No Data
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data



TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 BOULDERS PARKWAY, SUITE 300, RICHMOND, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

DATE	REVISION DESCRIPTION

JAMES RIVER WATER PROJECT

JAMES RIVER WATER AUTHORITY

DRAWING G-1: WETLAND IMPACTS MAP

SHEET NO.	JOB NO.	SCALE	CHECKED BY	DESIGNED BY	DRAWN BY	DATE
G-1	34957	NONE	D. SAUNDERS	D. SAUNDERS	B.B	MARCH 2014

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

February 14, 2014

Ms. Lynette Rhodes
U.S. Army Corps of Engineers- Norfolk District
Richmond Field Office
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

Re: Preliminary Jurisdictional Waters of the U.S. Delineation Package
James River Water Authority
(Approx. 72.7 acres)
Fluvanna County, Virginia

Dear Ms. Lynette Rhodes:

Enclosed please find the Preliminary Jurisdictional Waters of the U.S. Delineation Package for the above referenced property. On behalf of James River Water Authority, Timmons Group is submitting this package to you in order to obtain confirmation of the Preliminary Jurisdictional Waters of the U.S. Delineation performed at the James River Water Authority Site.

Please review this delineation package and contact Ethan Virts at (540) 267-5191 or ethan.virts@timmons.com so that we may schedule a site visit to review the delineation and confirm the jurisdictional boundary.

Sincerely,
Timmons Group

Ethan Virts
Environmental Scientist

Brian Breissinger
Environmental Project Manager

Enclosure

CC
Goodman Duke, James River Water Authority
David Saunders, Timmons Group

TIMMONS GROUP

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David Saunders, Timmons Group

PREPARED FOR:
JAMES RIVER WATER AUTHORITY
C/O GOODMAN DUKE
132 MAIN STREET
PALMYRA, VA 22963

JAMES RIVER WATER AUTHORITY

PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE

FEBRUARY 2014

PREPARED BY:
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TIMMONS GROUP PROJECT NO. 34967

EXECUTIVE SUMMARY

On behalf of the James River Water Authority, Timmons Group environmental scientists Ethan Virts and Mark Hepner conducted a wetland delineation on January 31, 2014 to identify Waters of the U.S. (WUS) and wetland boundaries within the project study limits of the James River Water Authority Site.

The Site is approximately 72.7 acres and is located in Fluvanna County. It is bound by residential land and early to mid-successional forest to the north and east, early to mid-successional forest, agricultural land, and the James River to the south, and agricultural land, residential land, and early to mid-successional forest to the west. The property is located within three watersheds including the Middle James-Buffalo, Rivanna, and Middle James-Willis Watersheds (HUC 02080203, 02080204, and 02080205), respectively, and is drained by the Rivanna River, James River, and unnamed tributaries to the James and Rivanna Rivers (see Figure1: Vicinity Map). An unnamed tributary to the James River flows north to south through the southeastern portion of the Site. The James River flows west to east along the southern boundary of the property. The Rivanna River flows from the northwest to southeast through the northern portion of the Site.

The Site was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual; the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, and subsequently issued COE regulatory guidance letters regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. Using these methodologies, preliminary wetland delineation mapping was produced and is included along with the attached Site description and discussion for your review. During our delineation of the Site, approximately 1.62 acres (70,757 sq. ft.) of riverine open-water (ROW), 6,135 linear feet (L.F.) of perennial stream, 253 L.F. of intermittent stream, 0.49 acres (21,528 sq. ft.), of palustrine forested (PFO) wetlands, 0.02 acres (846 sq. ft.) of palustrine scrub-shrub (PSS) wetlands, 0.30 acres (12,917 sq. ft.) of palustrine emergent (PEM) wetlands, and 0.10 acres (4,568 sq. ft.) of palustrine open water (POW) wetlands were identified onsite.

PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE
JAMES RIVER WATER AUTHORITY

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1.0 PROJECT INFORMATION SHEET

General

Project Name:	James River Water Authority
State:	Virginia
County:	Fluvanna County
Latitude:	37^0 45' 31.49" North
Longitude:	78^0 10' 30.20" West
Subject Property Size:	+/- 72.7 acres
HUC Code:	02080203, 02080204, and 02080205 (Middle James-Buffalo, Rivanna, and Middle James-Willis Watersheds)
Waterbodies (TNW):	Palustrine forested (PFO) wetlands, palustrine scrub-shrub (PSS) wetlands, palustrine emergent (PEM) wetlands, palustrine open water (POW) wetlands, riverine open-water (ROW) wetlands, riverine perennial streams, and riverine intermittent streams

Corresponding Information

USGS Quad and NWI	Columbia and Lakeside Village, 2009
USDA Soils Map:	http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm Fluvanna Co., VA

Owner/Applicant

Name:	James River Water Authority
Address:	132 Main Street Palmyra, VA 22963
Contact:	Goodman Duke: (540) 894-7982

Consultant

Name:	Timmons Group
Address:	1001 Boulders Parkway, Suite 300 Richmond, VA 23225
Telephone:	(804) 200-6500
Contacts:	Ethan Virts: (540) 267-5191 Brian Breissinger: (804) 200-6439

2.0 INTRODUCTION

On behalf of the James River Water Authority, Timmons Group environmental scientists Ethan Virts and Mark Hepner conducted a wetland delineation on January 31, 2014 to identify waters of the U.S. (WUS) and wetland boundaries within the project study limits of the James River Water Authority Site.

3.0 SITE INFORMATION

3.1 Site Location

The Site is approximately 72.7 acres and is located in Fluvanna County. The property is located within three watersheds including the Middle James-Buffalo, Rivanna, and Middle James-Willis Watersheds (HUC 02080203, 02080204, and 02080205), respectively, and is drained by the Rivanna River, James River, and unnamed tributaries to the James and Rivanna Rivers (see Figure 1: Vicinity Map). An unnamed tributary to the James River flows north to south through the southeastern portion of the Site. The James River flows west to east along the southern boundary of the property. The Rivanna River flows from the northwest to the southeast through the northern portion of the Site.

3.2 Site Description

The Site is comprised of multiple land uses including agricultural, early to mid-successional forest, roadways, railways, and residential land. The Site is bound by residential land and early to mid-successional forest to the north and east, early to mid-successional forest, agricultural land, and the James River to the south, and agricultural land, residential land, and early to mid-successional forest to the west. Currently a power line easement extends from the north to the southwestern portion of the property. East River road extends from the northern portion of the Site into the town of Columbia. Agricultural practices are currently in place along the southern boundary of the property, adjacent to the James River (See Figure 3: Environmental Inventory Map).

4.0 METHODS OF DELINEATION

4.1 Preliminary Offsite Investigation/Data Review

A review of publically available resources was performed prior to the onsite field investigation in order to determine if there is the potential for jurisdictional areas, and if present, the extent of these areas located within the project area. These mapping resources generally include, but are not limited to, the United States Geological Survey (USGS) quadrangle maps, the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) soils database, and the U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) database.

4.2 Field Investigation

The Site was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual; the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region; and subsequently issued COE regulatory guidance letters regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. The wetland boundary was flagged with consecutively numbered pink and black ribbon at approximately 50 foot intervals. Field data stations were established within close proximity to the flagged wetland boundary, usually within 10 to 20 feet, in order to document upland and wetland conditions existing along the jurisdictional boundary. Field data stations were labeled and marked with blue flagging in the field. Features identified in the field were GPS located for the study area. Photographs were taken of the field data stations to depict existing Site conditions along the boundary. Field data sheets are included in Appendix A and Site photographs are included in Appendix B.

5.0 DELINEATION FINDINGS

5.1 Preliminary Offsite Investigation/Data Review Findings

The USGS map and recent aerial imagery depict the Site as having multiple land uses including agricultural, early to mid-successional forest, roadways, railways, and residential land. The Rivanna River flows from the northwest to the southeast, crossing the Site in the northern portion of the property. The Rivanna River drains into the James River near the eastern Site limits. An Unnamed tributary to the James River flows north to south through the southeastern portion of the Site and discharges into the James River. The James River flows west to east along the southern boundary of the property. Given the size of the Site, the topography varies greatly throughout. The western, northern and eastern portions of the property have previously been graded to accommodate for the existing roadways and power lines. The topography flattens as the Site nears the James and Rivanna Rivers. Elevation ranges from approximately 280 feet above mean sea level at the west-central portion of the Site to 190 feet above mean sea level along the southern extents of the Site along the James River. Additional details regarding existing Site conditions are shown in Figure 1: Vicinity Map and Figure 3: Environmental Inventory Map.

The NRCS soils mapping identified twenty one distinct soil series/complexes within the project study area. Of the twenty one soil types identified, fifteen are categorized as being hydric in Fluvanna County, VA. The identified soils within the Site limits include Augusta fine sandy loam (Al), Chewacla silt loam (Cf), Congaree silt loam (Ck), Hiwassee clay loam (He & Hk), Hiwassee silt loam (Hl), Louisburg sandy loam (Ll & Lm), Mixed alluvial land (Ml), Roanoke silt loam (Rb), Wehadkee silt loam (Wa), Wickham loam (Wb), and Worsham sandy loam (We). These soils are generally poorly drained with low depths to the water table and a high frequency of flooding. The non-hydric soils identified on the Site are generally moderately well drained with moderate depths to the water table and a low frequency of flooding.

NWI mapping depicts wetland areas along the northern section of the Site boundary associated with the adjacent streams and floodplains. Additionally small sections of wetlands are located onsite in the southeastern portion of the property as well as the south-central portion of the property. The National Hydrography Dataset also shows two streams running from the

northwest to southeast, identified as the Rivanna River and an unnamed segment that terminates just before the railroad tracks in the central portion of the site. This unnamed stream segment was determined to be a linear PFO wetland that exists as a result of an abandoned railroad grade. An Unnamed tributary to the James River runs through the southeastern portion of the property. The James River flows along the southern property boundary. The NWI wetland areas, NRCS soils, and streams are shown on Figure 3: Environmental Inventory Map.

5.2 Onsite Determination/Findings

5.2.1 Jurisdictional Area Summary

The onsite wetland delineation verified the presence of small areas of wetlands consistent with the NWI mapping and NRCS soils. A preliminary Wetland Delineation Map is attached for review. In total, there were approximately 0.49 acres (21,528 sq. ft.) of palustrine forested (PFO) wetlands, 0.02 acres (846 sq. ft.) of palustrine scrub-shrub (PSS) wetlands, 0.30 acres (12,917 sq. ft.) of palustrine emergent (PEM) wetlands and 0.10 acres (4,568 sq. ft.) of palustrine open water (POW) wetlands. In addition, 1.62 acres (70,757 sq. ft.) of Riverine open-water (ROW), 6,135 linear feet (L.F.) of perennial streams (R3), and 253 L.F. of intermittent stream (R4) streams were identified onsite. A summary of the jurisdictional areas identified onsite is provided below in Table 1: Jurisdictional Areas Summary –James River Water Authority. The location and size of jurisdictional areas delineated onsite are approximated on the Preliminary Wetland Delineation Map included as Figure 4.

Area Description	Area Size (acres)	ROW (acres)	PFO (acres)	PSS (acres)	PEM (acres)	POW (acres)	R3 (L.F.)	R4 (L.F.)
James River Water Authority	72.7	1.62	0.49	0.02	0.3	0.10	6,135	253

Table 1: Jurisdictional Area Summary - James River Water Authority

Notes:

1) PFO = palustrine forested wetlands, PSS = palustrine scrub-shrub wetlands, PEM = palustrine emergent wetlands, R3 = upper perennial streams, R4 = intermittent streams, ROW = riverine open-water, POW = palustrine open-water, and L.F. = linear feet.

2) Jurisdictional area acreages are preliminary based on field delineation and have not been confirmed or surveyed

5.2.1.1 Jurisdictional Area Vegetation

Wetland vegetation communities in the forested areas consisted predominantly of box elder (Acer nugundo), silver maple (*Acer saccharinum*), and green ash (*Fraxinus pennsylvanica*) in the tree stratum. Box elder (Acer nugundo) and green ash (*Fraxinus pennsylvanica*) dominated the sapling stratum throughout the forested wetland.

5.2.1.2 Jurisdictional Area Hydrology

Visual observations of hydrology within jurisdictional areas consisted of direct observations of flowing water in the ROW, which is part of the James River and Rivanna River. Visual observation of hydrology in the PFO wetlands included direct and indirect observation of saturation and a high groundwater table. Soils within the wetland system were saturated within the upper 12 inches and the water table was encountered at 4 inches.

5.2.1.3 Jurisdictional Area Soils

The hydric soils observed within jurisdictional areas exhibited low chroma matrix colors, low chroma depletions, and concentrations that are characteristics of reducing anaerobic conditions associated with the formation of hydric soils. Soils were generally reddish gray (7.5YR 4/2) to reddish brown (7.5YR 3/3). The hydric soils identified within the wetland areas all satisfied the criteria for the F3 Depleted Matrix hydric soil indicator. Soil textures were predominately a clay loam. Field data sheets are included in Appendix A and provide additional detail regarding the representative soils present throughout the Site.

5.3.1 Upland Area Summary

During the field investigation of the property, approximately 70.27 acres of upland or non-jurisdictional areas were identified onsite. The upland areas located within the subject property are characterized by mid-successional forest and residential developed areas (see Figure 3: Environmental Inventory Map). Upland soils were typically dark orange brown 7.5YR 4/6 to dark brown 7.5YR 3/2. Soil textures were primarily clay loams and silt loams. The mapped soils present within the Site are depicted on Figure 3: Environmental Inventory Map. No indicators of wetland hydrology were observed within the upland areas onsite. The location of upland areas delineated onsite are shown on the Preliminary Wetland Delineation Map included as Figure 4.

6.0 REFERENCES

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

National List of Hydric Soils 2010, United States Department of Agriculture Natural Resource Conservation Service, http://soils.usda.gov/use/hydric/

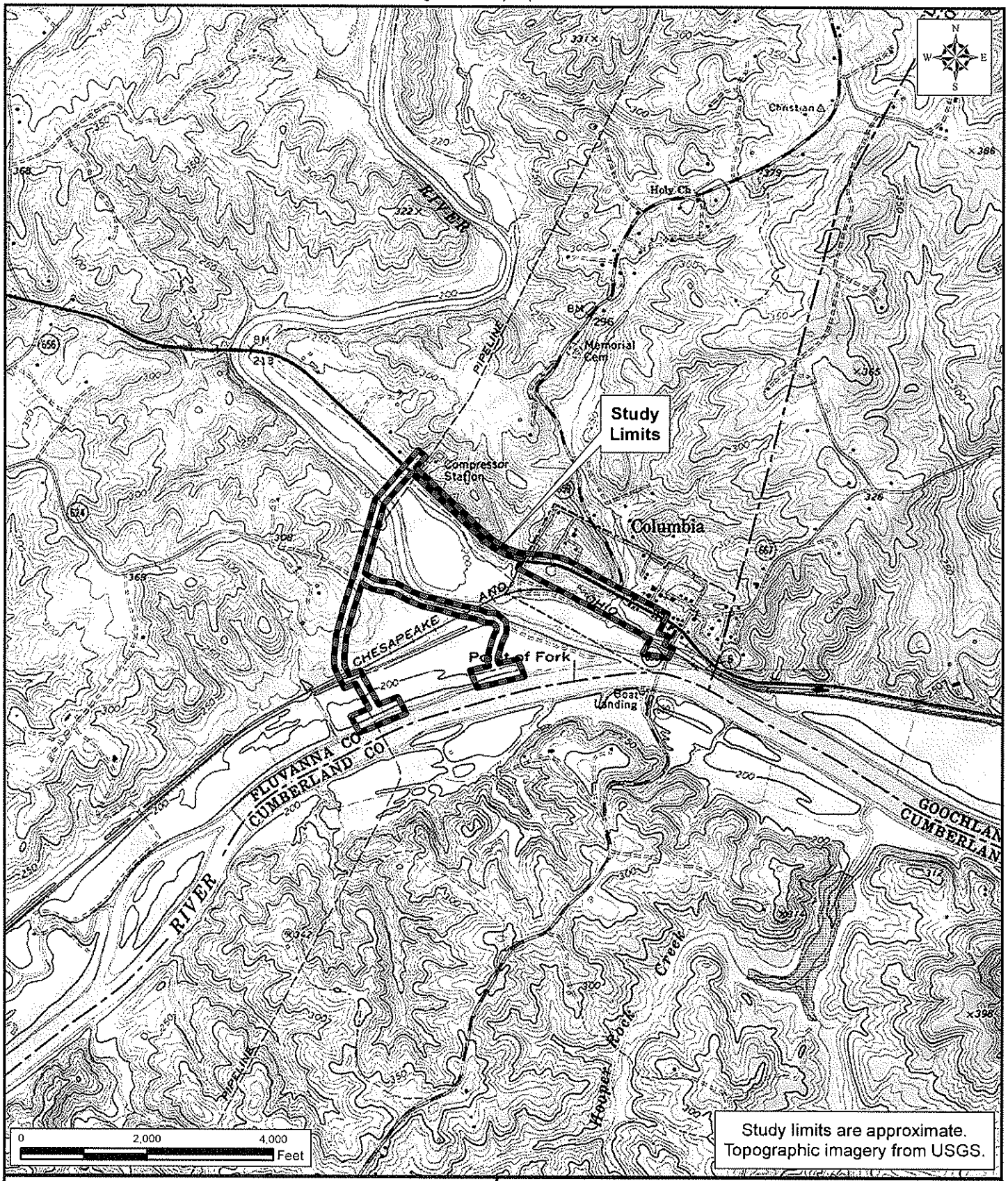
United States Department of Agriculture. Natural Resources Conservation Service http://websoilsurvey.nrcs.usda.gov/app/

United States Fish and Wildlife Service. National Wetlands Inventory http://www.fws.gov/nwi/

Wetland Training Institute. 1995. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual, Wetland Training Institute, Glenwood, NM, USA.

MAPS

Path: Y:\804\34967-James_River_Water_Au\GIS\Common Shared Exhibits\Figure 1 - Vicinity Map.mxd

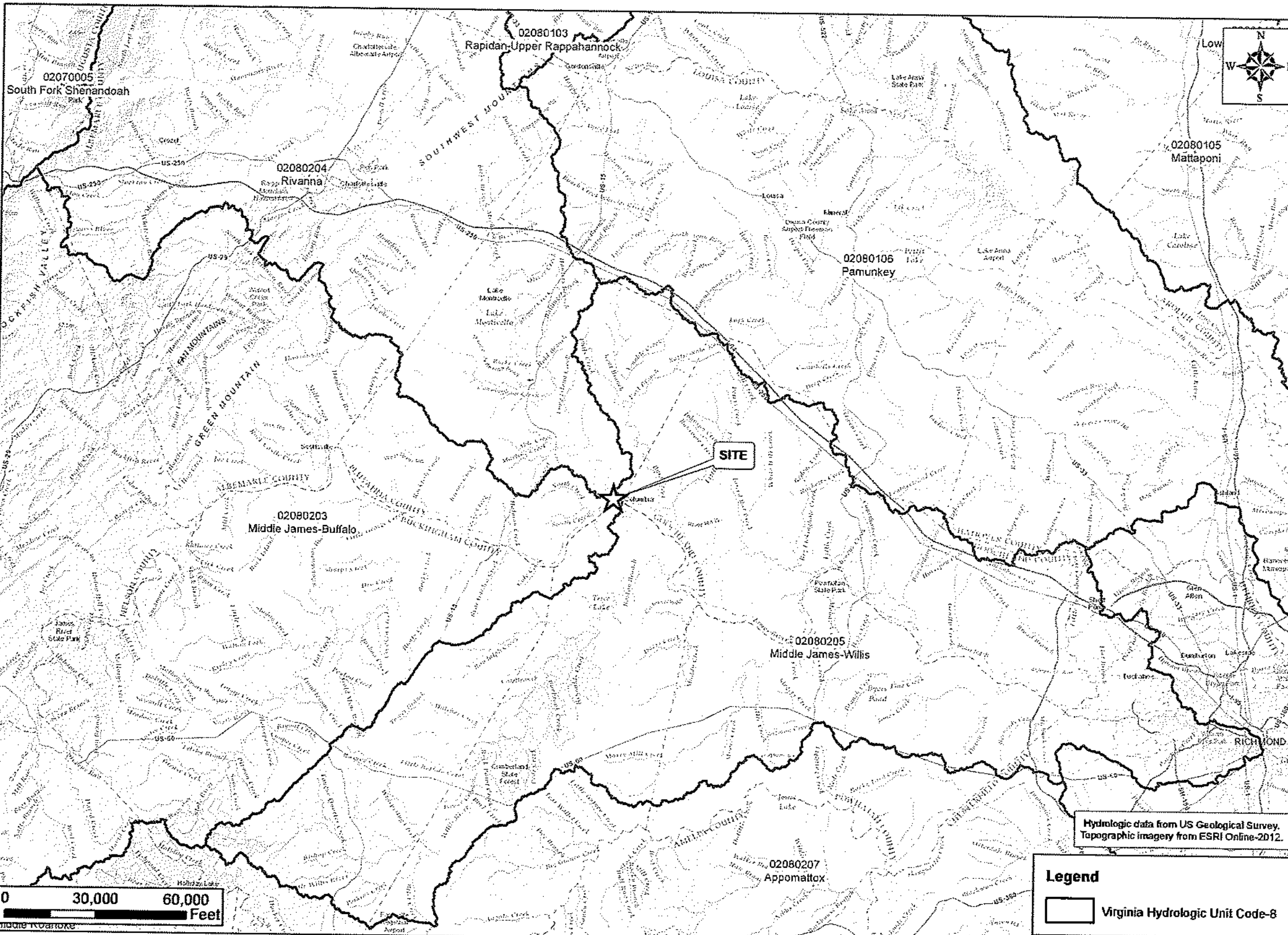


JAMES RIVER WATER AUTHORITY
FLUVANNA COUNTY, VIRGINIA
FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: *34967*
PROJECT STUDY LIMITS: *72.7 ACRES*
LATITUDE: *37° 45' 31.49" N*
LONGITUDE: *78° 10' 30.20" W*

U.S.G.S. QUADRANGLE(S): *COLUMBIA & LAKESIDE VILLAGE*
DATE(S): *2009*
WATERSHED(S): *MIDDLE JAMES-BUFFALO & RIVANNA & MIDDLE JAMES-WILLIS*
HYDROLOGIC UNIT CODE(S): *02080203 & 02080204 & 02080205*



Path: Y:\804\34967-James_River_Water_Au\GIS\Common Shared Exhibits\Figure 2 - HUC Map.mxd

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Site Development | Residential | Infrastructure | Technology | Environmental

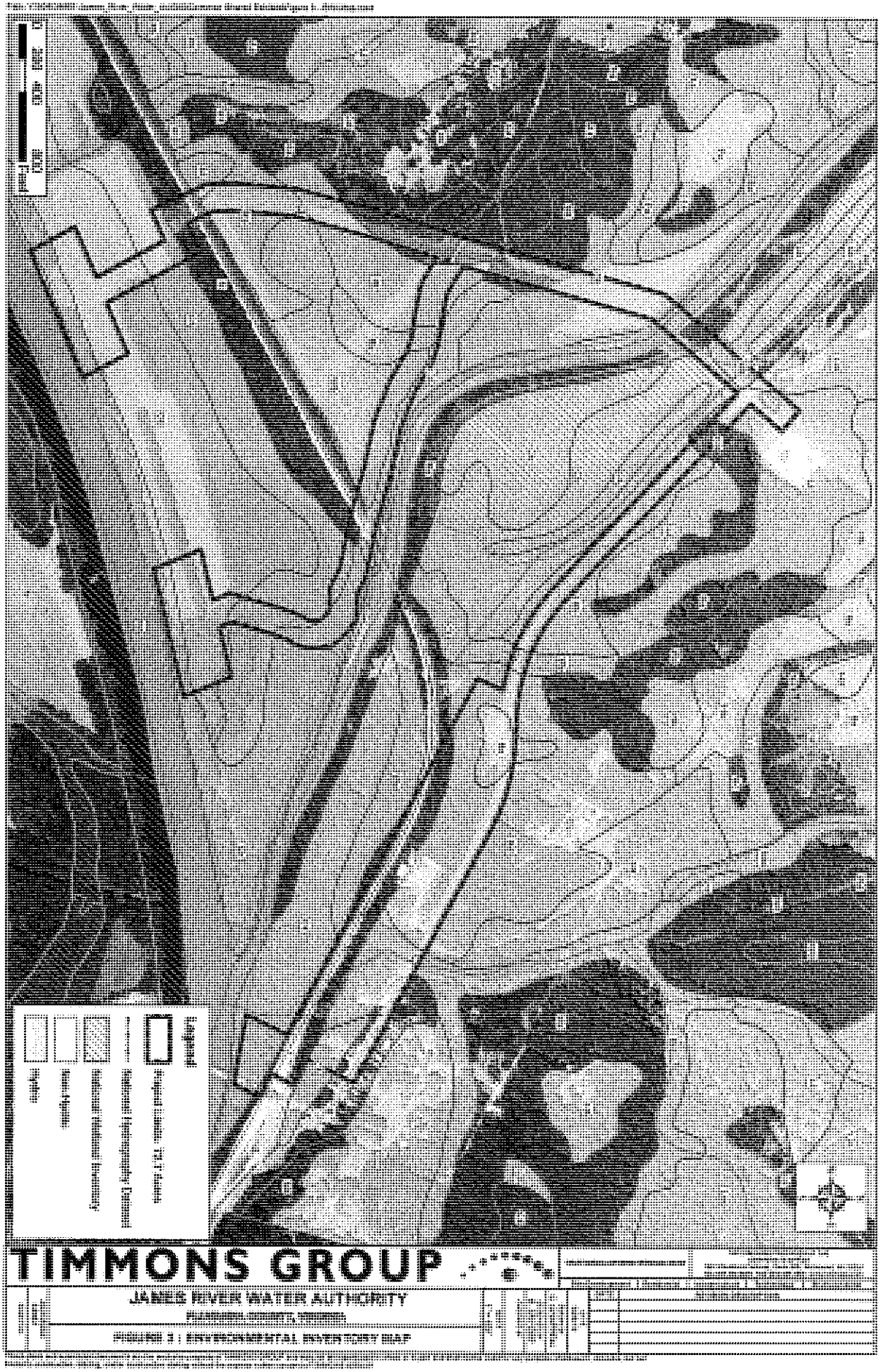
DATE	REVISION DESCRIPTION

JAMES RIVER WATER AUTHORITY

FLUVANNA COUNTY, VIRGINIA

FIGURE 2: HYDROLOGIC UNIT CODE MAP

DATE 1/23/14
DRAWN BY C. CHAPPELL
DESIGNED BY B. SNYDER
CHECKED BY
SCALE 1" = 30,000'
JOB NUMBER 34967
SHEET NO.


TIMMONS GROUP
JAMES RIVER WATER AUTHORITY
FIGURE 3 | ENVIRONMENTAL INVENTORY MAP

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JAMES RIVER WATER AUTHORITY

APPENDIX A
FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-30-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS A-1

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 03.69" Long: 78° 09' 42.32" Datum: NAD 83

Soil Map Unit Name: Congaree silt loam (Ck) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS A-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	30	yes	FACW
2. Acer nugundo	15	yes	FAC
3.			
4.			
5.			
6.			
7.			
	45 = Total Cover		
50% of total cover: 23	20% of total cover: 9		
Sapling/Shrub Stratum (Plot size: 15)			
1. Lindera benzion	20	yes	FAC
2. Asimina triloba	20	yes	FAC
3. Acer nugundo	10	no	FAC
4. Platanus occidentalis	5	no	FACW
5.			
6.			
7.			
8.			
9.			
	55 = Total Cover		
50% of total cover: 28	20% of total cover: 11		
Herb Stratum (Plot size: 5)			
1. Elymus virginicus	10	yes	FACW
2. Toxicodendron radicans	5	yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 8	20% of total cover: 3		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	72	x 3 =	216
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	117 (A)		306 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/4						CL	
5-14	10YR 3/6						L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-31-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS AA-1

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 26.20" Long: 78° 10' 37.51" Datum: NAD 83

Soil Map Unit Name: Congaree silt loam (Ck) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

The FDS is located in an agricultural field with a wildlife cover crop.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS AA-1

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5)			
1. Panicum virgatum	30	yes	FAC
2. Zea mays	25	yes	UPL
3. Setaria pumila	15	no	FAC
4. Barbarea vulgaris	10	no	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	25	x 5 =	125
Column Totals:	80 (A)		300 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetative cover is a wildlife food plot

SOIL

Sampling Point: FDS AA-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 4/6						FSCL	
4-14	7.5YR 4/6						FSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-30-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS F-1

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 03.69" Long: 37° 45' 03.69" Datum: NAD 83

Soil Map Unit Name: Mixed alluvial land (Ml) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS F-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	yes	FAC
2. Platanus occidentalis	20	yes	FACW
3. Acer nugundo	15	yes	FAC
4. Acer saccharinum	5	no	FACW
5. Betula nigra	5	no	FACW
6.			
7.			
	70	= Total Cover	
50% of total cover: 35	20% of total cover: 14		

Sapling/Shrub Stratum (Plot size: 15)			
1. Acer rubrum	5	yes	FAC
2. Acer nugundo	5	yes	FAC
3. Lindera benzion	3	yes	FAC
4. Betula nigra	2	no	FACW
5. Ligustrum sinense	1	no	FACU
6.			
7.			
8.			
9.			
	16	= Total Cover	
50% of total cover: 8	20% of total cover: 3		

Herb Stratum (Plot size: 5)			
1. Elymus virginicus	10	yes	FACW
2. Lonicera japonica	3	yes	FAC
3. Rosa multiflora	2	no	FACU
4. Betula nigra	2	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	17	= Total Cover	
50% of total cover: 8	20% of total cover: 3		

Woody Vine Stratum (Plot size: 30)			
1. Vitis rotundifolia	5	yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 3	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	44	x 2 =	88
FAC species	61	x 3 =	183
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	108 (A)		283 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS F-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3						SiL	
3-14	10YR 3/6						L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-30-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS H-1

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 03.69" Long: 37° 45' 03.69" Datum: NAD 83

Soil Map Unit Name: Made Land (M) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS H-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	25	yes	FACW
2. Acer nugundo	20	yes	FAC
3. Ulmus americana	15	yes	FACW
4.			
5.			
6.			
7.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Sapling/Shrub Stratum (Plot size: 15)			
1. Acer nugundo	15	yes	FAC
2. Platanus occidentalis	10	yes	FACW
3. Ulmus americana	10	yes	FACW
4. Juniperus virginiana	5	no	FACU
5. Celtis occidentalis	5	no	FACU
6.			
7.			
8.			
9.			
	45 = Total Cover		
50% of total cover: 23	20% of total cover: 9		

Herb Stratum (Plot size: 5)			
1. Lonicera japonica	10	yes	FAC
2. Vitis rotundifolia	10	yes	FAC
3. Acer nugundo	8	yes	FAC
4. Celtis occidentalis	2	no	FACU
5. Smilax rotundifolia	1	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	31 = Total Cover		
50% of total cover: 16	20% of total cover: 7		

Woody Vine Stratum (Plot size: 30)			
1. Vitis rotundifolia	3	yes	FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
50% of total cover: 2	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	67	x 3 =	201
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	139 (A)		369 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS H-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/4						CL	
6-14	10YR 3/2						Gravel-Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-31-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS Q-1

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 02.67" Long: 78° 10' 13.78" Datum: NAD 83

Soil Map Unit Name: Congaree Silt Loam (Ck) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [ ] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water is perched on clay layer.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS Q-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	28	yes	FACW
2. Acer nugundo	20	yes	FAC
3. Acer rubrum	5	no	FAC
4. Ulmus americana	2	no	FACW
5. Acer saccharinum	2	no	FACW
6.			
7.			
	57 = Total Cover		
50% of total cover: 29	20% of total cover: 12		

Sapling/Shrub Stratum (Plot size: 15)			
1. Acer nugundo	15	yes	FAC
2. Fraxinus pennsylvanica	8	yes	FAC
3. Acer rubrum	5	no	FACW
4.			
5.			
6.			
7.			
8.			
9.			
	28 = Total Cover		
50% of total cover: 14	20% of total cover: 6		

Herb Stratum (Plot size: 5)			
1. Fraxinus pennsylvanica	10	yes	FACW
2. Vitis rotundifolia	8	yes	FAC
3. Acer nugundo	5	no	FAC
4. Elymus virginicus	5	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	28 = Total Cover		
50% of total cover: 14	20% of total cover: 6		

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	52	x 2 =	104
FAC species	61	x 3 =	183
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	113 (A)		287 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS Q-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 YR 4/3	95	7.5 YR 3/4	5			SiL	
5-14	7.5 YR 4/3	90	7.5 YR 3/4	10			CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-31-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS Q-2

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): _____ Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 03.42" Long: 78° 10' 14.91" Datum: NAD 83

Soil Map Unit Name: Chewacla Silt Loam (Cf) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 1

Water Table Present? Yes ✓ No _____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water was frozen

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS Q-2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer nugundo	30	yes	FAC
2. Acer saccharinum	20	yes	FACW
3. Fraxinus pennsylvanica	15	yes	FACW
4. Acer rubrum	10	no	FAC
5.			
6.			
7.			
	75	= Total Cover	
50% of total cover: 38	20% of total cover: 15		

Sapling/Shrub Stratum (Plot size: 15)			
1. Acer nugundo	25	yes	FAC
2. Fraxinus pennsylvanica	20	yes	FACW
3. Celtis occidentalis	2	no	FACU
4. Ligustrum sinense	1	no	FACU
5.			
6.			
7.			
8.			
9.			
	48	= Total Cover	
50% of total cover: 24	20% of total cover: 10		

Herb Stratum (Plot size: 5)			
1. Fraxinus pennsylvanica	10	yes	FACW
2. Elymus virginicus	10	yes	FACW
3. Carex crinita	5	no	OBL
4. Lonicera japonica	2	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	27	= Total Cover	
50% of total cover: 14	20% of total cover: 6		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	75	x 2 =	150
FAC species	67	x 3 =	201
FACU species	3	x 4 =	
UPL species		x 5 =	
Column Totals:	150 (A)		356 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS Q-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/2	85	7.5YR 3/4	15	D	M	CL	
6-14	7.5YR 3/3	65	7.5YR 4/2	35	D	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: James River Water Authority City/County: Fluvanna Sampling Date: 1-31-14

Applicant/Owner: James River Water Authority State: VA Sampling Point: FDS Q-3

Investigator(s): E. Virts, M. Hepner Section, Township, Range: Columbia

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): Southern Piedmont Lat: 37° 45' 03.81" Long: 78° 10' 14.81" Datum: NAD 83

Soil Map Unit Name: Chewacla Silt Loam (Cf) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: FDS Q-3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer nugundo	30	yes	FAC
2. Fraxinus pennsylvanica	20	yes	FACW
3. Acer rubrum	5	no	FAC
4.			
5.			
6.			
7.			
	55	= Total Cover	
50% of total cover: 28	20% of total cover: 11		
Sapling/Shrub Stratum (Plot size: 15)			
1. Acer nugundo	25	yes	FAC
2. Fraxinus pennsylvanica	15	yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40	= Total Cover	
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 5)			
1. Vitis rotundifolia	20	yes	FAC
2. Elymus virginicus	10	yes	FACW
3. Fraxinus pennsylvanica	8	no	FACW
4. Acer nugundo	8	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	46	= Total Cover	
50% of total cover: 23	20% of total cover: 10		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	53	x 2 =	106
FAC species	88	x 3 =	176
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	141 (A)		282 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS Q-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/3						SiL	
6-14	7.5YR 4/4						CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

APPENDIX B
REPRESENTATIVE SITE PHOTOGRAPHS

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

Representative vegetation and ground cover at FDS A-1. (1/30/2014, E. Virts)

Unnamed perennial stream as it flows into the James River. (1/30/2014, E. Virts)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

Stream as it exits a culvert under State Route 6. (1/30/2014, E. Virts)

Vegetation and ground cover at FDS H-1. (1/30/2014, E. Virts)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

A field that is hayed along the James River. (1/31/2014, E. Virts)

A depression at FDS Q-1 that has pooled water but lacks hydric soils. (1/31/2014, E. Virts)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

Wetland located at FDS Q-2. (1/31/2014, E. Virts)

Canopy coverage within the adjacent to FDS Q-3 (1/31/2014, M. Hepner)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS

Representative Site Photos
James River Water Authority
Fluvanna County

Wildlife food plot located on a historic floodplain of the Fluvanna River. (1/31/2014, M. Hegner)

Linear wetland that runs parallel to a historic railroad grade. (1/31/2014, E. Virts)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

Wetland that is located within a power line easement. (1/31/2014, E. Virts)

Wetland on the north side of the railroad, adjacent to the town of Columbia. (1/30/2014, M. Hepner)

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Representative Site Photos
James River Water Authority
Fluvanna County

Left bank of the James River facing upstream. (1/31/2014, M. Hepner)

Vegetation cover adjacent to the James River. (1/31/2014, M. Hepner)

APPENDIX C
COE JD REQUEST FORM

NORFOLK DISTRICT REGULATORY OFFICE PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/homepage.asp

Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. City or County where property located: Fluvanna County

2. Address of property and directions (attach a map of the property location and a copy of the property plat): From I-64W take exit 148 for State Route 605 toward Shannon Hill. Drive 0.2 mi and turn left onto State Route 605/ Shannon Hill Rd. Drive 10.7 mi and turn left onto State Route 659/Stage Junction Rd. Drive 3.1 mi and the Site will be located to the northwest and southeast, once your in Columbia.

3. Size of property in acres: 72.7

4. Tax parcel number (if available): N/A

5. Has a jurisdictional determination been completed by a consultant or the Corps on the property previously? ☐ YES or ☒ NO

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available: N/A

6. Brief Description of Proposed Activity or Reason for Jurisdictional Waters Determination Request: Waterline upgrades and water withdraw system for Fluvanna County and the town of Columbia.

7. Name of Nearest Waterway: Rivanna River, James River, Un. tributaries to James River,

8. Date of Request: 2/11/14

Property Owner Contact Information:

Property Owner Name: James River Water Authority c/o Goodman Duke
Mailing Address: 132 Main Street
City: State: Zip: PO Box 540
Daytime Telephone: (540) 894-7982
E-mail Address: bbd304@comcast.net

If the person requesting the Jurisdictional Determination is **not** the Property Owner, please also supply the Requestor's contact information here:

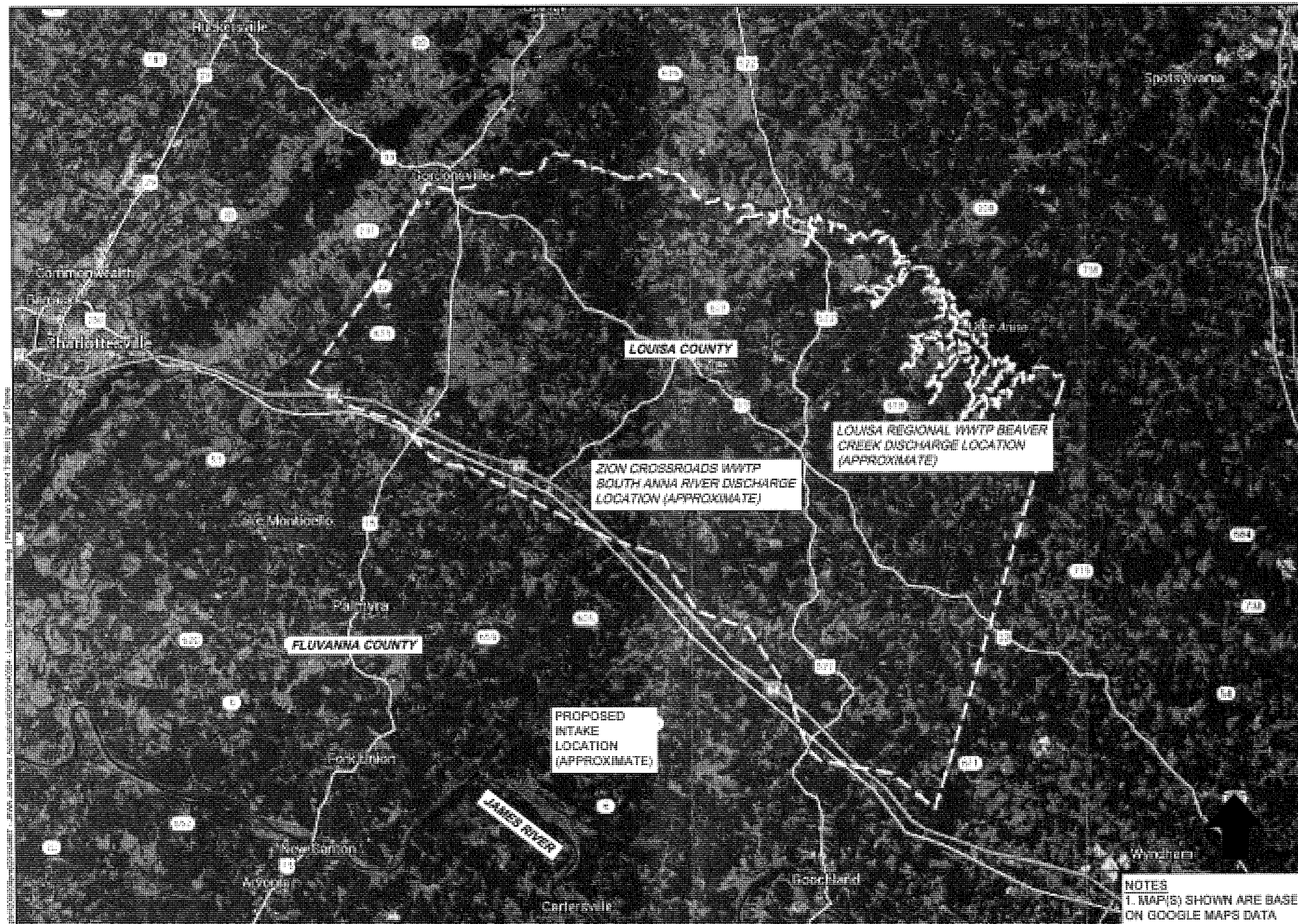
Requestor Name: Timmons Group c/o Ethan Virts
Mailing Address: Boulders Parkway, Suite 300
City: State: Zip: Richmond, Virginia 23225
Daytime Telephone: (540) 267-5191
E-mail Address: ethan.virts@timmons.com

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

_____ _____

Property Owner's Signature Date



NOTES
1. MAP(S) SHOWN ARE BASED ON GOOGLE MAPS DATA

TIMMONS GROUP

JAMES RIVER WATER SUPPLY PROJECT

LOUISA COUNTY WATER RETURN MAP

34957

APP. M

James River Water Authority
Relocation of Intake for VWP Individual Permit Number 04-0805
3/5/2014

Summary of County Approved Water Supply Plans w/ Projected Demands

Louisa County WSP (1)

	2020		2030		2040		2045		2050	
	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak
Gum Spring	58,391	87,586	118,409	177,614	161,798	242,697	185,455	278,182	209,111	313,667
Ferncliff	76,322	114,483	154,773	232,159	211,910	317,865	242,844	364,266	273,778	410,667
Shannon Hill	37,931	56,897	77,500	116,250	106,517	159,775	122,037	183,054	137,556	206,333
Zion Crossroads	460,460	690,690	712,045	1,068,068	890,562	1,335,843	989,837	1,484,755	1,089,111	1,633,667
Route 250 / I 64 Service Areas	633,104	949,656	1,062,727	1,594,091	1,370,787	2,056,180	1,540,172	2,310,257	1,709,556	2,564,334
LCWA	73,859	114,146	73,020	112,849	72,199	111,581	71,798	110,961	71,397	110,341
Town of Louisa	266,090	409,369	392,736	604,208	482,092	741,679	532,043	818,526	581,993	895,373
Town of Mineral	107,343	165,144	148,317	228,181	196,831	302,817	223,338	343,597	249,845	384,376
Lake Anna	496,858	745,287	1,009,242	1,513,864	1,380,674	2,071,011	1,582,930	2,374,395	1,785,185	2,677,778
North East Creek WTP Service Area (3)	944,150	1,433,946	1,623,315	2,459,102	2,131,796	3,227,088	2,410,108	3,647,478	2,688,420	4,067,868
North East Creek WTP Capacity (3)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
North East Creek Service Area	(55,850)	433,946	623,315	1,459,102	1,131,796	2,227,088	1,410,108	2,647,478	1,688,420	3,067,868
James River Supply (Louisa)	1,577,254	1,383,602	1,686,042	3,053,193	2,502,583	4,283,268	2,950,280	4,957,735	3,397,976	5,632,202

Fluvanna County WSP (2)

	2020		2030		2040		2045		2050	
	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak
Columbia CWS	4,315	6,473	5,158	7,736	6,473	9,709	7,768	11,651	9,062	13,592
Fork Union CWS	196,116	294,175	226,020	339,030	282,525	423,787	339,030	508,545	395,535	593,302
Palmyra CWS	25,720	38,580	70,730	106,094	102,558	153,837	125,634	188,450	148,709	223,063
Proposed Fluvanna CWS	324,315	486,472	1,070,541	1,605,812	1,403,336	2,105,003	1,724,245	2,586,367	2,045,153	3,067,730
							0	0		
James River Supply (Fluvanna)	550,466	825,700	1,372,449	2,058,672	1,794,892	2,692,336	2,196,676	3,295,012	2,598,459	3,897,687

Combined Projected Demands

	2020		2030		2040		2045		2050	
	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak
James River Water Supply (7)	***2,127,720***	***2,209,302***	***3,058,491***	***5,111,865***	4,297,475	6,975,604	***5,146,955***	***8,252,747***	5,996,435	9,529,889
(7) Current Permit Withdrawal Rate (2021)	***2,850,000***	***5,700,000***	***2,850,000***	***5,700,000***						

Fluvanna County WSP (2)

	2020		2030		2040		2045		2050	
	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak	Avg	Peak
Existing Permitted Withdrawals (4)										
Lake Monticello CWS (5)	792,500	1,109,500	951,000	1,331,400	1,141,200	1,597,680	1,255,320	1,757,448	1,369,440	1,917,216
Fluvanna Correctional CVS (6)	117,000	140,400	117,000	140,400	117,000	140,400	117,000	140,400	117,000	140,400

1 Data from Louisa County Long Range Regional Water Supply Plan, dated June 2011
2 Data from Fluvanna County Regional Water Supply Plan, dated April 2010
3 The Northeast Creek Water Treatment Plant is rated at 1.0 MGD per Dewberry PER, dated June 2013.
4 This summary assumes that the existing permitted withdrawals will remain and be re-permitted as required to serve projected demands.
5 Lake Monticello CWS: Withdrawal Permit is rated at 1.38 MGD
6 Fluvanna Correctional CVS: Withdrawal Permit is rated at 0.25 MGD
7 It is proposed that the withdrawal limits of 3.06 MGD average daily and 5.7 MGD peak daily be permitted. These limits and allocations will provide a reasonable degree of flexibility in meeting the water demands of each County. These limits will also provide for some degree of redundancy in the event that a component of a County dependent water supply is out of service for repair or maintenance.

TIMMONS GROUP

Public Information Meeting

James River Water Authority

Withdrawal Permit Relocation

February 4, 2014 @ 10:30 a.m.

Spring Creek Sports Club
181 Clubhouse Way
Zion Crossroads, VA

Overview

1. Welcome & Thank You
2. Please sign in
3. Purpose of Meeting
   - Educate and inform citizen's of permit relocation
   - Public to make comments for consideration during permit process

TIMMONS GROUP

Overview

4. JRWA will receive written comments up to 7 days after this meeting
   - Received by COB Feb 11, 2014
5. Send written comments to:
   - Steve Nichols, Fluvanna County Administrator & JRWA Board Member
     - Email: snichols@fluvannacounty.org
   - Robert Dube', Louisa County Administrator & JRWA Board Member
     - Email: rdube@louisa.org

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Existing Permit Basics

VWP Individual Permit Number: 04-0805
Date of Issuance: June 9, 2006
Expiration Date: June 9, 2021
Max Daily Withdrawal: 5.7 million gallons
Max Annual Withdrawal: 1.045 billion gallons
Average Daily Withdrawal: 2.85 million gallons
Intake Location: Approximately 2,000 feet downstream of Rte 15

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New Permit

1. Applying for a Permit Reissuance
2. Permit will be valid for 15-yrs
3. Projected water demands: Based upon DEQ approved Water Supply Plans
   - Fluvanna WSP dated April 2010
   - Louisa WSP dated June 2011
4. ***New Intake Location: Vicinity of Columbia on north side of James River upstream of Rte 690***

TIMMONS GROUP

JRWA Owned Project

1. Intake structure located on north side of James River (exact location TBD)
2. Raw Water Pump Station
3. Pipeline to a "T" just north of Rte 6 in the vicinity of the Colonial Pipeline easement

TIMMONS GROUP

Permit Timelines

1. Public Information Meeting: Feb 4, 2014
2. Receive all public comments: Feb 11, 2014
3. Submit JPA to VDEQ / VMRC: Mid-late Feb 2014
4. Regulatory review: 60-90 days
5. Additional studies: 30-60 days
6. Submit additional study info: 30 days
7. Regulatory review: 30-45 days
8. DEQ issue Draft Permit
9. DEQ issues Final Permit

Entire timeline anticipated to be 9-12 months

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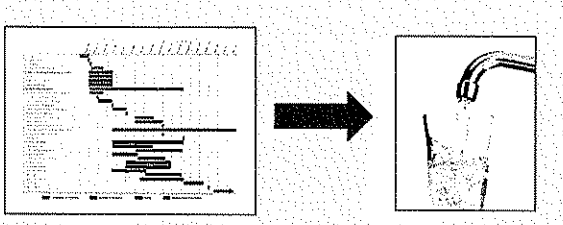
JRWA Project

1. Important project to both Fluvanna & Louisa
2. Public input is very important
3. Additional questions or comments e-mail:
   - Steve Nichols: snichols@fluvannacounty.org
   - Robert Dube': rdube@louisa.org

TIMMONS GROUP

James River Water Authority

Thanks for your time!



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