DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

28 July 2025

The St. Louis District, U.S. Army Corps of Engineers, has prepared a draft Project Implementation Report with Integrated Environmental Assessment (PIR/EA), titled, *Navigation and Ecosystem Sustainability Program Clarksville/Carroll Island Complex Side Channel Ecosystem Restoration Project, Pool 25, Upper Mississippi River Miles 273-266, Calhoun County, Illinois* dated, July 2025. The District is providing a review and comment period regarding the analysis and outcomes for this project to fulfill the National Environmental Policy Act (NEPA) of 1969. The report and associated appendices can be found here:

https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/ClarksvilleCarrollIslandComplexSideChannelEcosystemRestorationProjectDraftEA.pdf

The draft PIR/EA is available for public review from 28 July – 28 August 2025. Comments may be submitted via email to: CEMVS_Planning@usace.army.mil, or by writing to the address below and including the title of the Project. To request a hard copy call 314-580-4857, write to the address below, or use the above email.

U.S. Army Corps of Engineers, St. Louis District
Environmental and Planning Branch PD-C, Day-CC
1222 Spruce Street
St. Louis, MO 63103-2833

PROJECT INFORMATION

NESP is a long-term, dual-purpose program that aims to increase capacity and reliability of the inland navigation system while restoring, protecting and enhancing the environment of the Upper Mississippi River. The Clarksville/Carroll Island Complex Side Channel Ecosystem Restoration Project fits within the larger NESP goal by aiming to maintain, enhance and restore quality habitat for native and desirable plant, animal and fish species for a resilient and sustainable ecosystem. The proposed Project would increase side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity to improve aquatic habitat for native fishes and mussels.

Measures and features proposed for the Project would include:

- Dredging of pilot channels
- Construction of hardpoints, SCEDs, and mussel riffles
- Installation of woody bundles

The purpose of this PIR/EA is to document existing conditions, evaluate potential impacts associated with each alternative and assist in planning and decision making for the Clarksville/Carroll Island Complex Side Channel Ecosystem Restoration Project.

Sincerely,

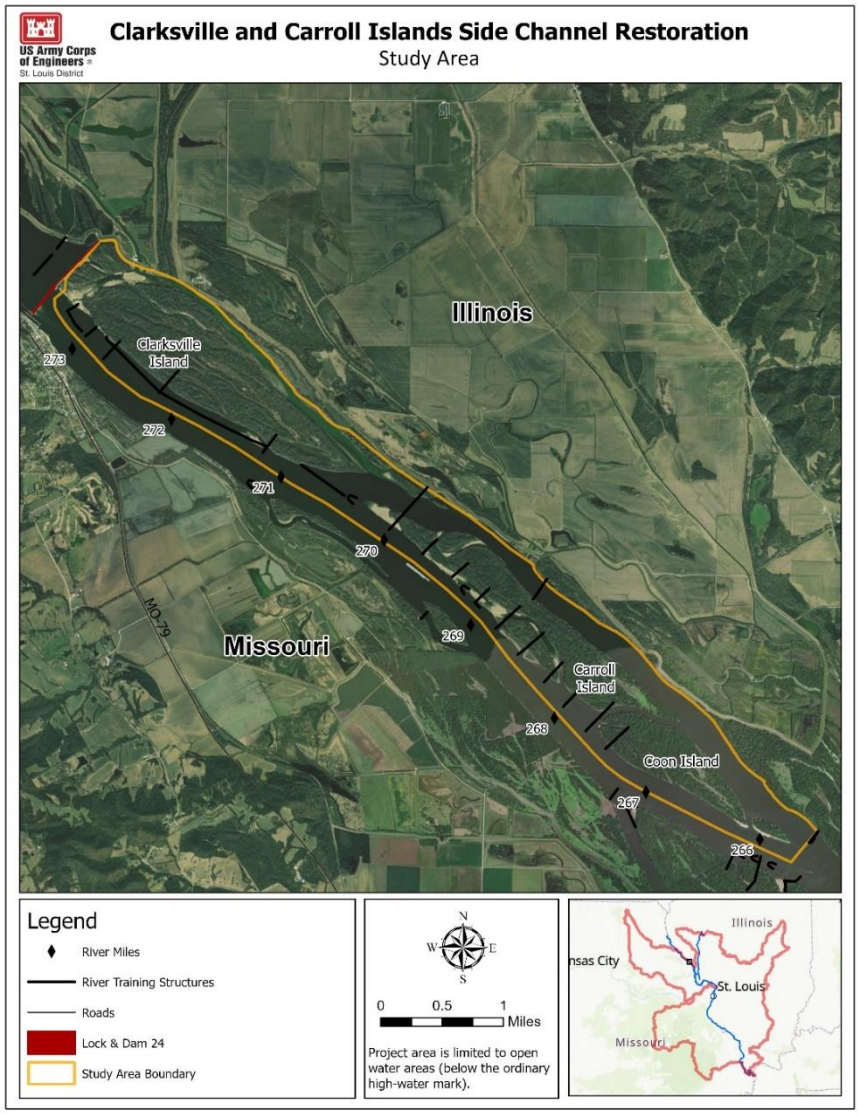
Alison M. Anderson, Ph.D.
Chief, Environmental Compliance Section

NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers®
St. Louis District

July 2025

DRAFT FINDING OF NO SIGNIFICANT IMPACT*

NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
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POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS

The U.S. Army Corps of Engineers (USACE), St. Louis District (District) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The final Integrated Project Implementation Report and Environmental Assessment (PIR/EA) dated **DATE OF PIR/EA**, for the **CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION PROJECT** addresses **ecosystem restoration** opportunities in **CALHOUN COUNTY, ILLINOIS**. The final recommendation is contained in the Final Project Implementation Report, dated **DATE OF FINAL PIR**.

The Final PIR/EA, incorporated herein by reference, evaluated various alternatives that would **maintain, enhance, and restore side channel connectivity to benefit native riverine fish and wildlife and to improve side channel habitat, including substrate stability, to benefit native freshwater mussels** in the study area. The recommended plan is the **National Ecosystem Restoration (NER) Plan** and includes:

- Dredging of a pilot channel
- Mussel habitat enhancement features
- Incorporation of Side Channel Enhancement Dikes (SCED)
- Creation of hard points
- Installation of woody bundles

In addition to a “no action” plan, **three** alternatives were evaluated. The alternatives included:

- Alternative 1 – Minimum Habitat Benefit – Side Channel Connectivity: This plan narrowly focuses on establishing side channel connectivity to the study area by opening the mouth of Clarksville Slough, which is the main side channel in the study area. This plan consists of the creation of a pilot channel by dredging located at the mouth of the slough extending along the upper end of Clarksville Island. (EA Figure 18)

- Alternative 2 – Intermediate Habitat Benefit: This plan includes measures to increase environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. This plan consists of dredging described in Alternative 1, with the addition of a series of hard points at the upper end of Clarksville Slough, the creation of two SCEDs by modifying two existing dikes: Dike 273.2L (SCED273) and Dike 267.7L (SCED267), and the creation of mussel riffles throughout the study area. The mussel riffles would be created by enhancing rock gravel substrate. The rock for substrate enhancement would be acquired by modifying

the existing closure structure in Clarksville Slough and dragging rock immediately downstream and for use in other areas where it is feasible to create mussel riffles. (EA Figure 19)

- Alternative 3 – Maximum Habitat Benefit: This plan includes measures to maximize environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. The plan consists of all measures included in Alterative 2 with the addition of woody bundles in the downstream end of Clarksville Slough to increase flow diversity.

SEE SECTION 4 FOR MORE DETAILS REGARDING ALTERNATIVE FORMULATION AND SELECTION.

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	**Insignificant effects as a result of mitigation***	**Resource unaffected by action**	**Positive effects**
Aesthetics	☒	☐	☐	☐
Air quality	☒	☐	☐	☐
Aquatic resources/wetlands	☐	☐	☐	☒
Invasive species	☒	☐	☐	☐
Fish and wildlife habitat	☐	☐	☐	☒
Threatened/Endangered species/critical habitat	☐	☐	☐	☒
Historic properties	☒	☐	☐	☐
Other cultural resources	☒	☐	☐	☐
Floodplains	☒	☐	☐	☐
Hazardous, toxic & radioactive waste	☒	☐	☐	☐
Hydrology	☒	☐	☐	☐
Land use	☒	☐	☐	☐
Navigation	☒	☐	☐	☐
Noise levels	☒	☐	☐	☐
Public infrastructure	☒	☐	☐	☐
Socio-economics	☐	☐	☐	☒
Soils	☐	☐	☒	☐
Tribal trust resources	☒	☐	☐	☐
Water quality	☐	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the PIR/EA would be implemented, if appropriate, to minimize

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impacts. All river-based construction Best Management Plans shall be taken to avoid and minimize impacts to the environment.

The following conservation measures are required by the USFWS to avoid or minimize potential impacts to federally listed species:

- All clearing of trees > 3" dbh resulting from the USACE action would occur during the inactive season from November 1 to March 31 unless negative presence/probable absence survey results were obtained for the action area through appropriate surveys approved by the U.S. Fish and Wildlife Service (USFWS).

- Stringent erosion and sedimentation controls to protect water quality would be implemented.

- Appropriate buffer distances around potential eagle nests would be coordinated with the USFWS prior to or during construction to account for any changes in conditions from existing resources.

The following conservation measures were recommended by the Illinois Department of Natural resources to avoid or minimize potential impacts to state natural areas and listed species:

- Equipment should not be stored within the INAI Sites or within ROW.
- Parking and staging in areas adjacent to the INAI sites should also be avoided.
- Areas of exposed soil should be re-seeded with a local genotype seed, approved IDOT seed mix, or non-invasive cover crop.
- Soil erosion and sediment control BMPs should be implemented and properly maintained. Wildlife-friendly plastic-free blanket should be used to prevent the entanglement of native wildlife.
- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into the INAI sites and other nearby natural areas.
- Equipment should be power washed off-site, where feasible, to remove exotic/invasive seed or propagules.
- All equipment, including but not limited to boots, tools, equipment, tires, and treads, should be cleaned of all debris prior to entry of the project area, where feasible, to avoid spreading of exotic or invasive plant seeds into the INAI Sites.
- Should any herbicide use be required for construction or operation, wind speed and direction should be carefully monitored to avoid herbicide drift into the INAI sites.

No compensatory mitigation is required as part of the recommended plan.

Public review of the draft PIR/EA and FONSI was completed on **DATE DRAFT EA AND FONSI REVIEW PERIOD ENDED**. All comments submitted during the public review period were responded to in the Final PIR/EA and FONSI.

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Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: Based on the information obtained, USACE has determined the proposed project "*May Affect, but is Not Likely to Adversely Affect*" the Indiana Bat, Northern Long-Eared Bat, Tricolored Bat, Spectaclecase mussel, Monarch butterfly, Western Regal Fritillary butterfly, and Decurrent False AsterLIST ALL SPECIES INCLUDED IN INFORMAL CONSULTATION. The U.S. Fish and Wildlife Service (FWS) concurred with the Corps' determination on **DATE OF CONCURRENCE LETTER**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that the recommended plan has no potential to cause adverse effects on historic properties.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in **APPENDIX J** of the PIR/EA.

A water quality certification pursuant to section 401 of the Clean Water Act was included with Nationwide Permit 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities from the **State of Illinois**. All conditions of the water quality certification will be implemented in order to minimize adverse impacts to water quality.

Technical, environmental, economic, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____
Date

_____
Andy J. Pannier
Colonel, U.S. Army
District Commander

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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE ISLAND & CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS

EXECUTIVE SUMMARY

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Purpose of the Report: The purpose of this project implementation report (PIR) with environmental assessment (EA) (report), including the anticipated Finding of No Significant Impact (FONSI), is to document the decision-making process for the proposed U.S. Army Corps of Engineers (USACE), Navigation and Ecosystem Sustainability Program (NESP) Clarksville Island & Carroll Island Complex Side Channel restoration project (Project). The proposed project focuses on an approximate 1,680-acre side channel complex in the Upper Mississippi River – Illinois Waterway (UMR-IWW) in the upper portion of Pool 25.

This report was developed by the USACE serving as the lead federal agency in close coordination with the U.S. Fish and Wildlife Service (USFWS), Illinois Department of Natural Resources (IDNR), and Missouri Department of Conservation (MDC). This report provides planning (including National Environmental Policy Act compliance), engineering, and sufficient construction details for the Tentatively Selected Plan (TSP) to help inform the final recommendation.

Project Area Description: The Project is located on the left descending bank of the Mississippi River, immediately downstream of Lock and Dam 24, near Clarksville, Missouri, in Calhoun County, Illinois. The proposed project lies in the upper portion of Pool 25 between River Miles (RM) 273 and 266. The approximately 1,680-acre area consists of side channels and connected backwaters in the vicinity of Clarksville, Carroll, and Coon Islands.

Problem Identification: The quantity and quality of side channel habitat, including backwaters, chutes, and riffle/pool complexes, have degraded due to sedimentation related to the impoundment and operations of the UMR-IWW (and resulting changes in hydraulics and hydrology), land use changes, and changing environmental conditions. The loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species. The project area is also characterized by a loss of fish and mussel habitat, and the natural hydrologic processes necessary to sustain native species. Shoreline erosion is also present in the project area.

Project Objectives: Increase depth and flow diversity of aquatic side channels throughout the project area to:

- restore side channel sediment transport and geomorphic diversity.
- increase side channel habitat quantity and quality for native fish and mussel species.
- increase side channel habitat quality for native fish spawning, rearing, juvenile, or overwintering habitat.
- increase side channel area, flow diversity, quality, and clarity for native mussel species

habitat.

- reduce sediment deposition within side channel flowing water habitats to maintain and restore main channel connectivity and increase quality of habitat for riverine dependent native fish.

Plan Formulation, Evaluation, and Comparison: The USACE planning process is a structured systematic and repeatable planning approach to ensure sound decisions are made in accordance with the processes laid out in the Planning Guidance Notebook (Engineer Regulation (ER) 1105-2-103) and the Principles and Guidelines for Federal Water Resource projects. This report describes the development, screening, and evaluation of management measures and alternative plans. The project delivery team (PDT), which includes biologists, engineers, economists, and planners from the USACE and partners, developed a series of alternatives for consideration.

Plan Selection: The TSP for the Clarksville & Carroll Island Complex side channel restoration NESP Project (Alternative 3 Maximum) is shown in Figure ES-1. It consists of multiple measures to improve the side channel ecosystem structure and function by implementation of the following:

- Dredging of a pilot channel
- Mussel habitat enhancement features
- Incorporation of Side Channel Enhancement Dikes (SCED)
- Creation of hard points
- Installation of woody bundles

The TSP was identified as the National Ecosystem Restoration (NER) Plan. For ecosystem restoration projects, the plan that maximizes ecosystem benefits compared to costs is selected as the NER Plan. The TSP is a best buy alternative that yields 497 net average annual habitat units (AAHUs) at an average annual cost of $1,164 per AAHU (FY2025 price level; FY2025 federal discount rate of 3.0 percent). The TSP best meets the identified planning objectives and has support from partners and consulting agencies. Implementation of the Plan would increase the quality and quantity of ecosystem resources and meet the needs of a large variety of native aquatic and terrestrial species. Restoring side channel depth diversity would improve aquatic habitat for native fishes, including state listed Lake Sturgeon, Bigeye Shiner, and Western Sand Darter. Improved mussel habitat would provide for and enhance vital habitat for mussel species, including the state listed Butterfly and Monkeyface within the proposed project area and the upper Mississippi River. The improved habitat is anticipated to provide enhanced opportunities for the recruitment of federally protected mussel species as well. The project outputs are also consistent with the goals and objectives of the NESP.

All proposed project measures would be located below the ordinary high-water mark (OHWM); therefore, project first cost funding for restoration measures would be 100 percent federal; and responsibility for the operation, maintenance, rehabilitation, replacement, and repair (OMRR&R) of the project would also be the responsibility of the USACE.

The St. Louis District Engineer has reviewed the proposed project outputs, a gain of 497 net AAHUs, and determined that the implementation of the TSP is in the Federal interest. Therefore, the District Engineer recommends construction approval for the Clarksville & Carroll Island Complex NESP side channel restoration project. The current estimated project first cost (FY2025 price level), including contingencies, is estimated at $11.48M. The total average

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annual cost based on the project first cost is $453,000 and the total average annual cost is $578,000. The fully funded project cost estimate is $12,900,000. The USACE would be responsible for the project OMRR&R at an estimated average annual cost of $26,000 (including contingencies).

For NESP program management accounting purposes, the Clarksville & Carroll Island Complex side channel restoration project accounts for one distinct NESP "side channel" restoration project. NESP programmatic accounting is necessary for alignment with the greater NESP ecosystem restoration recommended plan authorized by Congress in 2007.

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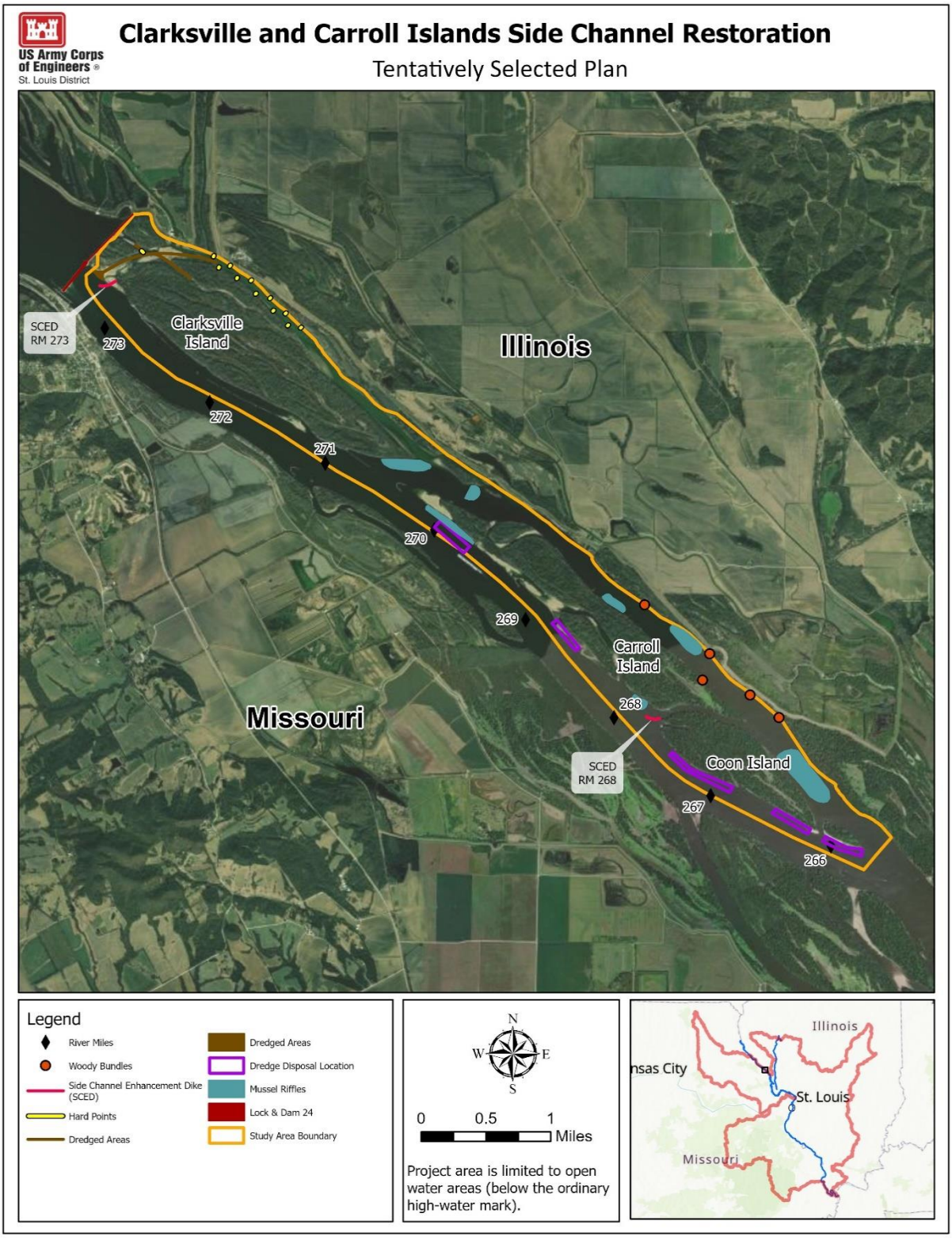


Figure ES-1. Tentatively Selected Plan, Alternative 3

ACRONYMS

Average Annual Habitat Unit	**AAHU**	USACE, Mississippi Valley Division	**MVD**
Area of Potential Effect	**APE**	North American Vertical Datum of 1988	**NAVD 88**
Cost Effectiveness & Incremental Cost Analyses	**CE/ICA**	National Environmental Policy Act	**NEPA**
Cubic Yards	**CY**	National Register of Historic Places	**NRHP**
Conceptual Ecological Model	**CEM**	Navigation and Ecosystem Sustainability Program	**NESP**
St. Louis District	**District**	Operation and Maintenance	**O&M**
Dissolved Oxygen	**DO**	Plans & Specifications	**P&S**
Environmental Protection Agency	**EPA**	Project Delivery Team	**PDT**
Engineer Regulation	**ER**	Project Implementation Report with Integrated Environmental Assessment	**PIR/EA**
Engineering Research and Development	**ERDC**	River Mile	**RM**
Endangered Species Act	**ESA**	River Resources Action Team	**RRAT**
Fish and Wildlife Coordination Act	**FWCA**	River Resources Coordinating Team	**RRCT**
Gradual Slope Revetement	**GSR**	Side Channel Enhancement Dike	**SCED**
Habitat Evaluation Procedures	**HEP**	State Historic Preservation Office	**SHPO**
Habitat Needs Assessment-II	**HNA-II**	Ton	**TN**
Habitat Rehabilitation and Enhancement Project	**HREP**	Tentatively Selected Plan	**TSP**
Habitat Suitability Index	**HSI**	Upper Mississippi River	**UMR**
Hazardous, Toxic, and Radioactive Waste	**HTRW**	Upper Mississippi River Restoration	**UMRR**
Illinois Department of Natural Resources	**IDNR**	Upper Mississippi River System	**UMRS**
Lock and Dam	**L&D**	U.S. Fish and Wildlife Service	**USFWS**
Long Term Resource Monitoring	**LTRM**	Water Resources Development Act	**WRDA**
Migratory Bird Treaty Act	**MBTA**	Upper Mississippi – Illinois Waterway	**UMR-IWW**
Ordinary High Water Mark	**OHWM**	U.S. Geological Survey	**USGS**

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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE & CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS

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INTRODUCTION*

The U.S. Army Corps of Engineers (USACE), St. Louis District (District), has prepared this Project Implementation Report (PIR) with Integrated Environmental Assessment (PIR/EA) to present a detailed account of the planning, engineering, construction considerations, and environmental considerations that resulted in the Tentatively Selected Plan (TSP) for the Clarksville & Carroll Islands Complex Side Channel Restoration (Project). The PIR/EA also meets applicable USACE guidance and documents and evaluates environmental effects of the recommended plan and alternatives in compliance with the National Environmental Policy Act (NEPA) of 1969.

1.1 Authority

NESP is a dual-purpose navigation and ecosystem restoration program for the Upper Mississippi River (UMR) and Illinois Waterway (IWW) System (UMR-IWW system) authorized by Title VIII (Sections 8001-8005) of the Water Resources Development Act (WRDA) of 2007 (Public Law (PL) 110-114, 33 USC 652 statutory note), substantially in accordance with the Report of the Chief of Engineers dated 15 December 2004 (Chief's Report). NESP is a regional program that includes geographic areas within the boundaries of the USACE St. Paul, Rock Island, and St. Louis Districts. The navigation portion of the NESP includes both small- and large-scale navigation improvements and mitigation. The ecosystem restoration portion of the NESP includes large projects at specific locations and a programmatic authorization for projects with a total single project cost not to exceed $25 million. Under the ecosystem restoration portion of NESP, a project would be implemented at 100 percent Federal expense if it (i) is located below the ordinary high-water mark (OHWM) or in a connected backwater; (ii) modifies the operation of structures for navigation; or (iii) is located on federally owned land. All other ecosystem restoration projects under the NESP are implemented with cost sharing of 65 percent Federal, 35 percent non-federal. (Public Law (PL) 110-114, Section 8004(b)(3)).

For this project, all proposed project measures would be located below the ordinary high-water mark (OHWM); therefore, project first cost funding for restoration measures would be 100 percent federal; and responsibility for the operation, maintenance, rehabilitation, replacement, and repair (OMRR&R) of the project would also be the responsibility of the USACE. For the purposes of this study, the ordinary high-water mark is defined by USACE, Operations Division, Regulatory Branch, where the water surface elevation corresponds to the Annual Exceedance Probability (AEP) frequency (2-year) flood event (2004 Upper Mississippi River System Flow Frequency Study) (USACE, 2004). The OHWM can be visually defined by the "vegetative line" within the riparian zone, usually considered at the bank full elevation. The OHWM can also be distinguished during field observation for verification. For this study, the Hydrologic and Hydraulic (H&H) modeling is calibrated to this OHWM definition.

NESP programmatic accounting is necessary for alignment with the greater NESP ecosystem restoration recommended plan authorized by Congress in 2007. Table 1 shows how the Clarksville & Carroll Islands Complex project accounts for one side channel restoration project as part of the larger programmatic NESP ecosystem restoration efforts.

Table 1. Alignment with the Authorized NESP Recommended Plan for Ecosystem Projects

Type of NESP Ecosystem Project	Number of Projects	Acres Benefitted
Side Channel Restoration	1	**1,079**

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1.2 NEPA Tiering

The Chief's Report, supported by the Integrated Feasibility Report and Programmatic Environmental Impact Statement for the Upper Mississippi River and Illinois Waterway System Navigation Feasibility Study (2004 IFR/EIS) (USACE, 2004), describes the framework for the ecosystem restoration component of NESP, including establishing the Federal interest, establishing the justified scope of the plan, and identifying preliminary locations of projects. The remaining requirement for implementation on a project-specific basis is detailed formulation and description of recommended project plans. Pursuant to implementation guidance for the NESP issued by the Assistant Secretary of the Army (Civil Works) (ASA(CW)) dated 2 July 2008, the site-specific assessments are accomplished by preparation of PIRs. The 2008 implementation guidance identifies the specific items to be included in each PIR. This PIR/EA is intended to fulfill those requirements.

The 2004 IFR/EIS includes the purpose, need, plan formulation, benefits, and effects of the NESP in compliance with NEPA. For the ecosystem restoration program, the 2004 IFR/EIS provided analyses at a program level. The conditions and environmental effects described in the 2004 IFR/EIS are still valid to support the ecosystem restoration project evaluated in this PIR/EA. This PIR/EA tiers off of the 2004 IFR/EIS and provides project-specific analysis consistent with the Department of Defense National Environmental Policy Act Implementing Procedures dated 30 June 2025. When the analysis presented in the 2004 IFR/EIS is adequate, no additional analysis is provided and instead the 2004 IFR is incorporated by reference.

1.3 NESP Partnership

Participants in the planning of the Project included the District and Regional Planning and Environment Division North (RPEDN) staff, and Project partners. There is no Sponsor for this project. Development of this draft PIR/EA was actively coordinated with the participants during meetings, phone conversations, and a site visit to the Project area. This PIR/EA summarizes the multidisciplinary efforts of the Project Delivery Team (PDT), which includes the District and Project partners. The Corps also consulted with Tribal Nations.

U.S. Army Corps of Engineers, St. Louis District. The District is responsible for Project management and coordination with the Project partners and other affected agencies. The District will submit the PIR/EA, program funds, finalize Plans & Specifications (P&S), complete all NEPA requirements, advertise and award a construction contract, and perform construction contract supervision and administration (S&A).

Sponsor. The Project is located 100 percent below the OHWM; therefore, the construction of this project would be 100 percent federal and does not require a Sponsor.

Partners. The River Resources Action Team (RRAT) was instrumental in the planning of this project. The RRAT is an interagency committee that provides an effective forum to address natural resource issues in the Mississippi River within the District. Members of the PDT included natural resource managers with the U.S. Fish and Wildlife Service (USFWS), Illinois Department of Natural Resources (IDNR), and Missouri Department of Conservation (MDC). Clarksville Island is owned and managed by the USFWS as part of the Two Rivers National Wildlife Refuge.

1.4 Purpose and Need for Federal Action*

The goal of the NESP is to ensure an efficient and environmentally sustainable navigation system on the UMR-IWW system. The 2004 IFR/EIS (Chapter 1) established the purpose and

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need for the ecosystem restoration plan, which remain valid. Section 8004(b)(1) of WRDA 2007 directs the Secretary to "carry out, consistent with requirements to avoid adverse effects on navigation, ecosystem restoration projects to attain and maintain the sustainability of the ecosystem of the Upper Mississippi River and Illinois River in accordance with the general framework" outlined in the Chief's Report. Each PIR identifies a project-specific purpose and need, consistent with the 2004 IFR/EIS and WRDA 2007.

Within the overarching NESP purpose, the purpose[1] of the project proposed in this PIR is to attain and maintain the sustainability of side channel habitat within the UMR, Pool 25, in the vicinity of Clarksville Island and Carroll Island area (RM 273-266). The need for restoration in the study area is based on the overall need to restore UMR side channels for important aquatic habitat for many native species including riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded side channel conditions. The RRAT has identified a need to restore side channels to promote freshwater mussel habitat, specifically in the Lower Impounded Reach of the Mississippi River. The District proposes to restore the functionality of the project area through construction of measures that would support quality side channel habitat for desirable native plant and animal species and emulate more natural river processes, structures, and functions for a resilient and sustainable ecosystem.

1.5 Study Area

The Clarksville and Carroll Island complex project area consists of approximately 1,680 acres of side channel and connected backwater habitat along the left descending bank of the Mississippi River, Pool 25, Calhoun County, Illinois, between river miles (RM 273 – 266) (Figure 1). The study area encompasses the side channels and connected backwaters below the OHWM within the area of Clarksville Island, Carroll Island and Coon Island. The island complex is located immediately downstream of Lock & Dam (L&D) 24, Clarksville, MO (RM 273.4) (Figure 2**Error! Reference source not found.**).

Note: This PIR/EA was prepared simultaneously with, but separately from, the Hausgen Island side channel restoration NESP project, which is located in Pool 25, approximately 18 miles downstream (RM 248-245).

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[1] Additional information on site-specific problems and study objectives are described fully in Chapter 2.

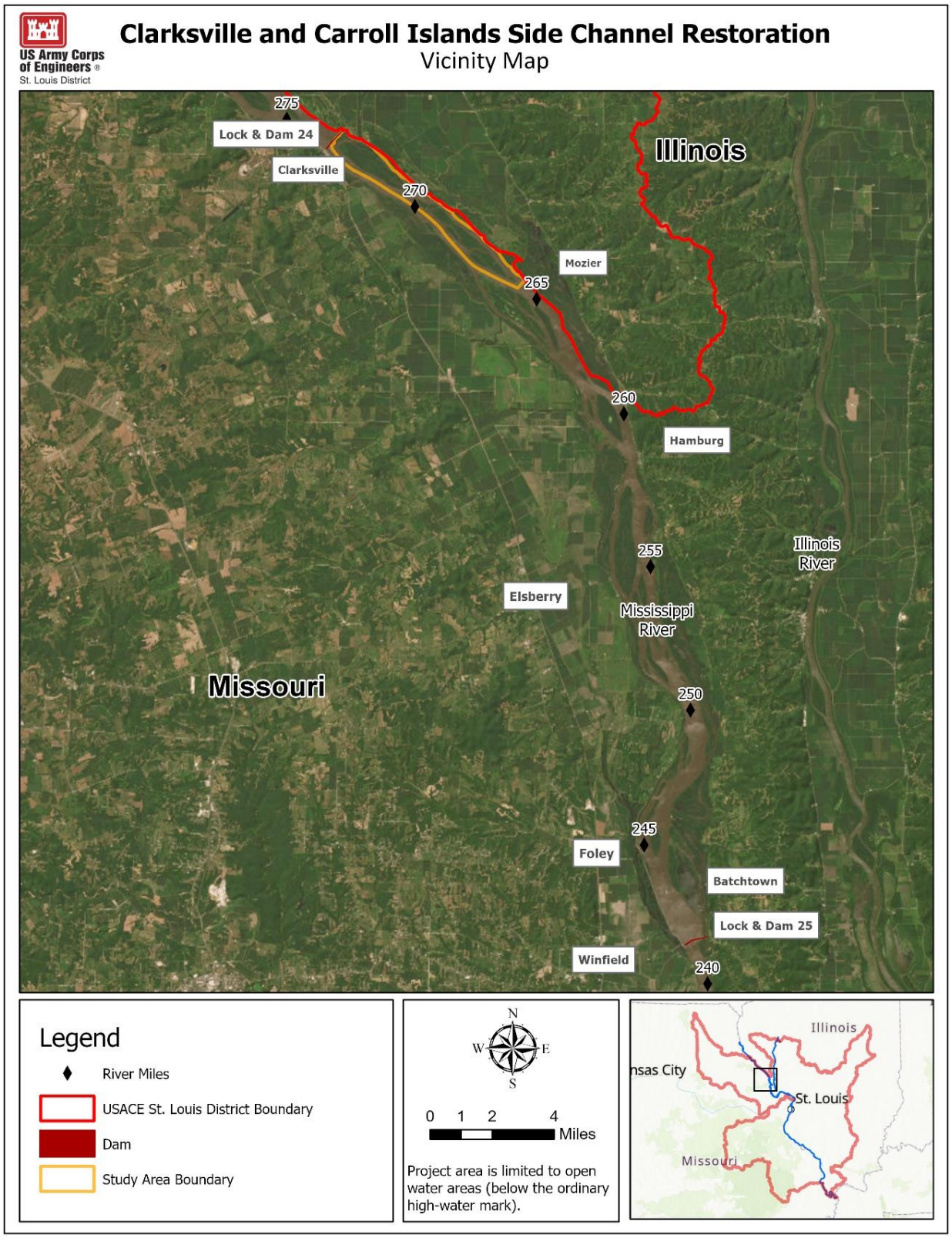


Figure 1. Project Vicinity Map

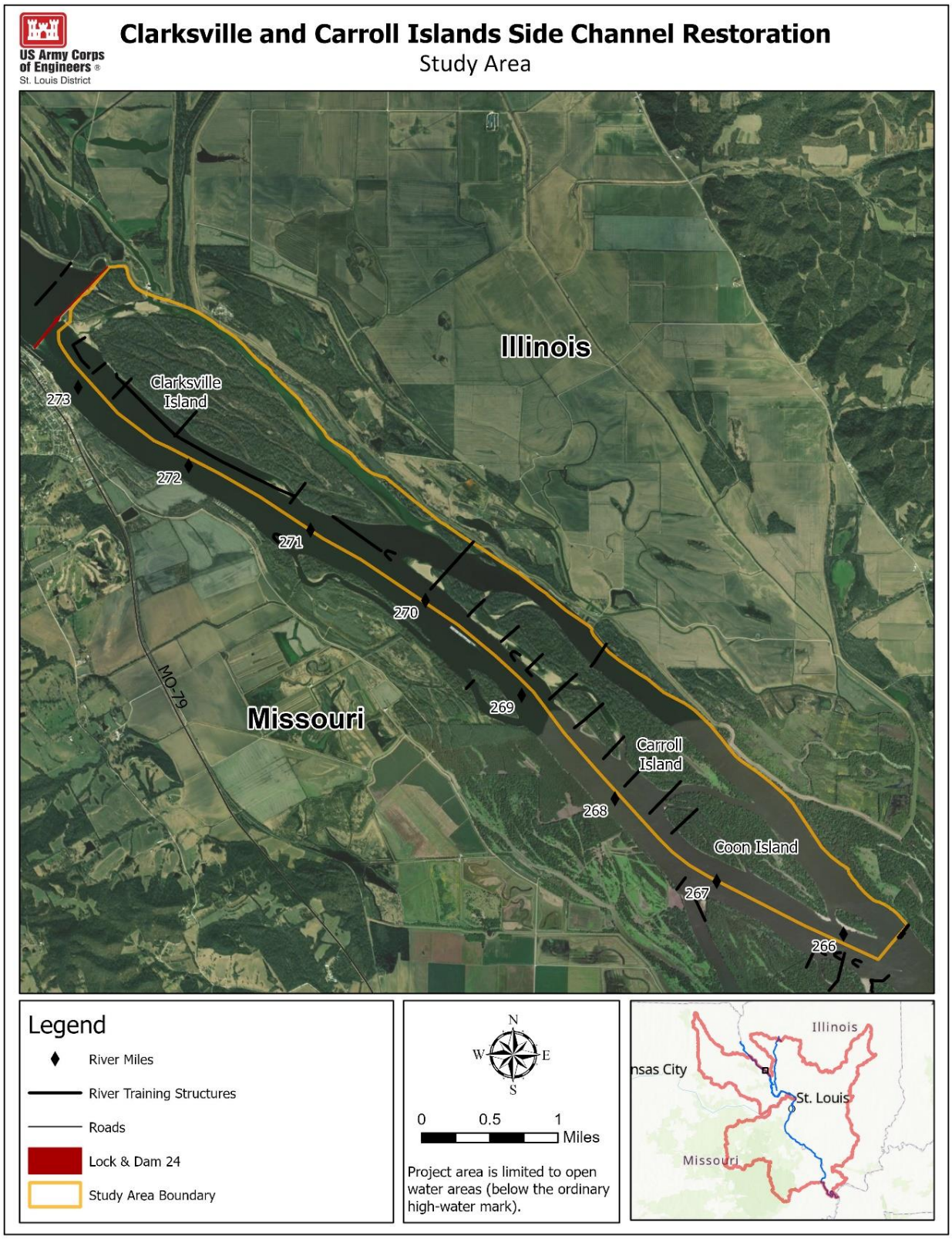


Figure 2. Project Location Map

1.6 Prior Reports, Existing Water Projects, and Ongoing Programs.

Table 2 summarizes prior reports, existing water projects, and ongoing programs which provided valuable information, experience, or guidance in the planning of the Project. Additional literature cited can be found in References section and at the end of each Appendix.

Table 2. Prior Reports, Projects, and Programs

Project	Study/Report/Environmental Document Title	Project Relevance
1999	Tier I Biological Assessment for Operation and Maintenance of the Upper Mississippi River Navigation Project within the St. Paul, Rock Island, and St. Louis Districts.	Endangered Species Act Compliance and Actions
1999	Draft Upper Mississippi River and Illinois Waterway Cumulative Effects Study. U.S. Army Corps of Engineers, Rock Island District, Rock Island, Illinois.	
2004	Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the UMR-IWW System Navigation Feasibility Study	Basis for NESP authorization in WRDA 2007
2004	Chief's Report UMR-IWW System Navigation Feasibility Study	Basis for NESP authorization in WRDA 2007
2004	U.S. Fish and Wildlife Service. Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi River System. Studies located near the study area are described in Section 1.6.1	Endangered Species Act Compliance and Actions
2012	Upper Mississippi River Environmental Design Handbook	Design elements
2018	Habitat Needs Assessment-II: Linking Science to Management Perspectives	Describes and compares historical, existing, forecasted, and desired future conditions to identify habitat needs within the UMRS.
2022	Ecological Status and Trends of the Upper Mississippi and Illinois Rivers.	Summarizes ecological health of UMR based on trends identified in Long Term Resource Monitoring (LTRM) data.
2023	NESP Environmental Design Tool Kit	Set of project measure design examples developed specifically for habitat restoration projects under the NESP program.

1.6.1 Biological Opinion

The NESP Biological Opinion (NESP BO) is a programmatic (Tier I) consultation which considers the systemic impacts of implementing the recommended plan (project) described in the "*Draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (EIS) for the Upper Mississippi River-Illinois Waterway System Navigation Feasibility Study,*

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dated 29 April 29 2004" (IFR/EIS) (USFWS, 2004), on listed species as projected over a 50 year period of analysis. To ensure that the anticipated level of incidental take is commensurate with the take that occurs per the proposed action, USACE and USFWS implemented a tiered programmatic consultation approach. All subsequent projects will use Tier II consultations with Tier II biological opinions issued as appropriate (i.e., whenever the proposed project would result in unavoidable adverse effects to threatened and endangered species).

In the NESP Tier I BO, the USFWS determined that implementation of the recommended plan described in the "*Draft Integrated Feasibility Report and Programmatic Environmental Impact Statement (EIS) for the Upper Mississippi River-Illinois Waterway System Navigation Feasibility Study, dated April 29, 2004*", would not jeopardize the continued existence of the Indiana bat (*Myotis sodalis*), decurrent false aster (*Boltonia decurrens*), pallid sturgeon *(Scaphirynchus albus*) and Higgins eye pearlymussel (*Lampsilis higginsii*), but would result in incidental take of these species. The Service provided Incidental Take Statements (animals only), Reasonable and Prudent Measures, and Terms and Conditions/Conservation Recommendations for these species. By letter dated 28 May 2004 the Service concurred with the USFWS Biological Assessment findings that the project is not likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*), interior least tern (*Sterna antillarum*), or winged mapleleaf (*Quadrula fragosa*), because project impacts either would be offset by management actions proposed by the Corps, or would be negligible (USFWS, 2004).

Ecosystem restoration projects in Pool 25 include:

- Hausgen Island Side Channel Restoration
- Pool 25 Mason Island Forestry Inventory
- Pool 25 Slim Island Forestry Inventory
- Clarence Cannon National Wildlife Refuge Habitat Enhancement and Restoration
- Pools 25 and 26 Islands Habitat Rehabilitation and Enhancement Project
- Red's Landing Wetlands Habitat Rehabilitation and Enhancement Project
- Gilead Slough Habitat Rehabilitation and Enhancement Project
- Stag and Keaton Islands Habitat Rehabilitation and Enhancement Project
- Batchtown Habitat Rehabilitation and Enhancement Project

In addition to the ecosystem restoration projects listed above, a new 1,200-foot lock is being constructed at Lock and Dam 25, which separates Pools 25 and 26.

1.6.2 Environmental Pool Management

Environmental Pool Management (EPM) was first implemented in 1994 in an attempt to create thousands of acres of critical wetland vegetation in the navigation pools, while still maintaining a safe and dependable navigation channel. The District, in coordination with local, state, and Federal natural resource managers, completed the first pool level drawdown on the Upper Mississippi River. This experiment, in Pool 25, consisted of holding the pool level approximately 2 feet lower than in previous years, for a period of about 30 days during the growing season. This "drawdown" was followed by a slow rise back to "full pool". What resulted was an expanse band of moist soil plants, that when flooded, provided habitat and food for both fish and wildlife. All work was done within the existing USACE operating range and authority. Because USACE was working within their existing range, there were no impacts to infrastructure, such as marinas, boat landings and commercial fleeting sites, which had to be built to accommodate the entire operational range (about 5 feet). Following the success in 1994, "Environmental Pool

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Management" was expanded to all three pools (24, 25, 26) within the District.

EPM goals change each year based expected flow conditions and input from the natural resource managers. In some years the pools are held near the top of the operating range to improve to fish spawning opportunities while in other years the pools are held low to allow for maximum vegetation growth. Other years are somewhere in-between.

Research in Pool 25 helped engineers and biologists further understand in the impacts of EPM. Outcomes showed that varying the timing of a drawdown results in very different plant communities (and seed crops for waterfowl), and that extended drawdowns can actually be detrimental by creating too much vegetation, resulting in serious oxygen depletion problems in some re-flooded areas. Late summer and fall fish use of vegetation also varied in relation to the length of the drawdown, and resultant plant growth. Research also showed extensive use of residual vegetation the following spring by a large number of larval and juvenile fish species. In addition, to producing moist soil plants, the yearly drawdowns result in the appearance of submerged and emergent aquatic plants as well, through the compaction and drying of the soil in these shallow areas.

The EPM water level period occurs between May 1 through September 30 and when the pool is between 0.5 and 2.0 feet below maximum regulated pool as conditions allow. The growth of moist soil vegetation benefits wildlife by providing food, shelter, and cover for a wide range of organisms, including fish, waterfowl, macroinvertebrates, and others.

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NEED FOR AND OBJECTIVES OF ACTION

This chapter describes the development of Project objectives, including the identification of problems and opportunities, assessment of resource significance of the Project area, consideration of the goals and recommendations of overarching programs, and identification of constraints and considerations. For planning purposes, the period of analysis was established as 50 years starting in 2028.

1.7 Specific Problems and Opportunities.

The problems and opportunities for the NESP are described in the 2004 IFR/EIS, Chapters 1. Purpose and Need for Action and 4. Inventory and Forecast Resource Conditions. As described in the 2004 IFR/EIS, the principal problems addressed by all NESP ecosystem projects are the adverse changes to ecosystem structure, function, and dynamic processes that have occurred over many years from many causes, but especially since the authorization of providing a nine-foot deep and 300-foot wide navigation channel.

Problems. Large river ecosystems support a variety of habitats, of which side channels and connected backwaters are integral components. Side channels and backwater habitats support a broad range of fish species, waterfowl, shorebirds, and wading birds. These areas are also quiet areas off the main channel where people and animals alike can seek refuge. Because of the widespread loss of backwater and secondary channel depth and depth diversity due to the high rates of sedimentation, fish habitat quality has decreased, especially in the winter when such areas provide refuge from harsh conditions in main channel areas. Many UMR backwaters have been degraded by excessive amounts of sediment emanating from the basin, tributaries, and mainstem sources. This degradation is in the form of loss of depth, poor sediment quality, poor water quality, and sediment resuspension that blocks light required by aquatic plants (USACE, 2012).

Between UMR 273 and 266 in Pool 25, increased erosion and sedimentation has degraded the quantity and quality of flowing water (lotic) side channel habitat, including chutes and riffle/pool complexes. This degradation is due to changes in hydraulics and hydrology from implementation and operation of the nine-foot navigation channel, land use changes, and changing environmental conditions. The loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species. This project area is characterized by a lack of native fish species, mussel habitat, and the natural hydrologic processes necessary to form new island and side channel habitat.

Opportunities. The opportunities evaluated by the overarching NESP are described in the 2004 IFR/EIS, *Chapters 1. Purpose and Need for Action* and *4. Inventory and Forecast Resource Conditions*. The primary opportunities of NESP are to reduce or eliminate commercial navigation traffic delays and improve the national and regional economic conditions while restoring, protecting, and enhancing the environment. Within the project area, there are opportunities for beneficial outcomes related to and beyond solving the previously stated problems. The following opportunities have been identified:

- Establishment of native aquatic plant communities
- Improve the resiliency of the habitat within the study area to the effects of changing conditions and hydrologic variability

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- Contribute to the management goals of the USFWS and state natural resource agencies
- Expand, improve, and/or protect lake sturgeon spawning habitat downstream of Lock & Dam 24 (L&D 24) within the study area
- Reduce shoreline erosion within the study area
- Improve passive recreational opportunities, such as fisheries, boating, hunting, etc., in the study area
- Address a long-term siltation issue along Clarksville Slough near the Sny Levee District outfall, in conjunction with side channel restoration features

1.8 Conceptual Model(s).

Conceptual ecological models (CEM) are helpful planning tools used to identify the major drivers and stressors on natural systems, the ecological effects of these stressors, and the best biological attributes or indicators of these ecological responses (Rudnick, Ortner, Browder, & Davis, 2005). By describing general relationships among ecosystem components, these models allow PDTs to tell the story of how complex systems work in a more simplified and easily understood way.

The US Geological Survey (USGS) and USACE, in cooperation with partners, have developed CEMs that describe the UMRS as three interacting sub-systems (flowing channels (lotic), lentic backwaters, and floodplain lakes (lentic), and floodplain)) (Bouska, Houser, De Jager, & Hendrickson, 2018). For this study area, the lotic channel conceptual model is most useful to understand the major ecological resources of the Clarksville and Carroll Island side channel complex more generally with the controlling variables that govern those resources (Bouska, Houser, De Jager, & Hendrickson, 2018). The PDT used the CEM to identify the major problems, develop objectives addressing those problems, and identify any additional opportunities for restoration within the study area.

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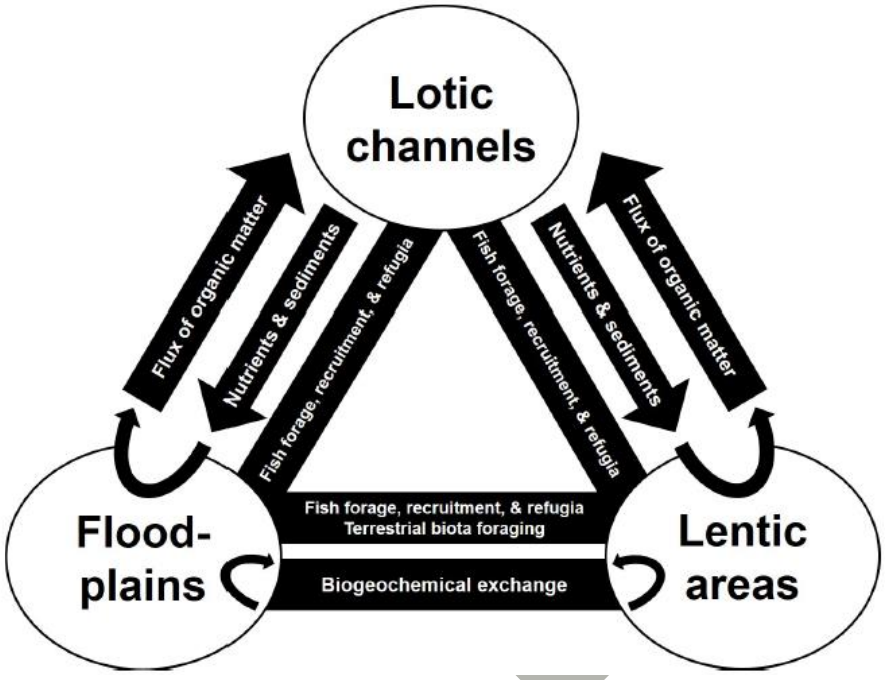


Figure 3. UMR Conceptual Ecological Model describing the relationships between three interacting sub-systems (flowing channels (lotic), still-water backwaters, and floodplain lakes (lentic), and floodplain (Bouska, Houser, De Jager, & Hendrickson, 2018).

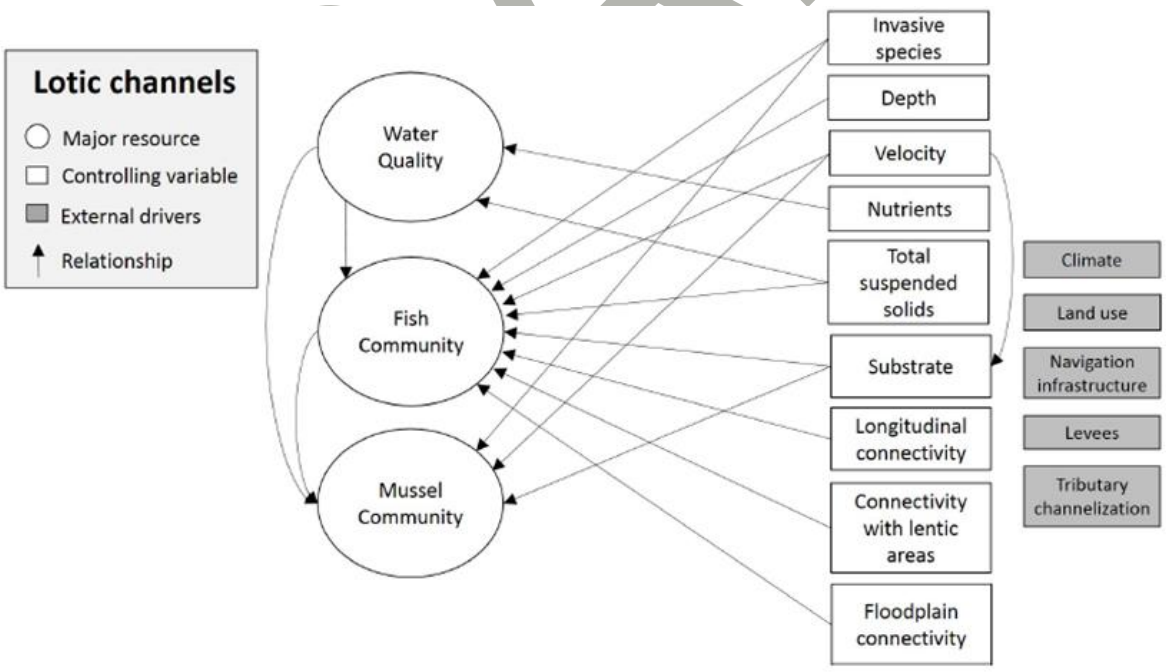


Figure 4. UMR Conceptual Ecological Model describing major drivers and stressors on the resources of flowing channels (lotic habitats) (Bouska, Houser, De Jager, & Hendrickson, 2018).

1.9 Resource Significance

Resource significance of the UMR is fully described in the Chief's Report and 2004 IFR/EIS, (Chapter 1). Site-specific resource significance, where relevant, is described below. See Table 3.

1. Institutional Recognition: Institutional recognition means the importance of an environmental resource is acknowledged in the laws, adopted plans and other policy statements of public agencies, tribes, or private groups. The formal recognition of the UMR Basin in laws, adopted plans, and other policy statements of public agencies and private groups illustrates the significance of the basin. The U.S. Congress recognized the UMR as a unique, "…nationally significant ecosystem and a nationally significant commercial navigation system…" in Section 1103 of the WRDA of 1986. Clarksville Island is federally owned and managed by the USFWS as part of the Two Rivers National Wildlife Refuge. Notably, it is an annual wintering location for hundreds of bald eagles as they hunt in the open water that typically remains ice free just below L&D 24.

2. Technical Recognition: Technical recognition means the resource qualifies as significant based on scientific knowledge or judgment of critical resource characteristics. Scarcity, representativeness, status and trends, connectivity, limiting habitat, and biodiversity describe technical significance. Differences across geographical areas and spatial scales may determine whether a resource is significant.

Numerous scientific analyses and long-term evaluations of the UMRS have documented its significant ecological resources. Since the early 20th century, researchers, government agencies, and private groups have studied the larger river floodplain system and proposed ecosystem restoration in the UMRS. Numerous scientific analyses and long-term studies through the USACE's Upper Mississippi River Restoration (UMRR) Long Term Resource Monitoring (LTRM) program have documented the significance of the resources in the UMR basin.

In a 1995 report, the U.S. Department of Interior (DOI) listed large streams and rivers as endangered ecosystems in the United States. The DOI documented an 85 to 98 percent decline in this ecosystem type since European settlement. Large floodplain-river ecosystems have become increasingly rare worldwide. Two large floodplain-river ecosystems lay within the UMRS, namely the Upper Mississippi and Illinois Rivers. These two ecosystems still retain some seasonal flood pulses, and half of their original floodplains remains un-leveed and open to the rivers (Sparks, J.C., & Yin, 1998). The UMRS is one of the few areas in the developed world where ecosystem restoration can be implemented on large floodplain-river ecosystems (Sparks R. , 1995)

In addition, technical resource agencies (federal, state, and non-profit) view the resources in the UMR as significant. The UMRS Habitat Needs Assessment II (McCain, Schmuecker, & De Jager, 2018) has also technically recognized the need to restore floodplain habitat and connectivity to the main river channel, restore islands, restore diversity of aquatic habitat types (deep lentic backwaters and shallow lotic channel areas), restore aquatic vegetation in backwaters, restore floodplain forest diversity, restore floodplain vegetation diversity, enhance topographic diversity, restore water level fluctuation to mimic pre-dam conditions, and improve water clarity.

3. Public Significance: Public recognition means some segment of the public

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recognizes the importance of an environmental resource, as evidenced by people engaged in activities reflecting an interest or concern for that resource. As the nation's second-longest river, behind only the conjoining Missouri, the Mississippi provides drinking water for millions and supports a $12.6 billion shipping industry, with 35,300 related jobs. It is one of the greatest water highways on earth, carrying commerce and food for the world. Half the nation's corn and soybeans are barged on the section above the Ohio River confluence. In addition, both food and sport-fishing are highly valued on the Upper Mississippi River. Species of major importance include channel catfish, flathead catfish, blue catfish, sauger, largemouth bass, bluegill, freshwater drum, and crappie. The large congregation of bald eagles in winter draws large crowds from the general public as they come to the riverfront to watch. Additionally, Carroll Island Side Channel is a part of the IDNR Waterfowl Blind Draw Program.

Table 3. Resource Significance of UMR

Resource	Institutional	Public	Technical
Threatened and Endangered Species	Fish and Wildlife Coordination Act (FWCA), as amended (16 U.S.C.§ 661) Endangered Species Act (ESA) of 1973, as amended. National Wildlife Refuge Systems Biological Integrity, Diversity, and Environmental Health Policy	American Rivers, a non-governmental organization dedicated to protecting and restoring healthy, natural rivers, listed the Mississippi River as number three in America's Top Ten Endangered Rivers for 2019. Congress has recognized the Nation's rich natural heritage is of "esthetic, ecological, educational, recreational, and scientific value to our Nation and its people."	*Representativeness:* USFWS has identified the Indiana Bat, Northern Long-Eared Bat, Spectaclecase, and Decurrent False Aster as federally endangered or threatened species that have the potential to occur within the study area. The Tricolored Bat is proposed for listing (endangered), as are the Monarch Butterfly and Western Regal Fritillary, which are proposed threatened and also have the potential to occur within the study area;
Migratory Birds	Migratory Bird Conservation Act of 1929, and associated treaties Migratory Bird Treaty Act (MBTA) of 1918 EO 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds Bald and Golden Eagle Protection Act of 1940 North American	Migratory birds provide the public with recreational opportunities, such as bird watching and waterfowl hunting. National Audubon's Mississippi River Campaign has been working to raise awareness of the importance of the Mississippi River as an internationally significant resource since 1998.	*Representativeness:* Numerous migratory birds utilize the study area; the following as the most relevant in the area: Bald Eagle, Great Blue Heron, waterfowl, and neotropical migratory birds. *Representativeness:* Knutson et al. (1996) found relative abundances of all birds and total numbers of neotropical migratory birds were almost twice as high in the UMR floodplain as in the adjacent uplands (Knutson, 1996). *Status and Trend:* Changes in the UMR forest community have

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Resource	Institutional	Public	Technical
	Waterfowl Management Plan	The Upper Mississippi River Waterfowl Conservation Region (Region 19) is a level III Ducks Unlimited conservation priority area, providing a migration corridor for hundreds of thousands of dabbling ducks and significant numbers of divers.	contributed to a reduction in diversity of habitat over time. These trends are likely to continue, and without intervention, the study area would cease to provide migration, dispersal, breeding, nesting, and cover habitat for a wide range of migratory birds.
Floodplain Forests	Fish and Wildlife Coordination Act, as amended (16 U.S.C.§ 661) ESA of 1973, as amended National Wildlife Refuge Systems Biological Integrity, Diversity, and Environmental Health Policy	The Upper Mississippi River Conservation Committee recognized the importance of the floodplain forest to the fish and wildlife of the UMR in the report, *Upper Mississippi and IL River Floodplain Forests* (Urich, Swenson, & Nelson, 2002).	*Representativeness:* The study area contains floodplain forest habitat. *Biodiversity:* The largest concern is without intervention; the study area is likely to continue to experience forest fragmentation and limited species and structural diversity. Consequently, neotropical and other migratory birds, forest dependent bat species, and the other floodplain species that rely on the forest resources would be severely impacted. (Knutson, 1996) described the importance of floodplain forest in the conservation and management of neotropical migratory birds.
Wetlands	Executive Order No. 11990 of May 1977 (Protection of Wetlands) Water Resources Development Act of 1990, Section 307(a) National Wildlife Refuge Systems Biological Integrity, Diversity, and Environmental Health Policy.	Protecting wetlands from excessive pollution and destruction is a Mississippi River Collaborative (MRC) priority. MRC has established a Wetlands Group to address this specific issue.	*Scarcity:* In the United States, over a period of 200 years between the 1780s and the 1980s, the lower 48 states have lost an estimated 53% of the 221 million acres of original wetlands. *Scarcity:* Through land use changes, approximately 90% of pre-settlement wetlands were lost by the 1980s in Illinois.

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1.10 Goals and Recommendations of Overarching Programs.

1.10.1 NESP Program Objectives.

The primary goal of the NESP, as an integrated dual-purpose plan, is to ensure the economic and environmental sustainability of the UMR-IWW Navigation System. To fully address this goal, the following three planning objectives were established (2004 IFR/EIS, Chapter 1.3):

> **Objective 1.** Recommend measures to provide for a safe, reliable, efficient, and sustainable UMR-IWW Navigation System over the planning horizon.
>
> **Objective 2.** Recommend measures to address the cumulative impacts including ongoing effects of the operation and maintenance of the UMR-IWW Navigation System.
>
> **Objective 3.** Assure that any recommended measures are consistent with protecting the Nation's environment and avoiding, minimizing, or mitigating significant environmental, cultural, or social impacts.

Included in the 2004 IFR/EIS' recommended plan specifically includes actions for cultural resources preservation and mitigation as well as bank stabilization (including bankline protection).

As stated in the 2008 NESP Implementation Guidance, "The ecosystem restoration plan authorized in Title VIII of WRDA 2007 is the initial increment of a framework plan developed by identifying broad ecosystem goals to meet the planning objective of restoring the ecosystem of the UMR-IWW including addressing the cumulative impacts and ongoing effects of the navigation" system. These broad goals were further refined into systemic goals and site-specific objectives for side channel restoration projects.

1.10.2 Habitat Needs Assessment-II.

A suite of 12 indicators were developed in the Habitat Needs Assessment-II (HNA-II) to quantify aspects of ecosystem health and resilience, reflect the ability of large floodplain river ecosystems to adapt and respond to disturbances, and represent ecosystem-based management objectives developed for the UMRS (McCain, Schmuecker, & De Jager, 2018). To identify habitat needs for the UMRS, the HNA-II effort compared individual indicators to the conditions desired by the management agencies on the UMRS. An assessment of current conditions using both quantitative data analysis and qualitative management perspectives was performed at two spatial scales: navigation pool and clusters of navigation pools that shared similar ecological attributes. The information provided in the HNA-II can be useful in planning and implementing individual ecosystem restoration projects (McCain, Schmuecker, & De Jager, 2018).

Pool 25 is part of the Lower Impounded Cluster and has the following desired future conditions:

- Improve open water connectivity conditions, including island restoration.
- Restore function and diversity of aquatic habitat types by improving quality, depth and distribution of lotic and lentic habitats.
- Restore, maintain, and enhance floodplain vegetation diversity, including hard-mast (nut-producing) trees.

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1.11 Project Objectives.

NESP's dual-purpose (navigation and ecosystem) plan aims to ensure the economic and environmental sustainability of the UMR-IWW Navigation System to ensure it continues to be a nationally treasured ecological resource as well as an efficient national transportation system as designated by Congress in the 1986 WRDA (PL 99-662). As stated in the 2007 NESP Authorization, the goal of the NESP ecosystem restoration project as a whole is "[t]o ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway System…to address the cumulative environmental impacts of operation of the system and improve the ecological integrity of the Upper Mississippi River and Illinois River."

The Project fits within the larger NESP goals by aiming to maintain, enhance, and restore side channel connectivity to benefit native riverine fish and wildlife and to improve side channel habitat, including substrate stability, to benefit native freshwater mussels. The project is classified as a "side channel restoration" project as part of the NESP EIS (USACE, 2004).

The following objective was identified to meet that goal within the study area over the 50-year period of analysis (2028-2078):

Study Objective. Increase depth and flow diversity of aquatic side channels throughout the project area to:

- restore side channel sediment transport and geomorphic diversity.
- increase side channel habitat quantity and quality for native fish and mussel species.
- increase side channel habitat quality for native fish spawning, rearing, juvenile, and/or overwintering habitat.
- reduce sediment deposition within side channel flowing water habitats to maintain and restore main channel connectivity and increase quality of habitat for riverine dependent native fish.

1.12 Study Constraints and Considerations

The following constraints and considerations were included in plan formulation:

Constraints:

- Alternatives should not increase river water surface elevations or adversely affect private property or infrastructure during a 1 percent annual exceedance probability (AEP) flood event.
- Alternatives should not result in adverse effects to the federally authorized UMR-IWW navigation channel (Title VII of WRDA 2007).

Considerations:

- Environmental Laws and Regulations. Construct measures consistent with Federal, state, and local laws. Therefore, the following elements are considered when analyzing alternatives:
  - Avoid disturbance of hazardous, toxic, and radioactive wastes (HTRW) in accordance ER 1165-2-132.
  - Avoid/minimize the spread and introduction of invasive species associated with potential ecosystem restoration measures.
  - Avoid/minimize adverse impacts to aesthetic resources.
  - Avoid/minimize adverse impacts to existing Civil Works projects and other NESP projects, as well as other Federal, State, local, or NGO-managed projects.

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- Construction should be timed to reduce adverse impacts, such as avoiding spring Lake Sturgeon spawning, spring/fall waterfowl migration, bat roosting, and bat mating seasons in the area.
- Minimize adverse effects of drawdowns on river resources and river uses, including recreational boat access, cultural resources, and mussels.
- Avoid/minimize adverse impacts to public recreation, such as recreational boating, birdwatching, and sight-seeing.

- Project-specific Considerations:
  - Proposed project measures are located below the OHWM and connected side channels which limits the scope of potential management measures.
  - Identification of viable dredge disposal locations in accordance with Sections 401/404 of CWA within the vicinity of the project area.
  - Avoid/minimize impacts to roads, utilities, such as power lines and buried pipes, and other existing private or public infrastructure, including the adjacent Sny Levee District operations, from potential ecosystem restoration measures.
  - Avoid/minimize adverse impacts to current water level management activities.
  - Minimize operation, maintenance, replacement, repair, and rehabilitation (OMRR&R) requirements to support sustainability and resiliency of measures.
  - Avoid/minimize adverse impacts to adjacent landowners.

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EXISTING CONDITION AND MANAGEMENT OF THE STUDY AREA*

Both existing and future conditions expected to occur without a project must be characterized to clearly define the problems and opportunities for a study. The future without-project condition (FWOP) forms the basis from which alternative plans are formulated and impacts are assessed. At a broad scale, the existing and future without project conditions of the UMRS are accurately described within the 2004 IFR/EIS, Chapter 4, Inventory And Forecast Resource Conditions. Information and existing conditions specifically relevant to the study area are described below.

The PDT evaluated relevant resources in the study area and assessed existing (Chapter 3) and Future Without Project (FWOP) conditions (Chapter 5). Under the National Environmental Policy Act (NEPA), the FWOP (considered to be the No Action alternative) is necessary to provide a reference point, enabling a comparison of environmental effects of the action alternatives. The FWOP condition is the forecasted condition of the project area for the next 50 years assuming that no significant action is taken to address the resource problems identified. The PDT focused its evaluation on resources potentially affected by the alternatives. Section 3.2 briefly describes the resources' current condition.

1.13 Management of the Study Area

1.13.1 Navigation, District River Training Structures, Dredging Operations, and Hydraulics/Hydrology

Since the arrival of the first steamboat in St. Louis in 1817, the MMR has undergone immense change (Norris 1997). Forest clearing was noted to occur as early as the mid-1830's to fuel increasing numbers of steamboats and growing populations of European settlers. Additionally, large patches of grassland and woodland were converted to agricultural production by the late 1800's. The loss of most stands of mature trees along both banks of the MMR made the riverbanks highly unstable (Norris 1997). These land use changes also led to increasing rates and quantities of runoff and sediment being routed from upland sources to backwater lakes, wetlands, and the Mississippi River. Thus, hydrologic conditions within the UMRS have been extensively modified by human actions for more than 200 years, bringing about the prevailing conditions. Today, the U.S. Army Corps of Engineers St. Louis District is responsible for providing a safe and dependable navigation channel, 9 feet deep and not less than 300 feet wide, with additional width in the bends as required, on the MMR. The navigation channel within Pool 25 is primarily maintained through river training structures, dredging, and controlling water elevations at L&D 25.

River training structures are constructed to divert flow into the main channel to manage sediment transport and reduce dredging needs. The structures in the study area include closure dikes, bullnoses, chevrons, spur dikes, and trail dikes to lessen shoreline erosion (Figure 5 and Figure 6). There are 35 river training structures located in the vicinity of the Clarksville and Carroll Island complex study area (RM 266 – RM 273). A comprehensive inventory of river training structures within this reach can be found in Appendix D – Hydrology and Hydraulics.

A District Dredging Master Plan was formalized in 2014 to document dredging frequency and status of the navigation channel. Dredging efforts are coordinated with partners, including USFWS, IDNR, and MDC. The District conducts regular dredging in Pool 25 in the main channel adjacent to the project reach. Dredge material is typically placed on the left descending bank thalweg away from the dike tips. Figure 7 shows all dredging efforts near Clarksville Island within the past 10 years, with green boxes representing dredging areas and red boxes representing placement areas.

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Flows and water levels within the project area are dependent on L&D 24 operations on the upper boundary and L&D 25 operations on the downstream boundary. Since L&D 24 was completed in May of 1940, the average river depth has been greater than 9 feet. The Hydraulic Engineering Center River Analysis System (HEC-RAS) version 6.3.1 was used to construct a 2D numerical model of the Clarksville and Carroll Island complex study area. Figure 8 and Figure 9 show the bathymetric surface at the project area, which is comprised of single and multi-beam sonar collected by USACE in 2023. The model was calibrated using the MVS Flow Frequency Study (Figure 10) and acoustic doppler current profiler (ADCP) survey. Water surface elevations were averaged along cross sections from the MVS Flow Frequency Study. Velocities within the model were calibrated to measured ADCP flow events. The ADCP collection is depicted with velocity arrows and the hydraulic model velocity shading results shown underneath. Figure 11 and Figure 12 show the velocity calibration results. It is noted that both velocities in HEC-RAS and the ADCP survey are depth-averaged, meaning the velocities within the water column are averaged. More on the terrain surfaces as well as details regarding model calibration and project specific use can be found in Appendix D – Hydrology and Hydraulics.

The accumulation of sediment at the northern side of Clarksville Island between February 2006 (NAVD88 436.50 ft) and October 2022 (NAVD88 434.88 ft) is depicted in Figure 13 and Figure 14, respectively. Overall, the entrance of the side channel has seen a reduction in areas with water by 9 percent from 2006 to 2023 and an increase in land coverage by 15 percent based on approximations from aerial imagery of the corresponding years. Sediment deposition rates within the side channels of Clarksville and Carroll Islands were estimated to range from 0.7-2.7 inches per year. Sediment deposition comes from a combination of factors, including but not limited to, flow fluctuations, lack of normal flow velocity, aquatic barriers, flood deposition, and sand waves moving down the river. Continued deposition may occur within the side channels, lowering velocities even more, unless high flow conditions occur to scour out the area naturally. Additional hydrology and hydraulics information can be found in Appendix D – Hydrology and Hydraulics.

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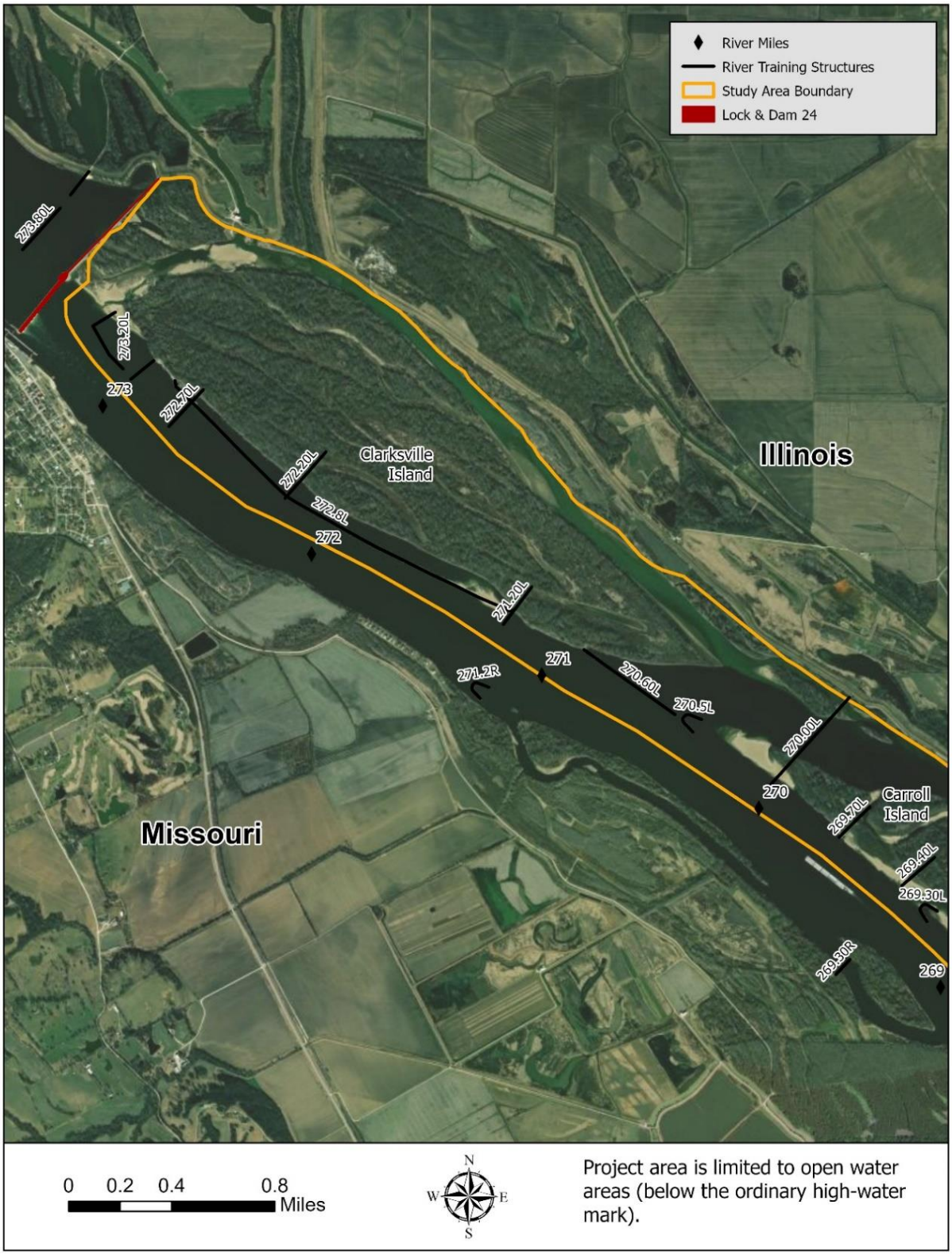


Figure 5. Clarksville Island, Inventory of River Training Structures (RM 270-274)

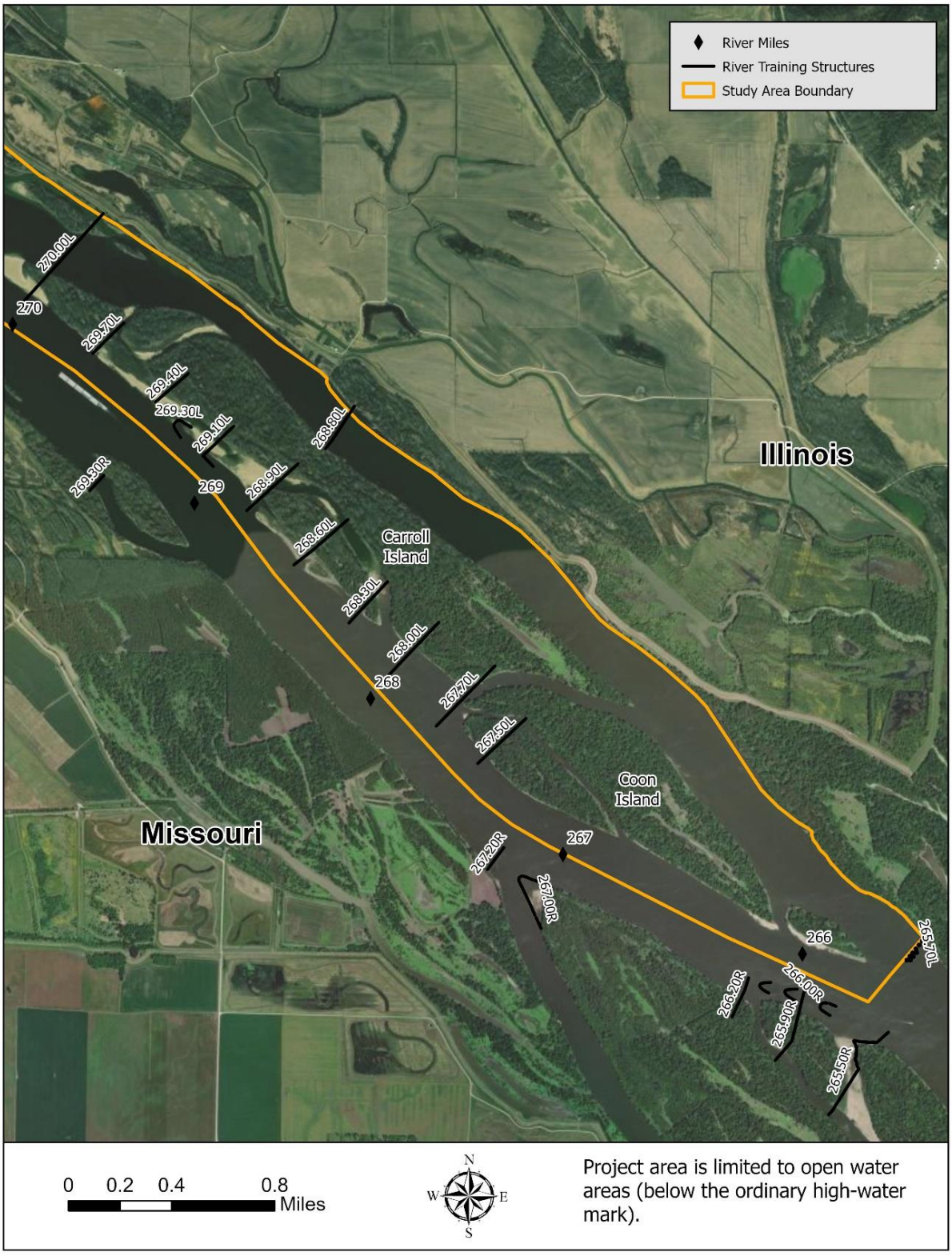


Figure 6. Carroll and Coon Islands, Inventory of River Training Structures (RM 265-270)

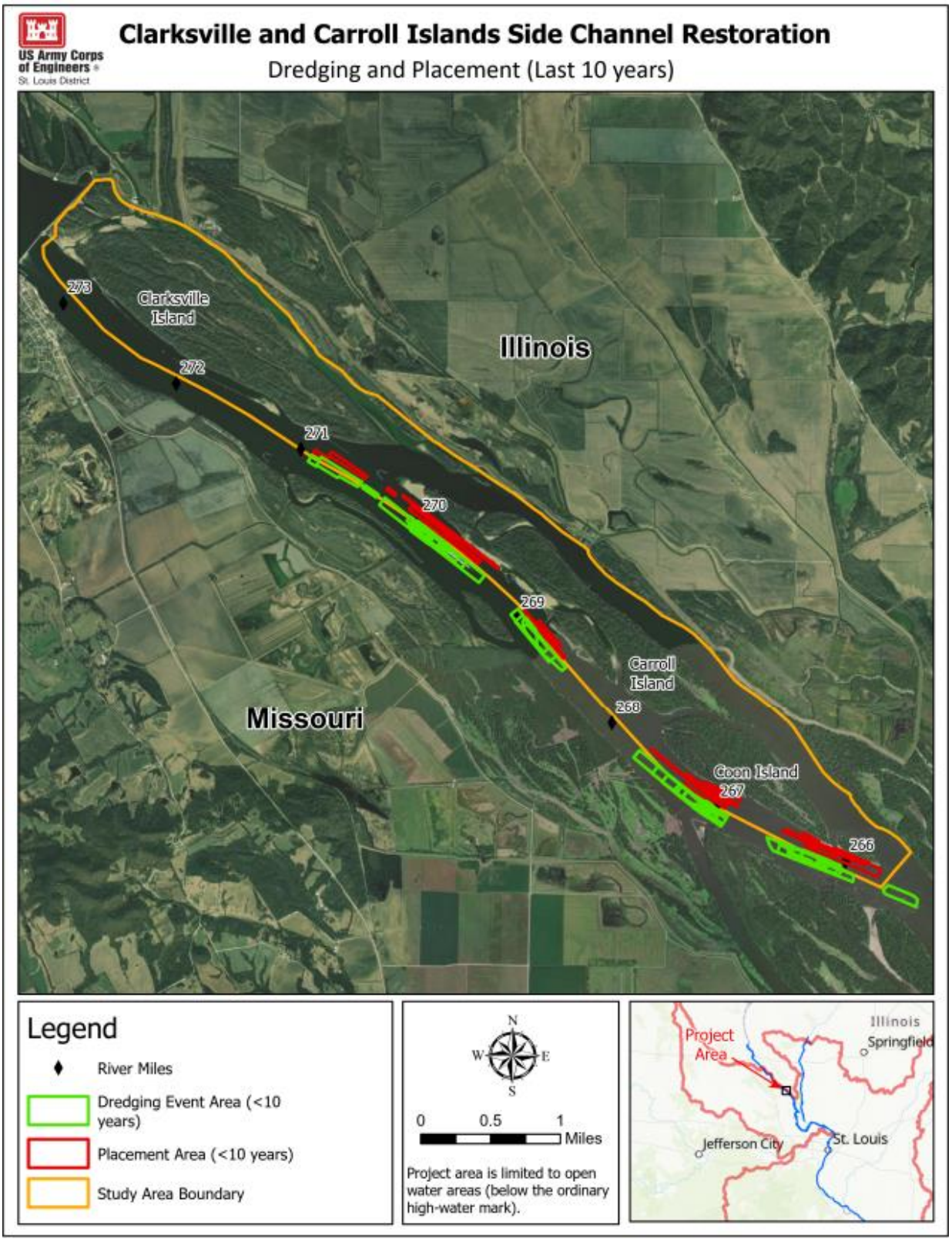


Figure 7 Clarksville and Carroll Islands Dredge Event (green) and placement (red) (<10 years)

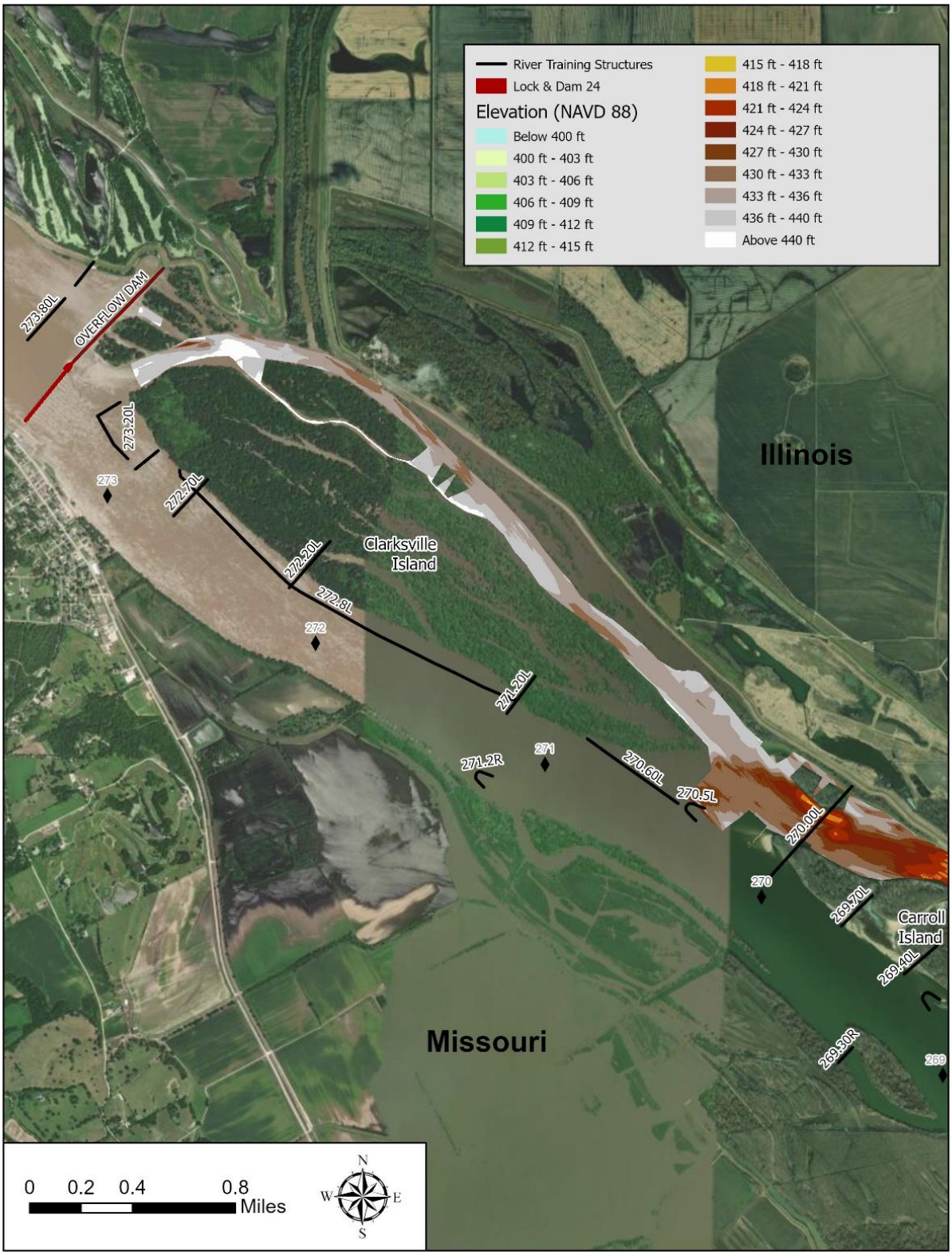


Figure 8**.** Bathymetric Data, Clarksville Island, RM 270-273, Pool 25 (2023)

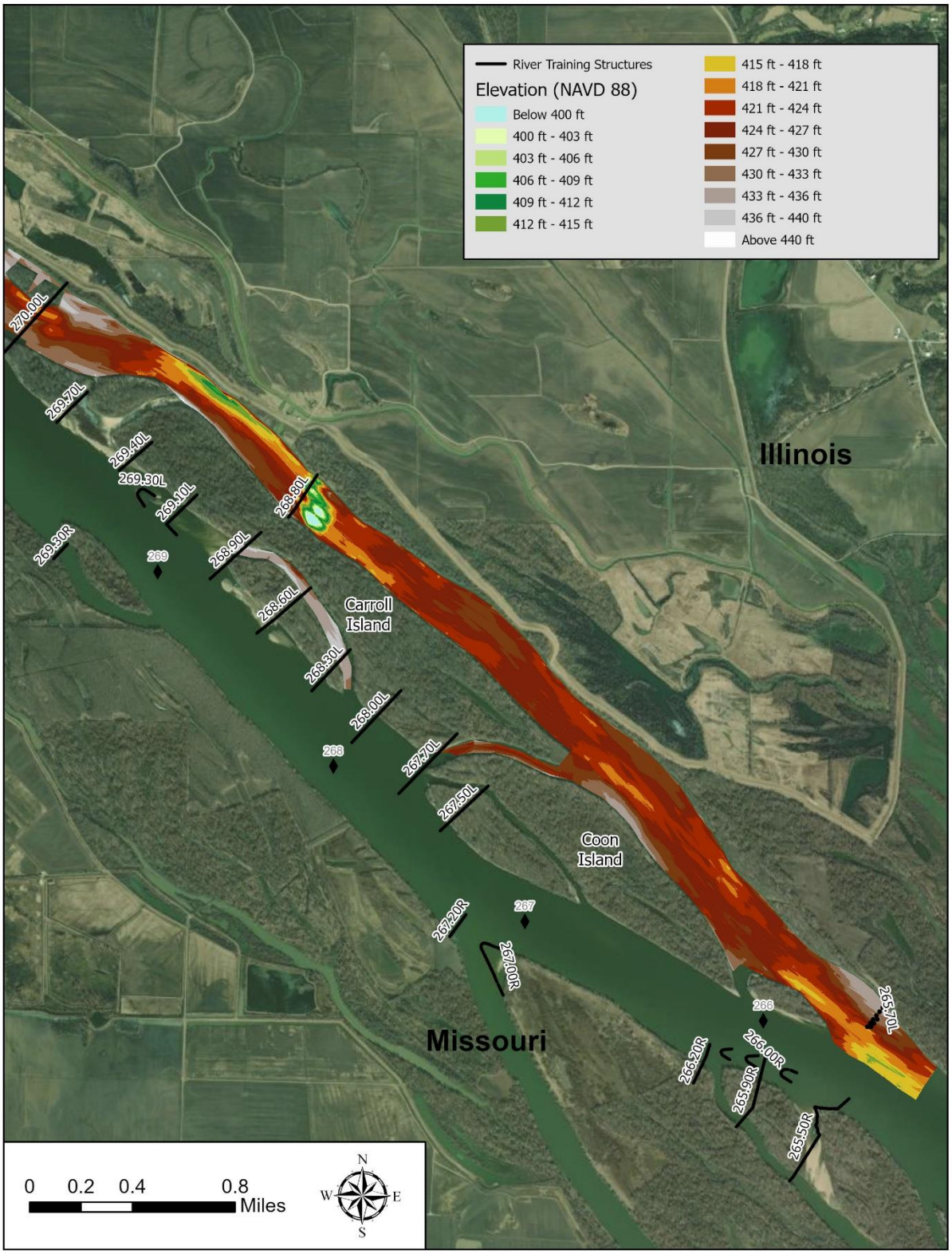


Figure 9. Bathymetric Data, Carroll Island, RM 266-270, Pool 25 (2023)

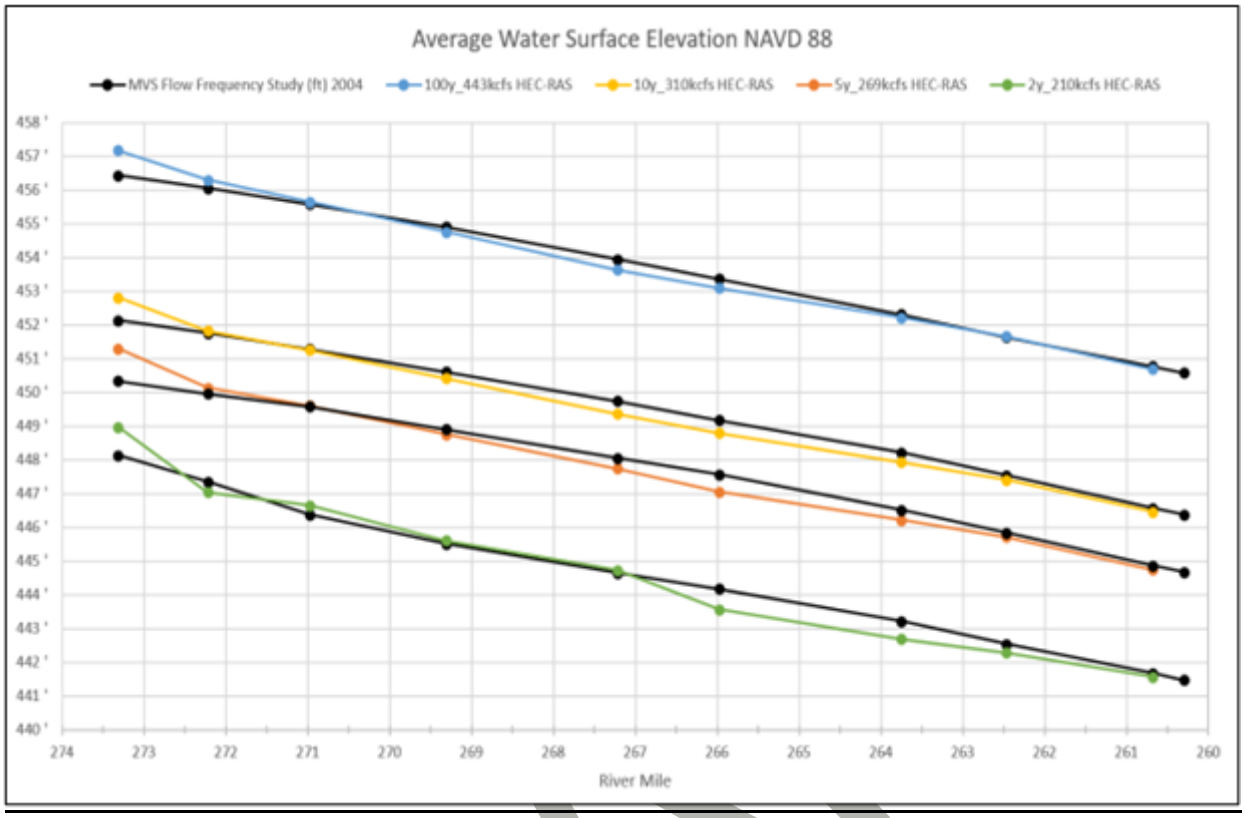


Figure 10 MVS Flow Frequency Study – HEC-RAS Calibration

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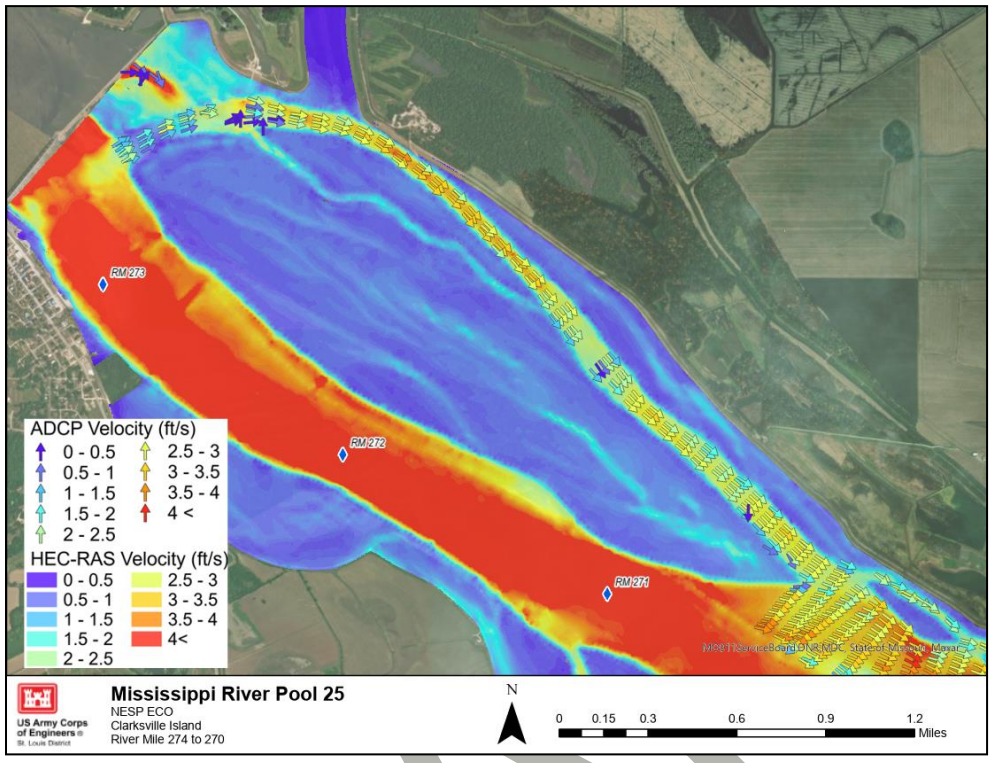


Figure 10 ADCP Model Calibration Clarksville Island RM 274-270

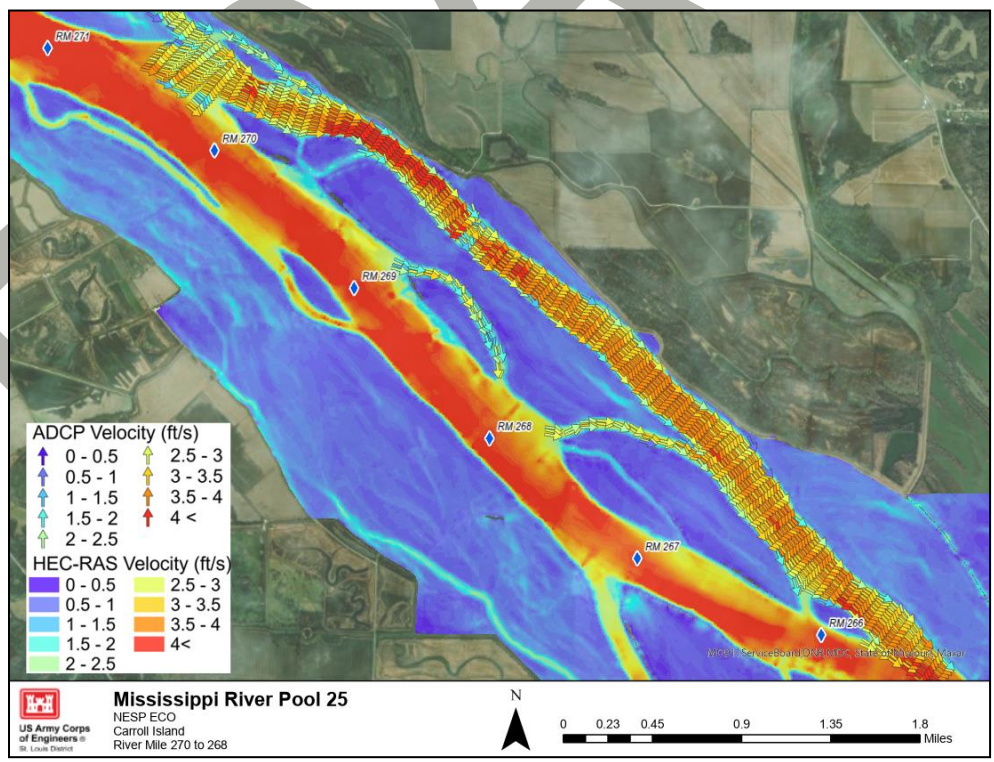
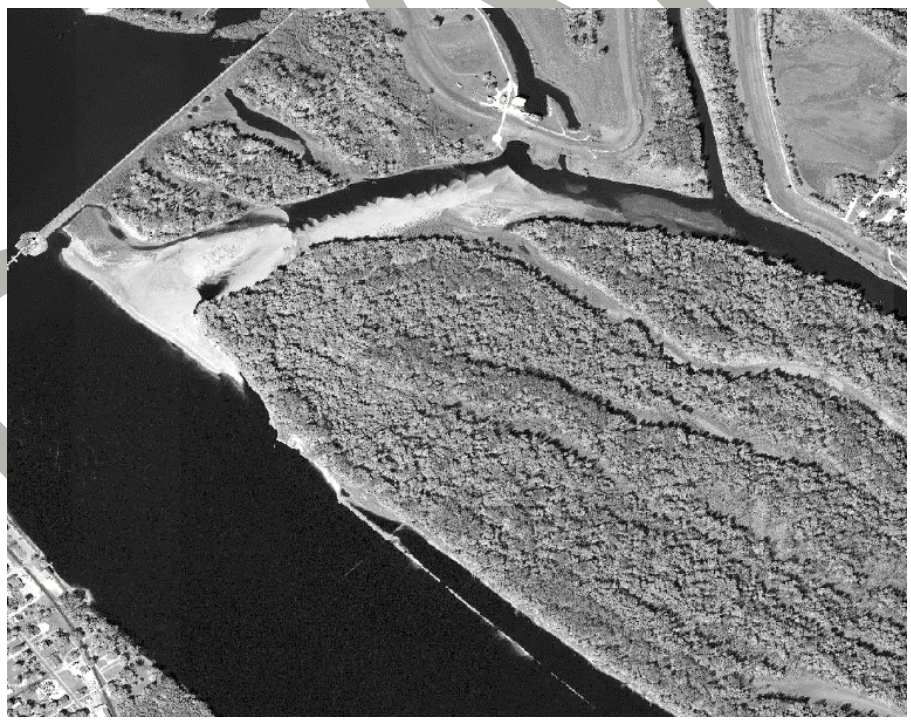


Figure 11 ADCP Model Calibration Clarksville Island RM 274-270



Figure 12. Clarksville Island Aerial Imagery, February 2006, 436.50 ft, NAVD88.


Figure 13. Clarksville Island Aerial Imagery, October 2022, 434.88 ft NAVD88.

1.14 Existing Environmental Conditions

Each resource listed in Section 3.2 has been described in its existing condition and then forecasted through the 50-year life of the project under the No Action or Future Without Project condition in Chapter 5. More details are covered in each of the resources below.

1.14.1 Resources Not Evaluated in Detail

The PDT considered relevant environmental resources that would potentially be impacted by the proposed alternatives and eliminated resources that were not in the area of potential effect or would not be impacted by any of the alternatives from further evaluation. The scope of this project is 100 percent under the OHWM, therefore resources such as Geology and Topography, Floodplains, Land Use, Mineral and Energy Resources, and Soils were not evaluated. Additionally, there are no Wild and Scenic Rivers in the District, thus it was not evaluated. The PDT focused on information gathered from the study area and the area of potential effect.

1.14.2 Physical Environment

1.14.2.1 Water Quality

Consideration of water quality encompasses a wide range of watershed influences, including tributary streams, point and non-point pollution sources, flow alteration due to navigation structures, and drought and flood events. Variations in land use practices and cover types determine the level and type of sediment, nutrient, and contaminant inputs into the Mississippi River and its tributaries. The Mississippi River has a long history of water quality impairment due to contamination from industrial, residential, municipal, and agricultural sources. However, recent changes in wastewater treatment laws and technologies, regulation of point source discharges, and changes in public awareness have contributed to overall improvements in water quality.

Section 303(d) of the Clean Water Act (CWA) requires states to generate lists of impaired water bodies every two years. Impaired water bodies are those that do not meet state water quality standards for the water bodies' designated uses. Specific water quality criteria may vary between various states and for individual pollutants depending on the designated use for a specific segment of the Mississippi River. The latest available data from Illinois is from 2024, while the latest available data from Missouri is from 2022. The Mississippi River adjacent to the Clarksville Carroll Island complex (Assessment Unit ID: IL_K-21) is listed on the Illinois 303(d) list as impaired for Fish Consumption (aldrin, dieldrin, endrin, heptachlor, mercury, mirex, PCBs, toxaphene), and Primary Contact (fecal coliform) (USEPA, 2025a). It is listed as not impaired for Aesthetic Quality and Aquatic Life (USEPA, 2025a). Sixmile Creek (Assessment Unit ID: IL_KCB), which drains into the Clarksville Island side channel, is not on the Illinois 303(d) list (USEPA, 2025c). The same reaches are not on the Missouri 303(d) list (Assessment Unit ID: MO_3699.00) (USEPA, 2025b).

1.14.2.2 Air Quality

The Clean Air Act, as amended (40 CFR part 50), requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants which can be harmful to public health and the environment (USEPA, 2024e) (Table 4). The Clean Air Act identifies two types of national ambient air quality standards. Primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The USEPA then publishes the results of air quality monitoring,

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designating areas as meeting (attainment) or not meeting (nonattainment) the standards (USEPA, 2024). Maintenance areas are those areas that have been redesignated as in attainment from a previous nonattainment status. A maintenance plan establishes measures to control emissions to ensure the air quality standard is maintained in these areas.

Table 4. U.S. EPA NAAQS criteria for six regulated air pollutants

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
Carbon Monoxide (CO)	Primary	1 hour	35 ppm	Not to be exceeded more than once per year
Lead (Pb)	Primary & Secondary	Rolling 3 month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Nitrogen Dioxide (NO_2)	Primary & Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)	Primary & Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution ($PM_{2.5}$)	Primary	1 year	9.0 µg/m^3	Annual mean, averaged over 3 years
Particle Pollution ($PM_{2.5}$)	Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
Particle Pollution ($PM_{2.5}$)	Primary & Secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
Particle Pollution (PM_{10})	Primary & Secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)	Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily max concentrations, averaged over 3 years
Sulfur Dioxide (SO_2)	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

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Ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on nitrogen oxides (NOx) and volatile organic compounds (VOC's) in the air. There are many sources of these gases. Some common sources include gasoline vapors, chemical solvents, fuel combustion products, and some consumer products.

Primary existing carbon emissions from the vicinity of the study area are related to commercial and recreational use of the Mississippi River, road and rail traffic, agriculture, and residential and commercial sites.

The project area is located within Calhoun County, IL, which is in attainment for all USEPA National Ambient Air Quality Standard pollutants (USEPA, 2024). Additionally, Pike County, Missouri, which lies directly across the river, is also in attainment for all USEPA National Ambient Air Quality Standard pollutants (USEPA, 2024).

1.14.2.3 Noise Levels

Inadequately controlled noise presents a risk for adverse impact to human and animals. Sound is measured in decibels (dB). A whisper is about 30 dB, normal conversation is about 60 dB, and a motorcycle engine running is about 95 dB (Figure 14). Noise above 70 dB over a prolonged period of time may start to damage your hearing. Loud noise above 120 dB can cause immediate harm to your ears. The U.S. Environmental Protection Agency (EPA) and the World Health Organization (WHO) recommend maintaining environmental noises below 70 dBA over 24-hours (75 dBA over 8-hours) to prevent noise-induced hearing loss. Furthermore, the National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss (Occupational Safety and Health Administration, 2024).

The proposed project area includes primarily agricultural, industrial, transportation, and recreational areas. These areas are dispersed in pockets of varying sizes and density, and each makes its own contribution to the noise characteristics of the area. Farm tractors typically have noise levels in the range of 78-103 decibels (dB) (Berger, Neitzel, & Kladden, 2015). Noise associated with transportation arteries such as highways, railroads, etc., typically range from 60-75, with train horns ranging from 96-110 dBA (Berger, Neitzel, & Kladden, 2015). Other sources of noise include operations of commercial and industrial facilities (67 dBA), operation of construction equipment (110 dBA), outboard motorboats (85 dBA), birds (60 dBA), fishing (73 dBA) and operation of construction equipment (110 dBA) (Berger, Neitzel, & Kladden, 2015).

Sensitive noise receptors are areas where occupants are more susceptible to the adverse effects of noise pollution. These include, but are not limited to, residential dwellings, hospitals, schools, day care facilities, care homes, places of worship, and public playgrounds or recreation fields. Sensitive noise receptors nearest to the proposed work area include residences and recreational areas along portions of the riverfront, and in the city of Clarksville, Missouri.

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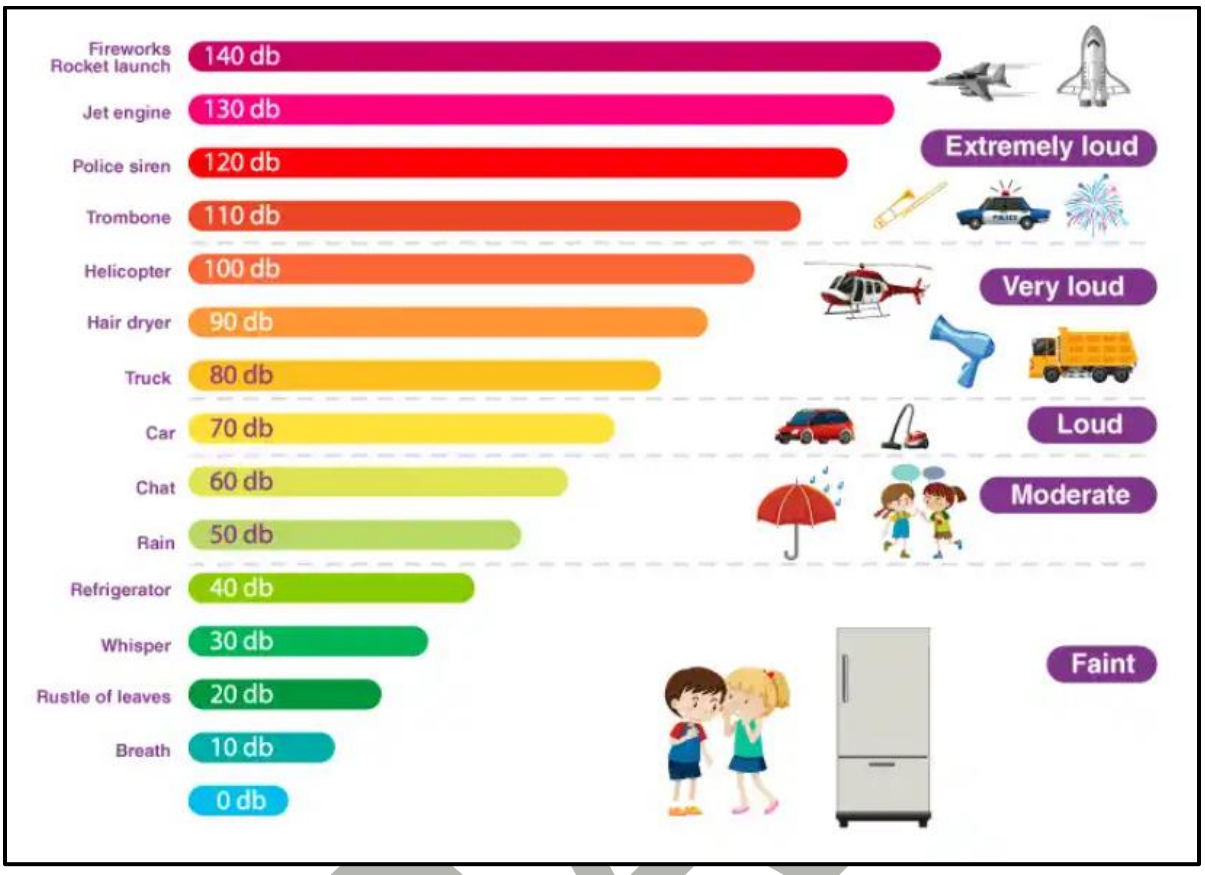


Figure 14. Example indoor and outdoor activities associated with common noise levels ranging 0-140 decibels (dB).

1.14.2.4 Historic Properties and Cultural Resources

A District archaeologist performed a records review of the Illinois State Historic Preservation Office (SHPO) files that revealed that two archaeological shoreline surveys (Surveys 595 and 1090) have been completed in the study area and eleven other surveys have been completed within a mile. Thirteen archaeological sites were identified within a mile of the project area as well as two National Register Districts (Clarksville Historic District and Lock and Dam No. 24 Historic District). There are no recorded cultural resources reported within the Area of Potential Effect (APE) of the project study area.

As part of a 2003 USACE study, archival research documented six hundred and eighty-seven (687) ships abandoned or reported lost prior to 1940 between Saverton, Missouri and the confluence of the Mississippi and Ohio Rivers. The information was obtained by James V. Swift from a variety of sources, including unsigned, undated wreck data in the files of the Waterways Journal (St Louis), nineteenth century correspondence and newspaper accounts, insurance records, official government surveys and reports, private accounts, and published research (Norris 2003). Typically, losses were reported within a general location (e.g., Scudder Towhead, Brewer Point), which was researched and when possible, converted to approximate river miles. The yearly mean for reported losses was just over five and half (5.5) with a peak in the 1850s to 1860s. Seven vessels are recorded as being wrecked in the immediate vicinity of the project locations within the main channel at mile marker 273.

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1.14.2.5 Hazardous, Toxic, and Radioactive Waste (HTRW)

USACE regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting Phase I ESA's published by the American Society for Testing and Materials (ASTM). The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e., RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW sites. A Phase I ESA has been conducted for the study area using methods outlined by ASTM E2247-16. This included a records review, physical site visit, and communications with persons knowledgeable of the project footprint and adjoining properties. Generally, the study area contains no major sites of interest which pose significant HTRW concerns.

1.14.3 Natural Environment

1.14.3.1 Aquatic Species and Habitat

The Mississippi River is the largest riverine ecosystem in North America and third largest in the world. It provides a mosaic of islands, side channels, and backwaters, along with the navigation channel and main channel border habitats. The Upper Mississippi River (UMR) floodplain ecosystem supports 45 species of amphibians and reptiles, 150 species of fish, and nearly 50 species of mussels (Guyon, Deutsch, Lundh, & Urich, 2012). Additionally, aquatic mammals, such as the River Otter (*Lontra canadensis*), Beaver (*Castor canadensis*), and Muskrat (*Ondatra zibethicus*), are commonly observed along the riverbanks and/or backwaters.

Freshwater mussels are of ecological importance and occur in high density mussel beds in parts of the UMR (Newton, Zigler, Rogala, Gray, & Davis, 2011) above the Missouri River. A mussel survey was conducted in the fall of 2024 along Clarksville and Carroll Islands main channel side and within the side channel. The survey effort yielded 146 live mussels of 19 species, including one live Illinois threatened Butterfly mussel and one live Illinois threatened Monkeyface mussel (Table 5). Threeridge (*Amblema plicata*; 23.3%), Hickorynut (*Obovaria olivaria*; 15.1%), and Threehorn Wartyback (*Obliquaria reflexa*; 14.4%) were the most abundant species encountered. Most individuals were of tribes Lampsilini (54.8%) or Amblemini (23.3%). Tribes Quadrulini (18.5%), Anodontini (2.1%), and Pleurobemini (1.4%) were less abundant (EnviroScience, 2025).

Table 5. Summary of mussels observed in the Clarksville and Carroll Island Complex survey area, 2024, as well as federal and state status.

Species	Federal Status	State Status	Number (Live)
Threeridge (*Amblema plicata*)	Unlisted	Unlisted	34
Rock Pocketbook (*Arcidens confragosus*)	Unlisted	Unlisted	1
Giant Floater (*Pyganodon grandis*)	Unlisted	Unlisted	2
Butterfly (*Ellipsaria lineolata*)	Unlisted	Threatened	1
Plain Pocketbook (*Lampsilis cardium*)	Unlisted	Unlisted	2
Canary Kingshell (*Lampsilis sietmani*)	Unlisted	Unlisted	6

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Species	Federal Status	State Status	Number (Live)
Fragile Papershell (*Leptodea fragilis*)	Unlisted	Unlisted	10
Threehorn Wartyback (*Obliquaria reflexa*)	Unlisted	Unlisted	21
Hickorynut (*Obovaria olivaria*)	Unlisted	Unlisted	22
Pink Heelsplitter (*Potamilus alatus*)	Unlisted	Unlisted	4
Pink Papershell (*Potamilus ohiensis*)	Unlisted	Unlisted	10
Fawnsfoot (*Truncilla donaciformis*)	Unlisted	Unlisted	3
Deertoe (*Truncilla truncata*)	Unlisted	Unlisted	1
Wabash Pigtoe (*Fusconaia flava*)	Unlisted	Unlisted	2
Wartyback (*Cyclonaias nodulata*)	Unlisted	Unlisted	3
Pimpleback (*Cyclonaias pustulosa*)	Unlisted	Unlisted	10
Washboard (*Megalonaias nervosa*)	Unlisted	Unlisted	1
Mapleleaf (*Quadrula quadrula*)	Unlisted	Unlisted	12
Monkeyface (*Theliderma metanevra*)	Unlisted	Threatened	1
Total			**146**

Additionally, macroinvertebrates are also an important part of the river ecosystem as they serve as a food source for a variety of fish and wildlife species. Common macroinvertebrate fauna encountered in the UMR consist of a variety of oligochaete worms, flies, mayflies, caddisflies, and stoneflies.

The project area contains side channel and secondary side channel lotic habitats. These habitats are being impacted by heavy sedimentation, which is disconnecting the upper Clarksville Island side channel from access to the main channel and resulting in shallower depths. Shallower depths have resulted in elevated summer temperatures and decreased levels of dissolved oxygen creating poor quality habitat for aquatic organisms. IDNR and survey records show the presence of several state listed species such as the Lake Sturgeon (*Acipenser fulvescens*; endangered), Bigeye Shiner (*Notropis boops*; ILE), Western Sand Darter (*Ammocrypta clara*: endangered), Butterfly Mussel (*Ellipsaria lineolata*; threatened), and Monkeyface (*Quadrula metanevra*; threatened). This project is limited to aquatic areas below the OHWM and is therefore focused on enhancing habitats specific to the fish and mussel resources within the Clarksville and Carroll Island side channel complex.

1.14.3.2 Terrestrial Species and Habitat

Terrestrial Habitat – Large rivers floodplains, such as the UMRS, provide a mosaic of forest, grassland, islands, and wetlands. In all, the UMRS supports over 550 vertebrate species (Guyon, Deutsch, Lundh, & Urich, 2012).

Terrestrial Species **–** Terrestrial animals such as the White-Tailed Deer (*Odocoileus virginianus*), Red Fox (*Vulpes vulpes*), Gray Fox (*Urocyon cinereoargenteus*), Coyote (*Canis latrans*), squirrels (*Sciurus* spp.), Raccoon (*Procyon lotor*), Muskrats (*Ondatra zibethicus*), Beavers (*Castor canadensis*), Skunks (*Mephitis mephitis*), Otters (*Lontra canadensis*), and Opossum (*Didelphis virginiana*) are found in abundance, primarily inhabiting the river's floodplain and islands. Additionally, amphibians and reptiles such as snakes, turtles, frogs, toads, and salamanders are commonly found in undeveloped area along the Mississippi River.

Birds **–** There are over 300 species of bird that migrate along the Mississippi Flyway, including neotropical migrants. Neotropical migrants are bird species that breed in North America but migrate to wintering grounds in Mexico, Central and South America, and the Caribbean Islands.

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The project area is located approximately 50 river miles north of the confluence of the Mississippi and Illinois Rivers and is an important link along this migratory corridor. Floodplain complexes and the habitats they provide are highly important to migratory bird species, and the diverse array of floodplain habitat types in close proximity to the project area tend to support a high abundance of species and individuals.

Bald Eagles – The Bald Eagle (*Haliaeetus leucocephalus*) is protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits unregulated take of Bald Eagles or their nests, including disturbance. The USFWS developed the National Bald Eagle Management Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute disturbance.
Bald Eagles generally nest near coastlines, rivers, large lakes, or streams that support an adequate food supply. They often nest in mature or old-growth trees, snags (dead trees), cliffs, and rock promontories. They rarely nest on the ground, and nest with increasing frequency on anthropogenic structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees with limbs strong enough to support a nest that can weigh more than 1,000 pounds (USFWS, 2007). In an email dated 07 April 2025, the USFWS stated that they are not aware of any nest in the vicinity of the proposed project at this time (Appendix A - Coordination).

1.14.3.3 Invasive Species

An invasive species is one that is not native to an ecosystem, and which causes, or is likely to cause, economic or environmental harm or harm to human health. Executive Order 13112 aims "to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause".

Invasive Carp, including Bighead Carp (*Hypophthalmichthys nobilis*), Silver Carp (*Hypophthalmichthys molitrix*), Common Carp (*Cyprinus carpio*) and Grass Carp (*Ctenopharyngodon idella*), are found throughout the region and utilize habitats with low water velocity such as those found in the backwaters and side channels. Bighead and Silver Carp, species of particular management concern, were first documented in the UMRS in 1982 (Koel, Irons, & Ratcliff, 2000). Since then, populations have increased dramatically in the Upper Mississippi River (Koel, Irons, & Ratcliff, 2000) and Illinois River reaches (Irons, Sass, McClelland, & O'Hara, 2011).

Zebra Mussels (*Dreissena polymorpha*) have been identified in much of the UMRS. The Zebra Mussel is a small shellfish native to eastern Europe and Western Russia, named for the striped pattern of its shell. In their introduced range they are known to clog irrigation intakes, attach in clusters to various types of watercraft reducing performance and efficiency, attach to submerged rocks, ladders, and swim rafts causing a cut hazard to swimmers, attach to and smother native mussels, while competing for the same food resources as those native bivalves. According to the USGS Nonindigenous Aquatic Species (NAS) database, Zebra Mussels have been collected just upstream of L&D 24 at RM 273.4, as well as multiple locations both up and downstream of the project area. Low numbers (1-2) of Zebra Mussels occurred on approximately 4.1% of the mussels surveyed at the Clarksville Carrol Islands site in 2024 (EnviroScience, 2025).

1.14.3.4 Federal Threatened / Endangered Species

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, an

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updated list of species and critical habitat was acquired from the USFWS IPaC website on 14 March 2025 for the proposed project area (Table 6). There are no designated critical habitats within the project area (IPAC Project Code: 2024-0041366). See Appendix A – Coordination, which contains the Biological Assessment, for more details.

Table 6. List of Federally Threatened and Endangered Species that may occur within the project area

Species	Status	Habitat
Indiana bat (*Myotis sodalis*)	Endangered	Hibernates in caves and mines. Maternity & foraging habitat includes small stream corridors with well-developed riparian woods, upland & bottomland forests.
Northern Long-eared Bat *(Myotis septentrionalis*)	Endangered	Hibernates in caves and mines. Swarming in surrounding wooded areas occurs in autumn. Roosts and forages in understory of a wide range of forested habitats during spring and summer.
Tricolored bat (*Perimyotis subflavus*)	Proposed Endangered	Hibernates in caves and mines in winter. Roosts among live and dead leaf clusters of live or recently dead deciduous hardwood trees in summer and fall.
Spectaclecase (mussel) (*Cumberlandia monodonta*)	Endangered	Large rivers where they live in areas sheltered from the main force of the river current. Often clusters in firm mud and in sheltered areas, like beneath rock slabs, between boulders and even under tree roots.
Monarch Butterfly (*Danaus plexippus)*	Proposed Threatened	Grassland and other herbaceous dominated habitats with Milkweed resources during the breeding life stage and similar habitats with abundant nectar resources during breeding and migration life stages. Overwintering occurs outside our region and must provide specific roosting microclimate conditions.
Western Regal Fritillary (*Argynnis idalia occidentalis*)	Proposed Threatened	Remnant native prairies, including disturbed or somewhat degraded examples and native pastures usually supporting sufficient populations of violets.
Decurrent False Aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils. Moist, sandy floodplains and prairie wetlands along the Illinois River and a small portion of the Mississippi River primarily above the Missouri-Mississippi River confluence.

1.14.3.5 State Threatened / Endangered Species

An Illinois Natural Heritage Database review was initiated with the Illinois Department of Natural Resources (IDNR) via the Ecological Compliance Assessment Tool (EcoCAT) on 27 January 2025 (Appendix A - Coordination). The EcoCAT report indicated that protected resources may be in the vicinity of the project location (Table 7). Additionally, several Illinois Natural Areas Inventory (INAI) sites are located within Calhoun County, IL, with several located within the proposed project area.

Table 7. List of Illinois Threatened and Endangered Species that may occur within the project area

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Resource	State Status	Habitat / Location
Bigeye Shiner (*Notropis boops*)	State Endangered	Flowing pools of moderately clear creeks and small to medium rivers with large permanent pools over bottom of clear sand, gravel, or rock. Often at stream margin in beds of emergent vegetation
Butterfly (*Ellipsaria lineolata*)	State Threatened	Large rivers with swift currents in sand or gravel substrates
Lake Sturgeon (*Acipenser fulvescens*)	State Endangered	Bottoms of large, clean, freshwater rivers and lakes with firm sand, gravel, or rock substrates
Carroll Island Bed	INAI Site	Within project area
Clarksville Dam Bed INAI Site	INAI Site	Upstream of project area
Clarksville Island INAI Site	INAI Site	Terrestrial area adjacent to project location
Coon Island Bed INAI Site	INAI Site	Within project area
Muddy Rivers Forest And Shrub Swamp INAI Site	INAI Site	Terrestrial area adjacent to project location
Riprap Landing Woods INAI Site	INAI Site	Terrestrial area adjacent to project location
Sny Island Bed INAI Site	INAI Site	Within project area

1.14.4 Socioeconomic Environment

1.14.4.1 Socioeconomics

Population Demographics – According to the U.S. Census Bureau (United Stated Census Bureau, 2024), Calhoun County, Illinois, has a total population of 4,437. The Calhoun County median age was 48.5 years, nearly a decade older than the median age of 39.5 in Illinois. Approximately 4.2 percent of the population was under 5 years old, and 17.6 percent of the population was over the age of 65. The population within the county is approximately 95.3 percent White, 0.2 percent Black, 0.2 percent American Indian and Alaska Native, 0.2 percent Asian, 0 percent Native Hawaiian and Other Pacific Islander, and 1.4 percent Hispanic or Latino.

Education – Based on the U.S. Census Bureau data (United Stated Census Bureau, 2024) for Calhoun County, Illinois, an estimated 33.3 percent of the population is a high school graduate or higher, and 38.3 percent hold a bachelor's degree or higher. In comparison, the state averages are 36.2 percent of the population are high school graduates or higher, and 15.8 percent hold a bachelor's degree or higher.

Economic Base – According to the U.S. Census Bureau (United Stated Census Bureau, 2024) for Calhoun County, Illinois, the median household income was $92,095, which is higher than the state average of $80,306. Approximately 5.8 percent of the population in Calhoun County, Illinois, is below the poverty line, which is lower than the state average of 11.6 percent.

Employment and Labor Force – According to the American Community Survey (2023) dataset for Calhoun County, Illinois, the unemployment rate was 2.0 percent of those in the labor force, with most occupations being in the management, business, science and arts (40.5%); followed by sales and office (18.2%); service (17.5%); natural resources, construction, and maintenance (12.2%), and production, transportation, and material moving (11.6%) (United Stated Census Bureau, 2025).

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1.14.4.2 Navigation Traffic

The UMRS is a critically important navigation corridor that provides for movement of a wide variety of commodities of local, national, and international importance. Over 63.4 million tons of cargo passed through the Mississippi River between Minneapolis, MN, and the mouth of the Missouri River in 2021, the most recent year with data available (USACE, 2022).

1.14.4.3 Recreation

The areas in the vicinity of Clarksville, Carroll, and Coon Islands are popular recreation destinations for waterfowl hunters, as well as other forms of recreation such as boating, wildlife viewing, wildlife photography, hiking, fishing, picnicking, and paddling. There are both public and private waterfowl hunting opportunities within the study area. IDNR, Mississippi River Area State Fish and Wildlife area manages a waterfowl blind hunting program with 3-year blind locations within the study area. Clarksville Island is owned by the federal government and managed by the USFWS, Two Rivers National Wildlife Refuge (NWR) and is open for public hunting. There are two private boat ramps as well as private duck hunting clubs located on the Illinois side of the project area. Sport fishing is a very popular recreational activity with catfish, Sauger, Walleye, Largemouth Bass, Bluegill, Freshwater Drum, and crappie being the most frequently targeted species.

1.14.4.4 Real Estate

The OHWM demarcates the lateral extent of waterways protected under Rivers and Harbors Act and Clean Water Act. The water line on the shore is established by the water fluctuations and encompasses water levels that are above the average of water line. When this occurs, Navigation Servitude allows acquisition of shore lands extending to the OHWM and may be exercised under statutory rights and powers without obligation for compensation to the riparian landowners. Navigation Servitude does apply for this project.

1.14.4.5 Aesthetics and Visual Resources

Aesthetic resources within the Clarksville and Carroll Island area of the UMRS consist primarily of natural habitat interspersed with river-based navigation features, including Lock and Dam 24. Sights include the impounded river, narrow riparian forests, sandy shorelines, and small islands that serve as scenery for sightseers and recreationists. The Lock and Dam and river training structures detract from the natural views and may be considered as aesthetically unappealing to some people.

1.14.4.6 Climate Resilience

The recent U.S. Climate and Hydrology Literature Applicable to USACE Missions report is summarized in this section. The river ecosystem within Pool 25 has been significantly affected by the impoundment of the pool along with permanently higher water tables maintained by L&D 25. Geomorphic features such as sandbars and backwater deposition are forming near the study area. Restoring side channels and backwater areas are crucial to freshwater mussel habitats and riverine fishes. The study area is located in 2-digit hydrologic unit code (HUC) 07, the Upper Mississippi Region and in the Fourth National Climate Assessment (NAC4) Midwest climate region. The site lies within the Sny watershed (HUC 07110004) stream segment 07000599. Several literature reviews were conducted utilizing the National Oceanic and Atmospheric Administration (NOAA) state climate summaries, the USACE Timeseries Toolbox, the USACE Climate Hydrology Assessment (CHAT), and the USACE Climate Change Vulnerability Assessment (VA) Tool.

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Upper Mississippi Region 07 projections show an annual increase in precipitation and in the frequency of large storm events in the future of the Upper Mississippi Region (USACE, 2015). Studies of trends in streamflow collected over the past century have been performed and there appears to be a consensus among these studies that show a general increase in river flow for the Upper Mississippi Region (USACE, 2015). However past trends may no longer be a good predictor of future events. To predict future streamflow, some studies used Global Climate Models (GCM's), which are widely recognized as the best available source. Clear consensus in the data is lacking, with some studies predicting an increase in future streamflow in the study region, while others project a decrease in flows (USACE, 2015). Additional information can be found in Appendix H.

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PLAN FORMULATION

Plan formulation is the process of building alternatives (plans) that meet planning objectives, addressing the problems while avoiding constraints. The process helps decision-makers identify water resources problems, conceive solutions to them, and compare the importance of the inevitable conflicting values inherent in any solution. This PIR/EA describes the systematic and repeatable planning approach the PDT implemented to ensure sound decisions are made in accordance with the process described in the Planning Guidance Notebook (ER 1105-2-103) and the P&G Guidelines. The USACE planning process consists of six steps including: (1.) Specify problems and opportunities, (2.) Inventory and forecast conditions, (3.) Formulate alternative plans, (4.) Evaluate effects of alternative plans, (5.) Compare alternative plans, and (6.) Select a recommended plan. The USACE planning process, as well as NEPA, requires USACE to evaluate a range of reasonable alternatives. This section describes plan formulation strategies that involve developing a wide range of potential actions or management measures. Alternative plans are a set of one or more measures functioning together to address one or more planning objectives.

1.15 Management Measures.

A management measure (measure) is a constructed feature or action implemented to achieve the planning objectives. Several measures were identified in the early planning stages; many of these were partially developed, then were determined not feasible and did not undergo further evaluation. Measures that were further evaluated to a point appropriate for planning purposes to meet the goals and objectives outlined in Section 2.5, Project Objectives, are described below. The measures discussed below were identified from similar projects, the Upper Mississippi River Restoration Environmental Management Program Environmental Design Handbook (2012), NESP Design Pamphlets (2023), subject matter experts, and meetings with state and federal resources agencies.

The PDT evaluated potential structural, nonstructural, and natural and nature-based measures. Table 8 lists the measures initially identified and able to be combined into an implementable alternative that may be in the federal interest, address the identified problems, and achieve project objectives. Table 10 in Section 1.19 shows the measures and the objectives they primarily address.

Table 8. List of Initial Structural, Nonstructural and Nature Based Measures

Structural	Nonstructural	Nature Based
River Training Structure Modifications (dikes, closure structures): • Removal • Notching • Partial Degradation • Construction of New Structures (hard points, bullnose, SCED) Mussel Habitat Enhancement: • Gradual Slope Revetment • Rock-Gravel Substrate Enhancement (Mussel Riffle) Lock and Dam 24 Overflow Spillway Modification	Lock and Dam 24 Operational modifications Widening Chutes downstream of LD24 Spillway Beneficial Use of Dredged Material Dredging	Incorporation of Woody Material (Woody Bundles, Anchored or Locked Logs)

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1.16 Structural Measures

1.16.1 River Training Structure Modifications

River training structures can be used to alter hydrodynamic conditions, the sediment transport regime, and ultimately habitat conditions. These structures can prevent erosion, maintain a stable channel, and create enhanced or restored habitat. River training structures redistribute the river's energy to achieve a desired result, which can include a deeper navigation channel, shoreline stabilization, and/or increased environmental habitat through bathymetric diversity. These structures can alter hydrodynamic conditions, sediment transport regimes, water depth diversity, and habitat conditions. Section 3.1 includes a river training structure inventory for the Clarksville, Carroll, and Coon Islands vicinity.

Modifications to the river training structures located within the project area can potentially meet project objectives related to increasing bathymetric diversity, sediment management, and flow diversion / redirection / deflection. The following initial alterations were identified to meet side channel restoration planning objectives:

- **Removal**: Removal of existing river training structures to improve or reroute flow.
- **Notching**: Notching these features is a method to promote the enhancement of channel geomorphic diversity to provide suitable habitat for fishes. Notching includes strategic excavation and adjacent onsite placement or reuse of the excavated rock materials and is intended to improve aquatic habitat by increasing bathymetric, flow velocity, and substrate diversity.
- **Partial Degradation:** Partial degrade and drag-back of the closing structures to create a boulder field like riffle on the downstream end of the structure would provide mussel habitat.
- **Construction of New Structures**: A new dike structure can be constructed to improve or reroute flow. The following types of structures were considered:
    - **Hard Points**: These structures divert the flow of water to protect or enhance existing shoreline and habitat. There are many different types of flow diversion structures, and each is used in a different situation that is dependent on the goals and objectives of the project.
    - **Bullnose Creation or Enhancement:** Bullnoses can be constructed to protect existing islands, create new islands, and as flow deflection structures to reduce velocities downstream during certain conditions. They can also be used as wave breaks.
    - **Side Channel Enhancement Dike (SCED):** SCEDs are a special class of L- Dikes with the trail oriented upstream from a spur dike constructed on the island side of a side channel entrance. With the upstream-oriented trail, the SCED captures flow from the main channel and redirects it down a side channel, increasing the energy in the side channel, scouring out deposited sediment, and preventing further sedimentation in the side channel. Under the right conditions, the installation of a SCED can reopen closed side channels, once again providing aquatic habitat in areas it had previously existed. The construction of a SCED does require certain conditions to be met for a higher likelihood of success: 1) a SCED works best when it can be constructed on the channel-dominant bank, and 2) SCED design requires a careful balance of flow capture between the side channel and main channel to avoid

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sedimentation in either channel.

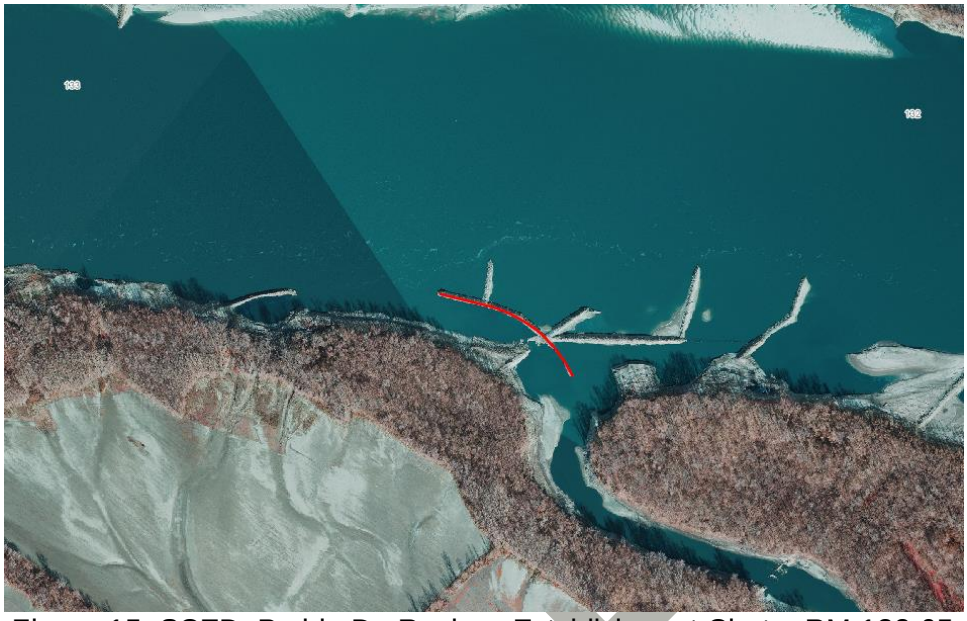


Figure 15**.** SCED, Prairie Du Rocher, Establishment Chute, RM 132.65

1.16.2 Mussel Habitat Enhancement

The two types of measures described below were identified to enhance habitat for mussel species to increase structure and side channel habitat for use by native freshwater mussels as opposed to a flow diversion structure.

- **Gradual Slope Revetment (GSR)**: A gradual slope on the interior side of a new or existing structure to minimize scouring from overtopping during high water events. Revetment incorporates various substrate sizes that allow for voids and interstitial spaces for smaller particles to settle into, and is preferential to mussel colonization, extended out along the toe and placed on top of stable bed. Figure 16 shows a typical revetment design as compared to GSR as shown in Figure 17.

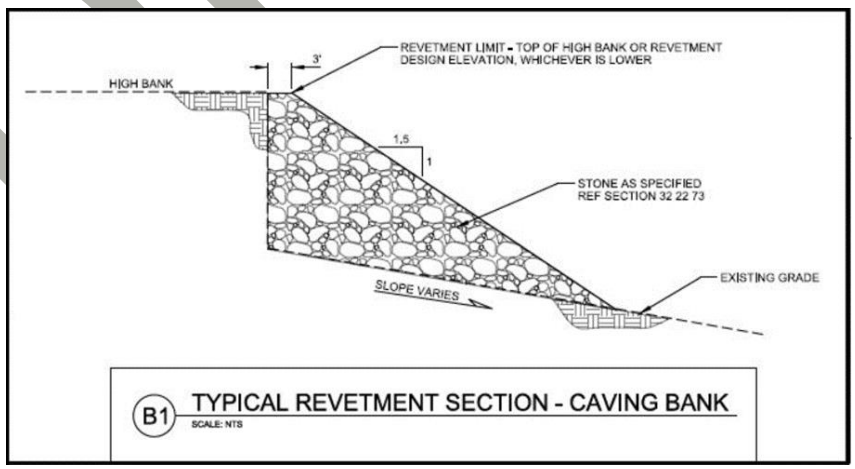


Figure 16**.** Traditional Revetment diagram

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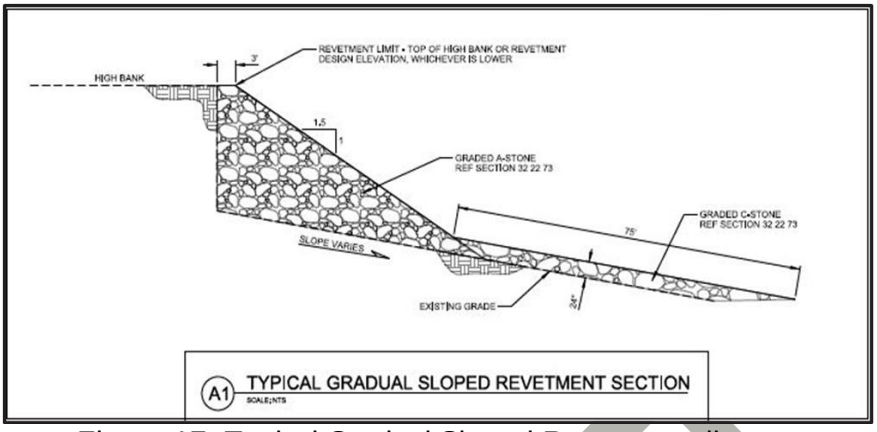


Figure 17**.** Typical Gradual Sloped Revetment diagram

- **Rock-Gravel Substrate Enhancement (Mussel Riffle):** This type of substrate enhancement would introduce more heterogeneity and promote mussel colonization. It consists of a combination of large cobble and rounded river stone to create interstitial spaces with stability for mussel colonization. Smaller rounded stone (2-4" or larger, depending upon velocities and shear) can be incorporated on the toe of existing dikes also. Sporadically placed, large boulder-sized material is used to create flow refugia or flow shadows for smaller particle sized sediments to shelter behind creating pockets of habitat.

1.16.3 Lock and Dam 24 Overflow Spillway Modification
A modification to the L&D 24 overflow spillway was considered to potentially increase flow diversity directly downstream in Clarksville Slough.

1.17 Nonstructural Measures
1.17.1 Lock and Dam 24 Operational Modifications
There is potential to implement a modification of the tainter gate operations on the Illinois side of L&D 24 to manipulate flows when conditions allow for advantageous spawning, including connectivity during lake sturgeon spawning. This could be achieved through coordination with the District Water Control section by potentially replicating similar efforts currently being conducted through the Sustainable Rivers Project (SRP) or possibly updating the L&D 24 Water control manual to ensure methods are in place long term.

1.17.2 Widening Chutes Downstream of Lock & Dam 24 Overflow Spillway
This measure would consist of increasing the width of the chutes located immediately downstream of L&D24 overflow spillway on the Illinois side. These chutes are currently maintained under USACE O&M. This action would increase flows through the chutes and Clarksville Slough.

1.17.3 Beneficial Use of Dredged Material
Dredged material can be used for ecosystem restoration such as to improve upland topographic diversity and for the creation of islands. However, the study scope requires all measures to be located below the OHWM; therefore, the beneficial use of dredged material is not proposed in conjunction with dredging.

1.17.4 Dredging
Typically, the primary purpose for including dredging as a standalone feature (self-justified) is

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the restoration of depth in aquatic areas. Depth is an important consideration in meeting ecosystem restoration objectives. Often, a depth of 6 feet is considered a minimum, but this varies depending on sedimentation rates and target species. Dredging in secondary channels can improve habitat for more riverine species, and the dredging of access channel for construction can help meet some side-channel restoration objectives incidentally. However, access dredging could be counter-productive if the area dredged contains important habitat/species such as mussels, and such impacts must be considered (2012 UMMR EMP Handbook).

1.18 Natural and Nature Based Features

1.18.1 Woody Bundles and/or Anchored or Locked Logs

These structures provide refuge/shading for fish and enhances substrate diversity for macroinvertebrate growth and development in support of other wildlife goals (2023 NESP Environmental Design Tool Kit).

1.19 Evaluation and Screening of Measures

Screening is the process of eliminating, based on planning criteria, the measures that would not be carried forward for alternative development. Screening criteria is developed using the study specific planning objectives, constraints, opportunities, and problems. Measures were screened by the PDT throughout the formulation process utilizing the four criteria of completeness, effectiveness, efficiency, and acceptability described in Policy for Conducting Civil Works Planning Studies (ER-1105-2-103).

Completeness is the extent to which the measures or alternatives provide and account for all necessary investments or other actions to ensure the realization of the planning objectives, including actions by other federal and non-federal entities. Completeness must consider the sustainability and long-term aspects of the plans and whether all resource requirements are included. Completeness does not mean that all planning objectives are fully realized, only that the required resources and actions are included to achieve the estimated benefits.

Effectiveness is the extent to which the measures or alternative plans contribute to achieving the planning objectives. Benefit metrics reflect the effectiveness of each alternative. Effectiveness does not mean that all planning objectives need to be addressed or fully realized. The degree of effectiveness will be used to illustrate the trade-offs between plans when compared.

Efficiency is the extent to which a measures or alternative plan is a cost-effective means of solving the problem and achieving the objectives. Efficiency is determined through a comparison of the costs and benefits of each alternative.

Acceptability is the workability and viability of the measure or alternative plan with respect to acceptance by state and local entities and the public and compatibility with existing laws, regulations, and public policies. Acceptability has two dimensions – implementability and satisfaction. Implementability means the extent to which the alternative is feasible from a technical, financial, and legal perspective. Satisfaction is the extent to which the plan is welcome from a political or preferential perspective. The measures were evaluated for acceptability based on the following criteria:

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- USACE Policy Compliant and other USACE authorities– This metric evaluated the magnitude of potential policy concerns for each alternative.
- Partner Satisfaction - Complements the larger federal, state, and local objectives – This metric evaluated how well each alternative complemented partner management objectives in and adjacent to the study area, showing the alternatives' viability for acceptance by non-federal entities and the public.
- Impacts to Federal Purpose of maintaining Navigation – This metric documents if and how the proposed dike alterations would result in negative impacts to the USACE navigation mission.

1.19.1 Screened Measures

All measures were evaluated under the four criteria. Table 9 lists the six screened measures and the screening rationale. These measures were initially considered but were not selected for alternative formulation because they were found to be ineffective or unacceptable.

Table 9. Screening of Initial Measures

Measure	Screening Rationale
Lock & Dam 24 Modification – Overflow Spillway Modification	Acceptability - Actions are considered within NESP authority, but out of the scope for side channel restoration projects. This type of measure is included in separate NESP initiatives. This action is considered a high risk for dam safety.
Lock & Dam 24 Operational Modification	
Widening Chutes Below Lock & Dam 24 Overflow Spillway	Acceptability - Action could potentially cause erosion along the overflow spillway and considered to be high risk for dam safety.
River Training Structure Removal	Effectiveness - Removal is not feasible for the dikes / closure structures in this area.
Bullnose Creation or Enhancement	Effectiveness - Island head erosion is not occurring
Beneficial Use of Dredged Material / Island Creation	Acceptability - Placement of material above the OHWM is not within study scope.

1.19.2 Summary of Retained Measures

Table 10 shows the retained measures and alignment with the problems, opportunities and objectives identified in Chapter 2.

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Table 10. Retained measures and alignment with Objectives

Measure (Planning Objective)	Objective 1: Increase side channel connectivity	Objective 2: Increase side channel flow diversity	Objective 3: Increase substrate diversity	Objective 4: Increase side channel sediment transport	Objective 5: Increase depth diversity
Hard Points		X	X	X	X
Dike Alteration Partial Degradation / Notching	X	X		X	X
Side Channel Enhancement Dike (SCED)	X	X	X	X	X
Dredging	X	X			X
Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement)		X	X		X
Natural and Nature-Based Features (Woody Bundles/Debris)		X	X		X

1.20 Development of Initial Array of Alternatives

Alternative plans are a set of one or more measures functioning together to address one or more planning objectives. Alternative plan formulation strategies were developed by the PDT through a conducting a scoping charette and habitat evaluation workshop with subject matter experts, including sponsors and agency partners, referencing the restoration work previously completed within the study area, and the 2004 IFR/EIS and Environmental Pool Plan. A site visit was conducted on 3 November 2023 to verify onsite conditions and guide alternative formulation.

Alternative development is a complex and iterative process with many inputs. An initial array of alternative plans was formulated by combining measures retained after the initial screening. Initial plan formulation strategies included three combinations of measures to provide environmental benefits on varying scales, i.e. minimum, intermediate, and maximum. These benefits were developed to maximize habitat units, maximize habitat diversity, and evaluate a minimally acceptable solution. Alternatives were developed to consider preferences of partners and avoid impacts to navigation.

The following plans were developed as the Initial Array of Alternatives to achieve the study goal, objectives, and opportunities, while avoiding constraints. Table 12 displays the measures in each alternative in the initial array. Plan formulation was limited by the scope and available measures for a NESP study area as described in the 2004 IFR/EIS. Thus, a limited number of alternatives were developed into the initial array.

- **No Action Alternative**: The NEPA requires Federal agencies to consider the option of "no action" as one of the alternatives. The No Action plan assumes no action is taken by the USACE to achieve the planning objectives and is used to inform the FWOP condition. The No Action Plan forms the basis against which all other alternative plans are measured.

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- **Alternative 1 – Minimum Habitat Benefit – Side Channel Connectivity**: This plan narrowly focuses on establishing side channel connectivity to the study area by opening the mouth of Clarksville Slough, which is the main side channel in the study area. This plan consists of dredging pilot channels at the mouth of the side channel and sloughs at the upper end of Clarksville Island. Table 11 displays the preliminary design geometry for the dredging. Material excavated from the side channel would be deposited in approved placement areas within the Mississippi River along the riverside borders of Clarksville, Carroll, and Coon Islands. Alternative 1 is shown in Figure 18.

Table 11 Dredge Dimensions

Measurement	Pilot Channel	Pilot Chute	Pilot Side
Bottom Width	83 ft	20 ft	53 ft
Left Side Slope V:H	1:6	1:2	1:6
Right Side Slope V:H	1:6	1:2	1:6
Max Top Extent	125 ft	30 ft	80 ft
Length	4950 ft	365 ft	1745 ft
Dredge Depth Range	3 ft - 5 ft	0 ft - 2 ft	6 ft – 10 ft
Total Volume (CY)	65,520	2,860	62,240

- **Alternative 2 – Intermediate Habitat Benefit**: This plan includes measures to increase environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. This plan consists of dredging and dredge placement as described in Alternative 1, with the addition of several measures. Measures include a series of hard points at the upper end of Clarksville Slough and the creation of two SCEDs: SCED273, which would be created by modifying the existing Dike 273.2 at the tip of Clarksville Island, and SCED 268, a new structure connected to Dike 267.7L near the slough on Carroll Island. This alternative also consists of the creation of mussel riffles throughout the study area. The mussel riffles will be created by sporadically placing large stone that will enhance flows and encourage settlement of gravels and coarse sands to fall out in the flow shadows downstream of the large stones. This will provide pockets of optimal habitat for mussel colonization provided by the enhanced bed and substrate stability in these flow shadows. The partial degrade and modification of the existing closure structures in Clarksville Slough will consist of dragging rock immediately downstream to improve flows through the side channel while simultaneously providing riffle habitat on the bed downstream of the structures plunge pool. Alternative 2 is shown in Figure 19.

- **Alternative 3 – Maximum Habitat Benefit**: This plan includes measures to maximize environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. The plan consists of all measures included in Alternative 2 with the addition of woody bundles in the downstream end of Clarksville Slough to increase flow diversity. Alternative 3 is shown in Figure 20.

Table 12. Measures included in Initial Array of Alternatives

Measure (Planning Objective)	No Action	Alt 1 Minimum	Alt 2 Intermediate	Alt 3 Maximum
Hard Points (2,3)			X	X

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Measure (Planning Objective)	No Action	Alt 1 Minimum	Alt 2 Intermediate	Alt 3 Maximum
Partial Degradation/Notching of Closure Structures (1,2,4,5)			X	X
Side Channel Enhancement Dike (SCED273) (upstream) (1,2,4)			X	X
Side Channel Enhancement Dike (SCED268) (downstream) (1,2,4)			X	X
Dredging of Clarksville Slough pilot channel (1,2,4,5)		X	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement) (2,3,5)			X	X
Natural and Nature-Based Features (Woody Bundles) (2)				X

1.21 Final Array of Alternatives*

1.21.1 Evaluation and Screening of Initial Array of Alternatives.

The initial array of alternatives was evaluated based on the evaluation and screening criteria described in Section 4.5: the planning objectives, constraints, opportunities, and problems of the study area; and the four criteria of completeness, effectiveness, efficiency, and acceptability described in Policy for Conducting Civil Works Planning Studies (ER-1105-2-103). Table 13 provides a summary of the evaluation of P&G criteria for the initial array of alternatives.

Completeness: The PDT determined that, at this stage of the planning process, no additional investments were needed to obtain benefits, so all alternatives are considered "complete".

Effectiveness: All of the action alternatives were considered effective at varying levels at meeting the planning objectives. In order to evaluate the effectiveness of each alternative, the PDT relied upon AdH modeling results and bathymetric survey data to assess the increased depth and flow diversity of aquatic side channels throughout the project area. To help guide plan selection, an assessment of the bed change was conducted. In addition, the modeling results indicated if there was potential for longitudinal connectivity as a result for each alternative. See Section 5 for assessment of environmental effects on existing resources under "with-project" conditions.

Efficiency: All alternatives are considered efficient. The Cost Effectiveness & Incremental Cost Analysis (CE/ICA) analysis was performed using the IWR planning suite, which is summarized in Section 6.3.1.

Acceptability: The alternatives were evaluated for acceptability based on the following criteria and were determined to be "complete" on varying levels:

- USACE Policy Compliant and other USACE authorities– This metric evaluated the magnitude of potential policy concerns for each alternative.
- Partner Satisfaction - Complements the larger federal, state, and local objectives – This metric evaluated how well each alternative complemented partner management objectives in and adjacent to the study area, showing the alternatives' viability for acceptance by non-federal entities and the public.
- Impacts to Federal Purpose of Maintaining Navigation – This metric documents if and how the proposed project would result in impacts to the USACE navigation mission.

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Table 13. Alternative Evaluation to P&G Criteria

Alternative	Acceptability	Completeness	Effectiveness	Efficiency
No Action	Partial. Viable in accordance with state and local entities and laws. Provides no solution to the identified problems.	No. Does not meet objectives.	No. The alternative does not alleviate the problems identified and does not meet study objectives.	Yes. Considered a Best Buy Plan. No money is expended, no benefits are gained, problems are not alleviated.
Alternative 1	Yes. No navigation impacts. Viable and in accordance with state and local existing laws. Partner supported, but not preferred.	Yes. The alternative includes all features needed to produce the stated effects.	Partial. The alternative did not meet all objectives.	Partial. Cost Effective, not Best Buy, with lowest cost.
Alternative 2	Yes. No navigation impacts. Viable and in accordance with state and local existing laws. Partner supports, but not preferred.	Yes. The alternative includes all features needed to produce the stated effects.	Yes. The alternative meets all study objectives.	Partial. Cost Effective, not Best Buy, with intermediate cost.
Alternative 3	Yes. No navigation impacts. Viable and in accordance with state and local existing laws. Full support of the Partners.	Yes. The alternative includes all features needed to produce the stated effects.	Yes. The alternative achieves the greatest habitat gain.	Yes. Considered a Best Buy Plan, with highest cost.

All of the action alternatives in the initial array were found to be complete, effective, efficient, and acceptable. Therefore, the team determined that all of the alternatives would be carried forward for further development. Refer to Section 4.6 for full description of each alternative:

- No Action Alternative
- Alternative 1 Minimum Habitat Enhancement (Figure 18)
- Alternative 2 Intermediate Habitat Enhancement: (Figure 19)
- Alternative 3 Maximum Habitat Enhancement (Figure 20)

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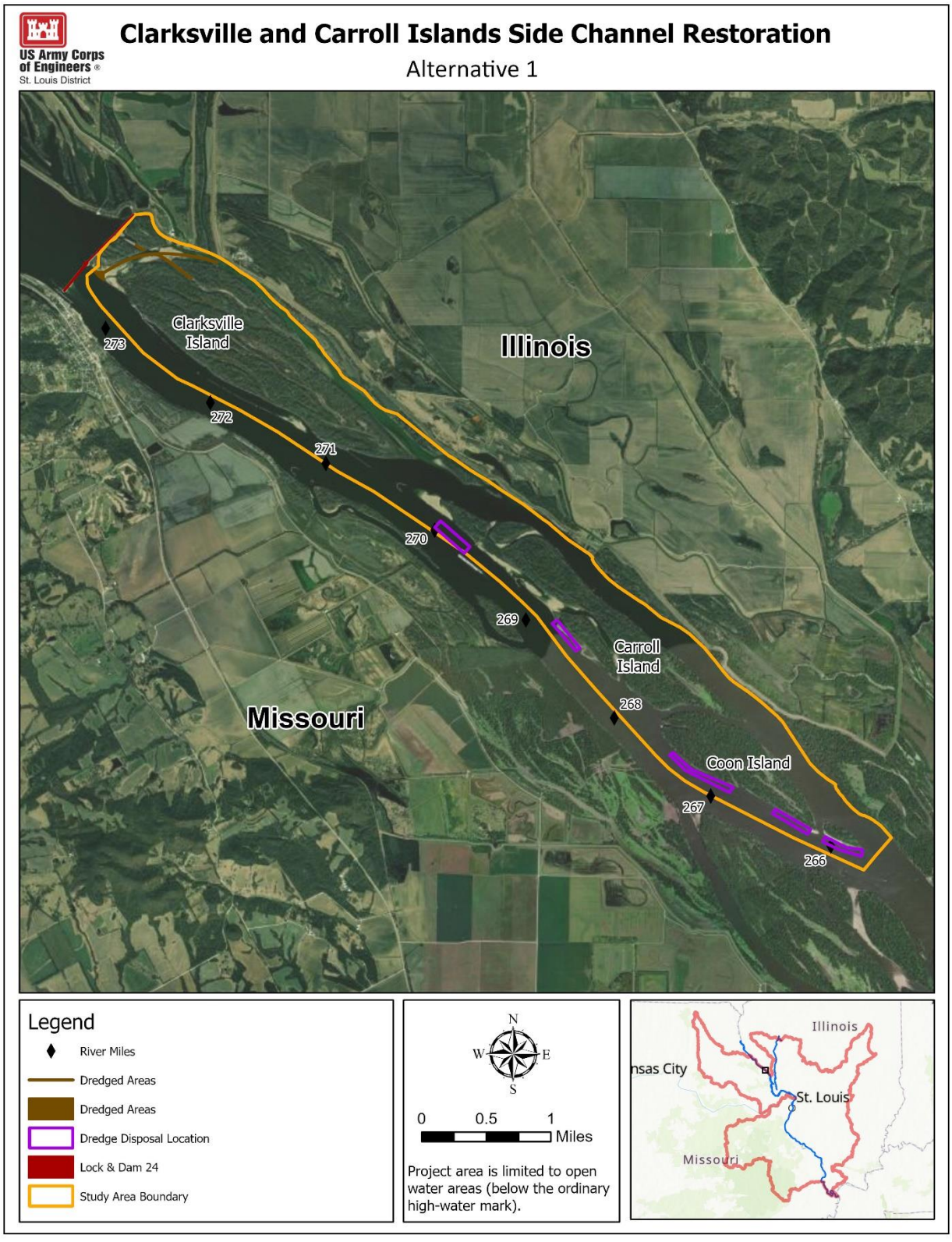


Figure 18. Alternative 1. Minimum Habitat Enhancement

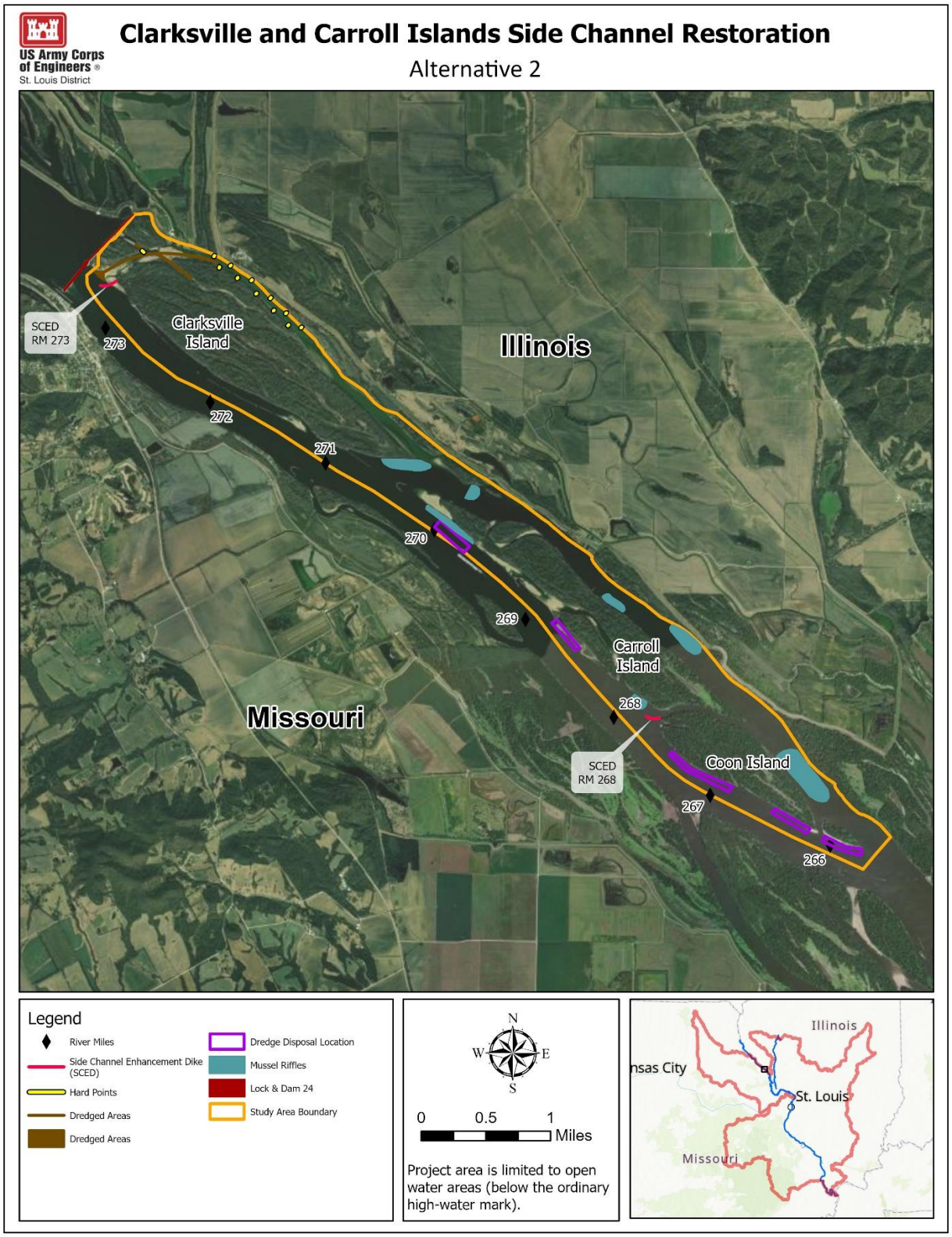


Figure 19. Alternative 2. Intermediate Habitat Enhancement

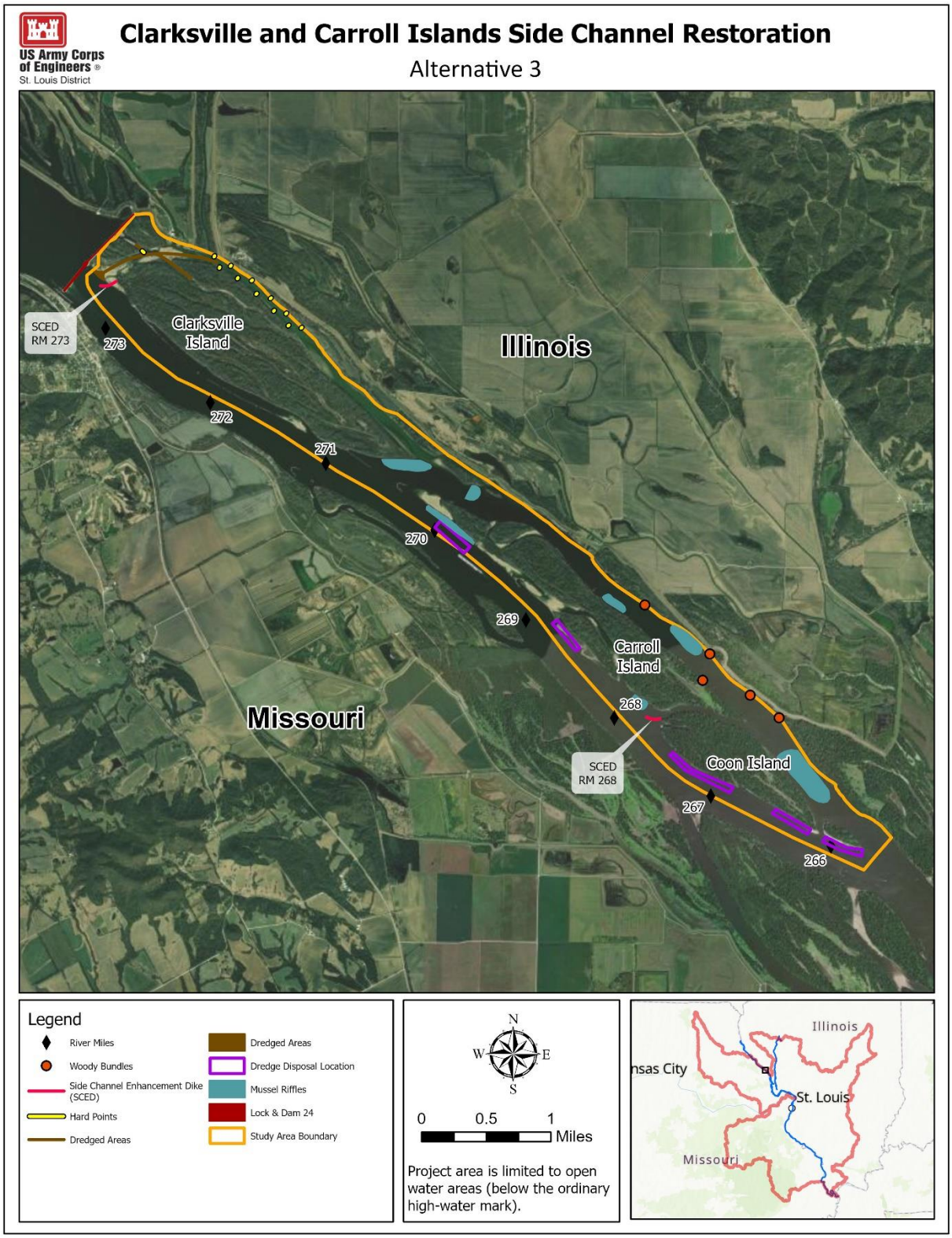


Figure 20. Alternative 3. Maximum Habitat Enhancement

ASSESSMENT OF EXISTING RESOURCES AND ENVIRONMENTAL CONSEQUENCES OF THE NO ACTION ALTERNATIVE AND FINAL ARRAY OF ALTERNATIVES*.

The following chapter describes the anticipated environmental effects (both adverse and beneficial) of the No Action Alternative and final array of the Action Alternatives on the resources addressed in *Chapter 3 - Existing Conditions and Management of the Study Area*. When the analysis presented in the 2004 IFR/EIS is sufficiently comprehensive or adequate, no additional analysis is provided in this chapter. The forecast takes current trends and projects those trends into the future to anticipate conditions in the project area, should no action be taken to intervene. The general trend includes increased sedimentation which would further degrade side channels by means of shallower depths leading to increased summertime temperatures, turbidity from wave action, lower dissolved oxygen levels and further disconnection from the main channel.

Under the NEPA, the FWOP (considered to be the No Action alternative) is necessary to provide a reference point, enabling a comparison of environmental effects of the action alternatives. The FWOP condition is the forecasted condition of the project area for the next 50 years assuming that no significant action is taken to address the resource problems identified. The base year (the year when a proposed project is expected to be operational or, in this case, when construction is complete, and benefits begin accruing) considered for this project is 2028, and period of analysis is 50 years (2028-2078). The PDT focused its evaluation on resources potentially affected by the alternatives.

The effects described in the following sections may be temporary or long-term in duration. Minor effects are typically considered negligible, while moderate adverse effects may be either avoided or counteracted by other actions that further enhance or benefit the resource. According to NEPA guidance, the meaning of significant effects varies with the context (where the action occurs) and intensity (how much damage or improvement the action causes). Non-significant effects mean there is no substantial change to the resource, while significant effects may be beneficial or adverse. The effects of the action alternatives may furthermore occur immediately because of the action (direct), occur later in time, or removed in distance in response to the action (indirect), or may be reasonably expected to occur, given similar restoration actions within the UMRS (cumulative).

Qualitative impact descriptions are explained by accompanying text. Qualitative definitions/descriptions of impacts as used in this section of the report include:

- Intensity
    - Beneficial – Provides positive or advantageous effects to the resource
    - Negligible – No noticeable effects to the resource in the project area
    - Minor – Noticeable impacts to the resource in the project area, but the resource is still mostly functional
    - Moderate – The resource is impaired, so that it cannot function normally
    - Major – The resource is severely impaired so that it is no longer functional in the project area
- Duration
    - Short term – Temporary effects caused by the construction and/or implementation of a selected alternative

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- Long term – Lasting effects caused by an alternative after the action has been completed and/or after the action is in full and complete operation

1.22 Management of the Study Area

1.22.1 Navigation, District River Training Structures, Dredging Operations, Hydraulics/Hydrology

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, navigation channel maintenance and subsequent effects are predicted to remain consistent with the existing conditions. Navigation induced shoreline erosion would continue to degrade both islands. The existing river structures would continue to be maintained in order to provide a safe and dependable navigational channel. Additionally, the construction, modification, or removal of river training structures may be carried out under other authorized projects or programs. Dredging operations in the main channel would continue as prescribed by the Dredging Master Plan. The mouth of Clarksville Slough would continue to accrete sediment, with Clarksville Island eventually connecting to the overflow dike at L&D 24, thereby cutting off connectivity between the main channel and side channel. Eventually, Carroll Island would experience the same degradation as sediments move further downstream. This could lead to more frequent dredging operations in this area. The hydraulics in the area would remain similar to existing conditions into the future, and high loads of suspended sediment are expected to continue. L&D 24 operations are not expected to change from existing conditions and would continue to function according to congressional directives and gate release criteria. Thus, the No Action Alternative would have no effect on navigation or existing river training structures in the project area. Increases in local dredging may occur over the long term and minor changes to hydraulics downstream of L&D 24 may result from changes in sediment deposition over time.

Action Alternative 1 (Minimum) – Alternative 1 is anticipated to have minimal to no effect on main channel navigational activities. Side channel recreational navigation may become more accessible during lower pool elevations due to the clearing of sediment by the pilot channel. No modification of the existing river training structures is proposed for Alternative 1, thus the effects would be consistent with the No Action Alternative. Dredging of pilot channels at the upstream opening to Clarksville Slough and adjacent upstream and downstream chutes would result in increased flow and velocity, which influences the sediment load the river is able to carry. HEC-RAS model results showed that velocity and flow across the cross sections increased when compared to the existing conditions. It is anticipated that flow and velocity would continue to increase over time, as the pilot channel widens, becomes more established, and sediment is "flushed out", improving connectivity between the main and side channels. Due to the flow and velocity predicted as a result of the pilot channels, there is minimal risk of sedimentation occurring at the downstream end of Clarksville Slough. Within the Carroll side channel region, velocities are anticipated to remain similar to existing conditions while flow would increase slightly as a result of the pilot channels at the upper end of Clarksville Island. Overall, Alternative 1 would have no effect on navigation or river training structures in the project area. Decreases in local dredging may occur over the long term and minor changes to hydraulics downstream of L&D 24 may result from beneficial changes in sediment deposition over time.

Action Alternative 2 (Intermediate) – Impacts to navigation are as described for Alternative 1. The construction or modification of river training structures under Alternative 2 includes two SCEDS, approximately 12 hard points, and partial degradation/notching of the closure structure. The RTSs included in Alternative 2 would work with the dredging to increase depth and flow diversity in the Clarksville Carroll Islands side channel. Modifications to existing river training

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structures and the construction of hardpoints and SCEDs is anticipated to reduce dredging needs in the main and side channel over the long term. No impacts to RTS outside of the proposed project area are anticipated. HEC-RAS model results showed a slight increase in velocity and flow within Clarksville slough when comparing to the No Action Alternative. This can be attributed to the introduction of SCED273, which directs more flow into the side channel. With increased flow, more sediment would be transported, thus opening the side channel quicker. Carroll slough showed a slight decrease in velocity and flow, which may be attributed to the introduction of the mussel riffles. When modeling the mussel riffles, the roughness coefficient (Manning's n) of the model was increased over those areas, which slowed velocities. Overall, Alternative 2 would have no effect on navigation in the project area. Existing river training structures would not be adversely impacted, and new or modified RTS would aid in sediment management. Decreases in local dredging may occur over the long term and minor changes to hydraulics downstream of L&D 24 may result from beneficial changes in sediment deposition patterns over time.

Action Alternative 3 (Maximum) – Impacts to navigation are as described for Alternative 1. Impacts to and from RTS are as described for Alternative 2. The addition of woody bundles under Alternative 3 does not pose a change to the dredging operations, therefore impacts to dredging are as described for Alternative 2. Alternative 3 causes similar hydraulic effects as described for Action Alternative 2, since hydraulic conditions are expected to remain similar with the introduction of the woody bundles in Alternative 3. Like the mussel riffles, woody bundles were modeled by increasing the Manning's n roughness over those areas. This resulted in a slight increase velocity and additional flow in Clarksville slough, and a slight decrease in velocity and flow within Carroll slough. However, this decrease is not substantial enough to cause adverse sedimentation impacts within the side channel, while providing a greater habitat benefit.

A preliminary 'no-rise' determination was conducted on the TSP (Alternative 3) and resulted in minimal rise in water surface elevation. Most cross sections analyzed fell below the 0.1-foot threshold. Additional investigation and refinement would occur during the design phase. A full hydraulic analysis of the alternatives can be found in the Hydraulics and Hydrology Appendix D.

1.23 Environmental Conditions

1.23.1 Physical Environment

1.23.1.1 Water Quality

No Action Alternative (Future Without Project Condition) – Under the No Action alternative, disconnection from the main channel would result in elevated water temperature during the summer, leading to dissolved oxygen levels which are anticipated to decrease to lethal or sublethal levels for aquatic organisms.

Action Alternative 1 (Minimum) – Dredging would cause temporary increases in turbidity and suspended sediment concentrations in the immediate vicinity of the dredging and placement locations. The impact would be localized and would dissipate quickly. Sediments in the area are typically sand with little associated fines and would, therefore, not be expected to release contaminants into the water column at concentrations that alone, or in combination with other contaminants, would cause toxic effects to aquatic organisms. The benthic community in the area of the dredge cut and placement sites would experience decreases to diversity, abundance, and biomass immediately following the dredging disturbance. Recovery of the benthic community is dependent on several environmental conditions including sediment type, habitat type, spatial scale of the disturbance, and timing and frequency of disturbance. Overall, estimates of benthic recovery rates are estimated to range from several months to several years

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(Qian, Qiu, Kennish, & Reid, 2003). Overall impacts to water quality are anticipated to be negligible and short term.

Action Alternative 2 (Intermediate) – In addition to the effects of dredging described for Alternative 1, the proposed closure structure notching, SCEDs, and mussel rock-gravel substrate enhancement are designed to increase side channel flow diversity, sediment transport, and /or substrate diversity. Therefore, this may result in some minor temporary changes in the suspended sediment concentration in the immediate area. Additionally, oxygen levels are anticipated to increase. Limestone material used for construction could potentially affect local water chemistry (e.g., alkalinity, hardness, and pH). However, given the prevalence of limestone in the watershed geology and the quick dissipation of any associated fine materials in the water column, the impact is likely to be negligible. Overall impacts to water quality are anticipated to be negligible and short term.

Action Alternative 3 (Maximum) – In addition to the effects described for Alternatives 1 and 2, the addition of woody bundles is anticipated to increase side channel flow diversity. This may result in some negligible short term changes in the suspended sediment concentration in the immediate area. Overall impacts to water quality are anticipated to be negligible and short term.

Permits – The activities included in this project are covered by 2022 Nationwide Permit Number 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities (NWP Final Notice, 86 FR, 73576). The Illinois EPA grants §401 Water Quality Certification for NWP 27 with Special and/or General Conditions. The three Special Conditions for Illinois NWP 27 - 401 (work in reclaimed surface coal mine areas; relocation of waters of the State; and backfilled materials used within artificial channels) are not applicable to this project. Sediment sampling and testing would occur during PED to document that the dredged material meets General Condition 12 of the Illinois EPA 401 Water Quality Certification - Discharged Material Quality (sediment size). Additionally, there are no Illinois Regional Conditions for Nationwide Permit 27. Therefore, this project is expected to meet the conditions of the Illinois 401 Water Quality Certification.

1.23.1.2 Air Quality

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, air quality is expected to remain similar to the existing condition. Attainment status for Calhoun County, IL, is not anticipated to change in the Future Without Project Condition. Control strategies targeted at physical improvements in regional transportations systems, resulting in reduced emissions, have been implemented across the region and could improve air quality over time.

Action Alternatives – Emissions from construction equipment may minimally increase carbon monoxide, suspended airborne particulates, and carbon dioxide levels in the vicinity of the construction site. Because the area is in attainment for all criteria pollutants, and the relatively small scale of the work would lead to emissions that are plainly *de minimis*, a conformity determination is not required. The Contractor shall comply with all applicable federal, state, and local laws and regulations. Care would be taken to minimize all impacts on air quality, such as running equipment only as needed, and ensuring that the contractor provides environmental protective measures and procedures to prevent and control emissions during construction. Effects to air quality from any of the action alternatives would be negligible and short term, limited to the hours and site of construction, and not expected to have long term impacts.

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1.23.1.3 Noise Levels

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, noise levels are expected to remain similar to the existing condition. Noise levels associated with navigation, construction, transportation, recreation, and agricultural practices in the project area would not be expected to change.

Action Alternatives – Noise levels at the work sites would increase due to construction equipment use during implementation of the action alternatives. Understandably, more project features would require a longer construction duration and potentially more equipment, thus increasing the sources of noise. Most construction activities are classified as point source noise, which is usually associated with a source that remains in one place for extended periods of time (WSDOT 2020). Construction point source noise is commonly measured by maximum decibel level (Lmax), or the highest value of a sound pressure over a stated time interval. Equipment such as cranes, boats, and pile hammers range from about 85 to 101 dBA average maximum noise levels (Lmax) at 50 feet. However, noises would attenuate outside of the immediate construction zone. Attenuation of 95 dBA at 400' is estimated to reduce the noise to 77 dBA (WSDOT, 2020). Attenuation to 800' is approximately 71 dBA; while the noise level at 1600' is reduced to approximately 65 dBA (WSDOT, 2020). The project features would not contribute to noise levels during operation.

Sensitive noise receptors in the area include residences and recreation areas (nearest is estimated at 550'). Additionally, fishing, boating, and hunting occur within the river, side channel, and islands. Each immediate work site would be off-limits to recreationists for safety purposes during construction. Thus, impacts to noise levels due to construction of project features would be minor and short term.

1.23.1.4 Historic Properties, Cultural Resources and Tribal Coordination

No Action Alternative (Future Without Project Condition) – No impacts to historical or cultural resources are anticipated under the No Action Alternative. If unknown cultural resources are within the study area, continued sediment deposition caused by a combination of factors described in the *Hydraulics/Hydrology* section would bury them deeper and thus preserve them.

Action Alternatives - Under the action alternatives, dredging of the upstream opening to Clarksville Slough would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and inhibiting the transition to terrestrial habitat. This should have no effect on historic properties or cultural resources within the study area.

SHPO Coordination - A SHPO coordination letter was sent on 25 April 2025 requesting concurrence with the Saint Louis District that no historic properties would be affected by this project. On 16 May 2025, the IL SHPO concurred with the District finding that no historic properties would be affected by this project (SHPO Log # 003042525). Additionally, if it is deemed necessary the District plans to utilize the 25 June 2024, implemented, Programmatic Agreement (PA) regarding the Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program for any additional compliance with Section 106. This agreement is included in Appendix A. Although unanticipated, Section VII of the PA outlines implementing procedures to follow to ensure that previously unidentified historic properties discovered during the construction activities for Program undertakings are subject to the requirements of 36 CFR § 800.13(b-d). The provisions outlined in Section VIII of the PA will be included in all construction, operations, and maintenance plans.

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Tribal Coordination - The St. Louis District consults with 22 Tribes that have an interest within this area. They were contacted on 25 April 2025 via a letter initiating consultation for this project (Appendix A). The District stated that because all work would be conducted from floating barge with no ground disturbing activities taking place on land, it made a determination of no historic properties affected. The District requested Tribes review the maps and information provided and contact the District if they had any questions, comments, or areas of concern.

Five Tribes responded to the request to consult for this project. The Eastern Shawnee Tribe of Oklahoma (28 April 2025), Iowa Tribe of Kansas and Nebraska (1 May 2025), The Osage Nation (27 May 2025) stated that they had no concerns and concurred with the District's determination of no historic properties affected. The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (12 June 2025) stated that they were not provided providing any additional comments. The Prairie Band Potawatomi Nation (11-27 June 2025) requested request on-site monitoring during the construction process. They were informed by USACE that the project would be taking place within the Mississippi River below the ordinary high water mark (OHWM) and the construction will take place via a floating barge. They were also informed that USACE would be using the NESP/UMRR programmatic agreement for this project regarding post-review discovery and treatment of human remains and items of religious and cultural importance. The Eastern Shawnee Tribe of Oklahoma, The Osage Nation, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, and The Prairie Band Potawatomi Nation requested to be contacted if any archaeological and/or human remains are identified during construction. Thus, no impacts to cultural to tribal resources are anticipated as a result of any Alternative.

1.23.1.5 Hazardous, Toxic, and Radioactive Waste

No Action (Future Without Project Conditions) – No existing HTRW concerns are present in the study area. HTRW concerns would not be affected by the No Action alternative.

Action Alternatives- The Phase I Environmental Site Assessment did not identify any major sites of interest which pose significant HTRW concerns. The environmental impact for the migration of off-site contaminants into the study area is negligible. Therefore, the action alternatives would not disturb any known HTRW sites, and no special considerations are being recommended for the project to proceed to construction. The USACE Environmental Quality Section should be contacted immediately if HTRW material is encountered at any point during construction activities. Thus, impacts from HTRW concerns are anticipated to be negligible and short term. See Appendix F for additional information on HTRW.

1.23.2 Natural Environment

1.23.2.1 Aquatic Species and Habitat

FWOP and Alternative specific benefits to mussels and fish are quantified in Appendix B - Habitat Evaluation. The following discussion is a qualitative discussion of the potential effects of the alternatives collectively and individually.

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, general trends are for increased sedimentation over time that would result in shallower depths, increased summer temps, lower dissolved oxygen, less connectivity throughout the year, slower flows and velocites, and general trend toward conversion to terrestrial habitat at head of Clarksville, and in smaller tertiary channels throughout. Improvements to bathymetric and velocity diversity as well as longitudinal connectivity of the side channel would not occur under the No Action Alternative.

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Action Alternative 1 (Minimum) – Under Alternative 1, dredging of the upstream opening to Clarksville Slough and adjacent upstream and downstream chutes would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and inhibiting the transition to terrestrial habitat. Additionally, adequate water depth and dissolved oxygen levels would be maintained for the benefit of aquatic organisms. The benthic community in the area of the dredge cut would experience decreases to diversity, abundance, and biomass immediately following the dredging disturbance. Recovery of the benthic community is dependent on several environmental conditions including sediment type, habitat type, spatial scale of the disturbance, and timing and frequency of disturbance. Overall, estimates of benthic recovery rates are estimated to range from several months to several years (Qian, Qiu, Kennish, & Reid, 2003). Dredging is not proposed within the project area at locations where mussel beds were found during a survey conducted between 12 August – 04 September 2024 (EnviroScience, 2024). Impacts to aquatic resources are anticipated to be beneficial and long term.

Action Alternative 2 (Intermediate) – In addition to the benefits described for Alternative 1 above, construction of the mussel habitat enhancement features is anticipated to result in more areas of suitable substrate and flow velocities where mussels could further colonize within the project area. Placement of hard point structures would increase structural complexity and result in areas with heterogeneous flows and substrates, thereby increasing their attractiveness to invertebrates (including mussels), fishes, reptiles, and amphibians. Impacts to aquatic resources are anticipated to be beneficial and long term.

Action Alternative 3 (Maximum) – In addition to the benefits described for Alternatives 1 and 2 above, the addition of woody bundles would benefit the aquatic habitat. The strategic addition of a variety of natural wood structures would enhance the aquatic food web and result in healthier fish populations. Fallen trees inherently serve as food sources and necessary cover for smaller fishes. Algae and insects thrive on these structures and are the foundation of a healthy aquatic food web. Additionally, structure can provide places for fish to hide from predators, cooler areas for fish to congregate during the heat of summer, and essential spawning/nesting habitat (IDNR, 2025). Thus, the addition of woody debris would improve river habitats for insects and fishes. A healthy population of aquatic insects is important since almost all game and non-game fishes in the river eat insects at some point in their life cycles, as do birds, bats and other organisms. Impacts to aquatic resources are anticipated to be beneficial and long term.

1.23.2.2 Terrestrial Species and Habitat

No Action Alternative (Future Without Project Condition) – The Clarksville and Carroll Islands area is a known congregation point for hundreds of bald eagles in winter. Under the No Action alternative, sedimentation is anticipated to result in further conversion and disconnection of vital side channel habitat into more terrestrial habitat. This would have detrimental impacts to the terrestrial wildlife that rely on these side channels for foraging and breeding. Impacts to existing terrestrial habitat, including that used by Neotropical migrants and bald eagles, is not anticipated.

Action Alternatives – Under the proposed alternatives, dredging of the upstream opening to Clarksville Slough would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and inhibiting the transition to terrestrial habitat. Retaining the side channel would provide essential habitat for terrestrial species such as bald eagles,

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otters and beavers, as well as amphibians and reptiles such as snakes, turtles, frogs, toads, and salamanders. The placement of additional features further supports terrestrial wildlife by providing habitat and increased recruitment for a variety of prey items consumed by terrestrial organisms. Under all action alternatives, any adverse impacts to existing terrestrial habitat would be negligible and short term.

1.23.2.3 Invasive Species

No Action Alternative (Future Without Project Condition) – Under the No Action alternative, it is anticipated that the invasive aquatic species previously identified would retain ample opportunity to establish and proliferate in the project area. This would be a detriment to the native species within the area. Additionally, the No Action Alternative would not involve the placement of any materials into the river; thus, any introduction or range expansion would not be the result of the No Action Alternative.

Action Alternative 1 (Minimum) – Under the Alternative 1, it is anticipated that the invasive aquatic species previously identified would retain ample opportunity to establish and proliferate in the project area. This would be a detriment to the native species within the area. Additionally, Alternative 1 involves only dredging of the Clarksville Slough and adjacent chutes to increase flow to the side channel. It would not involve the placement of any materials into the river. Best management practices regarding the transport of invasive species by vessels and equipment would be implemented. Thus, any introduction or range expansion would not result from Alternative 1.

Action Alternative 2 (Intermediate) – Under the Alternative 2, it is anticipated that the invasive aquatic species previously identified would retain ample opportunity to establish and proliferate in the project area. This would be a detriment to the native species within the area. Additionally, Alternative 2 involves dredging as described in Alternative 1, as well as construction of two SCEDs, hard points, and mussel riffles. These activities would involve the placement of stone material into the river. All material used for measures is required to be clean and free of invasive species. Best management practices regarding the transport of invasive species by vessels and equipment would be implemented. Thus, any introduction or range expansion would not result from Alternative 2.

Action Alternative 3 (Maximum) – The impacts of Alternative 3 would be as described for Alternative 2, with the incorporation of woody bundles throughout downstream end of Clarksville Slough. All material used for measures is required to be clean and free of invasive species. Best management practices regarding the transport of invasive species by vessels and equipment would be implemented. Thus, any introduction or range expansion would not result from Alternative 3.

1.23.2.4 Federally Threatened / Endangered Species

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the USFWS provided a list of federally threatened, endangered, proposed, and candidate species that could potentially be found in the area (Calhoun County, IL) via a letter dated 26 January 2024 (IPAC report), updated 14 March 2025. The listed species, federal protection status, and habitat descriptions can be found in Table 6 in Chapter 3. No critical habitats are located in the project area.

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, the side channel is anticipated to become shallower as a result of sedimentation due to slower flows

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and velocities. Shallower depths would result in increased summer temps, lower dissolved oxygen levels, and reduced connectivity between the main channel and side channel throughout the year. The general trend toward the conversion from aquatic to terrestrial habitat at head of Clarksville Island and in smaller tertiary channels throughout the side channel would continue. Improvements to bathymetric and velocity diversity as well as longitudinal connectivity of the side channel would not occur under the No Action Alternative. Thus, the No Action Alternative would be detrimental to the Spectaclecase mussel due to the lack of suitable structure to provide sheltered areas that are attractive to Spectaclecase colonization, as well as loss of aquatic habitat. Furthermore, mussel beds may be covered by sediment and/or sediment may impede filter feeding and reproduction. Additionally, fish hosts may use the area less frequently or not at all as the side channels transition from aquatic to terrestrial habitat. Bat species which utilize these areas for foraging may experience decreased areas of open foraging habitat and fewer prey items. The No Action Alternative is not anticipated to adversely impact the monarch butterfly, western regal fritillary butterfly, or decurrent false aster.

Action Alternatives – USACE prepared a biological assessment (Appendix A – Coordination with Biological Assessment) that is available to USFWS for concurrent review during the public comment period. For each species listed on the IPaC, the Biological Assessment (BA) describes the species status, site specific presence and use, as well as a discussion of the impacts of the No Action Alternative and the direct, indirect, and cumulative impacts of the proposed federal action. The BA also includes conservation measures proposed for the action alternative to help minimize effects to currently listed species within the proposed project area. The conservation measures include:

1. All clearing of trees > 3" dbh resulting from the USACE action would occur during the inactive season from November 1 to March 31 unless negative presence/probable absence survey results were obtained for the action area through appropriate surveys approved by the U.S. Fish and Wildlife Service (USFWS).
2. Stringent erosion and sedimentation controls to protect water quality would be implemented.
3. Appropriate buffer distances around potential eagle nests would be coordinated with the USFWS prior to or during construction to account for any changes in conditions from existing resources.

Based on the information contained in the BA, USACE has determined that the proposed action alternative "*May Affect, but is Not Likely to Adversely Affect*" the Indiana bat, northern long-eared bat, tricolored bat, spectaclecase mussel, monarch butterfly, western regal fritillary butterfly, and decurrent false aster.

1.23.2.5 State Threatened / Endangered Species

No Action Alternative (Future Without Project Condition) – Under the No Action alternative, sedimentation is anticipated to result in further conversion of vital backwater habitat and side channels into more terrestrial habitat which could have long-term adverse impacts to any state T&E species that may utilize these backwaters and side channels for spawning, rearing, foraging, or shelter including the state listed Lake Sturgeon, Butterfly Mussel, and Bigeye Shiner. Without the proposed project, adverse impacts are anticipated for INAI mussel bed sites, specifically Carroll Island Bed, Sny Island Bed, and Coon Island Bed, as the channel fills in with sediment. Mussel beds may be covered by sediment and/or sediment may impede filter feeding and reproduction. Additionally, fish hosts may use the area less frequently or not at all

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as the side channels transition from aquatic to terrestrial habitat. The Clarksville Dam Bed is located upstream of the proposed project area and is anticipated to remain unchanged without the federal project.

Action Alternative 1 (Minimum) – Under Alternative 1, dredging of the upstream opening to Clarksville Slough and adjacent upstream and downstream chutes would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and inhibiting the transition to terrestrial habitat. Additionally, adequate water depth and dissolved oxygen levels would be maintained for the benefit of aquatic organisms, including the state listed Lake Sturgeon, Butterfly Mussel, and Bigeye Shiner. Dredging is not proposed within the project area at locations where mussel beds were found during a survey conducted between 12 August – 04 September 2024 (EnviroScience, 2024). Dredge material placement would not occur near mussel beds or INAI sites and is not anticipated to cause adverse impacts to state listed species. Impacts to state listed species and mussel INAI sites in the area are anticipated to be beneficial and long term. Impacts to existing terrestrial habitat, including INAI sites, are not anticipated.

Action Alternative 2 (Intermediate) – In addition to the impacts and benefits described for Alternative 1 above, construction of the mussel habitat enhancement features are anticipated to result in more areas of suitable substrate and flow velocities where mussels could further colonize within the project area. Placement of hardpoint structures would increase structural complexity and result in areas with heterogeneous flows and substrates, thereby increasing its attractiveness to invertebrates (including mussels), fishes, reptiles, and amphibians. Structures would be placed at locations that benefit state listed species, in a manner that does not disrupt the existing habitat, mussel beds, aquatic INAI sites, and/or aquatic organisms. Impacts to state listed species in the area are anticipated to be beneficial and long term. Impacts to existing terrestrial habitat, including INAI sites, are not anticipated.

Action Alternative 3 (Maximum) – In addition to the impacts and benefits described for Alternatives 1 and 2 above, the addition of woody bundles would benefit aquatic organisms. The strategic addition of a variety of natural wood structures would enhance the aquatic food web, resulting in healthier fish populations, and serve as a substrate for mussel attachment. Additionally, fallen trees inherently serve as food sources and necessary cover for smaller fishes. Algae and insects thrive on these structures and are the foundation of a healthy aquatic food web. Additionally, structure can provide places for fish to hide from predators, cooler areas for fish to congregate during the heat of summer, and essential spawning/nesting habitat (IDNR, 2025). Thus, the addition of woody debris would improve river habitats for insects and fishes, including mussel host fishes. A healthy population of aquatic insects is important since almost all game and non-game fishes in the river eat insects at some point in their life cycles, as do other organisms. Impacts to state listed species, mussel beds, and aquatic INAI sites in the area are anticipated to be beneficial and long term. Impacts to existing terrestrial habitat, including INAI sites, are not anticipated.

1.23.2.5.1 Conservation Measures to Protect State Listed Species

The following conservation measures were recommended by the Illinois Department of Natural resources to avoid or minimize potential impacts to state natural areas and listed species. USACE responses are also included:

- Equipment should not be stored within the INAI Sites or within ROW.
    - No equipment shall be stored within the INAI Sites or within ROW.

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- Parking and staging in areas adjacent to the INAI sites should also be avoided.
    - Parking and staging shall not occur in areas adjacent to the INAI sites.
- Areas of exposed soil should be re-seeded with a local genotype seed, approved IDOT seed mix, or non-invasive cover crop.
    - No terrestrial work is proposed.
- Soil erosion and sediment control BMPs should be implemented and properly maintained. Wildlife-friendly plastic-free blanket should be used to prevent the entanglement of native wildlife.
    - No terrestrial work is proposed.
- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into the INAI sites and other nearby natural areas.
    - Good housekeeping practices would be implemented.
- Equipment should be power washed off-site, where feasible, to remove exotic/invasive seed or propagules.
    - BMPs shall be used to reduce spread of exotic/invasive seed or propagules.
- All equipment, including but not limited to boots, tools, equipment, tires, and treads, should be cleaned of all debris prior to entry of the project area, where feasible, to avoid spreading of exotic or invasive plant seeds into the INAI Sites.
    - BMPs shall be used to reduce spread of exotic/invasive species.
- Should any herbicide use be required for construction or operation, wind speed and direction should be carefully monitored to avoid herbicide drift into the INAI sites.
    - No herbicides would be used during the proposed project.
- If tree clearing is necessary, the Department recommends removing trees between 1 November and 31 March to avoid impacts to bats and birds.
    - No tree clearing is anticipated, however any required tree clearing would occur between 1 November and 31 March per USFWS recommendations.

1.23.2.5.2 IDNR Response

IDNR responded to the EcoCAT request in a letter dated 25 Feb 2025. In addition to the above recommendations, IDNR has determined that adverse impacts to Big-eye Shiner and Lake Sturgeon are unlikely.

The Department requests that USACE coordinates with IDNR's Endangered Species Program once plans are finalized in order to identify measures to avoid, minimize, and mitigate take of the state-listed Butterfly and Monkeyface. The IDNR and USACE would codevelop a strategy to conserve and provide conservation benefit to these species. Given the above recommendations are adopted, the IDNR has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely. Consultation is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If

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the action has not been implemented within two years of the date of the letter, or any of the above listed conditions develop, a new consultation is necessary. (Appendix A - Coordination).

1.23.3 Socioeconomic Environment

1.23.3.1 Socioeconomics

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, typical activities such as navigation and recreation would continue to occur in in this section of the river. No major impacts to the socioeconomics of the region, including population demographics, education, economic base, and/or employment and labor force are anticipated without this federal project. USACE continues to incorporate the needs and considerations of all communities, including those at risk.

Action Alternatives – Each of the action alternatives would continue to provide employment for workers. The larger the project, the more work would be involved. No adverse impacts to the socioeconomics of the region, including population demographics, education, economic base, and/or employment and labor force are anticipated as a result of any of the action alternatives. Positive economic benefits are anticipated as a result of the proposed work and continued recreational opportunities. USACE continues to incorporate the needs and considerations of all communities, including those at risk. Thus, overall impacts to socioeconomic resources are anticipated to be beneficial and short term.

1.23.3.2 Navigation Traffic

No Action Alternative (Future Without Project Condition) – Under the No Action Alternative, no ecosystem restoration activities would occur within the Clarksville Slough, and no impacts to navigation traffic would occur.

Action Alternatives – The proposed project is located on the opposite side of the Mississippi River from the navigation channel. Thus, none of the action alternatives are anticipated to result in adverse impacts to navigation. Accordingly, overall impacts to navigation traffic are anticipated to be negligible and short term.

1.23.3.3 Recreation

No Action Alternative (Future Without Project Condition) – Recreation is expected to remain highly valued in the area. A consequence of stabilizing a dynamic alluvial river system is that in general, new islands and side channel areas are no longer being created naturally; thus there is no potential for new hydrologic connections through secondary channels. Therefore, recreation that is supported by islands and side channels is limited to the available habitat. Conversion of aquatic to terrestrial habitat is anticipated to continue, and aquatic diversity is expected to continue to decline. Additionally, under the No Action alternative, routine structure maintenance and navigation channel activities would continue as needed. In the immediate vicinity of such maintenance activities, disturbance to aquatic organisms would occur. Consequently, there could be a negligible adverse effect on recreational fishing, and hunting or boating activities during these periods since maintenance activities would directly interfere by restricting access in work areas. However, these impacts would be considered very localized, temporary, and negligible.

Action Alternatives – Under the proposed alternatives, dredging of the upstream opening to Clarksville Slough would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and impeding the transition to terrestrial habitat. Additionally, the attractiveness of the side channel to invertebrates (including mussels), fishes,

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reptiles, and amphibians would increase, potentially resulting in better fishing opportunities. Furthermore, retaining the side channel would provide ample opportunities for waterfowl hunting, boating, wildlife viewing, wildlife photography, hiking, fishing, picnicking, and paddling. Under all action alternatives, any adverse impacts to existing terrestrial habitat would be negligible and short term. There could be small adverse effects to recreation during project construction due to restricted access in the vicinity of work areas as a result of public safety concerns. Overall, impacts to recreation are anticipated to be minor, beneficial, and long term.

1.23.3.4 Real Estate

No Action Alternative (Future Without Project Condition) – No change in real estate interests is anticipated in the future without project condition.

Action Alternatives – No LERRDS were anticipated to construct the Project measures of any action alternative. Measures are below the ordinary high water mark, therefore no real estate acquisition was identified.

1.23.3.5 Aesthetics and Visual Resources

No Action Alternative (Future Without Project Condition) – Routine navigation, structure maintenance, and channel operation and maintenance activities would continue under the No Action Alternative. These activities may detract from the aesthetic value of the river experience. However, these impacts would be very localized and minor in nature.

Action Alternatives – Under the action alternatives, dredging of the upstream opening to Clarksville Slough would allow increased flow velocity to transport sediment through the system, thereby reducing areas of accretion and inhibiting the transition to terrestrial habitat. Additionally, Alternative 2 would require the use of construction equipment to maneuver rocks, while Alternative 3 would require placement of wood bundles as well. From a visual perspective, these activities would be constructed underwater and thus may appear very similar to each other and to the No Action Alternative. After completion of construction, the project area would revert to a more natural appearance since all activities are below ordinary high water. Overall, the impact to aesthetics and visual resources would be minor and short term.

1.23.3.6 Climate Resilience

No Action Alternative (Future Without Project Condition) – It is anticipated that regional conditions would become more extreme as the climate continues to adjust. Without the proposed project, side channel and backwater habitats may become cut off from the main river channel and most species which depend on such areas would be detrimentally impacted.

Action Alternatives – Under all action alternatives, construction emissions would be released. The proposed project would not impact climate resilience, and climate variation has been incorporated into the design of the proposed project.

1.24 Cumulative Effects

Cumulative effects are defined as: "…which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

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Cumulative effects analysis recognizes that the most serious environmental impacts may result from the combination of individually minor effects of multiple actions over time, rather than the direct or indirect effects of a particular action.

Analyzing cumulative effects requires identifying the environmentally relevant area and the past, present, and future actions in that area that would contribute incrementally to the overall effect. The environmentally relevant area is determined by both location and time. Future actions are those that are reasonably likely to occur. A future project is only considered in this analysis if there is sufficient information on the project to understand what its incremental contribution to cumulative effects might be.

The 2004 IFR/EIS (Chapter 9- Cumulative Effects) contains detailed identification of other past, present, and future actions throughout the UMR. Since 2004, at least nine new projects have been or will be constructed within Pool 25 and are listed in Section 1.6.1.

1.24.1 Past, Present, and Future Projects

River based projects for Pool 25 are discussed in Section 1.6 of this report - Prior Reports, Existing Water Projects, and ongoing Programs. In addition to USACE, other entities also construct and operate river-based facilities and structures in the UMRS.

1.24.2 Cumulative Effects Assessment

The 2004 IFR/EIS (Chapter 9- Cumulative Effects) contains a comprehensive analysis of cumulative effects associated with the NESP and other past, present, and reasonably foreseeable actions. The Pool 25 past, present and future actions identified above are consistent with that analysis, which remains valid. Cumulative effects are not meaningfully different than analyzed in the 2004 IFR/EIS. Area-specific cumulative effects are summarized below where relevant. The environmental consequences outlined below are organized by the resource categories discussed for the project in Section 5. There are no area-specific adverse cumulative effects anticipated as a result of the proposed NESP project. Conversely, this NESP ecosystem restoration project reduces the negative cumulative impacts that have occurred because of the operation and maintenance of the 9-foot navigation channel project. Table 14 summarizes the cumulative effects of the NESP Mississippi River Clarksville/Carroll Island Complex Side Channel Restoration Ecosystem Restoration Project.

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Table 14. Summary of the effects of the "No Action" and TSP alternatives to physical, biological, and socioeconomic resources.

No Action Alternative Future Effects Compared to Existing Conditions (Effects of Nature)							Symbols: X = Long-Term Effect T = Temporary Effect C = Cumulative Impact	Proposed Alternatives, Effects of Action Alternatives to No Action Effects (Effects of Project)						
BENEFICIAL				ADVERSE				BENEFICIAL				ADVERSE		
SIGNIFICANT	SUBSTANTIAL	MINOR	NO EFFECT	MINOR	SUBSTANTIAL	SIGNIFICANT	Affected Resource	SIGNIFICANT	SUBSTANTIAL	MINOR	NO EFFECT	MINOR	SUBSTANTIAL	SIGNIFICANT
							A. Physical Effects							
		X					Topography, Geology, & Soils				X			
		X					Land Use/Land Cover				X			
			X				Prime Farmland				X			
			X				Noise					T		
				X			Water Quality			X				
				X			Hydraulics & Hydrology			X				
			X				Air Quality					T		
			X				Hazardous Waste				X			
							B. Biological Effects							
					C		Aquatic Habitat		C					
		X					Terrestrial Habitat				X			
			X				Bald Eagle				X			
			X				Migratory Birds				X			
			X				Invasive Species				X			
					X		State-listed Species		X					
			X				Federally-listed Species			X				
							B. Social Effects							
			X				Economics			X				
				X			Aesthetics				X			
				X			Recreation			X				
			X				Cultural Resources, Historic Prop.				X			
			X				Tribal Resources				X			

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EVALUATION AND COMPARISON OF FINAL ARRAY OF ALTERNATIVES

USACE is required to comprehensively evaluate and provide a complete accounting, consideration, and documentation of the total net benefits of alternatives a full array of benefit categories listed below. The economic, social, and environmental benefits, impacts, and costs are to be identified, measured, and/or qualitatively characterized using the four Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G) accounts (ER 1105-2-103, Section 1-6) listed below:

- *National Economic Development (NED)* account displays changes in the economic value of the national output of goods and services.
- *Environmental Quality (EQ)* account displays non-monetary effects on ecological, cultural, and aesthetic resources including the positive and adverse effects of aquatic ecosystem restoration plans. Increases (or decreases) in the net quantity and/or quality of desired ecosystem resources are referred to as *National Ecosystem Restoration (NER)* benefits or impacts.
- *Regional Economic Development (RED)* account displays changes in the distribution of regional economic activity (for example, income and employment).
- *Other Social Effects (OSE)* account displays plan effects on social aspects such as community resilience, public health, life safety, displacement, energy conservation, and similar effects.

Taken together, the concepts behind the four P&G accounts contribute to a structured planning framework for evaluating and comparing alternatives. Alternatives are assessed to determine if they have net benefits in total and by type in collaboration with non-federal partners and in consideration of other study interests and stakeholders, using available data, analysis, input from peer review, and professional judgment. This chapter describes the evaluation of the final array of alternatives by documenting the process used to determine the potential costs and habitat. The comparison of costs and habitat benefits is described below.

1.24.3 National Economic Development (NED)

The NED account displays changes in the economic value of the national output of goods and services. The No-Action Alternative would result in no project expenditure and would have no positive or negative impact on national output of goods and services. All the action alternatives provide similar and minimal direct economic benefits. An NED plan is not required to be identified for this study.

1.24.4 Environmental Quality Account

For ecosystem restoration projects such as this one, contributions to the EQ account are detailed both through NEPA compliance and through calculation of net ecosystem benefits. The EQ accounts for non-monetary effects on ecological, cultural, and aesthetic resources including the positive and adverse effects of ecosystem restoration plans.

1.24.4.1 National Ecosystem Restoration Benefits

The USACE's objective in ecosystem restoration is to contribute to national ecosystem restoration, or NER outputs, via increases in the net quantity and/or quality of desired ecosystem resources. The credit for the EQ account is the quantified benefits resulting from the project (AAHUs). Intangible and or non-quantifiable environmental benefits associated with the alternatives are assumed to increase proportionally relative to the AAHU outputs associated with each alternative.

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For aquatic ecosystem restoration projects, a plan that reasonably maximizes aquatic ecosystem restoration benefits compared to costs, consistent with the Federal Objectives and Guiding Principles, must be identified. The NER account identifies quantified habitat benefits against project costs to determine cost per AAHU; this is determined via alternatives found to be Best Buy under the CE/ICA as described in Section 6.3.1. The NER plan is the alternative plan that reasonably maximizes ecosystem restoration benefits compared to cost.

Based on the cost benefit analysis shown below in Section 6.3.1, the PDT identified Alternative 3 (Maximum) as the NER Plan as it reasonably maximizes the average annual cost per habitat unit benefits over the 50-year period of analysis over the other alternatives.

1.24.4.2 Habitat Benefits

Here, NEPA compliance is achieved by integrating an EA into this feasibility report, with a qualitative summary of environmental effects detailed in Section 5 of this report. A calculation of net ecosystem benefits was completed through the use of Habitat Evaluation Procedures (HEP; USFWS 1980a), and the application of HSI models. A summary of the habitat analysis is provided in Table 15; additional details are provided in Appendix B, Habitat Benefits Evaluation.

This assessment includes a summary of the existing biological conditions used in the evaluation, as well as a forecast for future conditions under the No Action Alternative and each potential Project alternative. The evaluation was conducted by a multi-agency team that included representatives from the District and Project partners. Aquatic habitat benefits were quantified using the HEP, a habitat-based evaluation methodology used in project planning. The procedure documents the quality and quantity of available habitat for selected wildlife species. The HEP assume that habitat for selected wildlife species can be described by a Habitat Suitability Index (HSI). This index value (from 0.0 to 1.0) is multiplied by the area of applicable habitat to obtain Habitat Units (HUs).

Changes in HUs occur as a habitat matures naturally or is influenced by development. These changes influence the cumulative HUs derived over the period of analysis (50 years). HUs are calculated for select target years and annualized using the IWR Planning Suite II tool annualizer over the period of analysis to derive a net Average Annual Habitat Unit (AAHU) quantity. By using target years, AAHUs were annualized using a linear interpolation approach, essentially drawing a straight line between target years, and then calculating the area under the curve for the resulting planning horizon benefit curve. Resulting net AAHUs are used as the output measurement to compare alternatives for the proposed Project. A summary of habitat analysis is provided in Table 14.

The PDT used two USACE-approved habitat evaluation methodologies in their analyses:

- General Freshwater Mussel Habitat Model
- White Bass Habitat Suitability Index

Table 15. Habitat Types and Evaluation

Habitat Type	Evaluation Area	Area (acres)	Habitat Suitability Index Model
Lotic side channel	Clarksville Is. Side Channel	405	White Bass HSI
Lotic side channel	Carroll Is. Side channel	674	Freshwater Mussel Model

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Habitat Type	Evaluation Area	Area (acres)	Habitat Suitability Index Model
TOTAL		1079	

Table 16 summarizes the benefits for each alternative to be carried forward for cost effectiveness and incremental cost analysis. The net average annual habitat benefits by habitat type for the final array of alternatives are displayed below. Alternative 3 provides the highest amount of total AAHU's. There are minimal adverse effects on cultural and aesthetic resources as result of the proposed alternatives, therefore, these factors were not considered useful for comparison criteria.

Table 16**.** Environmental Outputs (Net AAHU)

Alternative Name	Area (acres)	Total AAHU
No Action	1079	0
Alternative 1 – Minimum	1079	249
Alternative 2 – Intermediate	1079	464
Alternative 3 - Maximum	1079	497

1.24.5 Regional Economic Development (RED) Account

The RED account registers changes in the distribution of regional economic activity that result from each alternative plan. Evaluations of regional effects are to be carried out using nationally consistent projections of income, employment, output, and population. USACE and Michigan State University have developed a regional economic impact modeling tool, RECONS (Regional ECONomic System), that provides estimates of jobs and other economic measures such as labor income, value added, and sales that are supported by USACE programs, projects, and activities The RECONS model was run for the final array of action alternatives. As the costs of action alternatives varied, regional benefits would also vary. However, the percentage of Federal expenditure to regional benefits would be largely equivalent and not useful as criteria for comparison. See Appendix E, for the RECONS Analysis for the final array of alternatives.

The No Action Alternative would result in no project expenditure and would have no positive or negative regional impact. Table 17 displays the comparison of local impacts for all alternatives. All of the action alternatives would positively impact the regional economy and increase respective to each alternative relative to the number and size of the measures implemented.

Table 17. Local Total Impact for Final Array of Alternatives ($ Million)

Alternative	Local Capture	Output	Jobs*	Labor Income	Value Added
Alt 1 Minimum	$4.28	$5.33	47.1	$2.70	$3.01
Alt 2 Intermediate	$6.05	$7.53	66.5	$3.82	$4.25
Alt 3 Maximum	$6.08	$7.57	66.9	$3.84	$4.28

* Jobs are presented in full-time equivalence (FTE)

1.24.6 Other Social Effects Account

The OSE account addresses plan effects from perspectives that are relevant to the planning

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process but are not reflected in the other three accounts. Per the recent Policy Directive "Comprehensive Documentation of Benefits in Decision Document" (5 January 2021) the PDT relied on the expertise of the interagency team and other local experts to determine OSE. Per guidance, teams can, at a minimum, consider urban, rural and community impacts; life, health, and safety factors; displacement; and long-term productivity under OSE.

The PDT evaluated the study area for factors that could potentially produce non-monetized benefits or impacts (positive and negative) across the array of alternatives. When evaluating the socioeconomic status included in the 2022 U.S. Census data, Calhoun County, IL is classified as having a "low to low-medium" status, meaning there are minimal at risk communities within the vicinity of the project. Also, the study scope is narrowly focused on implementation of project measures under below OHWM and it is anticipated that there is minimal life safety risk associated with all the plans. Therefore, it was determined that the effects captured under the OSE account would be minimal and this evaluation did not significantly contribute to the plan comparison process.

1.25 Cost Estimates

Cost estimates for alternative comparison were prepared using October 2024 (FY25) price levels; annualized costs include construction costs, contingency costs, interest during construction, monitoring and adaptive management costs (M&AM), and O&M costs. Contingencies were developed based on project risks and determined to be 37.8 percent construction contingency. The total project contingency is 36 percent. A 26.6 percent contingency was applied to planning, engineering, and design (PED), and a 32.2 percent construction management contingency. Quantities and costs may vary during final design. All project measures are located under OWHM; consequently, there are no lands and damages or relocation costs. Project costs used in the CE/ICA were annualized based on the 2025 Federal discount rate of 3.0 percent and a 50-year period of analysis. Interest During Construction (IDC) was calculated using mid-year compounding based on a one-year period of construction, using the FY25 discount rate of 3.0 percent.

Table 18 shows the estimated cost of Project alternatives as of completion of the habitat analysis and for use in the comparison of alternatives, prior to selection, refinement, and developing a full cost estimate of the TSP. A full description of the cost estimate, including all related elements, can be found in Appendix K, Costs.

Table 18. Cost Estimates (FY25 Price Level)

Name of Alternative	First Cost (Million)	Interest During Construction	Average Annual Construction	Average Annual M&AM	Average Annual Cost
No Action	$ -	$ -	$ -	$ -	$ -
Alt 1 - Minimum	$6.88	$102,452	$271, 415	$87,254	$358,669
Alt 2 - Intermediate	$9.71	$144,618	$383,121	$123,052	$506,174
Alt 3 - Maximum	$9.77	$145,422	$385,251	$125,787	$511,038

Note: Costs are shown at the October 2024 price level and were annualized using the current FY25 Federal discount rate of 3.0 percent over a 50-year period of analysis.

1.26 Comparison of Final Array of Alternatives

1.26.1 Cost Effectiveness & Incremental Cost Analysis

IWR Planning Suite II software was used to complete a CE/ICA for the four alternatives (including the No Action Alternative), using the AAHUs and annualized costs described in this

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section. The CE/ICA is used when project benefits are not measured in dollars and is used to ensure the least cost alternative is identified for each possible level of environmental output, and the maximum level of output is identified for any level of investment. Cost Effectiveness evaluation is used to identify the least costly solution to achieve a range of project benefits; the Incremental Cost Analysis identifies the subset of cost-effective plans that are superior financial investments, called "Best Buys," through analysis of the preliminary incremental costs. Best Buys are the plans that are the most efficient at producing the output variable or provide the greatest increase in AAHUs for the least increase in preliminary cost. The first Best Buy is the most efficient plan, producing output at the lowest incremental cost per unit. If a higher level of output is desired than that provided by the first Best Buy, the second-Best Buy is the most efficient plan for producing additional output, and so on.

The CE/ICA analysis evaluated four possible plans. Table 19 and Figure 21 show the resulting alternatives differentiated by cost effectiveness. From this list of four alternatives, four cost effective plans and two Best Buy Plans were identified.

Table 19. Final Array of Alternatives Differentiated by Cost Effectiveness

Alternative Name	Annualized Cost ($)	Annualized Output (AAHU)	Average Cost/Output ($/AAHU)	Cost Effective?
No Action	$0	0	$0	Yes (Best Buy)
Alternative 1 Minimum	$358,669	249	$1,440	Yes
Alternative 2 Intermediate	$506,174	464	$1,091	Yes
Alternative 3 Maximum	$511,038	497	$1,028	Yes (Best Buy)

Note: Costs are shown at the November 2024 price level and were annualized using the current FY25 Federal discount rate of 3.0 percent over a 50-year period of analysis.

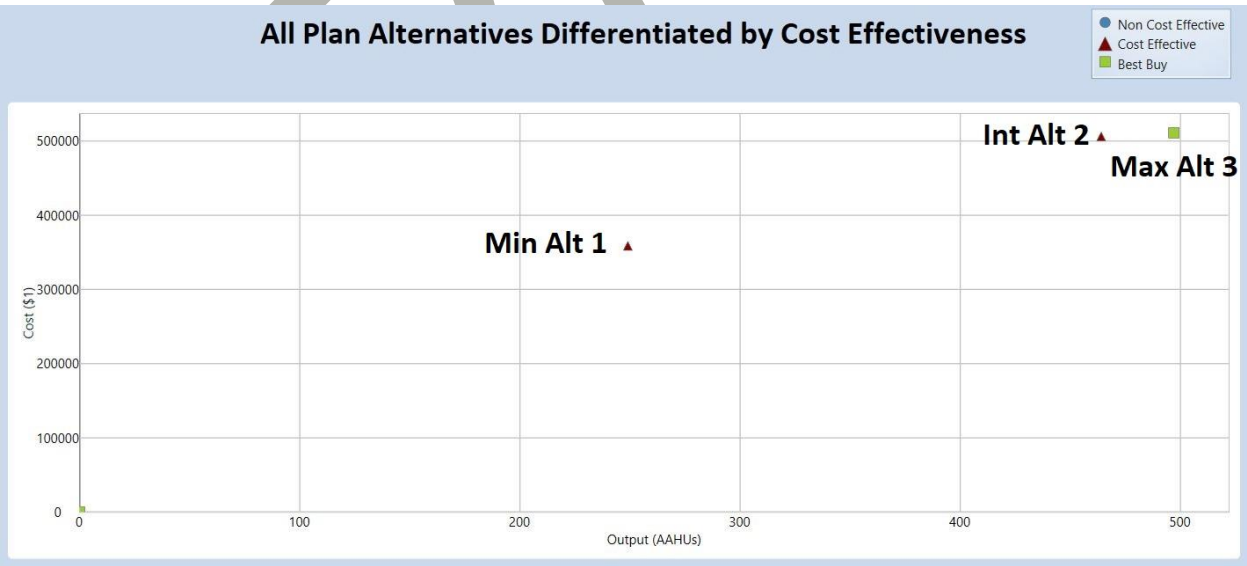


Figure 21. Final Array of Alternatives Differentiated by Cost Effectiveness

The No Action alternative and Alternative 3 (Maximum) were identified as Best Buy plans and carried forward for further analysis to determine the incremental cost for each additional increment of output. Table 20 displays the expected environmental outputs in terms of average

annual habitat units along with the total first cost, interest during construction, and total average annual cost for the final array of alternatives. Table 21 displays the incremental costs per habitat unit for the final array of alternatives.

Table 20. Incremental Cost Analysis of Final Array of Alternatives

Alternative	First Cost	Interest During Construction	Average Annual Construction	Average Annual O&M and MAM	Average Annual Cost	AAHUs	Cost Effective or Best Buy
No Action	$ -	$ -	$ -	$ -	$ -	-	**Best Buy**
Alt 1	$6,881,000	$102,452	$271,415	$87,254	$358,669	249	Cost Effective
Alt 2	$9,713,000	$144,618	$383,121	$123,052	$506,174	464	Cost Effective
Alt 3	$9,767,000	$145,422	$385,251	$125,787	$511,038	497	**Best Buy**

Table 21. Incremental Costs of Final Array of Alternatives

Alternative	AAHUs	First Cost	Interest During Construction	Average Annual Cost	Average Annual Cost per AAHU	Additional Average Annual Cost	Additional Output (AAHUs)	Incremental Cost (per AAHU)
No Action	-	$ -	$ -	$ -	$ -	$ -	-	$ -
Alt 1	249	$6,881,000	$102,452	$358,669	$1,440	$358,669	249	$1,440
Alt 2	464	$9,713,000	$144,618	$506,174	$1,091	$147,505	215	$686
Alt 3	497	$9,767,000	$145,422	$511,038	$1,028	$4,864	33	$147



Figure 22. Incremental Cost Analysis of Best Buy Plans

All of the alternatives are considered to be cost effective. The first Best Buy plan, the No Action Plan, is the lowest average annual cost but produces no benefit. The No Action Alternative does not include any measures or provide any additional AAHUs. The No Action Alternative would have no financial cost to the federal government but does not meet any of the project objectives. The study area would continue to degrade as discussed in Section 3.0.

The second Best Buy plan is Alternative 3 Maximum, which provides increases in benefits at the lowest average cost per habitat unit with an average annual cost of $1,028 per AAHU. The Maximum alternative would provide a net of 497 AAHU benefit gain over the No Action Alternative. This alternative significantly meets all the side channel restoration objectives. When comparing the costs of all of the alternatives, Alternative 3 maximized the net gain of AAHUs with a relatively high incremental cost; therefore, this alternative is considered to be worth the investment.

1.26.2 Summary of Comprehensive Benefits

Per Section 2-3 of ER 1105-2-103, USACE is required to comprehensively evaluate alternatives to determine if they have net benefits in total and type in each benefit category As previously described in Sections 4.5 and 4.7, the review of the four formulation criteria suggested by the P&G and resource significance (institutional, public, and technical) were used to aide in the selection of a TSP. To facilitate discussion and evaluation of the trade-offs among the four P&G accounts the array of alternatives must include, at a minimum, the following plans for evaluation for ecosystem restoration studies:

- "No Action" alternative - The No Action plan assumes no action is taken by the USACE to achieve the planning objectives and used to inform the FWOP condition. The No Action Plan forms the basis against which all other alternative plans are measured.
- National Ecosystem Restoration (NER) plan - Alternative 3 provides a total of 497 AAHUs, which is the highest benefit gain. Alternative 3 is the only Best Buy action alternative, making it the most efficient. Although Alternative 2 is considered cost effective, when comparing Alternative 2 and Alternative 3, Alternative 3 provides additional benefits of 33 AAHUs, with less cost per AAHU. Based on evaluation of habitat units, CE/ICA, and consideration of the significance of proposed ecological benefits, Alternative 3 has been identified as the NER Plan.
- Total Net Benefits Plan, which is a plan that reasonably maximizes total net benefits across all benefit categories including monetized and non-monetized benefits. As previously stated there are minimal OSE benefits to produce non-monetized benefits, therefore the total net benefits plan is the NER plan. Alternative 3 has been identified as the Total Net Benefit Plans as it reasonably maximizes the average annual cost per habitat unit benefits over the 50-year period of analysis over the other alternatives.
- Least environmentally damaging practicable alternative (LEDPA), as required by the CWA under Section 404 (Title 40, Part 230 of the 40 CFR Part 230): This plan is evaluated per Clean Water Act (CWA) under Section 404(b)(1)(40 CFR Part 230), which identified a LEDPA by comparing plans on the severity of the environmental impacts caused by proposed discharges of dredged or fill material into waters of the United States. Water quality certification for the proposed activities is covered by Nationwide Permit Number 27 –

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Aquatic Habitat Restoration, Enhancement, and Establishment Activities (NWP Final Notice, 86 FR, 73576) and the proposed actions meet conditions for Illinois 401 certification. NWP 27 requires activities result in a net increase in aquatic resource functions and services. The analysis contained in the main report and Appendix documents compliance with that requirement and all associated NWP conditions. There are minimal impacts across all plans, however, this analysis, combined with the NEPA analyses contained in the 2004 IFR, illustrate that Alternative 3 is not environmentally damaging, and thus meets the requirements to identify the LEDPA as specified in ER 1105-2-103. Based on analysis of impacts covered under CWA, Sections 404/401, the LEDPA was also identified based on the alternative that provides the greatest habitat benefits (497 AAHUs), which is Alternative 3, and consists of pilot channel dredging, construction of two side channel enhancement dikes, notching of the closure structures with partial degradation, substrate enhancement for mussel colonization, and installation of large woody bundles.

The performance of each alternative, relative to the baseline, the study objectives, the four formulation and evaluation criteria, and other screening criteria used is summarized in Table 21 below. Comprehensive benefits evaluation across the four categories for each of the alternatives and the results of the plan selection evaluation process are summarized in a table of effects by summarizing the contributions of each alternative, including the no action alternative, to the Federal Objectives and each of the Guiding Principles.

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Table 22. Table of Effects

FEDERAL OBJECTIVES	Maximize Economic Development		Protect and Restore Natural Systems										
GUIDING PRINCIPLES	Sustainable Economic Development		Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Healthy & Resilient Ecosystems	Local Community Benefits			
P&G ACCOUNTS	NED	RED	EQ	EQ	EQ	EQ	EQ	EQ	EQ	OSE			
PLANNING OBJECTIVES			All Objectives	All Objectives	Increase side channel connectivity	Increase side channel flow diversity	Increase substrate diversity	Increase side channel sediment transport	Increase depth diversity				
EVALUATION CRITERIA		Effectiveness	Efficiency	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Effectiveness	Acceptability	Acceptability	Completeness
METRICS (QUANTITATIVE and QUALITATIVE)	Cost ($) / Cost Effective	Annual RED Benefits ($Million)	Cost ($) / AAHU	AAHUs (Net Annual)	Meet Planning Objectives (Inclusion of measures)					Local Community Benefits	Risk to Navigation	Partner Satisfaction	Complete
No Action	$0 / No	$0.00	$0	0	No	No	No	No	No	No	No anticipated impacts	No	No
Alternative 1 (L)	$358,669 / Cost Effective	$4.28	N/A	249	Yes	Yes	No	Yes	Yes	No	No anticipated impacts	Yes, but not preferred	Yes
Alternative 2	$506,174 / Cost Effective	$5.66	N/A	464	Yes	Yes	Yes	Yes	Yes	No	No anticipated impacts	Yes, but not preferred	Yes
Alternative 3 (T, R, L)	$511,038 / Best Buy	$6.83	$1,028	497	Yes	Yes	Yes	Yes	Yes	No	No anticipated impacts	Highest Preferred	Yes

Costs were developed in FY 25 with 3% discount rate, 40% contingency, 15% E&D and 10% S&A, 3% MAM

(T) = Total Net Benefits Plan
(R) = NER Plan
(L) = LEDPA

1.27 Selection of the Tentatively Selected Plan.

As previously described in Section 6, the PDT considered the total benefits of project alternatives, including equal consideration of economic, environmental, and social categories. Review of the four formulation criteria suggested by the P&G (completeness, effectiveness, efficiency, and acceptability), CE/ICA, and resource significance (institutional, public, and technical) were used to aid in the selection of the TSP. Resource partners were involved in each planning step and support the TSP.

Alternative 3 is the plan that most effectively maximizes ecosystem restoration benefits relative to cost while meeting the project's overall goals and objectives. It was identified as the NER Plan, the total net benefits plan, and the LEDPA. Alternative 3 was approved by USACE MVD during the TSP milestone briefing held on 18 February 2025. The TSP is consistent with regional natural resource agency plans provides significant ecosystem restoration benefits, particularly in relation to side channel restoration.

The measures in Alternative 3 aim to increase side channel connectivity and sediment transport by dredging Clarksville Slough, notching of existing closure structures, and creation of two SCEDs along Clarksville Island. Compared to Alternative 2, Alternative 3 enhances side channel flow diversity by including all possible side channel restoration measures, including the placement of woody bundles within Clarksville Slough, which has been identified as a priority measure under NESP. It also includes rock-gravel substrate enhancement to maximize mussel habitat throughout the study area.

Alternative 3 is considered a "best buy" alternative, offering a relatively low incremental cost while delivering a total of 497 AAHUs. This plan poses minimal risk to USACE's Navigation mission, as H&H modeling indicates no significant increase in deposition within the navigation channel. Additionally, Alternative 3 was developed in collaboration with the RRAT to ensure alignment with federal and state natural resource agency goals.

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TENTATIVELY SELECTED PLAN

1.28 Description of Plan.

The TSP was developed following an analysis of project alternatives, including a CE/ICA. The TSP is shown on Figure 23, and described as follows:

Alternative 3 – Maximum Habitat Benefit: The TSP includes measures to maximize environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. This plan consists of the following measures:

- Dredging a pilot channel at the upstream opening of Clarksville Slough
- Partial degrade / notching of closing structures in Clarksville Slough
- Series of hard points at the upper end of Clarksville Slough
- Creation of two SCEDs: SCED273 would be created by modifying the existing Dike 273.2 at the tip of Clarksville Island. SCED 268 is a new structure connected to Dike 267.7L near the slough on Carroll Island.
- Mussel riffles: Approximately 150 acres of substrate enhancement for mussel colonization throughout the study area.
- Installation of woody bundles in the downstream end of Clarksville Slough to increase flow diversity.

The plan integrates dredging and material placement from Alternative 1, with additional measures to further improve environmental outcomes. These enhancements include installing a series of hard points at the upper end of Clarksville Slough and creating two SCEDs:

SCED 273, formed by modifying existing Dike 273.2 at the tip of Clarksville Island, and

SCED 268, a new structure connected to Dike 267.7L near Carroll Island.

The plan also introduces mussel riffles, created by placing large stones to alter flow patterns, promoting deposition of gravels and coarse sands downstream. These flow shadows enhance bed and substrate stability, creating optimal pockets for mussel colonization. In addition, the partial degradation and modification of closure structures in Clarksville Slough will involve redistributing rock downstream to improve side channel flow and generate riffle habitat below the plunge pools.

The estimated total project first cost is $9.77M (FY25) and produces a net gain of 497 AAHU. The total habitat restored is 910 AAHUs and 1,079 acres. The TSP would increase the quality and quantity of ecosystem resources and meet the needs of a large variety of native aquatic and terrestrial species. Restoring side channel depth diversity would improve aquatic habitat for native fishes, including state listed Lake Sturgeon, Bigeye Shiner, and Western Sand Darter. Improved mussel habitat would provide for and enhance vital habitat for mussel species, including the state listed Butterfly and Monkeyface within the proposed project area and the upper Mississippi River. The improved habitat is anticipated to provide enhanced opportunities for the recruitment of federally protected mussel species as well. The project outputs are also consistent with the goals and objectives of the NESP.

The Plan is consistent with the NESP ecosystem restoration program authorization in WRDA 2007 Section 8004 and would, in concert with other NESP ecosystem projects, ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway and address the cumulative environmental impacts of operation of the system and improve the

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ecological integrity of the Upper Mississippi River and Illinois River. The proposed project fits within the general framework of the larger NESP Recommended Plan as described in Table 23, below.

Table 23. Alignment with the Authorized NESP Recommended Plan for Ecosystem Projects

Type of Ecosystem Project	Number of Projects	Acres Benefitted
Side Channel Restoration	1	1,079

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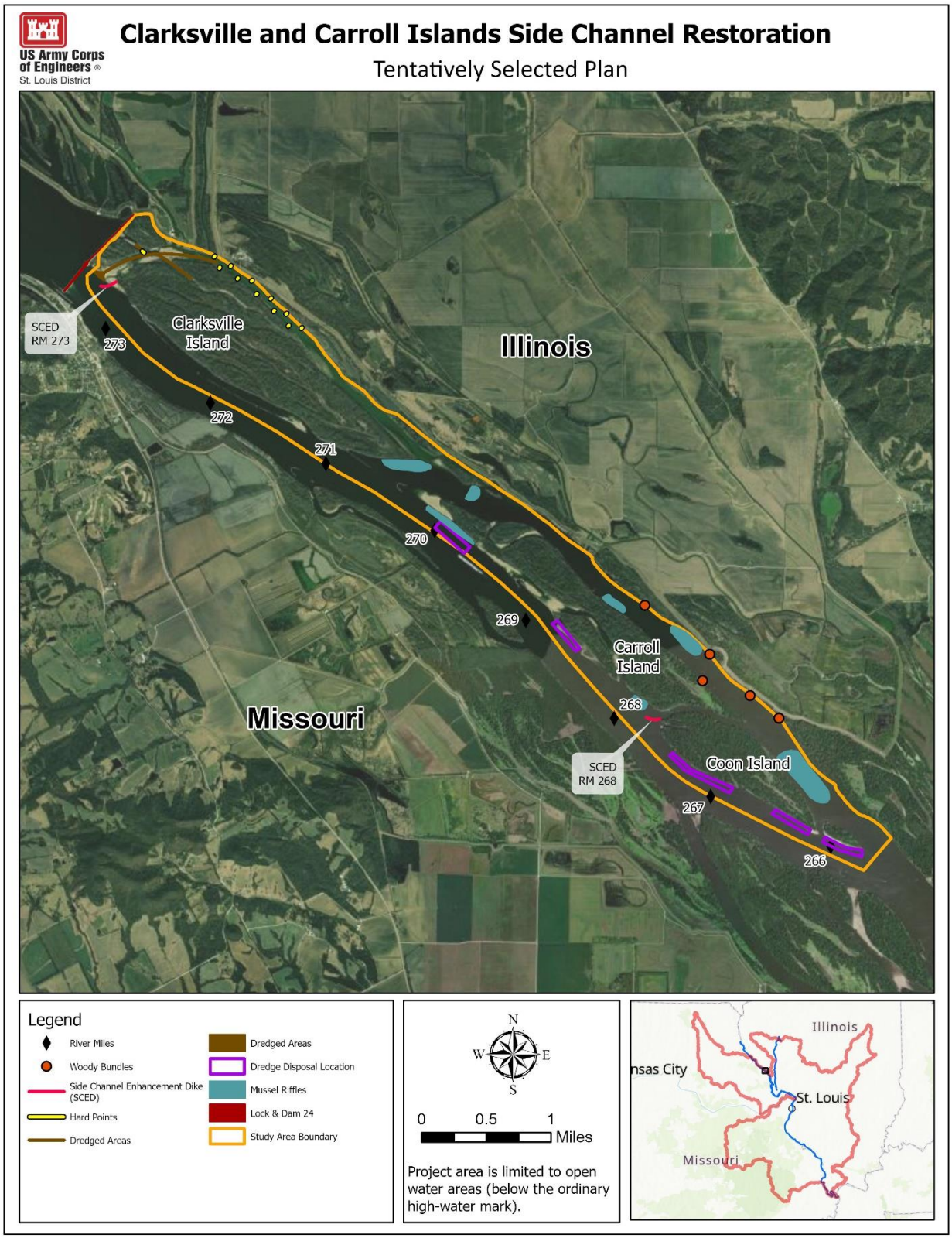


Figure 23. Tentatively Selected Plan

Table 24 presents the Project Implementation Schedule. Table 24 outlines the provisional Project Implementation Report Schedule. While these dates are accurate as of this report, they are subject to change in the future.

Table 24. Project Implementation Schedule

Event	Scheduled Date
Public Review of Draft Report	27 June – 16 July 2025
Approve Final PIR/EA	08 September 2025
Submit Final PIR/EA to MVD	09 September 2025
Complete Design	June 2027
Initiate Construction	July 2027
Complete All Construction Stages	January 2029

Details of quantities and design for the TSP can be found in Appendix K, Costs. A summary of quantities is presented in Table 25.

Table 25. Summary of Quantities for the TSP

Measure	Dredging (CY)	Stone Materials (TN)
Dredging	130,620	-
River training Strucuresstructure	-	29,205
Mussel Substrate	-	4,474
Total	**130,620**	**33,679**

1.29 Cost Estimates.

Table 26 presents the Project First Cost including contingencies. Contingencies were developed based on project risks. The total project contingency is 36 percent. The construction continency is 38 percent, the PED contingency is 27 percent, and the construction management contingency is 32 percent. Quantities and costs may vary during final design. A full description of the cost estimate, including all related elements, can be found in Appendix K, Costs.

Table 26. Project Design and Construction Cost Estimates (October 2024 (FY25) Price Level)

Account	Measure	Project First Cost
01	Lands and Damages	$0
06	Fish and Wildlife Facilities	$9,261,000
30	Planning, Engineering and Design	$1,286,000
31	Construction Management	$891,000
TOTAL		**$11,439,000**

The annualized costs and AAHUs were used to calculate a total annual cost per average annual habitat unit (Table 27). The total cost per habitat unit is $1,164. The costs used for analysis purposes include total construction costs, IDC, and annualized O&M, adaptive management, and monitoring costs. Costs for Monitoring and Adaptive Management are included in Appendix C. Performance monitoring and adaptive management are funded by the NESP Program.

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Table 27. Total Annual Cost per Average Annual Habitat Unit ($1,000's) (October 2024 (FY25) Price Level, 3.0 percent discount rate)

Analysis Element	Cost	Total
Project First Cost ($)	$11,439	
IDC ($)	$171	
Total Economic First Cost ($)	-	$11,610
Annualized Economic First Cost ($)	$453	
Annual O&M ($)	$26	
Annual Adaptive Management and Monitoring Costs ($)	$100	
Total Annual Costs ($)	-	$578
AAHUs	-	497
Total Annual Cost/AAHU ($)	-	$1,164

1.30 OMRR&R Considerations.

Operation and maintenance of ecosystem restoration projects is similar to that undertaken by the partner agencies in day-to-day management of parks, boat ramps, wildlife management areas, and other public use areas. O&M is the responsibility of USACE. Upon completion of the construction as determined by the District Engineer, USACE shall operate and maintain the Project as defined in this PIR/EA and in the Project's O&M manual; 100 percent of all costs associated with the O&M of the Project would be borne by USACE. Table 28 lists the major O&M components, their associated frequencies, and costs.

Table 28. O&M Considerations

O&M Component	Frequency	Cost
Restore Hardpoints	Every 25 Years	$37,895
Restore SCED 1	Every 10 Years	$203,704
Restore SCED 2	Every 25 Years	$29,800
Re-dredge Pilot	Once at 20 Years	$979,650

Replacement stone for the hard points and SCED are anticipated to be replenished at the intervals found above in Table 28, due to the projected flood frequency. Replenishment of this stone will ensure that adequate flows are observed through the pilot channel and ensure the predicted habitat uplift remains in place through the life of the project. These training structures are vital to providing adequate velocities, which will ensure the longevity of the dredged pilot channel within the project area. If losses are noted within the first 10 years post construction, these will be covered under Adaptive Management actions.

A single event of maintenance dredging of the pilot channel is anticipated to be required, once at year 20 post-project, in order to reset the channel from anticipated sedimentation under the predicted flood frequency over the life of the project. Maintenance dredging of this channel will ensure adequate flows are observed through the side channel complex and will ensure the predicted habitat uplift remains in place for the life of the project. This maintenance dredging activity is vital to providing adequate flow and velocity, which will ensure the longevity of the dredged pilot channel within the project area. If excessive sedimentation is noted within the first 10 years post construction, additional sediment removal will be covered under Adaptive Management actions.

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1.31 Design Considerations.

1.31.1 Overview

Design for the side channel complex is anticipated to be initiated for the entire project up to approximately the 35% level of design. This will be used to develop and refine the contract acquisition plan, validate assumptions from feasibility, and otherwise determine the path forward for major design decisions. After the Plan is refined, the design refinements will likely be broken up by contract, and the first contract will proceed with the remainder of design, and then into contract acquisition. Once the first contract package is submitted to contracting, the subsequent contract package is assumed to commence with the remaining design tasks. If broken into more than two contract packages, subsequent contract packages will follow the same process. Any lessons learned during early construction stages will be applied to subsequent design packages, and/or result in implementation of one or more Adaptive Management strategies.

1.31.2 Surveys

Collection of mussel survey data has been conducted during the Planning phase and will be used to inform design. Determination of additional survey needs are ongoing. Bathymetry will be collected using a combination of single-beam and multi-beam sonar, with acquisition occurring when adequate water levels are present.

1.31.3 Geotechnical and Environmental Explorations

The PDT does not anticipate the need for either Geotechnical or Environmental Exploration and testing. HTRW and Clean Water Act compliance are likewise not anticipated to require exploration and testing at this time, but if construction activities are not determined to fall under Nationwide Permits and/or existing environmental permits/NEPA coordination, additional information may be needed. Design estimates included a conservative estimate of the cost for conducting these activities, if necessary.

1.31.4 Hydraulics and Hydrology

The aquatic features implemented in the Plan include placing suitable substrate for mussel riffle habitats, pilot channel excavation, and SCED placement Design of these measures will require input from hydraulic engineers. Additional hydraulic modeling may also be utilized to inform design.

1.31.5 Civil Design

Planning Level of Design

The Planning process did not include Civil design of any measures beyond a conceptual level. Measures were quantified using a combination of 2-dimensional lines and shapes, along with combination of H&H models, and by manipulation of the existing conditions terrain to mimic channel excavation, stone placement. Quantities were extrapolated from this minimal information to provide an approximation of 10%-20% level of design. The remaining measures will also be designed and adjusted as needed to reduce impacts, manage construction costs, and maximize potential habitat benefits.

Alternatives are anticipated to have minimal staging area requirements. Clarksville/Carroll Boat ramp access could be at Hamburg river mile 258.50R or near the Lock and Dam 24. The requirements of establishing reliable access for crews to conduct TSI and OMRR&R activities will be determined during PED.

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Scope of Design Phase

After additional survey data is collected, an updated Existing Conditions Terrain model will be created for use by Civil Design and Hydraulics. This data will be used to model the proposed measures for use in the hydraulics model(s), develop detailed quantity estimates, and for generating construction drawings.

All measures from the Plan will be designed based on this terrain, aerial imagery, and site visits to the measure locations to identify potential design conflicts and opportunities. All measures will be designed in detail, and adjusted as needed from Planning to reduce impacts, manage construction costs, and maximize potential habitat benefits during Design.

Details on draft limitations for floating plant, and equipment assumptions and associated water surface elevations for establishing reliable access will also need to be determined during Design.

1.31.6 Cultural

District archaeologist performed a records review of the Illinois State Historic Preservation Office (SHPO) files that revealed that two archaeological shoreline surveys (Surveys 595 and 1090) have been completed in the study area and eleven other surveys have been completed within a mile. Thirteen archaeological sites were identified within a mile of the project area as well as two National Register Districts (Clarksville Historic District and Lock and Dam No. 24 Historic District). There are no recorded cultural resources reported within the Area of Potential Effect (APE) of the project study area. See section 3.2.2.4 for additional details.

1.32 Construction Considerations.

The District identified several construction considerations in the study area. A summary of critical construction considerations is provided in the following sections.

1.32.1 Protected Species

1.32.1.1 Bald Eagles

Consideration (in coordination with the USFWS) would be given during design preparation to sequence construction activities in a manner that minimizes impacts. No forestry measures would be utilized within a buffer of at least 100 feet of a known Bald Eagle nest location. At least a 330 feet buffer would be utilized during the nesting season for Timber Stand Improvement (TSI) in locations where the eagle nest is not visible through a forested buffer. A 660 feet buffer would be utilized under instances of direct line of site during the active nesting season according to the National Bald Eagle Management Guidelines. Staging of equipment would not be allowed within a 660 feet buffer of a known active nest. Additional coordination with the USFWS would be conducted during the design phase to account for changes in conditions in the study area relative to proposed project measures prior to or during construction.

1.32.1.2 Indiana Bat, Northern Long-Eared Bat, and Tricolored Bat.

Any construction work requiring tree clearing activities must have tree clearing operations scheduled within the bats inactive season from November 1 to March 31. Continued coordination with USFWS will occur through future project phases if tree clearing would be done during the roost season. During clearing, dead trees, split trees, trees that have cavities, and trees with exfoliating bark would be favored for retention where possible. Design of forestry measures would aim to improve foraging habitat and promote development of long-term roost tree sites. With the entirety of this project falling below the OHWM, no impacts to T&E bat species are anticipated.

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1.32.1.3 Migratory Wildlife

In accordance with Executive Order 13186, take of migratory birds protected under the Migratory Bird Treaty Act should be avoided or minimized, to the extent practicable, to avoid adverse impact on migratory bird resources. Tree clearing during winter would avoid impacts to nesting migratory wildlife.

1.32.1.4 Air Quality

Diesel emissions and fugitive dust during project construction may pose environmental and human health risks and should be minimized. Applicable protective measures as outlined in USEPA's "Construction Emissions Control Checklist" would be followed.

1.32.1.5 Permits

Laws of the United States and State of Illinois have assigned the USACE and Illinois with specific and different regulatory roles designed to protect the waters within and on the State's boundaries. Protecting Missouri waters is a cooperative effort between the applicant and regulatory agencies.

1.32.1.6 Section 404/401 Compliance

The District is compliant with Section 404 and 401 of the Clean Water Act. See the 404(b)1 evaluation (Appendix J – Clean Water Act) for more details. Based on this evaluation, the project qualifies for a Nationwide 27 permit for Ecosystem Restoration. The Nationwide 27 permit includes general conditions that meet IDNR Section 401 water quality certification requirements. Therefore, the necessary Section 401 water quality certification would be achieved through the associated Nationwide 27 permit conditions.

1.32.1.7 National Pollutant Discharge Elimination System (NPDES)

A storm water discharge or NPDES permit for construction activities may be required. Effective March 10, 2003, the NPDES storm water discharge permit is required when a construction activity disturbs more than one acre. The construction contract for the study area may trigger the need for the contractor to apply for this permit. The contractor would be required to prepare an erosion control plan to ensure that unprotected soil is not allowed to leave the study area work limits. The contractor would be required to comply with all local codes and permit requirements.

1.32.2 Construction Schedule Constraints

Scheduling of construction contracts would depend on availability of funds. The following documents constraints related to construction:

- Flooding has the potential to limit site access.
- No clearing of trees shall be allowed between April 1 and October 1, to avoid impacts to bat summer roosting habitat.
- During waterfowl season construction activities may be limited to certain areas.
- Any potential construction staging and access points to project measures would be defined during Plans and Specifications to avoid and minimize potential impacts to wetland resources.
- Coordination with IDNR & FWS personnel is required prior to working during hunting seasons.
- No clearing of trees where roosting or occupied nests exist shall be allowed when bald eagles are present in the area. There are known active bald eagle nests near the study area. Construction activities and other sources of disturbance would be avoided within a

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660-foot buffer area from the nest, when active. See section 3.2.3.2 for more detail.

- In accordance with Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, take of migratory birds protected under the MBTA should be avoided or minimized, to the extent practicable, to avoid adverse impact on migratory bird resources.

1.33 Construction Considerations.

A summary of construction considerations will be developed in more detail during the design phase. Preliminary construction considerations have been identified related to dredging and timing of construction. It is assumed that the dredging method would be mechanical dredging with a barge mounted excavator. It is assumed that the dredge disposal areas would be multiple miles away from the dredging location and that the most feasible way to transfer the excavated material is to place it on a work barge and have the material hauled to the placement site where there would be another barge mounted excavator to place the material. The timing of construction would most likely be required to occur during appropriate water levels. Mussel riffles would be created by enhancing rock gravel substrate. The rock for substrate enhancement would be acquired by modifying the existing closure structure in Clarksville Slough and dragging rock immediately downstream and for use in other areas where it is feasible to create mussel riffles.

1.34 Real Estate Considerations.

No LERRDS were anticipated to construct the Project measures. Measures are below the ordinary high water mark. There are no proposed Public Law 91-646 relocations, as there are no real estate acquisitions required or identified. All access to the Project would be by water. Boat ramps in the Project vicinity are public boat ramps, which the contractor may use. The Contractor would need to abide by local boat ramp usage regulations. All placement materials would be excavated from within navigational servitude and Project waters and from existing topsoil within the Project area.

1.35 Monitoring and Adaptive Management.

Per Section 2039 of WRDA 2007, monitoring for ecosystem restoration studies would be conducted to determine Project success. “Monitoring includes the systematic collection and analysis of data that provides information useful for assessment of Project performance, determining whether ecological success has been achieved, or whether adaptive management may be needed to attain Project benefits.”

This section summarizes the post-construction evaluation plan, which includes performance monitoring, adaptive management, and long-term performance reporting, described in Table 29. See Appendix C, Monitoring and Adaptive Management, for a full description of post-construction evaluation, including performance monitoring, adaptive management activities, and long-term performance reporting. Table 29 presents the post-construction evaluation plan, which displays several specific parameters and the levels of restoration that the Project hopes

Table 29. Post-Construction Evaluation Description

Monitoring Stage	Length of Time	Description	Funding Source

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Performance Monitoring	10 years	For entire Project, determine the degree to which the Project is meeting the success criteria and for informing potential adaptive management decisions	NESP Programmatic Cost
Adaptive Management	10 years	Provides a process for making decisions in the face of uncertainty and learning from outcomes of management actions; may improve the performance of a designed construction measure that is not meeting performance criteria	NESP Programmatic Cost

The 2008 Implementation Guidance for Upper Mississippi River and Illinois Waterway System also indicates that NESP PIRs must consider the "degree to which the project contributes to learning in an adaptive management context…" The Clarksville and Carroll Islands project contributes to learning in an adaptive management context by establishing monitoring of aquatic habitats for flow diversity and mussel habitat quality. Other factors may be considered to evaluate Project performance and success.

1.36 Environmental Operating Principles (EOPs).

The EOPs outline the USACE's role and responsibility to sustainably use and restore our natural resources in a world that is complex and changing. The TSP meets the intent of the EOPs. The PDT proactively considered the environmental consequences of the proposed Project, as well as the benefits of the TSP. The Project would be constructed in compliance with all applicable environmental laws and regulations. In accordance with the EOPs, the District has proposed a Project that supports economic and environmentally sustainable solutions.

1.37 Risk and Uncertainty.

Areas of risk and uncertainty have been analyzed and were defined so that decisions could be made regarding the reliability of estimated benefits and the costs of alternative plans. Risk is defined as the probability or likelihood for an outcome. Uncertainty refers to the likelihood that an outcome results from a lack of knowledge about critical elements or processes that then contributes to risk or natural variability in the same elements or processes.

The PDT worked to manage risk in developing measures by expanding on and referencing successful similar work completed by previous UMRS restoration projects and the Upper Mississippi River Restoration Environmental Management Program Environmental Design Handbook (Corps, Rock Island District, Rock Island IL), 2012. The PDT used that experience and information to identify possible risks and decrease uncertainty in plan formulation. No measures in the TSP are believed to be burdened by significant risk or uncertainty regarding the eventual success of the proposed measures. Significant risk would be avoided by proper design, appropriate selection, and correct seasonal timing of applications.

Table 30. Summary of Risk and Uncertainty

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Risk	Driver	Consequence	Risk Type	Risk Level	Risk Management
Internal takings analysis could impact project scope, schedule, & implementation	USACE Guidance on takings analysis is not finalized, may become hyper conservative due to recent litigation. Takings analysis may have to be approved at HQ.	Project schedule could be delayed. Findings may not be compliant with USACE guidance and effect implementation of the project.	Study, Implementation	High	H&H modeling refinement, internal coordination. Analysis would occur when sufficient level of design is developed in PED. Coordination with Office of Counsel.
Project features could cause an increase to water surface elevations or adversely affect private property	Currently unknown whether the proposed features (Hard Points, SCEDs, etc.) may cause a minimal rise in water surface elevations	Expected rise is <0.1'. Expected to be compliant / obtain permit from State of Illinois.	Study	Low	Continue H&H modeling and external coordination with IDNR. (Missouri does not require permit)
Project features cause adverse effects to the federally authorized UMR-IWW Navigation channel	Measures include potential for siltation to encroach in adjacent channel. Clarksville study area is historically a chronic dredging location	Decreased depth of authorized navigation channel causing additional dredging (costs).	Study	Low	Alternatives were H&H modelled and shown to not cause impacts to Navigation channel. Monitoring and Adaptive Management Plan would be in place to monitor navigation impacts.

1.38 Compliance with Environmental Statutes.

Status of compliance activities with environmental protection statutes, regulations, and guidelines is listed in Table 31 below. Remaining compliance activities would be completed as construction limits and timelines develop with enough detail to properly coordinate any potential effects related to the TSP within and/or adjacent to the study area.

Table 31. Environmental Protection Statutes and Other Environmental Requirements

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Federal Environmental Protection Statutes and Requirements	Applicability/ Compliance[1/2/3]
Federal Statutes	
Bald and Golden Eagle Protection Act of 1940, as amended	PARTIAL
Clean Air Act, as amended	FULL
Clean Water Act, as amended	PARTIAL
Coastal Zone Management Act, as amended	NA
Endangered Species Act of 1973, as amended	PARTIAL
Federal Water Project Recreation Act, as amended	FULL
Fish and Wildlife Coordination Act, as amended	PARTIAL
Land and Water Conservation Fund Act of 1965, as amended	FULL
Migratory Bird Treaty Act of 1918, as amended	PARTIAL
National Environmental Policy Act of 1969, as amended	PARTIAL
National Historic Preservation Act of 1966, as amended	PARTIAL
National Wildlife Refuge Administration Act of 1966	FULL
Noise Pollution and Abatement Act of 1972	FULL
Watershed Protection and Flood Prevention Act	FULL
Wild and Scenic Rivers Act of 1968, as amended	NA
Farmland Protection Policy Act of 1981	NA
Executive Orders, Memoranda	
Floodplain Management (E.O. 11988)	FULL
Protection of Wetlands (E.O. 11990)	FULL
Safeguarding the Nation from the Impacts of Invasive Species (E.O. 13112)	FULL
Protection and Enhancement of Environmental Quality (E.O. 11514)	FULL
Protection and Enhancement of the Cultural Environment (E.O. 11593)	FULL
Analysis of Impacts on Prime and Unique Farmland (CEQ Memorandum, Aug 1976)	NA
Consultation and Coordination with Indian Tribal Governments (E.O. 13175)	PARTIAL
Protection of Children from Environmental Health Risks and Safety Risks	FULL

[1] Full Compliance = having met all requirements of the statute for the current stage of project
[2] Partial Compliance = having met some requirements of the statute for the current stage of project or anticipate full compliance at completion of current state of project (additional information in Section VI.H)
[3] Not Applicable = no requirements for the statute or Project does not contain resources applicable to the law

The Bald and Golden Eagle Protection Act, Endangered Species Act, and Migratory Bird Treaty Act compliance would be fully complete after coordination is completed with the USFWS during the 30-day public review period.

Fish and Wildlife Coordination Act compliance will be fully complete after issuance of the Final Fish and Wildlife Coordination Act Report by the USFWS.

Clean Water Act compliance will be fully complete after coordination with the state of Illinois regarding the use of 2022 Nationwide Permit Number 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities is complete.

National Environmental Policy Act compliance will be fully complete after providing the public a minimum 30-day review period, incorporation of any substantial comments/concerns, and signing of the decision document by USACE.

National Historic Preservation Act compliance will be fully complete after concurrence is received from Illinois SHPO that no historic properties would be affected by this project following a 30-day review period. If it is deemed necessary, the District plans to utilize the June 25, 2024

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implemented, Programmatic Agreement (PA) regarding the Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program for any additional compliance with Section 106 of the NHPA. Although unanticipated, Section VII of the PA outlines implementing procedures to follow to ensure that previously unidentified historic properties discovered during the construction activities for Program undertakings are subject to the requirements of 36 CFR § 800.13(b-d). The provisions outlined in Section VIII of the PA will be included in all construction, operations, and maintenance plans.

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PUBLIC INVOLVEMENT, COORDINATION, AND CONSULTATION*

Scoping is an early and open process for determining the range of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping was conducted during the planning process using a variety of communication methods with the affected public, agencies, and organizations. Scoping and coordination have been conducted with the following state and federal agencies, and other interested parties: RRAT, USFWS, MDC, IDNR, and the Illinois SHPO.

1.39 Coordination Meetings.

This draft PIR/EA is a reflection of a collaboration of key partners and stakeholders. Numerous coordination and stakeholder meetings, as well as a site visit, were conducted to discuss problems, opportunities, project goals and objectives, potential restoration measures, and expected outcomes with and without the proposed project. A scoping charrette was held prior to the development of the study. In addition, a rapid iteration, Habitat Workshop, alternatives Meeting, and a Pre-TSP Meeting was held with partners. A full copy of the Planning Charrette report is available upon request. In addition, development of this report was actively coordinated throughout the planning process with the RRAT as well as other resource agencies.

1.40 Coordination by Correspondence.

1.40.1 Public Views and Comments.

In accordance with NEPA, the draft report with integrated EA will be available to interested members of the public during a 30-day public review period, yet to be scheduled. The report will be on the District website and a letter will be mailed to interested members of the public identifying where to find the report, how to provide comments, and the date of the public meeting/open house to be held. Comments received during public review will be incorporated into the report where appropriate prior to finalizing the design.

1.40.2 Historical Preservation and Tribal Coordination

The National Historic Preservation Act of 1966, as amended (NHPA), requires federal agencies to consider the effects of “undertakings”, or projects, on significant historical or archaeological sites (“historic properties”). To ensure that agencies consider the effects they are required to provide the SHPO an opportunity to review and comment on the plans and the agency’s assessment of the potential risk to historic properties through the process of consultation. Coordination is included in Appendix A.

The United States government has a unique legal relationship with federally recognized Indian tribes based on recognition of inherent powers of Tribal sovereignty and self-government. Federal agencies are required to provide tribes the opportunity to comment on projects that may affect areas that hold significance for their tribe. The District consults with 21 Tribes that have an interest within this area. Coordination is included in Appendix A.

1.40.3 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act directs the Service to investigate and report on proposed Federal actions that affect any stream or other body of water and to provide recommendations to minimize impacts on fish and wildlife resources (16 U.S.C. 661-666(e)). The PDT has been in communication with the U.S. Fish and Wildlife Service regarding the Fish and Wildlife Coordination Act prior to the development of the study. The USFWS, as a member of the RRAT, has been fully involved with the project and has provided guidance during the development of the TSP. USFWS Ecological Services Office provided a Draft Fish and Wildlife Coordination Act

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Report (DCAR) for the project on 04 April 2025, and provided copies to IDNR and MDC for comment and input (Appendix A - Coordination). Coordination regarding the Fish and Wildlife Coordination Act is ongoing.

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RECOMMENDATION

The Recommended Plan is Alternative 3, which includes measures to maximize environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. This plan consists of the following measures:

- Dredging a pilot channel at the upstream opening of Clarksville Slough
- Series of hard points at the upper end of Clarksville Slough
- Creation of two SCEDs: SCED273 would be created by modifying the existing Dike 273.2 at the tip of Clarksville Island. SCED 268 is a new structure connected to Dike 267.7L near the slough on Carroll Island.
- Creation of mussel riffles throughout the study area. The mussel riffles would be created by enhancing rock gravel substrate. The rock for substrate enhancement would be acquired by modifying the existing closure structure in Clarksville Slough and dragging rock immediately downstream and for use in other areas where it is feasible to create mussel riffles.
- Addition of woody bundles in the downstream end of Clarksville Slough to increase flow diversity.

The estimated Project first cost of the Recommended Plan is $11,439,000 (October 2024 (FY25) price level). The project is 100 percent Federally funded. Upon completion, USACE is responsible for O&M at an estimated annual cost of $26,000.

The expected outputs of the Recommended Plan include restoration of 1,079 acres of habitat. The Recommended Plan would contribute 497 average annual habitat units of side channel habitat over the 50-year period of analysis.

The Recommended Plan is consistent with the NESP ecosystem restoration program authorization in WRDA 2007 Section 8004 and would, in concert with other NESP ecosystem projects, ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway and address the cumulative environmental impacts of operation of the system and improve the ecological integrity of the Upper Mississippi River and Illinois River.

I have weighed the outputs to be obtained from the full implementation of the Clarksville and Carroll Islands Side Channel Restoration Ecosystem Restoration Project against its estimated cost and have considered the various alternatives proposed, impacts identified, and overall scope. I recommend that the Clarksville and Carroll Islands Side Channel Restoration Project be implemented as generally described in this report.

The recommendations herein reflect the information available at the time and current Department of the Army policies governing the formulation of individual projects. They do not reflect programming and budgeting priorities inherent in the formulation of national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are approved for implementing funding. However, prior to approval, the state, Federal agencies and other parties will be advised of any modifications and afforded the opportunity to comment.

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Andy J. Pannier COL,
U.S. Army Corps of Engineers
District Commander

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ACKNOWLEDGEMENTS*

Name	Role	Education	Years of Experience
Shane Simmons	Project Manager	BS Fisheries and Wildlife MS Biology	10
Justin Garrett	Biologist, Environmental Planning; Co-Lead Report Writer; National Environmental Policy Act (NEPA) Compliance	BS Ecology, Evolution, and Systematics MS Biology	11
Teri Allen, Ph.D.	Ecologist, Environmental Planning; Co-Lead Report Writer; National Environmental Policy Act (NEPA) Compliance; ESA; FWCA; 404(b)(1)	BS Marine Biology MS Freshwater Ecology Ph.D. Freshwater Ecology and Conservation Biology	27
Katy Fechter	Plan Formulator; Report Writer	BS Ecology, Evolution, and Environment	4
Matt Voss	Hydraulic Engineer Engineering Technical Lead	BS Civil Engineering	19
Maude Wilkinson	Hydraulic Engineer	BS Civil Engineering	4
Ryan Holland	Cost Engineering Technician	BS Accounting & Finance	11
Kaleb Rakers	Environmental Specialist	BS Environmental Science	2
Lara Andersen	Cultural Resources & Tribal Liaison	BA Anthropology MA Anthropology	30
Joie Lyerla	Realty Specialist	BS Business Administration	16
Jen Backer	GIS	BS Biology/Psychology	3

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		MA Biology MS Geography	
Brandon Belt	Office of Legal Counsel	BS Biological Sciences Juris Doctor Certificate of Health Law	7
Doug Reilly	Civil Engineer	BS Civil Engineering	16

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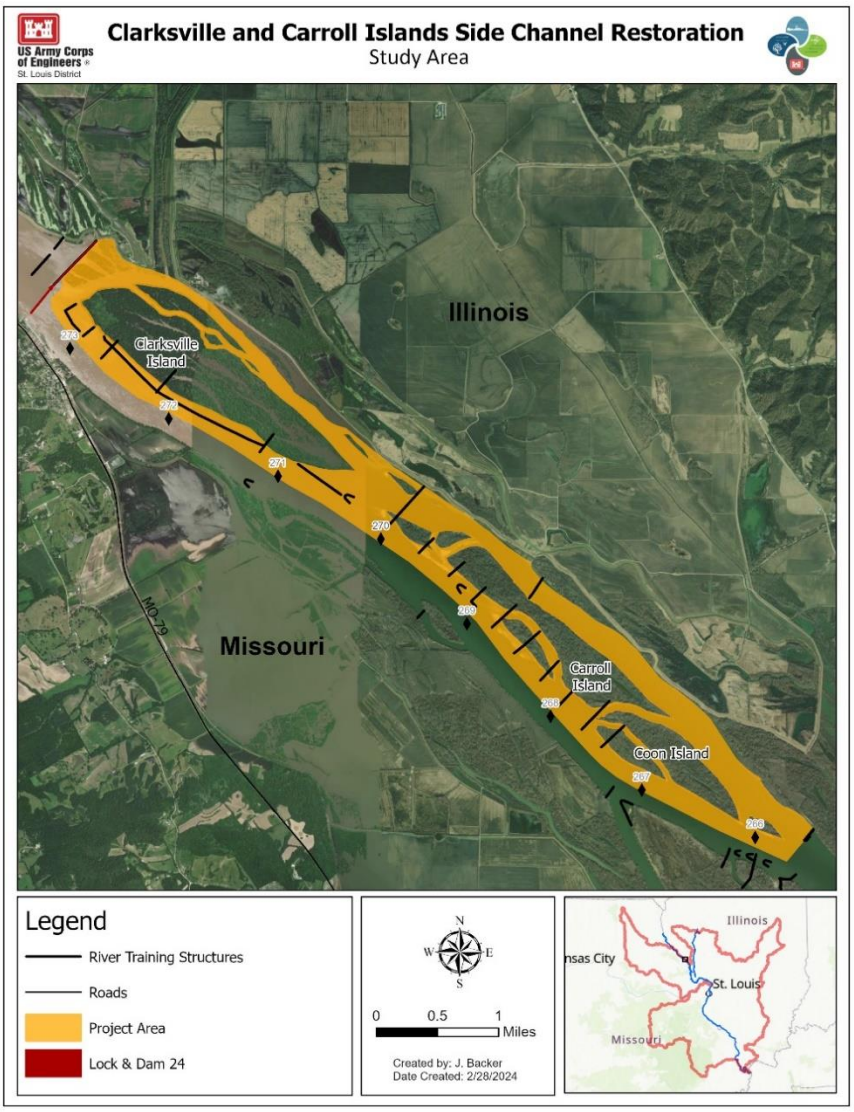
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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers®
St. Louis District

July 2025
Appendix A
Coordination

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1 PUBLIC INVOLVEMENT, COORDINATION, AND CONSULTATION

Scoping is an early and open process for determining the range of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping was conducted during the planning process using a variety of communication methods with the affected public, agencies, and organizations. Scoping and coordination have been conducted with the following state and federal agencies, and other interested parties: River Resources Action Team (RRAT), U.S. Fish and Wildlife Service, Missouri Department of Conservation, Illinois Department of Natural Resources, Missouri State Historic Preservation Office, and the Illinois Historic Preservation Division.

2 COORDINATION MEETINGS

A scoping charrette was held on 19 August 2022 at the Applied River Engineering Center (AREC), prior to the development of the study. RRAT representatives from each of the three organizations (U.S. Fish and Wildlife Service, Missouri Department of Conservation, Illinois Department of Natural Resources) attended and provided input on project objectives, potential management measures, future conditions of the site, and identified resource issues. A full copy of the Planning Charrette report is available upon request. In addition, development of this report was actively coordinated throughout the planning process with the RRAT as well as other resource agencies.

Additionally, numerous coordination and stakeholder meetings, as well as site visits, were conducted to discuss problems, opportunities, project goals and objectives, potential restoration measures, and expected outcomes with and without the proposed project.

3 FISH AND WILDLIFE SERVICE

3.1 Endangered Species Act

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, an updated list of species and critical habitat was acquired from the USFWS IPaC website on 23 July 2025 for the proposed project area. There are no designated critical habitats within the project area (IPaC Project Code 2024-0041366). USACE prepared a biological assessment. Based on the information obtained, USACE has determined the proposed project "*May Affect, but is Not Likely to Adversely Affect*" the Indiana Bat, Northern Long-Eared Bat, Tricolored Bat, Spectaclecase mussel, Monarch butterfly, Western Regal Fritillary butterfly, and Decurrent False Aster. The USFWS will continue review of the project during the public review period.

3.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act directs the Service to investigate and report on proposed Federal actions that affect any stream or other body of water and to provide recommendations to minimize impacts on fish and wildlife resources (16 U.S.C. 661-666(e)). The PDT has been in communication with the U.S. Fish and Wildlife Service regarding the Fish and Wildlife Coordination Act during the development of the study. The USFWS, as a member of the RRAT, has been fully involved with the project and has provided guidance during the development of

the TSP. USFWS Ecological Services Office provided a Draft Fish and Wildlife Coordination Act Report (DCAR) for the project on 04 April 2025, and provided copies to IDNR and MDC for comment and input. On XX MONTH 2025, MDC provided an email stating that they concurred with the findings and conclusions of the DCAR. On XX MONTH, USACE responded to the USFWS that USACE has reviewed the Draft Coordination Act Report and concur with the findings and conclusions. The final Fish and Wildlife Coordination Act Report was received on XX MONTH 2025.

3.3 The Bald and Golden Eagle Protection Act

The BGEPA prohibits unregulated take of Bald Eagles, including disturbance. The USFWS developed the National Bald Eagle Management Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to Bald Eagles, particularly where such impacts may constitute disturbance. Bald Eagle are known to utilize various locations throughout the project area. USACE attempted to identify Bald Eagle nests within the project vicinity, however none were found. Additionally, the correspondence from the USFWS stated that they were not aware of any Bald Eagle nests as of 7 April 2025. If any Bald Eagle nest trees are identified within 660' of any project activity, the National Bald Eagle Management Guidelines would be implemented to minimize potential impacts and appropriate coordination with the U.S. Fish and Wildlife Service would be conducted.

4 ILLINOIS DEPARTMENT OF NATURAL RESOURCES

The IDNR was accessed via the Ecological Compliance Assessment Tool (EcoCAT) website on 27 January 2025, for a list of Illinois state threatened and endangered (T&E) species that could potentially be located in the potential project areas. The EcoCAT report identified three listed species and seven Illinois Natural Areas Inventory sites near the project vicinity. In a letter dated 25 February 2025, IDNR stated that the Department has reviewed the EcoCAT submission and concluded that adverse effects are unlikely *with the inclusion of their recommendations*.

5 WATER QUALITY CERTIFICATION - ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

U.S. Army Corps of Engineers intends to utilize the Clean Water Act Section 404 Nationwide Permit for Aquatic Habitat Restoration, Enhancement, and Establishment Activities (27)/Maintenance (3) and associated with Illinois Programmatic Section 401 Water Quality Certification for the Mississippi River Pool 25 Clarksville/Carroll Island Complex Side Channel Restoration Project was coordinated with the Illinois Environmental Protection Agency on 02 April 2025. The Illinois EPA responded on 17 April 2025 requesting clarification and a response was provided on 21 April 2025. During PED sediment sampling and a gradation analysis will be performed to ensure the proposed dredge cut meets the 401 certification conditions.

6 HISTORIC PRESERVATION - ILLINOIS STATE HISTORIC PRESERVATION OFFICE

The National Historic Preservation Act of 1966, as amended (NHPA), requires federal agencies to consider the effects of "undertakings", or projects, on significant historical or archaeological sites ("historic properties"). To ensure that agencies consider the effects they are required to

provide the State Historic Preservation Office (SHPO) an opportunity to review and comment on the plans and the agency's assessment of the potential risk to historic properties through the process of consultation. Formal consultation took place on 25 April 2025, via letters to Illinois State Historic Preservation Office (IL SHPO) stating the District determined that no historic properties would be affected by this project. If it is deemed necessary the District plans to utilize the 25 June 2024, implemented, Programmatic Agreement (PA) regarding the Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program for any additional compliance with Section 106. Although unanticipated, Section VII of the PA outlines implementing procedures to follow to ensure that previously unidentified historic properties discovered during the construction activities for Program undertakings are subject to the requirements of 36 CFR § 800.13(b-d). The provisions outlined in Section VIII of the PA will be included in all construction, operations, and maintenance plans.

On 16 May 2025, the IL SHPO concurred with the District finding that no historic properties would be affected by this project (SHPO Log # 003042525).

7 TRIBAL COORDINATION

The United States government has a unique legal relationship with federally recognized Indian tribes based on recognition of inherent powers of Tribal sovereignty and self - government. Federal agencies are required to provide tribes the opportunity to comment on projects that may affect areas that hold significance for their tribe. The St. Louis District consults with 22 Tribes that have an interest within this area. They were contacted on 25 April 2025, via a letter initiating consultation for this project. The District stated that because all work would be conducted from floating barge with no ground disturbing activities taking place on land, a determination of no historic properties affected was made. The District requested Tribes review the maps and information provided and contact the District if they had any questions, comments, or areas of concern.

Five Tribes responded to the request to consult for this project. The Eastern Shawnee Tribe of Oklahoma (28 April 2025), Iowa Tribe of Kansas and Nebraska (1 May 2025), The Osage Nation (27 May 2025) stated that they had no concerns and concurred with the District's determination of no historic properties affected. The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (12 June 2025) stated that they were not provided providing any additional comments. The Prairie Band Potawatomi Nation (11-27 June 2025) requested request on-site monitoring during the construction process. They were informed by USACE that the project would be taking place within the Mississippi River below the ordinary high water mark (OHWM) and the construction will take place via a floating barge. They were also informed that USACE would be using the NESP/UMRR programmatic agreement for this project regarding post-review discovery and treatment of human remains and items of religious and cultural importance. The Eastern Shawnee Tribe of Oklahoma, The Osage Nation, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, and The Prairie Band Potawatomi Nation requested to be contacted if any archaeological and/or human remains are identified during construction. Thus, no impacts to cultural or tribal resources are anticipated as a result of any Alternative.

8 PUBLIC VIEWS AND COMMENTS

In accordance with NEPA, the draft report with integrated EA was available to interested members of the public during a 30-day public review period, X July to X August 2025. The report was on the St. Louis District website and a letter was mailed to interested members of the public identifying where to find the report, how to provide comments. Comments received during public review were incorporated into the report where appropriate prior to finalizing the design.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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In Reply Refer To: 03/14/2025 17:46:36 UTC
Project Code: 2024-0041366
Project Name: NESP-Eco Clarksville & Carroll Side Channel Complex restoration.

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation. If you determine that other federally protected species not listed in this Official Species List are present in your action area, you are still responsible to analyze your potential effects to those species and consult with the U.S. Fish and Wildlife Service if consultation is required.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service

(Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or more Determination Keys to conclude consultation on your action for species covered by those keys.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.???????

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.
2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.
3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.
4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat, ‘may affect’ is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.
2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species’ resources may have consequences even if the species is not present when the project is implemented.
3. If no listed or proposed species will be exposed to stressors caused by the action, a ‘no effect’ determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."
4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.
5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.
6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/library/collections/midwest-region-section-7-consultations.

https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance

You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Tricolored Bat Update

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat (Perimyotis subflavus) as endangered under the Endangered Species Act (ESA). The Service has up to 12-months from the date the proposal published to make a final determination, either to list the tricolored bat under the Act or to withdraw the proposal. The Service determined the bat faces extinction primarily due to the rangewide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across North America. Because tricolored bat populations have been greatly reduced due to WNS, surviving bat populations are now more vulnerable to other stressors such as human disturbance and habitat loss. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective (typically 30 days after publication of the final rule in the Federal Register), the prohibitions against jeopardizing its continued existence and “take” will apply. Therefore, if your future or existing project has the potential to adversely affect tricolored bats after the potential new listing goes into effect, we recommend that the effects of the project on tricolored bat and their habitat be analyzed to determine whether authorization under ESA section 7 or 10 is necessary. Projects with an existing section 7 biological opinion may require reinitiation of consultation, and projects with an existing section 10 incidental take permit may require an amendment to provide uninterrupted authorization for covered activities. Contact our office for assistance.

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information

visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 998-5945

PROJECT SUMMARY

Project Code: 2024-0041366
Project Name: NESP-Eco Clarksville & Carroll Side Channel Complex restoration.
Project Type: Restoration / Enhancement of Waterbody
Project Description: Restore aquatic habitats within the project boundary.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.34501825,-90.83468771307793,14z



Counties: Calhoun County, Illinois

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Spectaclecase (mussel) *Cumberlandia monodonta* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7867	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Western Regal Fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Decurrent False Aster *Boltonia decurrens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7705	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
GREAT RIVER NATIONAL WILDLIFE REFUGE https://www.fws.gov/our-facilities?$keywords="%5C%22GREAT+RIVER+NATIONAL+WILDLIFE+REFUGE%5C%22"	782.479

IPAC USER CONTACT INFORMATION

Agency:	Army Corps of Engineers
Name:	Teri Allen
Address:	1222 Spruce Street
Address Line 2:	REPDN CEMVS-PD-C
City:	St. Louis
State:	MO
Zip:	63103
Email	teri.c.allen@usace.army.mil
Phone:	3143318084

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Illinois - Iowa Field Office
1511 47th Avenue
Moline, Illinois 61265

In Reply Refer To:
FWS/SISO
Consultation Code:

April 4, 2025

Colonel Andy J. Pannier
U.S. Army Corps of Engineers
St. Louis District
1222 Spruce Street
St. Louis, Missouri 63103-2833

Attn: Teri Allen, CEMVP-PD-C

Dear Colonel Pannier:

This letter constitutes our Draft Fish and Wildlife Coordination Act Report (Report) for Clarksville and Carroll Islands Side Channel Navigation and Ecosystem Sustainability Program (NESP) Project located between Upper Mississippi River miles 266 and 273, Calhoun County, Illinois. This report is intended to provide partial compliance with Subsection 2(b) of the Fish and Wildlife Coordination Act and compliance with the Endangered Species Act of 1973, as amended, and the National Environmental Policy Act, as amended. This Report has not been reviewed by the Missouri Department of Conservation or the Illinois Department of Natural Resources and additional coordination with those agencies may be warranted.

Introduction

The Clarksville and Carroll Islands Side Channel Project (Project) is a component of NESP Ecosystem Restoration, authorized by Sections 8004 of the Water Resources Development Act (WRDA) of 2007. NESP is a long-term program of ecosystem restoration and navigation improvements for the Upper Mississippi River System (UMRS) and the primary goal of the program is to increase the capacity and improve the reliability of the inland navigation system while restoring, protecting, and enhancing the environment. The proposed Project involves ecosystem restoration, and the project area consists of 1,079 acres of side channels and connected backwater habitats.

Resource Problems and Opportunities

The quantity and quality of aquatic habitats have degraded within the project area due to sedimentation related to the impoundment and operations of the Upper Mississippi River System and resulting changes in hydraulics and hydrology. The loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species including fish and mussel resources. The stressors are likely to continue and cause further decline in the quality of habitats within the project area.

The primary problems to be addressed by this project include:

- Substrate Homogenization
- Reduced Side Channel Connectivity
- Homogenized Side Channel Morphology (bathymetric and hydraulic diversity).
- Lack of woody structure in side channels

The degraded state of the project area, however, provides an opportunity to restore side channel and aquatic habitat, function, and process for the benefit of fish and wildlife resources.

Goals and Objectives

The goal of the Project is to increase depth and flow diversity of aquatic side channels throughout the project area. To achieve this goal a planning team of biologists, foresters, engineers, and planners from the U.S. Army Corps of Engineers (USACE), state resource agencies, and USFWS developed the objectives for the project. The objectives include the following:

- Increase side channel connectivity
- Increase side channel flow diversity
- Increase substrate diversity
- Increase side channel sediment transport
- Increase depth diversity

The goals and objectives of the Project work towards achieving the desired future conditions identified in HNA-II for the Lower Impounded cluster of UMR pools (McCain et al. 2018):

- Restore diversity of aquatic habitat types with desire for more lentic and backwater habitats, preferably shallow lotic areas and deep lentic areas

Proposed Project Features

To achieve the project objectives, several project plans/features were evaluated. The tentatively selected plan (TSP) Alternative 3 consists of the following:

- Dredging of a Pilot Channel at the head of Clarksville Island
- Side Channel Enhancement Dikes (SCEDs)
- Hard Points
- Notching of closing structures/partial degradation
- Substrate/Mussel Enhancement Measures
- Woody Bundles

This plan restores approximately 1,079 acres of side channels and connected backwater habitats within the Project area.

Methodology to Evaluate Alternatives

The Project was analyzed using the General Freshwater Mussel Habitat Model and White Bass Habitat Suitability Index. Existing conditions, future without project conditions and future with project conditions were examined. This analysis was conducted with team members representing the USACE, state resource agencies, and USFWS.

The utilized evaluation models produced a rating of habitat quality for each respective habitat type. This rating is referred to as a Habitat Suitability Index (HSI). The HSI, a value ranging from 0.1 to 1.0, measures the existing and future habitat conditions compared to optimum habitat, which is 1.0. This value, when multiplied by the available habitat within the project area, will provide a measure of available habitat quality and quantity known as habitat units (HUs). Average annual habitat units (AAHUs) for each species are typically calculated to reflect expected habitat conditions over a 50-year project life. Target years for evaluation included 0 (existing condition), 1, 5, 10, 25, and 50 years.

Existing, Future without, and Future with Project Conditions

Several general and site-specific assumptions were made as to what the project area and vicinity would be like 50 years in the future with and without the project and can be found in the Habitat Appendix of the Project Implementation Report (USACE 2024).

Existing, Future without, and Future with Project Conditions

Side Channel

Habitat suitability for the white bass improved with the project, while without the project the habitat declined over time (Table 1). Habitat quality improved with the project due to improved current velocity, water temperatures, substrate composition, forage fish composition, and depth diversity within the side channel areas. Over time it was assumed that the quality of habitat with the project would eventually decline due to sedimentation and reduced flow but would remain suitable. Without the project, habitat suitability within the side channel would continue to decline due to sedimentation and lack of flow. This will cause reduced current velocity, increased water temperatures, reduced substrate and depth diversity, and a decline in forage fish composition.

Side Channel Substrate Enhancement

Habitat suitability within the enhance areas improved with the project, while without the project the habitat declined over time (Table 1). Habitat quality for mussels improved with the project due to improved aquatic cover, substrate heterogeneity, water temperature, water depth, and side channel flow/connectivity. Over time it was assumed that the quality of habitat with the project would eventually decline due to sedimentation and reduced flow but would remain suitable. Without the project, the enhancement areas would continue to degrade over time due to sedimentation and lack of flow. Habitat quality for mussels would decline due to reduced substrate diversity, water depth, and channel flow/connectivity.

Table 1. Habitat Suitability Index (HSI) scores; Existing, Future with Project (Year 5,10,25 and 50) and Future without Project (Year 0, 5,10,25 and 50), Clarksville and Carroll Island NESP.

Habitat Type /Measure	Model	Existing	Future Without					Future With				
		Year 0	1	5	10	25	50	1	5	10	25	50
Side Channel	White Bass	0.54	0.54	0.52	-	0.27	0.25	0.73	0.74	-	0.73	0.71
Substrate	Mussel	0.68	0.68	0.64	0.43	0.38	0.31	0.96	0.96	0.95	0.94	0.83

Summary

The habitat analysis indicates that side channel restoration results in a net increase of 154 AAHUs and mussel substrate enhancement results in a net increase of 343 AAHUs over the no action alternative. The combination of habitat features in the preferred alternative will yield a net increase of 497 AAHUs over the future without project condition.

Conclusions and Recommendations

According to the Incremental Cost Analysis, the preferred alternative ranks 2 out of 4 in cost per AAHU output compared to the other alternatives including the no action alternative. It is very difficult to capture the full benefits associated with these types of restoration projects. For purposes of the Incremental Cost Analysis, the model was only able to capture habitat unit benefits associated with the limited acreage evaluated within the project area. However, we believe that the ecosystem benefits of aquatic habitat restoration extend beyond the project area and limits for both aquatic and terrestrial species. These habitats are critical to migratory fish and birds and provide habitat for a variety of other wildlife resources. We support the preferred alternative as it will restore a large component of habitat diversity in this portion of the Mississippi River System.

Overall, the proposed project will be beneficial to the Mississippi River System and biota dependent upon them by improving habitat quality in this portion of the river. The project will improve the quality and diversity of aquatic habitats within the project area. Large river fish and other aquatic organisms will gain improved access to important habitats for several life stages, such as spawning, rearing and over wintering. These areas will also provide an important feeding area for aquatic organisms and serve as a production area for small fish and invertebrates that other terrestrial organisms feed upon. In addition, mussel resources will gain improved habitat conditions for colonization and survival. The proposed Project will be beneficial to a variety of wildlife resources and is supported by the Service.

Threatened and Endangered Species

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service (Service) information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. You can visit our Information, Planning, and Conservation System (IPaC) at the following link below to obtain an updated official U.S. Fish and Wildlife species list.

https://ipac.ecosphere.fws.gov

Although the bald eagle has been removed from the threatened and endangered species list, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The Service developed the National Bald Eagle Management Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. The Service is aware of a bald eagle nest within the proposed project area, and we recommend additional coordination with our office as the project moves forward. A copy of the guidelines is available at:

https://www.fws.gov/media/national-bald-eagle-management-guidelines-0

Thank you for the opportunity to provide this Draft Fish and Wildlife Coordination Act Report. If you have questions, please contact me at (618) 998-5945.

Sincerely,

Matthew T. Mangan
Fish and Wildlife Biologist

Enclosures: Appendix A – Literature Cited

cc: IDNR (Atwood, Glover)
MDC (Vitello)

APPENDIX A

LITERATURE CITED

McCain, K.N.S., S. Schmuecker, and N.R. De Jager *2018.* Habitat Needs Assessment-II for the Upper Mississippi River Restoration Program: Linking Science to Management Perspectives. U.S. Army Corps of Engineers, Rock Island District, Rock Island, IL

USACE (U.S. Army Corps of Engineers). 2024. Navigation and Ecosystem Sustainability Program, Draft Project Implementation Report with Integrated Environmental Assessment, Clarksville/Carroll Island Complex Side Channel Restoration Ecosystem Restoration Project. U.S. Army Corps of Engineers, St. Louis District, St. Louis, MO.

From: Mangan, Matthew
To: Allen, Teresa C (Teri) CIV USARMY CEMVP (USA)
Subject: [Non-DoD Source] Re: [EXTERNAL] RE: NESP Eco Clarksville and Carroll Islands Pool 25 DCAR
Date: Monday, April 7, 2025 4:56:12 PM

That might have been a copy and paste error on the bald eagle nest. I am not aware of any at this time.

Sent from my iPhone

> On Apr 7, 2025, at 12:49 PM, Allen, Teresa C (Teri) CIV USARMY CEMVP (USA) <Teresa.C.Allen@usace.army.mil> wrote:
>
> **This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**
>
> Hi Matt,
>
> Thank you for the DCAR. Yes, the PIR is a very rough draft. Is there any additional info that I can provide? Also, do you have the location of the bald eagle nest(s)?
>
> Thanks,
> Teri
>
> *Teri C. Allen, Ph.D.*
> Senior Technical Specialist
> Aquatic Ecologist
>
> U.S. Army Corps of Engineers, St. Louis District
> Regional Planning and Environmental Division North
> Environmental Compliance Section
> CEMVP-PD-C
>
> Cell 314-580-4857
> E-mail Teri.C.Allen@usace.army.mil
>
> ---
>
> **From:** Mangan, Matthew <Matthew_Mangan@fws.gov>
> **Sent:** Friday, April 4, 2025 12:42 PM
> **To:** Allen, Teresa C (Teri) CIV USARMY CEMVP (USA) <Teresa.C.Allen@usace.army.mil>
> **Subject:** [Non-DoD Source] Re: [EXTERNAL] NESP Eco Clarksville and Carroll Islands Pool

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Teri Allen
Contact: Teri Allen
Address: 1222 Spruce Street
St. Louis, MO 63103

IDNR Project Number: 2508828
Date: 01/27/2025

Project: NESP-Eco Clarksville & Carroll Side Channel Complex Restoration
Address: Pool 25, Clarksville

Description: Restore aquatic habitats within the Mississippi River Pool 25 project boundary.

Natural Resource Review Results

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Carroll Island Bed INAI Site
Clarksville Dam Bed INAI Site
Clarksville Island INAI Site
Coon Island Bed INAI Site
Muddy Rivers Forest And Shrub Swamp INAI Site
Riprap Landing Woods INAI Site
Sny Island Bed INAI Site
Bigeye Shiner *(Notropis boops)*
Butterfly *(Ellipsaria lineolata)*
Butterfly *(Ellipsaria lineolata)*
Lake Sturgeon *(Acipenser fulvescens)*

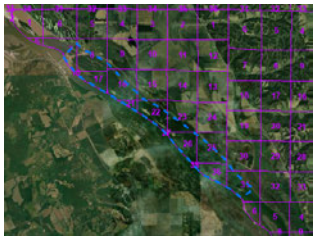
An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Calhoun

Township, Range, Section:
8S, 3W, 30
8S, 3W, 31
8S, 4W, 7
8S, 4W, 8
8S, 4W, 9
8S, 4W, 15
8S, 4W, 16
8S, 4W, 17
8S, 4W, 18
8S, 4W, 21
8S, 4W, 22
8S, 4W, 23
8S, 4W, 25



8S, 4W, 26
8S, 4W, 35
8S, 4W, 36

IL Department of Natural Resources Contact
Alex Davis
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
U.S. Army Corps of Engineers

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

February 25, 2025

Teri Allen
1222 Spruce Street
St. Louis, MO 63103

RE: NESP-Eco Clarksville & Carroll Side Channel Complex Restoration
Consultation Program
EcoCAT Review #2508828
Calhoun County

Dear Ms. Allen:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action consists of restoring aquatic habitats within the Mississippi River Pool 25 project boundary in Nebo, Illinois. Proposed improvement measures include hard points constructed of stone, partial degradation or notching of the old side channel closure structure, construction of side channel enhancement dikes (SCED), pilot dredging at the entrance of the side channel and two adjacent chutes, construction of mussel habitat enhancement features (rock/gravel substrate enhancement), and placement of woody bundles. At the time of the project submittal, the exact placement of dredge material was still being determined.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Illinois Natural Areas Inventory (INAI)
Carroll Island Bed INAI Site
Clarksville Dam Bed INAI Site
Clarksville Island INAI Site
Coon Island INAI Site
Muddy Rivers Forest and Shrub Swamp INAI Site
Riprap Landing Woods INAI Site
Sny Island Bed INAI Site

State Threatened or Endangered Species
Big-eye Shiner *(Notropis boops)*

Butterfly *(Ellipsaria lineolate)*
Lake Sturgeon *(Acipenser fulvescens)*

Due to the project scope and proximity to protected resources, the Department recommends the following actions be taken to avoid adversely impacting listed species and protected natural areas in the vicinity of the project:

Clarksville Island INAI, Sny Island INAI, Carroll Island Bed INAI, and Coon Island INAI
EcoCAT indicates this project overlaps the Clarksville Island INAI Site, Sny Island INAI Site, Carroll Island Bed INAI Site, and Coon Island INAI Site. Impacts to these INAI sites should be avoided or minimized as much as possible. However, if impacts are necessary, the Department recommends:

- Equipment should not be stored within the INAI Sites or within ROW.
- Parking and staging in areas adjacent to the INAI sites should also be avoided.
- Areas of exposed soil should be re-seeded with a local genotype seed, approved IDOT seed mix, or non-invasive cover crop.
- Soil erosion and sediment control BMPs should be implemented and properly maintained. Wildlife-friendly plastic-free blanket should be used to prevent the entanglement of native wildlife.
- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into the INAI sites and other nearby natural areas.
- Equipment should be power washed off-site, where feasible, to remove exotic/invasive seed or propagules.
- All equipment, including but not limited to boots, tools, equipment, tires, and treads, should be cleaned of all debris prior to entry of the project area, where feasible, to avoid spreading of exotic or invasive plant seeds into the INAI Sites.
- Should any herbicide use be required for construction or operation, wind speed and direction should be carefully monitored to avoid herbicide drift into the INAI sites.

Clarksville Dam Bed INAI, Riprap Landing Woods INAI, and Muddy Rivers Forest and Shrub Swamp INAI
EcoCAT indicates this project is in the vicinity of Clarksville Dam Bed INAI Site, Riprap Landing Woods INAI Site, and Muddy Rivers Forest and Shrub Swamp INAI Site. Impacts to these INAI sites should be avoided or minimized as much as possible. However, if impacts are necessary, the Department recommends:

- Equipment should not be stored within the INAI Sites or within ROW.
- Parking and staging in areas adjacent to the INAI sites should also be avoided.
- Areas of exposed soil should be re-seeded with a local genotype seed, approved IDOT seed mix, or non-invasive cover crop.
- Soil erosion and sediment control BMPs should be implemented and properly maintained. Wildlife-friendly plastic-free blanket should be used to prevent the entanglement of native wildlife.

- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into the INAI sites and other nearby natural areas.
- Equipment should be power washed off-site, where feasible, to remove exotic/invasive seed or propagules.
- All equipment, including but not limited to boots, tools, equipment, tires, and treads, should be cleaned of all debris prior to entry of the project area, where feasible, to avoid spreading of exotic or invasive plant seeds into the INAI Sites.
- Should any herbicide use be required for construction or operation, wind speed and direction should be carefully monitored to avoid herbicide drift into the INAI sites.

Big-eye Shiner and Lake Sturgeon
The Department has determined adverse impacts to these species are unlikely.

Butterfly
EcoCAT has indicated records for the state-listed Butterfly in the vicinity of the project area. USACE conducted a survey in the project area from August 24 – September 4, 2024, which identified the state-listed Butterfly, Monkeyface, and Higgins Eye. The Department requests that USACE coordinates with the Department's Endangered Species Program once plans are finalized in order to identify measures to avoid, minimize, and mitigate take of the state-listed Butterfly, Monkeyface, and Higgins Eye. The Department and USACE will codevelop a strategy to conserve and provide conservation benefit to these species.

Given the above recommendations are adopted, the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Consultation on the part of the Department is closed, unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

- If tree clearing is necessary, the Department recommends removing trees between November 1st and March 31st to avoid impacts to bats and birds.

Please contact Alexandra (Alex) Davis (alexandra.davis@illinois.gov) with any questions about this review.

Sincerely,

Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
Bradley.Hayes@Illinois.gov
Phone: (217) 782-0031

CC Brian Metzke, State Aquatic Ecologist

From: Rakers, Kaleb C CIV USARMY CEMVS (USA)
To: EPA.401.BOW@illinois.gov
Cc: Hopfinger, Christopher Jon CIV USARMY CEMVS (USA); Allen, Teresa C (Teri) CIV USARMY CEMVP (USA)
Subject: USACE 401 Permit Notification
Date: Wednesday, April 2, 2025 2:10:15 PM
Attachments: Clarksville and Carroll Side Channel Restoration.jpg

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Good afternoon,

This is to inform you of the U.S. Army Corps of Engineers intent to utilize the Clean Water Act Section 404 Nationwide Permit for Aquatic Habitat Restoration, Enhancement, and Establishment Activities (27)/Maintenance (3) and associated with our Illinois Programmatic Section 401 Water Quality Certification for a side channel restoration project under the Navigation and Ecosystem Sustainability Program. The project will be constructed under the Ordinary High-Water Mark. The primary goals of the program are to increase the capacity and improve the reliability of the inland navigation system while restoring, protecting, and enhancing the environment. The side channel restoration would occur in Illinois around Clarksville, Carroll, and Coon Islands directly below Lock and Dam 24 between River Miles 273.5 and 265.7. The tentatively selected plan for the project includes the construction of hard points and side channel enhancement dikes to improve and reroute flow. The project would enhance mussel habitat through gradual slope revetment and rock-gravel substrate enhancement. The project would include dredging sediment that has filled in the upstream portion of the side channel to allow for improved and consistent flow throughout the project area. The dredged material would be placed on the left descending bank thalweg away from the dike tips (Dike 272.7L, Dike 272.9L, and Dike 273.2L); this placement area was last used in 2013 in support of navigation dredging near Clarksville Island. Based on observations during lower water levels it is believed that the material is mostly sand, but we will be performing a gradation analysis to ensure the material meets general condition 12 of the 401 certification. A map of the project's tentatively selected plan is attached for reference.

Let me know if you have any follow up questions or need additional information.

Thank you,
Kaleb Rakers
Environmental Specalist
U.S Army Corps of Engineers
St. Louis District
(314) 309-8432

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103

April 25, 2025

Engineering and Construction Division
Curation and Archives Analysis Branch (ECZ)

Subject: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project.

Jeff Kruchten
State Historic Preservation Office – IDNR
Attn: Review & Compliance
One Natural Resources Way
Springfield, Illinois

Dear Mr. Kruchten:

The U.S. Army Corps of Engineers, St. Louis District (District), is conducting a feasibility study to formulate alternatives to attain and maintain sustainability of side channel habitat within the Upper Mississippi River (UMR), Pool 25, immediately downstream of Lock and Dam 24, near Clarksville, Missouri, in Calhoun County, Illinois. Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, has been initiated under the Navigation and Ecosystem Sustainability Program (NESP) which is authorized to ensure an efficient and environmentally sustainable navigation system on the Mississippi River. The District would like to initiate consultation for this action under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR 800.

The Clarksville and Caroll Islands project area consists of approximately 950 acres of side channel and connected backwater habitat along the left descending bank of the Mississippi River, Calhoun County, Illinois, between River Mile (RM) 273 and 266. The area lies within Navigation Pool 25 of the UMR between Lock & Dam 24 (L&D 24), just upstream in Clarksville, MO (RM 273.4) and Lock & Dam 25 (L&D 25) in Winfield, MO (RM 241.4). The project area encompasses the areas below ordinary high-water mark (OHWM) surrounding Clarksville, Carroll, and Coon Island. Clarksville Island is owned and managed by the U.S. Fish and Wildlife Service (USFWS) as part of the Two Rivers National Wildlife Refuge. The goal of the study is to increase depth and flow diversity of aquatic side channels throughout the project area.

Between RM 273 and 266 in Pool 25, increased erosion and sedimentation has degraded the quantity and quality of flowing water (lotic) side channel habitat, including chutes and riffle/pool complexes. This degradation is due to changes in hydraulics and hydrology from implementation and operation of the 9-foot navigation channel, land use changes, and climate change. The loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species. This project area is characterized by a lack of native fish species, mussel habitat, and the natural hydrologic processes necessary to form new island and side channel.

The District's Tentatively Selected Plan proposes to restore the functionality of the project area through construction of the following kinds of measures: creation of mussel riffles, placement of woody bundles, dredging and dredge placement, creation of a side channel enhancement dike, and the addition of aquatic hard points (map).

A review of the Illinois State Historic Preservation Office (SHPO) files revealed that two archaeological shoreline surveys (Surveys 595 and 1090) have been completed in the study area and eleven other surveys have been completed within a mile. Thirteen archaeological sites were identified within a mile of the project area as well as two National Register Districts (Clarksville Historic District and Lock and Dam No. 24 Historic District). There are no recorded cultural resources reported within the Area of Potential Effect (APE) of the project study area.

All planned work for this project will occur below the OHWM and construction will be conducted by floating barge. There will be no access roads or laydown areas created. Based upon this information, the District has determined that no historic properties will be affected by this project. If it is deemed necessary the District plans to utilize the June 25, 2024, implemented, Programmatic Agreement (PA) regarding the Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program for any additional compliance with Section 106. The USACE shall achieve compliance with all relevant terms of this PA prior to initiating physical construction of the Program undertaking.

Given this information, the District would like to initiate consultation regarding this NESP project and request concurrence of no Historic Properties Affected. If you have any questions regarding this project, please contact Lara Anderson (Archaeologist) at lara.anderson@usace.army.mil or call (314) 331-8779.

Sincerely,

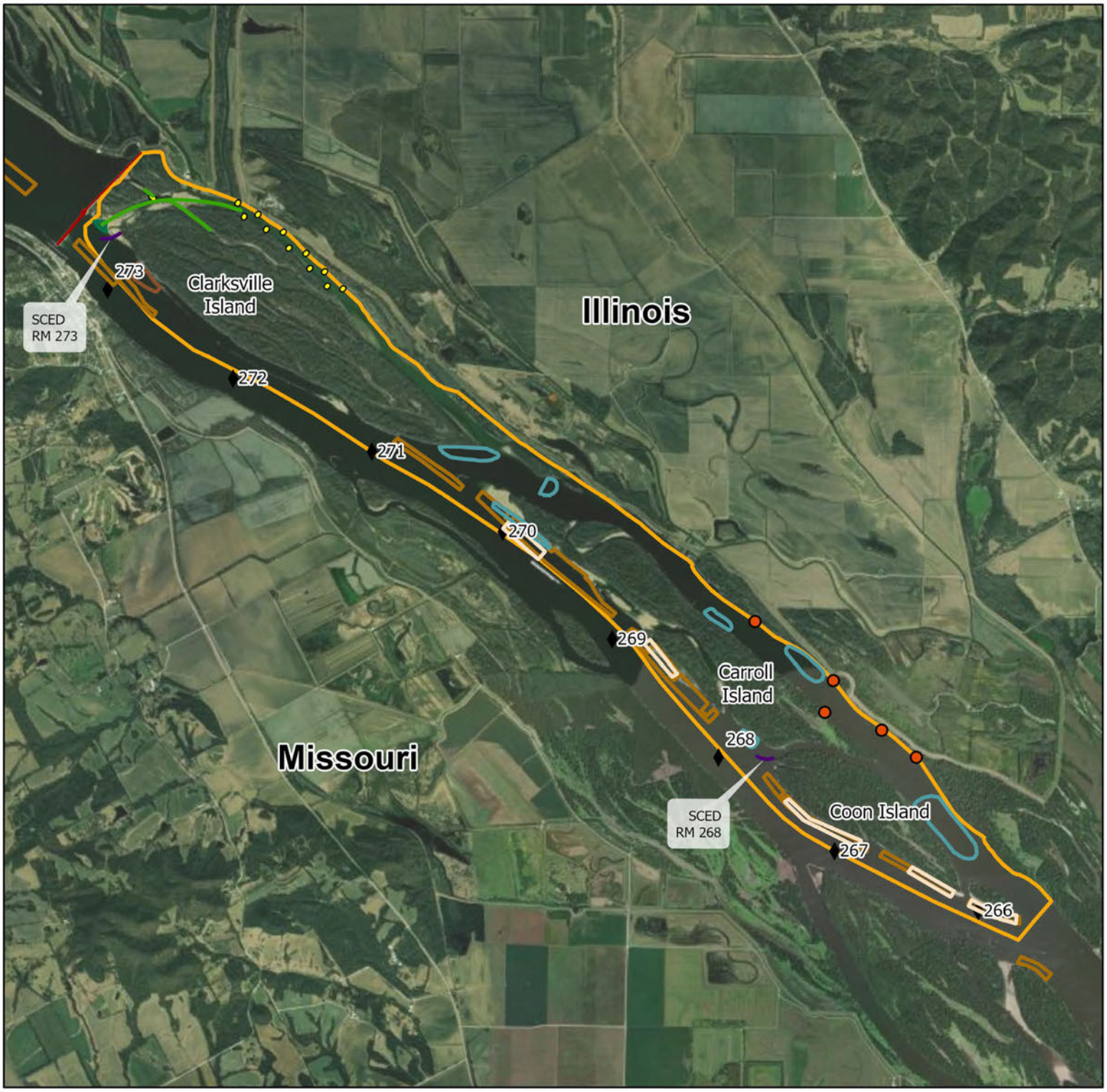
For

Jennifer L. Riordan
Chief, Curation and Archives
Analysis Branch

US Army Corps of Engineers ®
St. Louis District

Clarksville and Carroll Islands Side Channel Restoration

Tentatively Selected Plan



Legend

- River Miles
- Woody Bundles
- SCED
- Hard Points
- Dredged Areas
- Dredged Areas
- Preferred Dredge Placement Area
- Acceptable Dredge Placement Area
- PDT Potential Dredge Placement
- Mussel Riffles
- Lock & Dam 24
- Study Area Boundary

N
W E
S

0 0.5 1 Miles

Project area is limited to open water areas (below the ordinary high-water mark).



Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Calhoun County
Carroll Island
Upper Mississippi River, Pool 25,
immediately downstream of Lock and Dam 24
COESTL
Clarksville and Carroll Islands Side Channel Restoration (NESP)

PLEASE REFER TO: SHPO LOG #003042525

May 16, 2025

Mark A. Smith
Dept. of the Army, Corps of Engineers
St. Louis Dist. - 1222 Spruce Street
St. Louis, MO 63103-2833

We have reviewed the documentation submitted for the referenced project in accordance with Section 106 of the National Historic Preservation Act of 1966 (54 USC 306108) and its implementing regulations (36 CFR Part 800). Based upon the information provided, no historic properties will be affected. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with the Act. This approval remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Jeff Kruchten, Principal Archaeologist, at 217/785-1279 or jeff.kruchten@illinois.gov.

Sincerely,

Carey L. Mayer

Carey L. Mayer, AIA
Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

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PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

WHEREAS, the U.S. Army Corps of Engineers (USACE) is authorized to carry out the Upper Mississippi River – Illinois Waterway System (UMR-IWW) Navigation and Ecosystem Sustainability Program (NESP) pursuant to Title VIII of the Water Resources Development Act (WRDA) of 2007 (P.L. 110-114); and,

WHEREAS, the USACE implements projects under the NESP to attain and maintain the sustainability of the UMR-IWW ecosystem, addressing the cumulative impacts and ongoing effects of the navigation system and improving ecological integrity of the UMR-IWW, including projects with measures for island building, restoration of floodplain, backwater, side channels, and tributary confluences, fish passage, water level management, wing dam and dike restoration and modification, island and shoreline protection; topographical diversity, dam point control, use of dredged material for environmental purposes, spillway, dam, and levee modification to benefit the environment, and land and easement acquisition, as well as cultural resource management and mitigation and forest management; and,

WHEREAS, the USACE is also authorized to carry out the Upper Mississippi River Restoration (UMRR) Program for Habitat Rehabilitation and Enhancement Projects (HREP) pursuant to Section 1103 of the WRDA of 1986 (P.L. 99-662), as amended, codified in 33 U.S.C. 652; and,

WHEREAS, the USACE implements projects under the UMRR Program to rehabilitate and enhance habitat of the Upper Mississippi River System (UMRS); and,

WHEREAS, the USACE, as a Federal agency, is required to comply with Section 106 of the National Historic Preservation Act (NHPA), as amended (54 U.S.C. § 306108) and its implementing regulations, "Protection of Historic Properties," codified in 36 CFR § 800; and,

WHEREAS, the USACE has determined that projects under the NESP and UMRR Programs (hereinafter the "Programs") entail undertakings which may have the potential to affect historic properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) as defined under 36 CFR § 800.16(y); and,

WHEREAS, the USACE has determined due to the nature of the Programs, their generally shared multi-state geographic region and similar authorized purposes, that a combined Programmatic Agreement (PA) to address both Programs is needed to clarify review procedures, improve consistency, consultation, and accountability in fulfilling its responsibilities to comply with Section 106 of the NHPA pursuant to 36 CFR § 800.14(b)(2) for the Program undertakings, as defined in Stipulation I.A.; and,

WHEREAS, the Program undertakings are subject to development and analysis which is detailed in Project Implementation Reports (PIRs), Feasibility Reports, or other decision or implementation documents which discuss program undertaking alternatives and typically identify a Tentatively Selected Plan in the draft decision document, followed by a Recommended Plan in the final decision document, that becomes the proposed project after decision document approval; and,

WHEREAS, the Program undertakings are subject to environmental review under the National Environmental Policy Act (NEPA) and other environmental laws; and,

WHEREAS, the USACE may defer the identification of the Area of Potential Effect (APE), as defined in Attachment B, and completion of the Section 106 process to include final identification and evaluation of historic properties, assessment of project effects to historic properties, and resolution of adverse effects, if any, until after completing the final USACE decision document and requirements of NEPA for a Program undertaking but before the implementation of the Program undertaking begins; and,

WHEREAS, this PA does not invalidate or supersede existing program alternatives or any other applicable Section 106 agreements including project level agreements for Steamboat HREP (Rock Island District), Quincy Bay HREP (Rock Island District), and Green Island HREP (Rock Island District), executed for undertakings already being implemented under either of the Programs; and,

WHEREAS, the USACE shall seek ways to avoid, minimize, and mitigate any adverse effects to historic properties, listed on or eligible for inclusion in the NRHP; and,

WHEREAS, the USACE has consulted with the State Historic Preservation Offices of Illinois (IlSHPO), Iowa (IaSHPO), Minnesota (MnSHPO), Missouri (MoSHPO), and Wisconsin (WiSHPO) (collectively, the "SHPOs") on the development of this PA, and the SHPOs are Signatories to this PA; and,

WHEREAS, the U.S. Fish and Wildlife Service (USFWS) has designated the USACE as the lead federal agency for Section 106 compliance for the Programs but will participate as a Signatory to this PA because it will be responsible for the operation and maintenance of Program

undertakings on lands and waters it administers or manages and would need to issue an Archaeological Resources Protection Act (ARPA, 16 U.S.C. 470 et seq) permit for work on Federal lands under the agency's jurisdiction; and,

WHEREAS, the National Park Service (NPS) has designated the USACE as the lead federal agency for Section 106 compliance for the Programs but will participate as an Invited Signatory to this PA because it will be responsible for the operation and maintenance of Program undertakings on lands and waters it administers or manages and would need to issue an ARPA permit for work on Federal lands under the agency's jurisdiction; and,

WHEREAS, the USACE recognizes the Federal government's special relationship with Federally recognized Indian Tribes and is responsible for government-to-government consultation pursuant to the NHPA, 36 CFR § 800.2(c)(2)(ii), the American Indian Religious Freedom Act (AIRFA, 42 U.S.C. 1996), Executive Orders 13007 and 13175, and Sections 3(c) and 12 of the Native American Graves Protection and Repatriation Act (NAGPRA, 25 U.S.C. 3001 et seq.); and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(2)(ii), 800.3(f)(2), and 800.14(b)(2), the USACE, in a letter dated 14 October 2022, initiated consultation with 55 Federally recognized Indian Tribes (collectively, the "Consulting Tribes"), that may ascribe religious or cultural significance to historic properties that have the potential to be affected by Program undertakings and are entitled to be consulted about the identification and assessment of effects on historic properties, to consult on the development of this PA and these Tribes include the Absentee-Shawnee of Oklahoma, Bad River Band of Lake Superior Chippewa, Bois Fort Band of Chippewa, Caddo Nation of Oklahoma, Citizen Potawatomi Nation in Oklahoma, Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee of Oklahoma, Flandreau-Santee Sioux, Fond du Lac Band of Lake Superior Chippewa, Fort Belknap Community, Forest County Potawatomi Community, Grand Portage Band of Lake Superior Chippewa, Hannahville Indian Community, Ho-Chunk Nation of Wisconsin, Iowa Tribe of Kansas and Nebraska, Iowa Tribe of Oklahoma, Keweenaw Bay Community, Kickapoo Traditional Tribe of Texas, Kickapoo Tribe in Kansas, Kickapoo Tribe of Oklahoma, Lac Courte Oreilles Band of Lake Superior Chippewa, Lac du Flambeau Band of Lake Superior Chippewa, Lac Vieux Desert Band of Lake Superior Chippewa, Little Traverse Bay of Odawa, Leech Lake Band of Ojibwe, Lower Sioux Community, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, Menominee Tribe of Wisconsin, Mille Lacs Band of Ojibwe, Miami Tribe of Oklahoma, Nottawaseppi Huron Band of Potawatomi, Omaha Tribe of Nebraska, Otoe-Missouria Tribe, Peoria Tribe of Oklahoma, Pokagon Band of Potawatomi, Prairie Band of Potawatomi Nation, Prairie Island Community, Quapaw Nation, Red Cliff Band of Lake Superior Chippewa, Sac and Fox Nation of Missouri in Kansas and Nebraska, Sac and Fox Nation of Oklahoma, Sac and Fox Tribe of the Mississippi in Iowa (Meskwaki Nation), Santee Sioux Nation, Shakopee Mdewakanton Sioux, Shawnee Tribe, Sisseton-Wahpeton Oyate, Sokaogon Chippewa Community (Mole Lake Band of Lake Superior Chippewa), Spirit Lake Nation, St. Croix Band of Chippewa, The Osage Nation, United Keetoowah Band of Cherokee, Upper Sioux Community, White Earth Band of Ojibwe, and Winnebago Tribe of Nebraska; and,

WHEREAS, in accordance with 36 CFR § 800.6(c)(2), and based on each Consulting Tribe's response, the USACE has invited The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation to be Invited Signatories, as defined in Attachment B, in this PA and each has elected to sign the PA, each as a Invited Signatory and collectively included in "Consulting Tribes"; and,

WHEREAS, each Invited Signatory Tribe has identified the area within which it may attach religious or cultural significance to historic properties that have the potential to be affected by Program undertakings, the Invited Signatory Tribe's "consultation area", as defined in Stipulation I.E, and each consultation area is included in Attachment C; and,

WHEREAS, in accordance with 36 CFR § 800.6 (c)(3), the Iowa Tribe of Kansas and Nebraska and the Winnebago Tribe of Nebraska have been invited to participate in the development of this PA and have elected to sign the PA, as a Concurring Party, as defined in Attachment B, and collectively included in "Consulting Tribes"; and,

WHEREAS, nothing in this PA diminishes or affects any treaty right of a Federally recognized Indian Tribe or any other right of a Federally recognized Indian Tribe or external boundary of an Indian reservation of a tribe. No provision of the PA shall alter existing law regarding the sovereign immunity of tribes or shall be construed to alter existing law regarding the trust duty of the United States to tribes (either to limit or expand that trust duty); and,

WHEREAS, the USACE acknowledges that Consulting Tribes possess special knowledge regarding any religious and cultural significance they may ascribe to historic properties, including Traditional Cultural Properties/Places, that may be physically or visually affected by a Program undertaking, and possess special expertise in assessing the eligibility of such properties; and,

WHEREAS, the USACE Programs benefit from consultation with Consulting Tribes in the identification and management of properties of religious and cultural significance, and the USACE shall ensure that its NHPA Section 106 procedures recognize the interests of Consulting Tribes in historic properties potentially affected by USACE decisions and afford Consulting Tribes participation in the process leading up to a USACE decision, in accordance with 36 CFR § 800; and,

WHEREAS, the USACE, USFWS, NPS, each SHPO, and each Consulting Tribe is each a Consulting Party as defined in Stipulation I.D; and,

WHEREAS, a Consulting Party will be recognized by the USACE as a Signatory, Invited Signatory, or Concurring Party, as applicable, under this PA starting on the date the Consulting Party signs the PA and provide the USACE with a record of its signature; and,

WHEREAS, the definitions set forth in 36 CFR § 800.16 are incorporated herein by reference and apply throughout this PA; and,

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), the USACE, in a letter dated 19 October 2022, notified the Advisory Council on Historic Preservation (ACHP) of its decision to enter into this PA and has invited the ACHP to enter into consultation, and the ACHP has chosen to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and,

WHEREAS, the USACE provided opportunities for public review and comment on this PA by publishing online information, including a Public Notice posted on 15 November 2023 – 1 January 2024 for this PA, and receiving comments through online platforms, and will continue to engage the public, as appropriate, during Section 106 review of Program undertakings under the terms of this PA; and,

WHEREAS, for individual Program undertakings subject to this PA, the USACE may invite other agencies, organizations, and individuals to participate as Consulting Parties; and,

WHEREAS, each USACE District (St. Paul, Rock Island, or St. Louis, depending on individual Program undertakings), uses its own staff and authority and will consult with the SHPO of jurisdiction and the applicable Federally recognized Tribe(s) regarding the specific Program undertakings within its respective districts.

NOW, THEREFORE, the St. Paul, Rock Island, and St. Louis Districts of USACE, the IlSHPO, the IaSHPO, the MnSHPO, the MoSHPO, the WiSHPO, the USFWS, the ACHP (Signatories), the NPS, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation (Invited Signatories) agree that implementation of this PA in accordance with the following stipulations will allow the USACE to meet its responsibilities under Section 106 of the NHPA for the Program undertakings subject to this PA.

I. SCOPE AND APPLICABILITY

A. This PA shall apply to all undertakings under the NESP and UMRR Programs in the St. Paul, Rock Island, and St. Louis Districts of USACE that have the potential to cause effects to historic properties, if any, and require Section 106 review after the execution of this PA; are not otherwise covered by a separate memorandum of agreement (MOA) or programmatic agreement, and for which the USACE has not recognized another federal agency as lead federal agency (hereinafter the "Program undertakings").

B. The USACE will utilize this PA to fulfill its Section 106 responsibilities and those of the USFWS and NPS, who have designated the USACE as the lead federal agency pursuant to 36 CFR § 800.2(a)(2) for Program undertakings. The USFWS and/or NPS, as applicable may decide, and notify the USACE, for a specific Program undertaking that they will perform their own Section 106 compliance and the USACE will not be the lead federal agency for the Program undertaking. When the USACE is not designated as the lead federal agency and no other agency is designated lead federal agency, all federal agencies, including the USACE, remain individually responsible for their compliance with Section 106, but this PA will apply to Program undertakings. This provision does not prevent the USACE from recognizing another federal agency as lead federal agency for specific Program undertakings, as appropriate. If USACE recognizes another federal agency as lead federal agency for a specific Program undertaking that would otherwise be subject to this PA, this PA shall not apply.

C. All Program undertakings to which this PA is applicable shall be reviewed in accordance with the stipulations in this PA. The USACE may combine some or all of the steps during consultation in accordance with 36 CFR § 800.3(g).

D. Consultation among the SHPOs, Consulting Tribes, the USFWS, and the NPS (collectively, "Consulting Parties") when appropriate to this PA shall continue throughout the implementation of individual Program undertakings subject to this PA. The USACE shall identify and consult with the applicable Consulting Parties for each Program undertaking (the "Applicable Consulting Parties") consisting of:

1. The SHPO or SHPOs who reflect(s) the interests of the State(s) that overlaps with the Area of Potential Effects, as defined under Stipulation III.B and Attachment B, for the individual Program undertaking ("Applicable SHPO"); and,

2. The Consulting Tribes that are known to attach religious or cultural significance to historic properties within the Area of Potential Effects, as defined under Stipulation III.B, that may be affected by the individual Program undertaking ("Applicable Consulting Tribes"); and,

3. The USFWS and/or NPS when that agency would have operation and maintenance responsibility for the individual Program undertaking on lands or waters it administers or manages within the undertaking's Area of Potential Effects ("Applicable Federal Agency/ies").

E. The USACE acknowledges that contacts and consultation areas may change over time. Addressing this is primarily a USACE responsibility with assistance from the Consulting Parties. The relevant contact list for Consulting Parties at the time of execution of this PA is provided in Attachment D.

The USACE has requested and shall continue to request that each Consulting Tribe provide the area in which they may attach religious or cultural significance to historic properties (its "consultation area"), in the form of a map or other listing that USACE can use to identify Applicable Consulting Tribes for individual Program undertakings. All Invited Signatory Tribes have provided their consultation areas, included as Attachment C. For any Consulting Tribe who has not provided their consultation area, the USACE will use best available information to determine Applicable Consulting Tribes for Section 106 review of an individual Program undertaking.

F. The USACE shall seek ways to identify and preserve historic properties, and to avoid, minimize, or mitigate any adverse effects on historic properties. The USACE shall also endeavor to protect burials, cemeteries, or sites likely to contain human remains/artifacts and objects associated with interments or religious activities, and provide this information, studies, and/or reports to the Applicable Consulting Parties through the implementation of historic property surveys and testing, and the treatment of historic properties.

G. For each Program undertaking, the USACE shall achieve compliance with all relevant terms of this PA prior to initiating physical construction of the Program undertaking.

II. PERFORMANCE STANDARDS AND PROFESSIONAL QUALIFICATIONS STANDARDS

A. Pursuant to 36 CFR § 800.2(a), the Agency Official is the District Commander of the applicable USACE district with approval authority for a specific Program undertaking, who can commit the agency to take appropriate action for the Program undertaking to comply with Section 106 under this PA. The Agency Official may delegate authority to other USACE personnel who shall act on their behalf.

B. The USACE shall ensure all technical work, as defined in Attachment B, required under this PA is carried out in accordance with the professional standards and guidelines outlined in the Secretary of the Interior's (SOI) *Standards for Archaeology and Historic Preservation* (48 CFR 44716) and the SOI's *Standards for the Treatment of Historic Properties* (36 CFR Part 68), as applicable (individually or collectively, SOI Standards). The USACE will also consider other appropriate and applicable state laws, guidelines, or best practices for historic preservation activities within which state work is required.

1. Documentation in support of the USACE historic property eligibility determinations and findings of effect shall meet the documentation requirements specified in 36 CFR § 800.11 and the SOI Standards. Current state survey requirements/guidance for

documentation and reporting shall also be followed for work occurring in the respective state.

C. The USACE shall ensure that technical work conducted pursuant to this PA is carried out by or under the supervision of persons meeting qualifications set forth in the SOI's *Professional Qualification Standards*, as amended, for the pertinent discipline (see 48 F.R. 44738-44739) or the United States Office of Personnel Management (OPM) qualifications for cultural resources professionals such as Archaeologist GS-0193 series, Anthropologist GS-0190 series, or Historian GS-0170 series.

D. The USACE shall maintain professional qualified staff meeting SOI *Professional Qualification Standards,* OPM qualifications for cultural resources professionals, and/or Section 112 of the NHPA (hereafter referred to as "qualified staff".

1. The USACE qualified staff assigned to review USACE Program undertakings pursuant to this PA shall be a GS-9 or higher and meet the SOI *Professional Qualification Standards* or the OPM qualifications for cultural resources professionals such as Archaeologist GS-0193 series, Anthropologist GS-0190 series, or Historian GS-0170 series.

2. Qualified staff at or below the GS-7 level are considered to be performing duties in a developmental or technician capacity.

3. USACE qualified staff at GS-9 or higher shall oversee and review any work conducted by GS-7 or lower graded staff when the USACE implements any portion of the PA.

III. PROGRAM UNDERTAKING REVIEW PROCESS

A. USACE INTERNAL REVIEW PROCESS

1. At the earliest stages of developing a Program undertaking, the USACE shall assign a qualified staff member to ensure cultural resources and historic properties are identified and considered in the USACE planning process.

2. In general, the area of interest for the UMRR and NESP Programs includes the UMRS as defined in Public Law 99-662, which includes both the Mississippi River from its confluence with the Ohio River near Cairo, Illinois to Upper St. Anthony Falls Lock in Minneapolis-St. Paul and the Illinois River from its confluence with the Mississippi River at Grafton, Illinois to the Brandon Road Lock and Dam, Joliet, Illinois and river reaches having commercial navigation channels on the Minnesota River, Minnesota; Black River, Wisconsin; Saint Croix River, Minnesota and Wisconsin; Illinois River and Waterway, Illinois; and Kaskaskia River, Illinois and associated floodplains (Attachment A). The area of interest includes a 5-mile buffer on either side of the navigation centerline, to accommodate potential undertakings covered by the Programs, auditory and visual effects, and any other potential effects.

3. The USACE shall further refine the general area of interest for a specific project under the Programs in the development of the Recommended Plan, as defined in Attachment B, defining the Program undertaking subject to Section 106 review under this PA, defining and documenting an Area of Potential Effect, carrying out initial efforts to identify historic properties as stated under Stipulation III.A.4 and initiating an assessment of the Program undertaking's potential effects to historic properties.

4. Before the selection of the Recommended Plan for a specific Program undertaking, the USACE shall complete initial background research of the study area to include reviewing available investigations and consulting with the applicable state historic preservation databases and/or inventories to determine and direct adequate survey coverage for historic, architectural, and archaeological properties, terrestrial and aquatic.

5. At any given time during the development of the Recommended Plan for a specific Program undertaking, the USACE may seek input from the Applicable Consulting Parties as appropriate.

B. DEFINE AND DOCUMENT THE AREA OF POTENTIAL EFFECTS

1. In consultation with Applicable Consulting Parties, the USACE shall identify and document the Area of Potential Effects (APE) appropriate to the scope and scale of the Recommended Plan for a specific Program undertaking as identified through Stipulation III.A and include the following:

    i. The vertical and horizontal extents (i.e., height and depth), if available, of all construction activities required to complete the Program undertaking, including staging areas, access routes, and a reasonable buffer informed by consultation.

    ii. Areas outside of the construction areas of the Program undertaking where the Program undertaking's potential direct, indirect, or cumulative effects to historic properties may be reasonably anticipated.

2. The USACE is responsible for defining and documenting a final APE, including any modification to the APE as a result of change in scope and scale of the Recommended Plan, for each Program undertaking subject to review under this PA.

C. HISTORIC PROPERTY IDENTIFICATION

1. The USACE shall complete and document historic property identification efforts and issue formal NRHP-eligibility determinations for all properties within the APE for the proposed Program undertaking as follows.

2. The USACE shall complete a literature search of the APE.

i. The literature search shall include consulting the appropriate state historic inventory and archaeological site files, previous survey reports, historic contexts, and other pertinent documents of the appropriate state for information on previously developed historic contexts, recorded historic properties, and previously surveyed areas.

ii. The USACE shall use the literature search to determine adequacy of existing documentation and to inform the scope of any additional research or surveys, including the need for additional historic context development and/or re-evaluation of any previously identified historic properties or properties previously determined to be eligible for listing on the NRHP.

3. In accordance with appropriate state survey guidelines, implementation of historic property surveys and testing, the USACE shall record all properties meeting minimum criteria for recordation, such as buildings, structures, shipwrecks, objects, linear resources, landscapes, districts, Traditional Cultural Properties/Places, and archaeological/historical and burial sites. Recordation of structures, buildings, aquatic resources such as shipwrecks, objects, districts, and sites shall be prepared using the respective state recordation forms, as appropriate.

4. Pursuant to 36 CFR § 800.4(a)(4), historic property identification efforts shall include contacting the Tribal Historic Preservation Offices (THPOs), or other Tribal representative of Applicable Consulting Tribes for the Program undertaking, to assist in identifying properties within the APE, that may be of religious and cultural significance to them and may be eligible for listing on the NRHP.

5. The results of identification efforts, including any supporting documentation, shall be prepared in accordance with Stipulation II (Performance Standards and Qualifications).

6. The USACE shall make one of the following findings as a result of its historic property identification efforts:

i. "No Historic Properties Affected." If the USACE finds that either there are no historic properties identified within the APE or there are historic properties within the APE and the Program undertaking will have no effect upon them as defined in 36 CFR § 800.16(i) then the USACE shall make a "No Historic Properties Affected" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(d), to the Applicable Consulting Parties for review and comment.

(1) For Program undertakings with a finding of "No Historic Properties Affected" the USACE shall provide the Applicable Consulting Parties information including the following:

(a) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

(b) An APE map and narrative description of the APE for the Program undertaking;

(c) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

(d) Results of historic property identification efforts completed by the USACE, including an appropriate level of documentation, to include reports, forms, evaluations, eligibility determinations, or other documents supporting NRHP eligibility determinations;

(e) Any photos, additional maps, images, or plans, as appropriate; and

(f) A stated finding of "No Historic Properties Affected" for the Program undertaking and request for comment on said finding from the applicable SHPO(s).

(2) The Applicable Federal Agencies and Consulting Tribes are under no obligation to provide comments on the finding. However, if they wish the USACE to consider their comments regarding the "No Historic Properties Affected" finding, they shall submit comments in writing within thirty (30) calendar days of receipt of the fully documented finding, unless a request for extension was submitted. The USACE shall take any comments received from Applicable Federal Agencies and Consulting Tribes into consideration before concluding the consultation and will notify the Applicable SHPO of these concerns and the USACE response to them. Any objection to the finding received will be addressed in accordance with Stipulation III.C.6.4 below.

(3) The Applicable SHPO shall provide a response to a USACE finding within thirty (30) calendar days of receipt of a fully documented "No Historic Properties Affected" finding. If no comments or requests for an extension are received from the Applicable SHPO within the 30-day review period, the USACE will assume the SHPO has waived their opportunity to comment and has concurred with the finding.

(4) If an Applicable Consulting Party objects to the finding of "No Historic Properties Affected" within the 30-day review period, the USACE shall consult with the objecting party, and include other parties as appropriate, for no more than a total of thirty (30) calendar days, or other time period as agreed to among Applicable Consulting Parties, upon receipt of the notification of objection to attempt to resolve concerns as identified by the objecting party.

(a) The USACE may revise its finding of "No Historic Properties Affected." If the USACE revises its finding to "No Adverse Effect" for the specific Program undertaking, then the USACE shall continue consultation pursuant to Stipulation III.D.

(b) If at the end of the thirty (30) calendar days, the objecting party(ies) concurs with the finding of "No Historic Properties Affected", the USACE shall document this concurrence, and USACE has no further obligations for the specific Program undertaking under this Stipulation.

(c) If at the end of the thirty (30) calendar days, or agreed to specified time, the party(ies) objects to the finding of "No Historic Properties Affected" and the USACE has not altered its effects determination, the USACE shall notify the ACHP in accordance with Stipulation X.

(5) If an Applicable Consulting Party(ies) disagrees regarding NRHP eligibility of a property identified within the APE for a Program undertaking, the USACE shall notify all Applicable Consulting Parties. The USACE shall consult with the Applicable Consulting Party(ies) for no more than thirty (30) days upon receipt of the notification to resolve the disagreement. The USACE shall provide copies of the notification to other Applicable Consulting Parties within five (5) days of receipt. Upon request and at its discretion, the USACE may extend the consultation period to resolve the disagreement.

(i) If the dispute cannot be resolved, or if the ACHP or Secretary of the Interior so requests, the USACE shall obtain a determination of eligibility from the Keeper of the NRHP. The Keeper's determination will be final in accordance with 36 CFR Part 63.4.

(6) If the USACE does not carry out the Program undertaking as documented in the "No Historic Properties Affected" finding, then the USACE shall continue consultation in accordance with Stipulation III.C.

ii. If the USACE finds that there are historic properties identified within the APE which may be affected by the Program undertaking, then the USACE shall proceed to Stipulation III.D.

D. ASSESSMENT OF POTENTIAL ADVERSE EFFECTS TO HISTORIC PROPERTIES

1. Avoidance of adverse effects to historic properties is the preferred treatment approach. The USACE shall consider redesign of components of the Program undertakings to avoid potential adverse effects to historic properties. However, there may be instances where it is not feasible for the USACE to redesign Program undertakings to avoid adverse effects to historic properties.

2. The USACE shall assess potential adverse effects caused by the proposed Program undertaking on all identified historic properties within the APE. This assessment shall include consideration of all direct, indirect, and cumulative effects caused by the Program undertaking, and shall use the criteria of adverse effects (36 CFR § 800.5(a)(1)). The USACE shall make one of the following determinations:

    i. "No Adverse Effect to Historic Properties." If the USACE determines that historic properties present in the APE will be affected by the Program undertaking but the characteristics of the historic properties that qualify the properties for inclusion are not diminished or altered, then the USACE shall make a "No Adverse Effect to Historic Properties" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(e), to the Applicable Consulting Parties for review and comment in accordance with Stipulation III.D.3.

    ii. "Adverse Effect to Historic Properties." If the USACE determines that historic properties present in the APE will be affected by the Program undertaking and the characteristics of the historic properties that qualify them for inclusion will be diminished or altered, then the USACE shall make an "Adverse Effect to Historic Properties" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(e), to the Applicable Consulting Parties for review and comment in accordance with Stipulation III.D.4.

3. No Adverse Effect to Historic Properties

    i. For Program undertakings with a finding of "No Adverse Effect to Historic Properties" the USACE shall provide the Applicable Consulting Parties with the following:

        (1) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

        (2) An APE map and narrative description of the APE for the Program undertaking;

        (3) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

        (4) Results of historic property identification efforts completed by the USACE, including an appropriate level of documentation to include reports, forms, evaluations, eligibility determinations, or other documents supporting NRHP eligibility determinations;

(5) A description of the affected historic properties including information on the characteristics that qualify them for the NRHP;

(6) A description of the Program undertaking's potential effects on the identified historic properties and explanation of why the criteria of adverse effect were found applicable or inapplicable;

(7) Any photos, additional maps, images, or plans, as appropriate; and

(8) A stated finding of "No Adverse Effect to Historic Properties" for the Program undertaking and request for comment for said finding from the Applicable SHPO.

ii. The Applicable Federal Agencies and Consulting Tribes are under no obligation to provide comments on the finding of "No Adverse Effect to Historic Properties". However, if they wish the USACE to consider their comments regarding the finding of effect, Applicable Federal Agencies or Consulting Tribes shall submit comments in writing within thirty (30) calendar days of receipt. The USACE shall take any comments received into consideration before concluding the consultation and will notify the applicable SHPO of these concerns and the USACE response to them. Objections shall be addressed in accordance with Stipulation III.D.3.v. below.

iii. The Applicable SHPO shall provide a response to a USACE finding within thirty (30) calendar days of fully documented "No Adverse Effect to Historic Properties" finding. If no comments or a request for an extension are received within the 30-day review period, the USACE will assume SHPO has waived their ability to comment and has concurred.

iv. If the Applicable SHPO concurs with the "No Adverse Effect to Historic Properties" finding for a specific Program undertaking, the USACE shall first determine if any other party has objected to the finding, and if there are no objections, the USACE has no further obligations under this Stipulation.

v. If an Applicable Consulting Party(ies) objects to the finding of "No Adverse Effect to Historic Properties," the USACE shall consult with the objecting party (ies), and include other parties as appropriate, for no more than a total of thirty (30) calendar days, upon receipt of the notification of non-concurrence to attempt to resolve concerns as identified by the objecting party.

(1) The USACE may revise its finding of "No Adverse Effect to Historic Properties." If the USACE revises its finding to "No Historic Properties Affected," then the USACE shall continue consultation pursuant to Stipulation III.C.5.i. If the USACE revises its finding to "Adverse Effect," then the USACE shall continue consultation pursuant to Stipulation III.D.4.

(2) If at the end of the thirty (30) calendar days, the objecting party concurs with the finding of "No Adverse Effect to Historic Properties," the USACE shall document this concurrence, and the USACE has no further obligations under this Stipulation for the specific Program undertaking.

(3) If at the end of the thirty (30) calendar days, the objecting party(ies) still objects to the finding of "No Adverse Effect to Historic Properties", and the USACE has not altered its effects determination, the USACE shall notify the ACHP in accordance with Stipulation X.

vi. If the USACE does not carry out the Program undertaking as documented in the "No Adverse Effect" finding, then the USACE shall continue consultation in accordance with Stipulation III.C.

4. Adverse Effect to Historic Properties

i. For a specific Program undertaking with a finding of "Adverse Effect to Historic Properties," the USACE shall provide the Applicable Consulting Parties with the following:

(1) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

(2) An APE map and narrative description of the Program undertaking;

(3) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

(4) Results of historic property identification efforts completed by the USACE, including an appropriate level to include reports, forms, evaluations, eligibility determinations, or other documents of documentation supporting NRHP eligibility determinations;

(5) A description of the affected historic properties including information on the characteristics that qualify them for the NRHP;

(6) A description of the Program undertaking's potential effects on the historic properties and an explanation of why the criteria of adverse effect were found applicable or inapplicable;

(7) Any photos, additional maps, images, or plans, as appropriate;

(8) A stated finding of "Adverse Effect to Historic Properties" and request for comment for said finding from the Applicable SHPO.

ii. The USACE shall consult with the Applicable Consulting Parties to resolve the "Adverse Effect to Historic Properties" pursuant to Stipulation III.E.

E. RESOLUTION OF ADVERSE EFFECTS

1. The USACE shall notify Applicable Consulting Parties, and the public, upon receiving Applicable SHPO concurrence on a finding of "Adverse Effect to Historic Properties" for a Program undertaking using the following process:

   i. For public awareness, the USACE shall post a notice of the "Adverse Effect to Historic Properties" finding on the official USACE website for the involved District to include a description of the Program undertaking, a list of identified historic properties, the explanation for the finding of adverse effects, steps taken or considered by the USACE to avoid or minimize the adverse effects, any Applicable Consulting Party comments received by the USACE regarding the undertaking, and an invitation to provide written comment within thirty (30) calendar days of posting to the website.

   ii. Consulting Parties are under no obligation to provide comments on the finding of adverse effect. However, if they wish the USACE to consider their comments regarding the finding of adverse effect, Consulting Parties shall submit comments in writing within thirty (30) calendar days of receipt. The USACE shall take any comments received into consideration before concluding the consultation and will notify the Applicable Consulting Parties of any concerns and the USACE response to those concerns.

2. The USACE shall consult with the Applicable Consulting Parties to determine appropriate avoidance, minimization and/or mitigation measures to resolve the adverse effect. The USACE shall offer to facilitate a consultation meeting, to include Applicable Consulting Parties, within thirty (30) calendar days after notification of an adverse effect finding, to discuss Program undertaking alternatives to avoid, minimize, or mitigate the adverse effects, and may schedule additional meetings at its discretion.

3. If through consultation with Applicable Consulting Parties, the USACE modifies the Program undertaking to avoid adverse effects to historic properties within the APE, the USACE shall document the alternatives utilized to eliminate the potential adverse effects of the proposed Program undertaking resulting in a revised finding of "No Adverse Effect to Historic Properties," which must receive concurrence from the Applicable Consulting Parties pursuant to Stipulation III.D.3. Once concurrence is achieved, the USACE has no further obligations under this Stipulation for the specific Program undertaking.

4. If through consultation with the Applicable Consulting Parties, the USACE reaches agreement to appropriately resolve the adverse effects through minimization and/or mitigation measures then the measures agreed to by the USACE and the Applicable

Consulting Parties shall be specified in a Memorandum of Agreement (MOA) developed and executed for the Program undertaking in accordance with 36 CFR § 800.6(b)(1) and 800.6(c) and filed with the ACHP upon execution.

i. If any agreed-upon minimization and/or mitigation measure included in the final MOA involves archaeological data recovery or historic property documentation, then ground-disturbing activities or activities resulting in adverse effects to historic properties associated with the Program undertaking may not begin until after the adequate completion of the fieldwork for the data recovery or historic property documentation and the USACE has provided written notification in this regard.

ii. It is understood the USACE shall not complete archaeological data recovery while lands are under private ownership and mitigation of the adverse effect is not complete until the final draft of the data recovery report has been filed with and recommended for acceptance by the Applicable SHPO and other Applicable Consulting Parties as agreed-upon in the final MOA.

5. If through consultation with the Applicable Consulting Parties, the USACE cannot reach agreement to appropriately resolve adverse effects through minimization and/or mitigation measures, the USACE will notify the ACHP and seek a formal resolution in accordance with 36 CFR § 800.6(b)(2). The ACHP will only participate in the resolution of adverse effects for individual Program undertakings if a written request is received from the USACE or Applicable Consulting Party.

IV. SUBSEQUENT AGREEMENTS

A. Memoranda of Agreements developed to resolve adverse effects for specific Program undertakings under the Programs shall be negotiated between the respective USACE District (St. Paul, Rock Island, St. Louis), Applicable Consulting Parties, and ACHP, pursuant to 36 CFR § 800.6(c), and shall be independent of this PA.

V. REVIEW AND MONITORING OF PA IMPLEMENTATION

A. The purpose of the PA review and monitoring is to ensure the USACE identification and protection of historic properties in carrying out Program undertakings. This is accomplished through the review of Program undertakings that were completed during a reporting period and review of implementation of the PA. Electronic mail (email) will serve as the official correspondence method for all communications regarding this PA and its provisions. See Attachment D for a list of contacts and email addresses. Attachment D may be updated as needed without an amendment to this PA. It is the responsibility of each Consulting Party to inform a respective USACE District of any change in name, email address, or phone number of any point-of-contact listed in this PA. Following any updates to Attachment D, the USACE shall provide this information to all Consulting Parties. In order to foster cooperative relations as the terms of this PA are carried out, the USACE shall:

1. Beginning on the one-year anniversary of the execution of this PA, and on an annual basis thereafter, compile and distribute a report to Consulting Parties on the implementation of the terms of this PA.

2. Invite Consulting Parties to a review meeting every two (2) years. If it is agreed that such a meeting is not necessary at that time, the meeting may be waived. Meetings may be conducted in any mutually agreeable location and/or format, including in-person, video conferencing, or teleconferencing. The USACE shall remain responsible for initiating the biennial meetings in subsequent years. More frequent meetings may be appropriate based on specific circumstances and therefore an alternative meeting schedule may be established.

VI. CURATION

A. All records and materials resulting from the actions required by this PA shall be curated to the extent provided by law in accordance with 36 CFR Part 79, Curation of Federally Owned or Administered Archeological Collections, except those materials identified as Native American human remains and items associated with Native American burials which would be subject to Stipulation IX.

B. Subject to Stipulation VI and consistent with the USACE's property interest, the USACE or its contractors, in accordance with 36 CFR Part 79, will maintain all archaeological items and materials collected until any specified analyses and reviews are complete.

C. It is USACE policy that archaeological items and materials, not associated with human remains or burials, recovered from lands other than USACE fee-title, are the property of the respective landowner including private, state, federal, and other locally owned lands.

VII. CONFIDENTIALITY

A. The USACE shall seek and consider the views of the public in a manner that reflects the nature of the Program undertakings and their effects on historic properties following procedures pursuant to 36 CFR § 800.2(d) and in a manner that observes confidentiality requirements pursuant to Section 304 of the NHPA (54 U.S.C. 307103); Section 9 of the Archaeological Resources Protection Act (16 U.S.C. 470hh); and Section 552(b) of the Freedom of Information Act (5 U.S.C. 552) and applicable state laws.

B. The nature and location of archaeological sites and any other cultural resources discussed in this PA shall be considered confidential as provided for in 36 CFR § 800.11(c). The USACE shall use best efforts to protect sensitive information from disclosure as requested by Applicable Consulting Parties to the extent permitted by federal and applicable state laws identified in VII.A above.

VIII. POST-REVIEW DISCOVERIES

A. The USACE shall ensure that previously unidentified historic properties, or unanticipated effects to previously identified historic properties, discovered during the construction activities for Program undertakings are subject to the requirements of 36 CFR § 800.13(b-d). Discoveries of previously unidentified historic properties or unanticipated adverse effects to known historic properties is not anticipated. However, if this were to occur, the USACE shall ensure the following measures are met. USACE shall implement the provisions outlined below that are intended to ensure that Program undertakings are in compliance with applicable federal and state laws and regulations. These provisions will be included in all construction, operations, and maintenance plans.

1. The contractor will be instructed to cease all ground-disturbing activities in the area of the historic property, as well as within a 100-foot radius around but within the project footprint, to avoid and/or minimize harm to the property.

2. The contractor will be instructed to immediately notify the USACE of the discovery and implement interim measures, as appropriate, to protect the discovery from damage, looting, and vandalism, such as protective fencing and covering of the discovery with appropriate materials.

3. The USACE will inspect the work site to determine the extent of the discovery and ensure work activities have halted within the 100-foot radius.

4. The USACE will clearly mark the area of discovery and implement additional measures such as security, as appropriate, to protect the discovery from theft and vandalism.

5. The USACE shall provide an initial assessment of the resource's condition and eligibility to Applicable Consulting Parties and notify other Consulting Parties, if applicable, of the discovery within seven (7) calendar days.

B. If USACE, after consultation with Applicable Consulting Parties, determines the discovery is not a historic property as it is either isolated, does not retain integrity sufficient for listing on the NRHP, or if the historic property will not be further disturbed by construction activities, construction may resume within the 100-foot radius.

C. If USACE determines that the discovery is a historic property that is, or may be, eligible for listing on the NRHP, the USACE shall consult with Applicable Consulting Parties, regarding appropriate measures for site treatment pursuant to 36 CFR 800.6(a). Consulting Parties have ten (10) days to provide their comments on the proposed measures which may include:

1. Formal evaluation of the historic property;
2. Exploration of potential alternatives to avoid the historic property;

3. If the historic property will be adversely affected by project activities, preparation and implementation of a mitigation plan by USACE to resolve adverse effects in consultation with Applicable Consulting Parties.

D. The notified Applicable Consulting Parties have ten (10) days following notification to provide comment regarding NRHP eligibility determination of the discovery.

E. USACE shall prepare a report of findings describing the background history leading to and immediately following the reporting and resolution of an inadvertent discovery within thirty (30) days of the resolution for each inadvertent discovery.

F. USACE shall communicate the procedures to be observed to its contractors and personnel.

G. USACE shall provide a Notice to Proceed to the contractor to work in the area. Notices to Proceed may be issued by USACE for individual construction segments, defined by USACE in its construction specifications, after the identification and evaluation of historic properties and resolution of adverse effects has been completed.

IX. TREATMENT OF HUMAN REMAINS AND ITEMS OF RELIGIOUS AND CULTURAL IMPORTANCE

A. Under this PA, no investigative surveys or construction activities will be planned to knowingly disturb human remains, funerary objects, sacred objects, or objects of cultural patrimony. If any potential unmarked human burials or skeletal remains are encountered during construction activities, all ground disturbing activities will cease. Should any potential findings be made, field personnel will follow instructions provided by USACE for each project to initiate identification, evaluation, and consultation efforts as outlined below.

B. If human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered during field investigations or laboratory work or during construction activities, the USACE will comply with the provisions based on the nature of the land ownership at the time remains or objects are encountered.

1. The USACE will immediately notify appropriate law enforcement, appropriate medical examiner or coroner, the state archaeologist, Applicable SHPO, Applicable Consulting Tribes, and landowner within twenty-four (24) hours, or as soon as otherwise practicable, via email or telephone.

    i. The notification process will follow the state law appropriate for the location of the discovery:

        (1) Iowa per Code of Iowa 263B, Office of the State Archaeologist
        (2) Illinois per The Human Skeletal Remains Protection Act (20 ILCS 3440)

(3) Minnesota per Statutes Section 307.08, Office of the State Archaeologist and the Minnesota Indian Affairs Council
(4) Missouri Unmarked Human Burials Law (RSMo Chapter 194) and Missouri Cemeteries Law (RSMo Chapter 214); and/or
(5) Wisconsin per Statutes Section 157.70 and Wisconsin Administrative Code HS2, Wisconsin Burial Site Preservation Office

2. The USACE will require that all work will immediately cease within a 165-foot radius from the point of discovery and require that the contractor secure the area by placing pin flags within the work area radius around the discovery, and following other appropriate measures directed by USACE to protect the discovery from further disturbance. The USACE shall consult with the Applicable Consulting Parties regarding additional steps to be followed. All human remains, regardless of ancestry, will be treated with dignity and respect.

3. If the human remains, funerary objects, sacred objects, or objects of cultural patrimony appear to be Native American, the USACE, or the landowner, if located on private land, may be required to meet applicable federal, tribal, and state burial laws and ordinances. When on federal or tribal lands, the USACE will meet applicable requirements of the Native American Graves Protection and Repatriation Act for all Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony on a case-by-case basis, in accordance with 43 CFR Part 10.

4. If not on federal or tribal lands, the USACE shall notify appropriate authorities and work with the landowner and state to comply, as appropriate, with
   i. Code of Iowa 263B,
   ii. 20 Illinois Compiled Statue 3440
   iii. Minnesota Statutes Section 307.08,
   iv. Revised Statues of Missouri Chapters 194 and 214
   v. Wisconsin Statutes Section 157.70 and Wisconsin Administrative Code HS2.

5. Measures to protect the human remains and any associated artifact(s) will remain in effect until an appropriate treatment plan for the discovery (if applicable) has been completed for the remains and associated artifacts. The USACE will consider redesign of undertakings to avoid effects to human remains and any associated artifacts(s). The contractor will not resume work in the vicinity of the find until the USACE has granted clearance to do so.

6. Where suspected burial sites in the absence of human remains are encountered, the USACE or its contractor will comply, as applicable, with
   i. Code of Iowa 263B,
   ii. 20 Illinois Compiled Statue 3440
   iii. Minnesota Statutes Section 307.08,
   iv. Revised Statues of Missouri Chapters 194 and 214, and/or
   v. Wisconsin Statutes Section 157.70 and Wisconsin Administrative Code HS2

X. DISPUTE RESOLUTION

A. Should a Consulting Party to this PA object in writing regarding implementation of this PA, the USACE shall consult with the objecting party for no more than thirty (30) calendar days. The USACE shall provide copies of the written objection to other Consulting Parties within five (5) calendar days of receipt of the written objection. Upon request, the USACE shall make every effort to extend the consultation period, subject to mission requirements.

   1. The USACE shall take into account the reasons for the objection and evaluate the solutions suggested by the objecting party.

   2. If, after the thirty (30)-calendar-day review period, the USACE determines that the objection cannot be resolved, the USACE shall forward all documentation relevant to the dispute, including the USACE proposed resolution, to the ACHP.

      i. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and other Consulting Parties. The USACE shall provide Consulting Parties with a copy of this written response. The USACE will then proceed according to its final decision.

      ii. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar-day time period, the USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the signatories to the PA. The USACE shall provide Consulting Parties with a copy of this written response. The USACE will then proceed according to its final decision and notify Consulting Parties.

B. The USACE responsibilities to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

C. Should any member of the public raise a timely and substantive objection pertaining to the manner in which the terms of this PA are carried out, at any time during its implementation, the USACE shall take the objection into account by consulting with the objector. When the USACE responds to an objection, it shall notify the Consulting Parties of the objection and the manner in which it was resolved. The USACE may request the assistance of a Consulting Party to resolve an objection.

XI. SEVERABILITY

A. If any section, subsection, paragraph, sentence, clause, or phrase in this PA, for any reason, is held to be unconstitutional or invalid or ineffective, such decision shall not affect the validity or effectiveness of the remaining portions of this PA.

B. If any section, subsection, paragraph, sentence, clause, or phrase in this PA, for any reason, is held to be unconstitutional or invalid or ineffective, the signatories shall consult to determine whether an amendment to this PA is needed.

XII. ANTI-DEFICIENCY PROVISION

A. All parties to this agreement acknowledge the USACE fiduciary responsibilities pursuant to the Anti-Deficiency Act (31 USC 1341). All obligations on the part of the USACE under this PA shall be subject to the appropriations, allocation, and availability of sufficient funds available to the USACE for such purposes.

B. The legal responsibility of the USACE to comply with Section 106 of the NHPA is not affected by the availability of federal funding provided through appropriation.

XIII. AMENDMENTS

A. Any signatory to this PA may at any time propose amendments, whereupon all signatories shall consult to consider such amendment for no more than ninety (90) days. An amendment will be effective on the date a copy signed by all signatories is filed with the ACHP.

B. Any Consulting Tribe may update its consultation area in Attachment C without an amendment to this PA through notice to the respective USACE district. USACE will distribute the updated consultation area to all Consulting Parties.

XIV. TERMINATION OR WITHDRAWAL

A. If the USACE or the ACHP determines that the terms of this PA will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII, above. If within ninety (90) calendar days (or another time period agreed to by all signatories) an amendment cannot be reached, the USACE or the ACHP may terminate the PA upon written notification to the other signatories.

    1. Once the PA is terminated, the USACE must review all undertakings identified post termination in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14. The USACE will include this in a final annual report per Stipulation V.

B. Any SHPO may terminate this PA as to its jurisdiction after providing the USACE written notice ninety (90) calendar days prior to termination.

1. The USACE shall consult with the terminating SHPO to identify any mutually acceptable measures that would avoid the party's termination.

2. If mutually acceptable measures are identified that would require amendment to the PA, the USACE shall follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached, and the SHPO terminates, the PA will no longer apply within that SHPO's state, and the USACE will review all Program undertakings previously subject to this PA in that jurisdiction in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14, which may include entry into subsequent MOAs and/or PAs.

4. This PA will remain in effect in all other jurisdictions and for all other parties.

C. The USFWS and/or NPS may terminate the PA or withdraw as a Signatory/Invited Signatory after providing the USACE written notice ninety (90) calendar days prior to termination or withdrawal.

1. The USACE shall consult with the USFWS or NPS, as applicable, to identify any mutually acceptable measures that would avoid the termination or the party's withdrawal, as applicable.

2. If mutually acceptable measures are identified that would require an amendment to the PA, the USACE will follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached, the USFWS or NPS, as applicable, may terminate the PA upon written notification to the other signatories, or withdraw from the PA. If the USFWS or NPS, as applicable, terminates the PA, USACE will follow Stipulation XIV.A.1. If the USFWS or NPS, as applicable, withdraws, the PA will remain in full force and effect.

D. Any Invited Signatory Tribe may withdraw as an Invited Signatory or terminate the PA as to its consultation area after providing the USACE written notice ninety (90) calendar days prior to withdrawal or termination.

1. The USACE shall consult with the withdrawing or terminating Invited Signatory Tribe to identify any mutually acceptable measures that would avoid the party's withdrawal or termination.

2. If mutually acceptable measures are identified that would require amendment to the PA, the USACE shall follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached and an Invited Signatory Tribe withdraws, the USACE will continue to consult with the former Invited Signatory Tribe as a Consulting Tribe under the terms of this PA, and the PA will continue in full force and effect, including within the former Invited Signatory Tribe's consultation area. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached and an Invited Signatory Tribe terminates as to its consultation area, the PA will no longer apply within that consultation area, and the USACE will review all Program undertakings previously subject to this PA in that consultation area in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14, which may include entry into subsequent MOAs and/or PAs. This PA will remain in effect in all other jurisdictions and for all other parties. The remaining Signatories may confer on whether additional amendment to the PA is warranted to address the termination by the Invited Signatory Tribe.

XV. DURATION

This PA shall remain in effect for ten (10) years, until March 18, 2034, and can be extended through amendment in accordance with Stipulation XIII. Prior to March 18, 2028 the USACE shall host a workshop for a four (4)-year review and assessment of the effectiveness of this PA.

XVI. IMPLEMENTATION

A. This PA may be executed in counterparts, with a separate page for each signature.

B. This PA shall become effective within the applicable state on the date of signature, whichever is latest, by the USACE, applicable SHPO or the ACHP.

C. The USACE shall ensure each consulting party is provided with a complete copy of the final PA and that the final PA and any amendments are filed with the ACHP.

XVII. EXECUTION

Execution of this PA by the St. Paul, Rock Island, and St. Louis Districts of the USACE, the IaSHPO, the IlSHPO, the MnSHPO, the MoSHPO, the WiSHPO, the USFWS, the NPS, the ACHP, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation and implementation of its terms is evidence that the USACE has taken into account the effects of its undertaking on historic properties and has afforded the ACHP opportunity to comment pursuant to Section 106 of the NHPA.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT

E R Swenson Digitally signed by SWENSON.ERIC.RAYMOND.1032271894 Date: 2024.03.28 14:26:54 -10'00' **. Date:** 28 March 2024 **.**

Colonel Eric R. Swenson, St. Paul District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ROCK ISLAND DISTRICT

Digitally signed by CURRY.JESSE.THOMAS.1086509969
Date: 2024.04.02 12:46:17 -05'00'

. Date: 02 April 2024 **.**

Colonel Jesse T. Curry, Rock Island District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT

PANNIER.ANDY.JOSEPH.1090474134 Digitally signed by PANNIER.ANDY.JOSEPH.1090474134 Date: 2024.03.22 13:20:53 -05'00'

_____. **Date:** _____.

Colonel Andy J. Pannier, St. Louis District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE NATIONAL PARK SERVICE,
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
IOWA STATE HISTORIC PRESERVATION OFFICE

Heather Gibb **. Date:** 04/16/2024 **.**

Heather Gibb, State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
ILLINOIS STATE HISTORIC PRESERVATION OFFICE

Carey L. Mayer **. Date:** 4/3/2024 **.**

Carey Mayer, Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
MINNESOTA STATE HISTORIC PRESERVATION OFFICE

_____. **Date:** 4/9/2024.

Amy H. Spong, Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
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THE MIAMI TRIBE OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
MISSOURI STATE HISTORIC PRESERVATION OFFICE

_____. Date: 06/17/2024

Brian Stith, Deputy Director Division of State Parks and
Deputy Missouri State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE NATIONAL PARK SERVICE,
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
WISCONSIN STATE HISTORIC PRESERVATION OFFICE

Daina Penkiunas . **Date:** 4/11/2024 .

Daina Penkiunas, State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
UNITED STATES FISH AND WILDLIFE SERVICE

WILLIAM MEEKS Digitally signed by WILLIAM MEEKS Date: 2024.04.16 20:48:24 -05'00' **. Date:** _____.

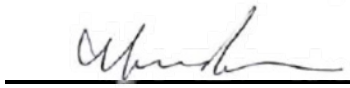
Will Meeks, Midwest Regional Director

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE NATIONAL PARK SERVICE,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
ADVISORY COUNCIL ON HISTORIC PRESERVATION



. Date: June 25, 2024 .

Reid Nelson, Executive Director

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
NATIONAL PARK SERVICE

Digitally signed by HERBERT FROST
Date: 2024.08.02 16:44:13 -05'00'

_____. **Date:** _____.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS

Melissa Brown **. Date:** 5-2-24 .

Melissa Brown, Senior Director of Operations

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
MIAMI TRIBE OF OKLAHOMA

Douglas Lankford Digitally signed by Douglas Lankford Date: 2024.05.03 11:50:27 -05'00' **. Date:** _____.

Chief Douglas Lankford

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
QUAPAW NATION

Wena Supernaw . **Date:** 4/20/2024 .

Wena Supernaw, Chair

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE OSAGE NATION

_____. **Date:** 4-23-24.

Geoffrey M. Standing Bear, Principle Chief

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA

_____. **Date:** 5/21/24 .

Chief Craig Harper

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

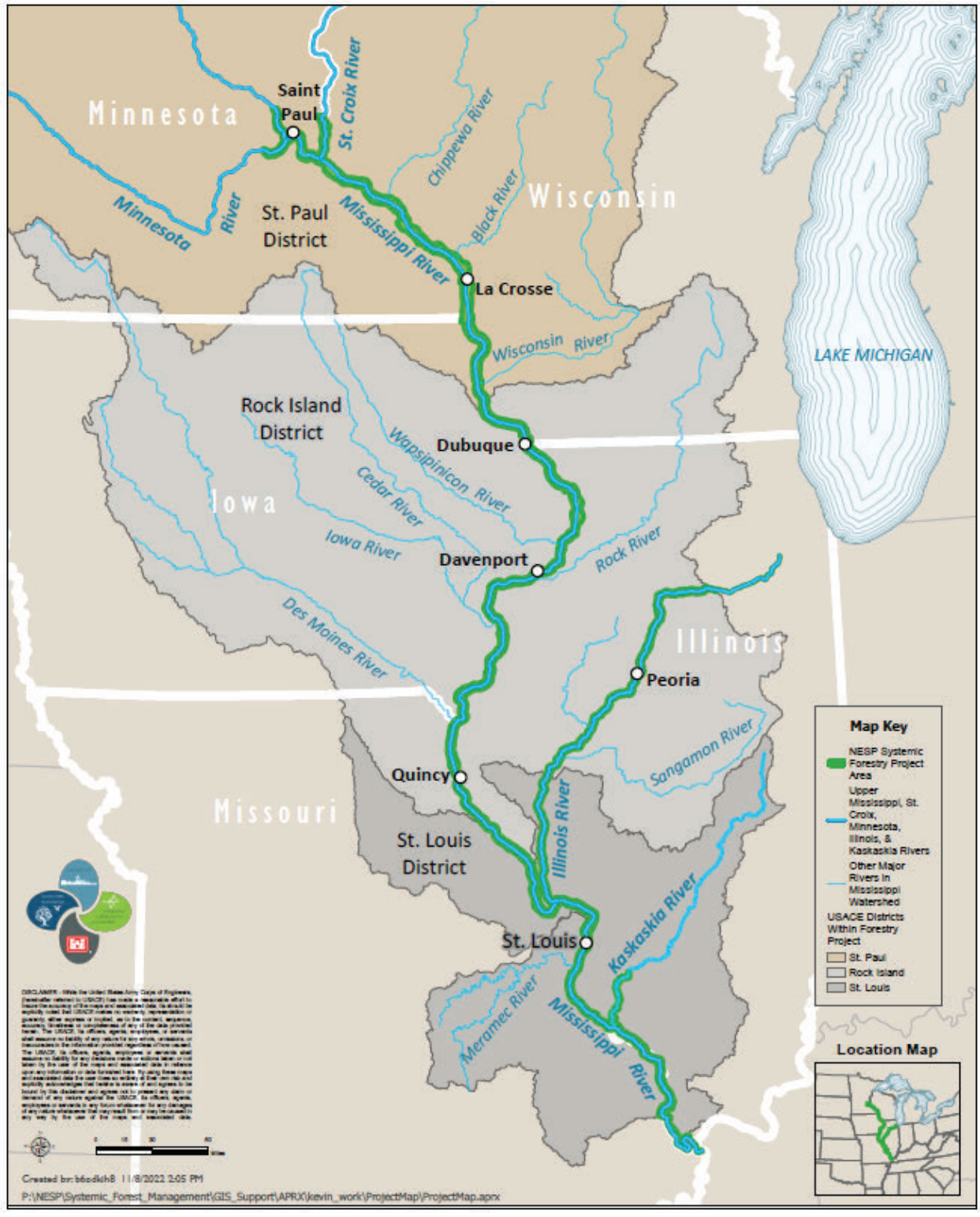
The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

CONCURRING:
IOWA TRIBE OF KANSAS AND NEBRASKA

Alan Kelley . Date: 04.03.2024

Alan Kelley, Deputy Tribal Historic Preservation Officer

Attachment A – NESP and UMRR General Area of Interest



Attachment B: Definitions

Tentatively Selected Plan	Under Engineer Regulation ER_1105-2-61, the tentatively selected plan is the single alternative chosen from all those considered during the feasibility study and identified in the draft feasibility report/NEPA report released to the public for review. The tentatively selected plan usually becomes the recommended plan after agency endorsement.
Recommended Plan	Under Engineer Regulation ER_1105-2-100, the recommended plan is the plan proposed in the final decision document for implementation.
Area of Potential Effect (APE)	Under 36 CFR § 800.16(d) the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.
Signatory	In accordance with 36 CFR § 800.6(c)(1), a Signatory has the authority to execute, amend, or terminate the Programmatic Agreement.
Invited Signatory	In accordance with 36 CFR § 800.6(c)(2), Invited Signatories who sign the Programmatic Agreement are signatories with the authority to amend and terminate the Programmatic Agreement.
Concurring Party	In accordance with 36 CFR § 800.6(c)(3), a Concurring Party is a Consulting Party invited to concur in the Programmatic Agreement but does not have the authority to amend or terminate the Programmatic Agreement.
Technical work	In this PA means all efforts to identify and delineate, evaluate historic, architectural, and archaeological properties, and to assess potential adverse effects, and perform subsequent treatment of historic properties, such as avoidance, minimization, data recovery excavation, monitoring, or recordation of potential historic properties that is required under this PA.

Attachment C. Provided Tribal Consultation Areas

Tribe	Consultation Area by County				
	Illinois	**Iowa**	**Minnesota**	**Missouri**	**Wisconsin**
The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Adams, Brown, Calhoun, Champaign, Madison, Monroe, Pike, and Saint Clair in MVS*	Clinton, Des Moines, Lee, Louisa, Muscatine, Scott	N/A	St. Charles, St. Louis, and St. Louis City in MVS*	Grant
The Miami Tribe of Oklahoma	All MVS*	N/A	N/A	Boone, Callaway, Cape Girardeau, Franklin, Gasconade, Jefferson, Lincoln, Marion, Mississippi, Montgomery, Osage, Perry, Pike, Ralls, St. Charles, St. Louis City, St. Louis Co., Ste. Genevieve, Scott, and Warren in MVS*	N/A
The Osage Nation	All MVS* and Adams, Boone, Brown, Bureau, Calhoun, Carroll, Cass, Champaign, Christian, De Witt, Fulton, Hancock, Henderson, Henry, Jo Daviess, Knox, Lee, Logan, Macon, Macoupin, Marshall, Mason, Menard, Mercer, Montgomery, Morgan, Moultrie, Ogle, Peoria, Piatt, Pike, Putnam, Rock Island, Sangamon, Schuyler, Shelby, Stark, Stephenson, Tazewell, Warren, Whiteside, Winnebago, and Woodford Counties in MVR*	Clinton, Des Moines, Henry, Jackson, Lee, Louisa, Muscatine, Scott, and Van Buren Counties	N/A	All MVS* and Adair, Clark, Knox, Lewis, Marion, Monroe, Ralls, Schuyler, Scotland, and Shelby Counties in MVR*	N/A

The Peoria Tribe of Indians in Oklahoma	Adams, Alexander, Calhoun, Carroll, Hancock, Henderson, Jackson, Jersey, Jo Daviess, Madison, Mercer, Monroe, Pike, Randolph, Rock Island, St. Clair, Union, and Whiteside Counties	All MVR*	All MVP*	All MVR*and MVS*	All MVP* and MVR*
Quapaw Nation	Alexander, Jackson, Johnson, Madison, Monroe, Pulaski, Randolph, St. Clair, and Union Counties	N/A	N/A	Bollinger, Butler, Cape Girardeau, Iron, Jefferson, Madison, Mississippi, Perry, Reynolds, St. Charles, Ste. Genevieve, St. Francois, St. Louis, St. Louis City, Scott, and Wayne Counties	N/A

*MVP is the St. Paul District, MVR is the Rock Island District, and MVS is the St. Louis District.

Attachment D: Consulting Party Distribution List (January 2024)

Agency and/or Tribe	Name	Title	Email
Iowa State Historic Preservation Office	Dr. Heather Gibb	State Historic Preservation Officer	heather.gibb@iowa.gov
Illinois State Historic Preservation Office	Mr. Jeffrey Kruchten	State Historic Preservation Officer	jeff.kruchten@illinois.gov
Minnesota State Historic Preservation Office	Amy Spong	Deputy State Historic Preservation Officer	amy.spong@state.mn.us
Missouri State Historic Preservation Office	Ms. Amy Rubingh	Review, Compliance, Records Coordinator	amy.rubingh@dnr.mo.gov
Wisconsin State Historic Preservation Office	Mr. Tyler Howe	State Historic Preservation Officer	tyler.howe@wisconsinhistory.org
National Park Service	Ms. Susan Snow	Superintendent – Effigy Mounds National Monument	Susan_Snow@nps.gov
U.S. Fish and Wildlife Service	Ms. Sabrina Chandler	Refuge Manager/Area Supervisor – UMR national Wildlife and Fish Refuge	sabrina_chandler@fws.gov
U.S. Fish and Wildlife Service	Mr. James Myster	Archaeologist	James_Myster@fws.gov
Advisory Council on Historic Preservation	Mr. Chris Daniel	Program Analyst	cdaniel@achp.gov
Absentee-Shawnee Tribe of Indians in Oklahoma	Ms. Devon Frazier Smith	Tribal Historic Preservation Officer	dfrazier@astribe.com
Absentee-Shawnee Tribe of Indians in Oklahoma	Ms. Carol Butler	Cultural Preservation Director	cbutler@astribe.com
Bad River Band of Lake Superior Chippewa	Mr. Larry Plucinski	Tribal Historic Preservation Officer	thpo@badriver-nsn.gov
Bois Forte Band of Chippewa	Mr. Jaylen Strong	Tribal Historic Preservation Officer	jaylen.strong@boisforte-nsn.gov
Caddo Nation of Oklahoma	Mr. Jonathan M. Rohrer	Tribal Historic Preservation Officer	jrohrer@mycaddonation.com
Citizen Potawatomi Nation, Oklahoma	Ms. Kelli Mosteller	Assistant Tribal Historic Preservation Officer	cpnthpo@potawatomi.org
Delaware Nation, Oklahoma	Ms. Carissa Speck	Historic Preservation Director	cspeck@delawarenation-nsn.gov
Delaware Tribe of Indians	Ms. Susan Bachor	Tribal Historic Preservation Officer	lheady@delawaretribe.org
Eastern Shawnee Tribe of Oklahoma	Mr. Paul Barton	Tribal Historic Preservation Officer	pbarton@estoo.net
Flandreau-Santee Sioux Tribe	Mr. Garrie Kills-A-Hundred	Tribal Historic Preservation Officer	garrie.killsahundred@fsst.org
Fond du Lac Band of Lake Superior Chippewa	Mr. Evan Schroeder	Tribal Historic Preservation Officer	EvanSchroeder@FDLREZ.com
Fort Belknap Indian Community	Emma "Emmy" Filesteel	Tribal Historic Preservation Officer	emma.filesteel@ftbelknap.org

Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
Forest County Potawatomi Community	Mr. Ben Rhodd	Tribal Historic Preservation Officer	Benjamin.Rhodd@fcp-nsn.gov
Forest County Potawatomi Community	Ms. Nicole Reske	Assistant Tribal Historic Preservation Officer	Nicole.Reske@fcpotawatomi-nsn.gov
Grand Portage Band of Lake Superior Chippewa	Mr. Rob Hull	Tribal Historic Preservation Officer	thpo@grandportage.com
Hannahville Indian Community	Mr. Earl Meshigaud	Tribal Historic Preservation Officer	EarlMeshigaud@hannahville.org
Ho-Chunk Nation of Wisconsin	Mr. William Quackenbush	Tribal Historic Preservation Officer	bill.quackenbush@ho-chunk.com
Iowa Tribe of Kansas and Nebraska	Mr. Lance Foster	Tribal Historic Preservation Officer	lfoster@iowas.org
Iowa Tribe of Kansas and Nebraska	Mr. Alan Kelley	Deputy Tribal Historic Preservation Officer	akelly@iowas.org
Iowa Tribe of Oklahoma	Ms. Candace Pershall	Cultural Preservation	cpershall@iowanation.org
Keweenaw Bay Indian Community	Mr. Gary Loonsfoot, Jr.	Tribal Historic Preservation Officer	gloonsfoot@kbic-nsn.gov
Kickapoo Traditional Tribe of Texas	Mr. Hector Gonzalez	Historic Preservation	hector.gonzalez@kttttribe.org
Kickapoo Tribe of Oklahoma	Mr. Darwin Kaskaske	Chairman	darwin.kaskaske@okkt.net
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Mr. Lester Randall	Chairman	
Lac Courte Oreilles Band of Lake Superior Chippewa	Mr. Brian Bisonette	Tribal Historic Preservation Officer	brian.bisonette@lco-nsn.gov
Lac du Flambeau Band of Lake Superior Chippewa	Ms. Sarah Thompson	Tribal Historic Preservation Officer	Sarah.Thompson@ldftribe.com
Lac Vieux Desert Band of Lake Superior Chippewa	Ms. Alina Shively	Tribal Historic Preservation Officer	alina.shively@lvd-nsn.gov
Little Traverse Bay Bands of Odawa Indians	Ms. Melissa Wiatrolik	Tribal Historic Preservation Officer	MWiatrolik@LTBBODAWA-NSN.GOV
Leech Lake Band of Ojibwe	Ms. Gina Lemon	Tribal Historic Preservation Officer	ginalemon@llojibwe.net
Lower Sioux Indian Community	Ms. Cheyanne St. John	Tribal Historic Preservation Officer	lowersiouxthpo@lowersioux.com
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Ms. Lakota Hobia	Tribal Historic Preservation Officer	lakota.hobia@glt-nsn.gov
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Ms. Kaila Akina	THPO Assistant Director	kaila.akina@glt-nsn.gov
Menominee Indian Tribe of Wisconsin	Mr. David Grignon	Tribal Historic Preservation Officer	dgrignon@mitw.org
Mille Lacs Band of Ojibwe	Mr. Mike Wilson	Tribal Historic Preservation Officer	Mike.Wilson@millelacsband.com
Miami Tribe of Oklahoma	Mr. Logan York	Tribal Historic Preservation Officer	lyork@miamination.com

Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
Nottawaseppi Huron Band of Potawatomi, Michigan	Mr. Douglas R. Taylor	Tribal Historic Preservation Officer	douglas.taylor@nhbp-nsn.gov
Omaha Tribe of Nebraska	Mr. Dwight Howe	Tribal Historic Preservation Officer	dwight.howe@theomahatribe.com
Otoe-Missouria Tribe of Indians, Oklahoma	Ms. Elsie Whitehorn	Tribal Historic Preservation Officer	ewhitehorn@omtribe.org
Peoria Tribe of Indians of Oklahoma	Ms. Burgundy Fletcher	Tribal Historic Preservation Specialist	bfletcher@peoriatribe.com
Pokagon Band of Potawatomi Indians, Michigan and Indiana	Mr. Matthew Bussler	Tribal Historic Preservation Officer	matthew.bussler@pokagonband-nsn.gov
Prairie Band of Potawatomi Nation	Ms. Tara Mitchell	Deputy Tribal Historic Preservation Officer	taramitchell@pbpnation.org
Prairie Island Indian Community	Mr. Noah White	Tribal Historic Preservation Officer	Noah.White@piic.org
Quapaw Nation	Mr. Billie Burtrum	Tribal Historic Preservation Office	Billie.Burtrum@quapawnation.com
Red Cliff Band of Lake Superior Chippewa	Mr. Marvin Defoe	Tribal Historic Preservation Officer	marvin.defoe@redcliff-nsn.gov
Sac and Fox Nation of Missouri in Kansas and Nebraska	Ms. Lisa Montgomery	Director Environmental Protection Agency	lisa.montgomery@sacfoxenviro.org
Sac and Fox Nation, Oklahoma	Mr. Chris Boyd	NAGPRA/Historic Preservation	chris.boyd@sacandfox-nsn.gov
Sac and Fox Tribe of the Mississippi in Iowa (Meskwaki Nation)	Mr. Johnathan Buffalo	Historic Preservation Director	director.historic@meskwaki-nsn.gov
Santee Sioux Nation / Santee Sioux Tribe of Nebraska	Mr. Butch Denny	Tribal Historic Preservation Officer	ssn.thpo@gmail.com
Shakopee Mdewakanton Sioux Community	Mr. Leonard Wabasha	Cultural Resource Director	leonard.wabasha@shakopeedakota.org
Shawnee Tribe	Ms. Tonya Tipton	Historic Preservation Office	section106@shawnee-tribe.com
Sisseton-Wahpeton Oyate	Ms. Dianne Desrosiers	Tribal Historic Preservation Officer	DianneD@swo-nsn.gov
Sokaogon Chippewa Community - Mole Lake Band of Lake Superior Chippewa	Mr. Michael LaRonge	Tribal Historic Preservation Officer	Michael.LaRonge@scc-nsn.gov
Spirit Lake Tribe	Mr. Kenneth Graywater, Jr.	Tribal Historic Preservation Officer	thpo@spiritlakenation.com
St. Croix Band of Chippewa Indians	Ms. Wanda McFaggen	Tribal Historic Preservation Officer	thpo@stcroixtribalcenter.com
The Osage Nation	Dr. Andrea Hunter	Tribal Historic Preservation Officer	ahunter@osagenation-nsn.gov
The Osage Nation	Ms. Caitlin Nichols	Archaeologist	caitlin.nichols@osagenation-nsn.gov
The Osage Nation	Ms. Sarah O'Donnell	Preservation Office	sodonnell@osagenation-nsn.gov

Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
United Keetoowah Band of Cherokee of Oklahoma	Mr. Acee Watt	Tribal Historic Preservation Officer	awatt@uk-nsn.gov
Upper Sioux Community	Ms. Samantha Odegard	Tribal Historic Preservation Officer	THPO@uppersiouxcommunity-nsn.gov
White Earth Band of Ojibwe	Ms. Jaime Arsenault	Tribal Historic Preservation Officer	Jaime.Arsenault@whiteearth-nsn.gov
Winnebago Tribe of Nebraska	Ms. Sunshine Thomas-Bear	Cultural Preservation Director	sunshine.bear@winnebagotribe.com

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103

April 25, 2025

Engineering and Construction Division
Curation and Archives Analysis Branch (ECZ)

Subject: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL

[redacted]

[redacted]:

The U.S. Army Corps of Engineers, St. Louis District (District), is conducting a feasibility study to formulate alternatives to attain and maintain sustainability of side channel habitat within the Upper Mississippi River (UMR), Pool 25, immediately downstream of Lock and Dam 24, near Clarksville, Missouri, in Calhoun County, Illinois (Figure 1). Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, has been initiated under the Navigation and Ecosystem Sustainability Program (NESP) which is authorized to ensure an efficient and environmentally sustainable navigation system on the Mississippi River. The District is contacting your Tribe to initiate consultation under Section 106 of the National Historic Preservation Act of 1966, as amended, its implementing regulations 36 CFR 800, and *The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancements Projects and the Navigation and Ecosystem Sustainability Program Programmatic Agreement* (PA), which was implemented on June 25, 2024.

The Clarksville and Caroll Islands study area consists of approximately 950 acres of side channel and connected backwater habitat along the left descending bank of the Mississippi River, Calhoun County, Illinois, between River Mile (RM) 273 and 266. The area lies within Navigation Pool 25 of the UMR between Lock & Dam 24 (L&D 24), just upstream in Clarksville, MO (RM 273.4) and Lock & Dam 25 (L&D 25) in Winfield, MO (RM 241.4). The project area encompasses the areas below ordinary high-water mark (OHWM) surrounding Clarksville, Carroll, and Coon Island. Clarksville Island is owned and managed by the U.S. Fish and Wildlife Service as part of the Two Rivers National Wildlife Refuge. The goal of the study is to increase depth and flow diversity of aquatic side channels throughout the project area.

Between RM 273 and 266 in Pool 25, increased erosion and sedimentation has degraded the quantity and quality of flowing water (lotic) side channel habitat, including chutes and riffle/pool complexes. This degradation is due to changes in hydraulics and hydrology from implementation and operation of the 9-foot navigation channel, land use changes, and climate change. The loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species. The study area is characterized by a lack of native fish species, mussel habitat, and the natural hydrologic processes necessary to form new islands and side channels.

The District has reviewed multiple alternatives, and the Tentatively Selected Plan (TSP) proposes to restore the functionality of the project area through construction of the following kinds of measures: creation of mussel riffles, placement of woody bundles, dredging and dredge placement, creation of a side channel enhancement dike, and the addition of aquatic hard points (Figure 2).

A review of the Illinois State Historic Preservation Office (SHPO) files revealed that two archaeological shoreline surveys (Surveys 595 and 1090) have been completed in the study area and eleven other surveys have been completed within a mile. Thirteen archaeological sites were identified within a mile of the study area as well as two National Register Districts (Clarksville Historic District and Lock and Dam No. 24 Historic District). There are no recorded cultural resources reported within the study area.

All planned work for this project will occur below the OHWM and construction will be conducted by floating barge. There will be no access roads or laydown areas created. Based upon this information, the District has made the determination that “no historic properties will be affected” by the proposed project. If project activity were to change, the District will use the process outlined in the PA for Section 106 compliance.

If your Tribe has any questions, comments, or areas of concern, please contact me at (314) 331-8855, or Meredith Hawkins Trautt (Tribal Liaison) at Meredith.M.Trautt@usace.army.mil, or call (314) 925-5031. A copy of this letter has been furnished to Mr. Jonathan M. Rohrer.

Sincerely,



Jennifer L. Riordan
Chief, Curation and Archives
Analysis Branch

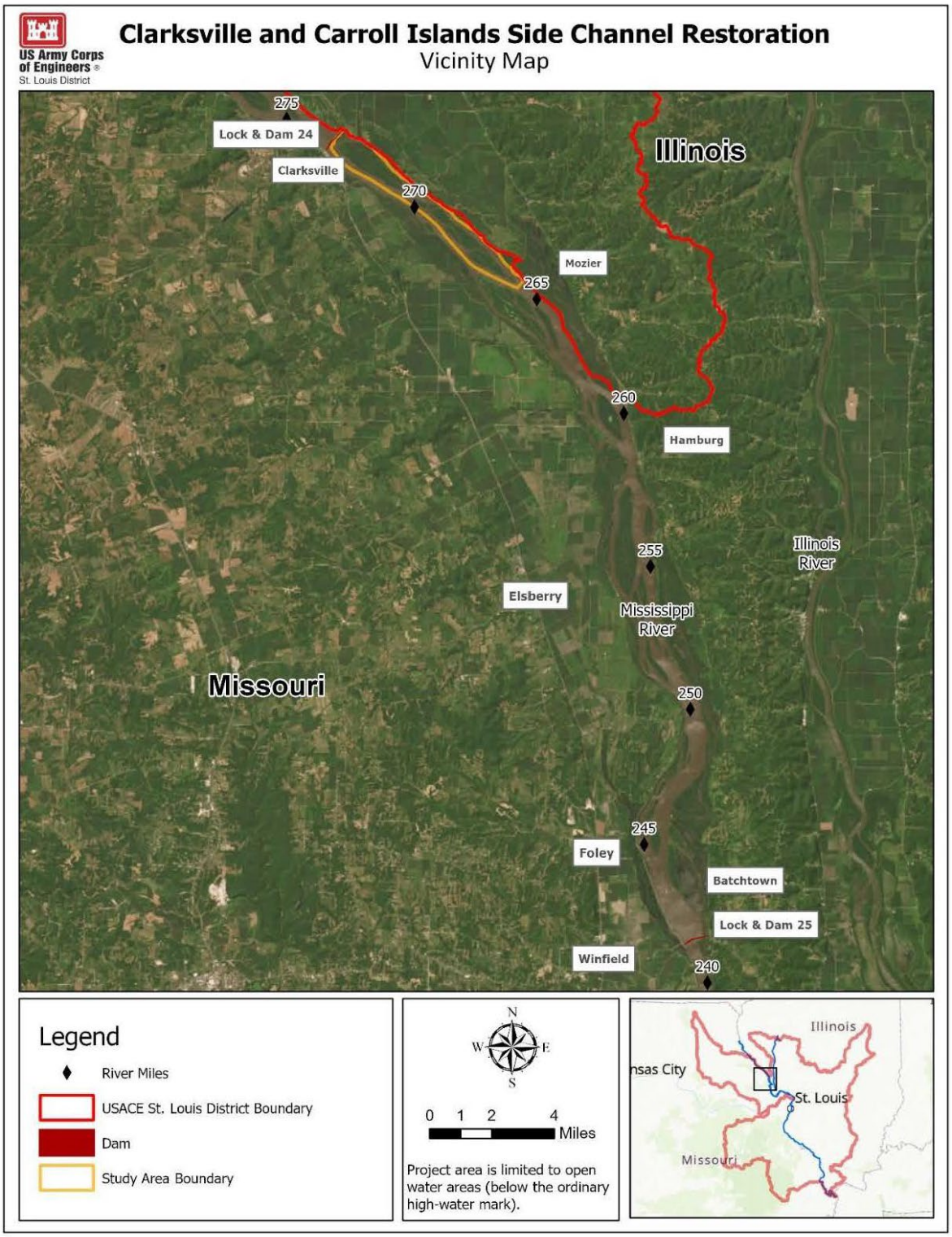


Figure 1. Location map of study area.

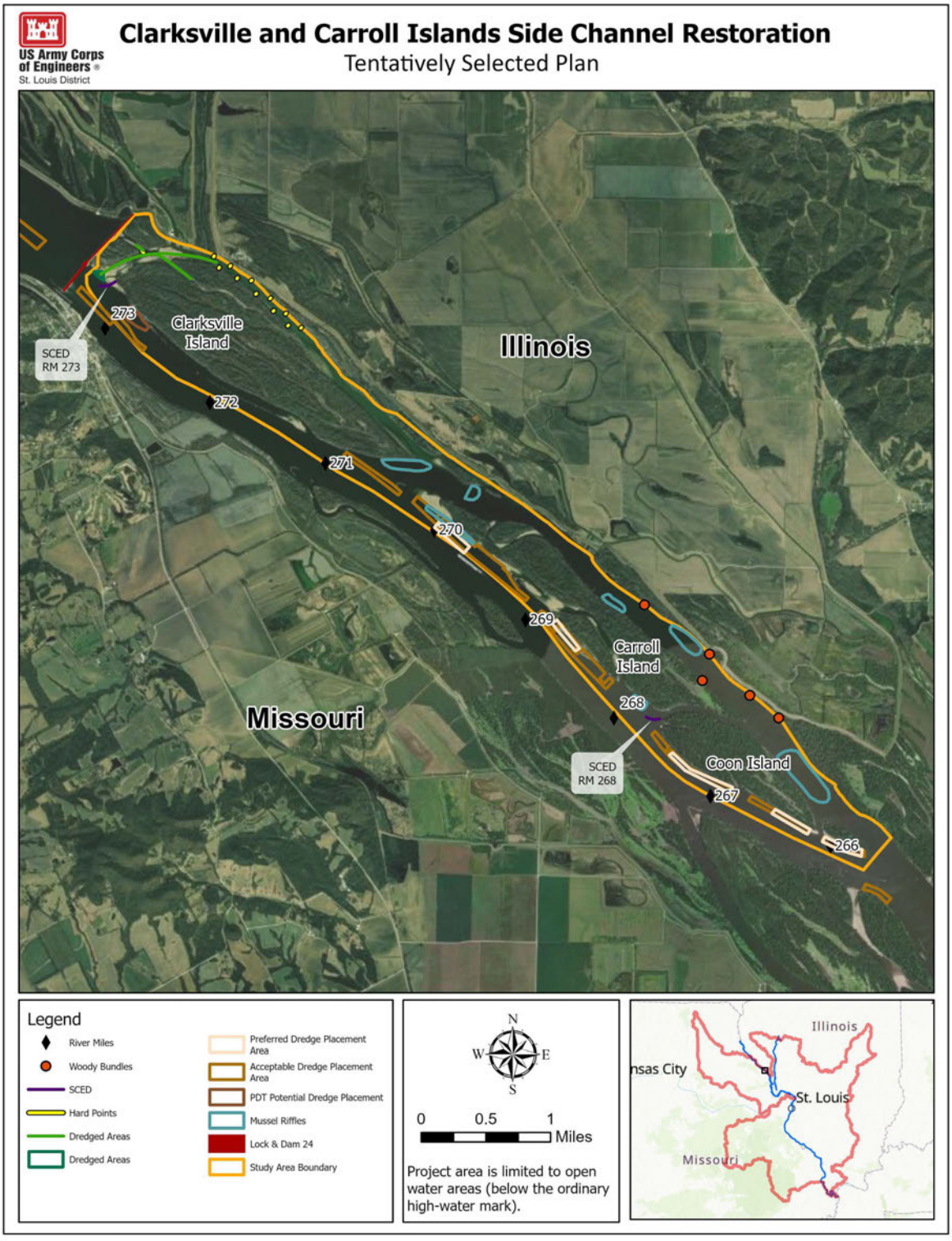


Figure 2. Study area and TSP.

MVS Leaders

Tribe	Name	Street Address	City	State	Zip	Furnished Copy
Caddo Nation of Oklahoma	Chairman Bobby Gonzalez	P.O. Box 487	Binger	OK	73009	Mr. Jonathan M. Rohrer
Citizen Potawatomi Nation, Oklahoma	Chairman John Barrett	1601 S. Gordon Cooper Drive	Shawnee	OK	74801	Mr. Blake Norton
Eastern Shawnee Tribe of Oklahoma	Chief Glenna J. Wallace	12755 S. 705 Road	Wyandotte	OK	74370	Ms. Lora Nuckolls
Forest County Potawatomi Community, Wisconsin	Chairman James A. Crawford	P.O. Box 340, 5416 Everybody's Road	Crandon	WI	54520	Mr. Luke Heider
Hannahville Indian Community, Michigan	Chairman Kenneth Meshigaud	N 14911 Hannahville B-1 Road	Wilson	MI	49896	Mr. Dustin Meshigaud
Ho-Chunk Nation of Wisconsin	President Jon Greendeer	P.O. Box 667	Black River Falls	WI	54615	Mr. William Quackenbush
Iowa Tribe of Kansas and Nebraska	Chairman Timothy Rhodd	3345 Thrasher Road, #8	White Cloud	KS	66094	Mr. Alan Kelley
Iowa Tribe of Oklahoma	Chairman Jake Keyes	335588 E. 750 Rd	Perkins	OK	74059	Ms. Candace Pershall
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Chairwoman Gail Cheatham	824 111th Drive	Horton	KS	66439	Mr. Howard Allen
Kickapoo Tribe of Oklahoma	Chairman Darwin Kaskaske	P.O. Box 70	McCloud	OK	24851	Tribal Historic Preservation Office
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Chairman Bob Peters	2872 Mission Dr.	Shelbyville	MI	49344	Ms. Lakota Hobia
Menominee Indian Tribe of Wisconsin	Chairman Michael Fish Jr.	W2908 Tribal Office Loop Road, P.O. Box 910	Keshena	WI	54135	Mr. David Grignon
Miami Tribe of Oklahoma	Chief Douglas Lankford	P.O. Box 1326	Miami	OK	74355	Mr. Logan York
Nottawaseppi Huron Band of the Potawatomi, Michigan	Chairman Jamie Stuck	2221—1 & 1/2 Mile Road	Fulton	MI	49052	Ms. Onyleen Zapata

Peoria Tribe of Indians of Oklahoma	Chief Craig Harper	P.O. Box 1527	Miami	OK	74355	Ms. Burgundy Fletcher
Pokagon Band of Potawatomi Indians, Michigan and Indiana	Chairperson Matthew J. Wesaw	P.O. Box 180	Dowagiac	MI	49047	Mr. Matthew Bussler
Prairie Band Potawatomi Nation	Chairman Joseph Rupnick	Government Center, 16281 Q Road	Mayetta	KS	66509	Ms. Tara Mitchell
Sac & Fox Nation of Missouri in Kansas and Nebraska	Chairperson Tiauna Carnes	305 N. Main Street	Reserve	KS	66434	Mr. Gary Bahr
Sac & Fox Nation, Oklahoma	Principal Chief Randle Carter	920963 S Highway 99	Stroud	OK	74079	Mr. Chris Boyd
Sac & Fox Tribe of the Mississippi in Iowa	Chairman Vern Jefferson	349 Meskwaki Road	Tama	IA	52339	Ms. Tieranny Keahna
United Keetoowah Band of Cherokee of Oklahoma	Chief Jeff Wacoche	P.O. Box 746	Tahlequah	OK	74464	Mr. Roger Cain

MVS Reps – Hard Copy

Tribe	Name	Position	Street Address	City	State	Zip
Caddo Nation of Oklahoma	Mr. Jonathan M. Rohrer	Tribal Historic Preservation Officer	P.O. Box 487	Binger	OK	73009
Hannahville Indian Community, Michigan	Mr. Dustin Meshigaud	Tribal Historic Preservation Officer/NAGPRA Representative	N15756 Hannahville B-1 Rd	Wilson	MI	49896
Iowa Tribe of Oklahoma	Ms. Candace Pershall	Cultural Preservation	335588 E. 750 Rd	Perkins	OK	74875
Kickapoo Tribe of Oklahoma	Tribal Historic Preservation Office		P.O. Box 70	McCloud	OK	24851
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Ms. Lakota Hobia	Tribal Historic Preservation Officer	ATTN: THPO, 2872 Mission Drive	Shelbyville	MI	49344

Menominee Indian Tribe of Wisconsin	Mr. David Grignon	Tribal Historic Preservation Officer	P.O. Box 910	Keshena	WI	54135
Pokagon Band of Potawatomi Indians, Michigan and Indiana	Mr. Matthew Bussler	Tribal Historic Preservation Officer	P.O. Box 180	Dowagiac	MI	49047
Prairie Band Potawatomi Nation	Ms. Tara Mitchell	Deputy Tribal Historic Preservation Officer	Government Center, 16281 Q Road	Mayetta	KS	66509
Sac & Fox Nation, Oklahoma	Ms. Chris Boyd	NAGPRA/Historic Preservation Office	920963 S Highway 99	Stroud	OK	74079
Sac & Fox Tribe of the Mississippi in Iowa	Ms. Tieranny Keahna	Tribal Historic Preservation Officer	349 Meskwaki Road	Tama	IA	52339

MVS Reps – Electronic Copy

Tribe	Name	Position	Street Address	City	State	Zip	Email
Citizen Potawatomi Nation, Oklahoma	Mr. Blake Norton	Director Tribal Historic Preservation Office	Cultural Heritage Center, 1601 S Gordon Cooper Dr	Shawnee	OK	74801	cpnthpo@potawatomi.org
Eastern Shawnee Tribe of Oklahoma	Ms. Lora Nuckolls	Tribal Historic Preservation Officer	70500 E. 128 Road	Wyandotte	OK	74370	THPO@estoo.net
Forest County Potawatomi Community, Wisconsin	Mr. Luke Heider	Tribal Historic Preservation Officer	8130 Mish ko Swen Dr., P.O. Box 340	Crandon	WI	54520	Luke.Heider@fcp-nsn.gov
Ho-Chunk Nation of Wisconsin	Mr. William Quackenbush	Tribal Historic Preservation Officer	P.O. Box 667	Black River Falls	WI	54615	bill.quackenbush@ho-chunk.com
Iowa Tribe of Kansas and Nebraska	Mr. Alan Kelley	Tribal Historic Preservation Officer	3345 Thrasher Road	White Cloud	KS	66094	akelley@iowas.org

Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas	Mr. Howard Allen	Secretary	824 111th Drive	Horton	KS	66439	secretary@ktik-nsn.gov
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Ms. Lakota Hobia	Tribal Historic Preservation Officer	2872 Mission Drive	Shelbyville	MI	49344	section106@glt-nsn.gov
Miami Tribe of Oklahoma	Mr. Logan York	Tribal Historic Preservation Officer	202 S. Eight Tribes Trail, P.O. Box 1326	Miami	OK	sent	THPO@MiamiNation.com
Nottawaseppi Huron Band of the Potawatomi, Michigan	Ms. Onyleen Zapata	Tribal Historic Preservation Officer	1485 MNO--Bmadzen Way	Fulton	MI	49052	Onyleen.Zapata@nhbp-nsn.gov
The Osage Nation	Dr. Andrea Hunter	Historic Preservation Office	627 Grandview Avenue	Pawhuska	OK	74056	s106@osagenation-nsn.gov
Peoria Tribe of Indians of Oklahoma	Ms. Charla EchoHawk	Director of Cultural Preservation	118 S. Eight Tribes Trail	Miami	OK	74354	cechohawk@peoriatribe.com
Sac & Fox Nation of Missouri in Kansas and Nebraska	Mr. Gary Bahr	Vice Chairperson	305 N. Main Street	Reserve	KS	66434	gary.bahr@sacfoxks.com
United Keetoowah Band of Cherokee of Oklahoma	Mr. Roger Cain	Tribal Historic Preservation Officer	P.O. Box 746	Tahlequah	OK	74464	rcain@ukb-nsn.gov

From: Alan Kelley
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [Non-DoD Source] Re: USACE St. Lous District, Clarksville and Carroll Islands, Calhoun County, IL
Date: Thursday, May 1, 2025 3:32:33 PM

Subject: Clarksville and Carroll Islands Side Channel Restoration,
Ecosystem Restoration
Project, Calhoun County, IL

I Have No Concerns

On Fri, Apr 25, 2025 at 12:52 PM Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil> wrote:
>
> Dear Mr. Kelley,
>
> Please see the attached letter pertaining to the tentatively selected plan for a ecosystem restoration project at Clarksville and Carroll Islands in Calhoun County, IL.
>
>
>
> Sincerely,
>
>
>
> Meredith Hawkins Trautt, M.S., RPA
>
> Archaeologist and Tribal Liaison
>
> U.S. Army Corps of Engineers, St. Louis District
>
> 1222 Spruce Street
>
> St. Louis, MO 63103
>
> Office: (314) 925-5031
>
> Mobile: (314) 798-2169
>
>

--
Alan Kelley
THPO
Iowa Tribe of KS & NE
3345 Thrasher RD
White Cloud KS 66094
785-351-0080

From:	Lora Nuckolls
To:	Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject:	[Non-DoD Source] Eastern Shawnee Tribe - Project Review - Clarksville and Carroll Islands Side Channel Restoration
Date:	Monday, April 28, 2025 2:43:02 PM
Attachments:	ClarksvilleandCarrollIslandsSideChannelRestoration.pdf
Importance:	Low

Ms. Hawkins Trautt
Please see the attached review for: Clarksville and Carroll Islands Side Channel Restoration
EST Reference Number: 9144

"We prefer" Electronic Copy

Please submit an electronic copy of 106 project files to:

THPO@estoo.net

Lora Nuckolls
Cultural Preservation Director
THPO
Office: (918) 238-5151 ext. 1840
70400 East Hwy. 60
Wyandotte, OK 74370
lnuckolls@estoo.net
THPO@estoo.net

IMPORTANT NOTICE: This e-mail message, including any attachments, is intended only for the recipient(s) named above. It may contain confidential or proprietary information of The Eastern Shawnee Tribe and its related businesses. Unauthorized use, disclosure, or distribution is prohibited. If you have received this message in error, please notify the sender immediately and delete it from your system.

EASTERN SHAWNEE
CULTURAL PRESERVATION DEPARTMENT
70400 East Highway 60, Wyandotte, OK 74370

April 28, 2025
USACE St. Louis District
1222 Spruce Street
St. Louis, Missouri 63103-2833

RE: ***Clarksville and Carroll Islands Side Channel Restoration, Calhoun County, IL***

Dear Ms. Hawkins Trautt,

The Eastern Shawnee Tribe has received your letter regarding the above referenced project(s) within Calhoun County, IL. The Eastern Shawnee Tribe is committed to protecting sites important to Tribal Heritage, Culture and Religion. Furthermore, the Tribe is particularly concerned with historical sites that may contain but not limited to the burial(s) of human remains and associated funerary objects.

As described in your correspondence, and upon research of our database(s) and files, we find our people occupied these areas historically and/or prehistorically. However, the project proposes **NO Adverse Effect** or endangerment to known sites of interest to the Eastern Shawnee Tribe. Please continue project as planned. However, should this project inadvertently discover an archeological site or object(s) we request that you immediately contact the Eastern Shawnee Tribe, as well as the appropriate state agencies (within 24 hours). We also ask that all ground disturbing activity stop until the Tribe and State agencies are consulted. Please note that any future changes to this project will require additional consultation.

In accordance with the NHPA of 1966 (16 U.S.C. § 470-470w-6), federally funded, licensed, or permitted undertakings that are subject to the Section 106 review process must determine effects to significant historic properties. As clarified in Section 101(d)(6)(A-B), historic properties may have religious and/or cultural significance to Indian Tribes. Section 106 of NHPA requires Federal agencies to consider the effects of their actions on all significant historic properties (36 CFR Part 800) as does the National Environmental Policy Act of 1969 (43 U.S.C. § 4321-4347 and 40 CFR § 1501.7(a). This letter evidences NHPA and NEPA historic properties compliance pertaining to consultation with this Tribe regarding the referenced proposed projects.

Thank you, for contacting the Eastern Shawnee Tribe, we appreciate your cooperation. Should you have any further questions or comments please contact our Office.
Sincerely,

Lora Nuckolls

Lora Nuckolls, Tribal Historic Preservation Officer (THPO)
Eastern Shawnee Tribe of Oklahoma
(918) 238-5151 Ext:1840
THPO@estoo.net

Osage Nation Historic Preservation Office

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Date: May 27, 2025 **File No. 2425-5774MO-4**

St. Louis District, USACE
Meredith Trautt
1222 Spruce Street
St. Louis, Missouri, 63103
Email: Meredith.m.trautt@usace.army.mil

RE: USACE, St. Louis District, Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, Illinois

SENT VIA EMAIL

Dear Ms. Trautt,

The Osage Nation Historic Preservation Office has evaluated your submission regarding the USACE, St. Louis District, Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, Illinois and determined that the proposed project **most likely will not adversely affect any sacred properties and/or properties of cultural significance to The Osage Nation**. For direct effect, the finding of the NHPA Section 106 review is a determination of "**No Properties**" eligible or potentially eligible for the National Register of Historic Places.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law. **If, however, artifacts or human remains are discovered during the project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office by contacted**.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.
Director, Tribal Historic Preservation Officer

Caitlin Eileen Nichols, MA, RPA
Archaeologist

627 Grandview Ave. * Pawhuska, OK 74056 Telephone 918-287-5328 * Fax 918-287-5376
www.osagenation-nsn.gov/who-we-are/historic-preservation * HistoricPreservation@osagenation-nsn.gov

2872 Mission Drive, Shelbyville, MI 49344 | {p} 269.397.1780 | gunlaketribe-nsn.gov

June 12, 2025

Jennifer Riordan
Chief, Curation and Archives
United State Army Corps of Engineers
1222 Spruce Street, St. Louis, Missouri 63103

Re: Ecosystem Restoration in Calhoun County

Dear Ms. Riordan,

The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians' Tribal Historic Preservation Office has received the Section 106 consultation request for comments regarding a proposed ecosystem restoration project in Clarksville, Calhoun County, Illinois. At present, we are not providing any additional comments. We have not identified any information concerning the presence of any cultural resources significant to the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians within the Area of Potential Effect (APE). This is not to say that such a site may not exist, just that this office does not have any available information for the area(s) at this point in time.

This office will be available to assist you in the future or during this project if there is an unanticipated encounter with human remains, funerary objects, and artifacts. The subsequent identification of additional historic properties affected by the undertaking will require reinitiating Section 106 consultation related to all ongoing and proposed project work and the handling of "discoveries" per the National Historic Preservation Act (NHPA) implementing regulations, 36 CFR Part 800, and, as applicable, the Native American Graves and Repatriation Act (NAGPRA) and its implementing regulations, 43 CFR Part 10. In the event of an encounter with unanticipated human remains, funerary objects, and artifacts we request to be notified within 72 hours. At that time, the Tribe will determine if further consultation is necessary.

Please contact our office with any further questions or requests at 269-397-1780 or Section106@glt-nsn.gov. Also, keep in mind that there may be other Tribal Nations that may have an interest or knowledge of cultural resources within the APE that we may not know about. We thank you for including the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians in your consultation efforts and planning processes.

Sincerely,

Lakota Hobia

Lakota Hobia
Tribal Historic Preservation Officer
Lakota.Hobia@glt-nsn.gov
Section106@glt-nsn.gov

CC: Meredith Hawkins Trautt, Tribal Liaison, Meredith.M.Trautt@usace.army.mil

June 11, 2025

Meredith Hawkins Trautt
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
MCX CMAC, EC Z
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
Meredith.M.Trautt@usace.army.mil

Re: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL

Dear Ms. Trautt,

Pursuant to consultation under Section 106 of the National Historic Preservation Act (1966 as amended) the Prairie Band Potawatomi, a Federally Recognized Native American Tribe, reserves the right to comment on Federal undertakings, as defined under the act.

This response pertains to the project mentioned above. Based on the archaeological sites identified within the APE, we request on-site monitoring during the construction process. If human remains or archaeological materials are exposed as a result of project activities, work must halt, and the Tribe must be included in any further discussion regarding treatment and disposition of the findings prior to their removal. If you would like to schedule a virtual meeting to discuss this project, please reach out to us with available meeting dates.

Tara Mitchell, Deputy Tribal Historic Preservation Officer, will be the primary contact. Her contact information is 785-966-3984 or email TaraMitchell@pbpnation.org. Please CC me as a secondary contact.

Your interest in protecting PBPN's cultural and historic properties is appreciated. If you have any questions or concerns, please contact me at the email or number listed below.

Respectfully,

Raphael J Wahwassuck
Tribal Council Member
Tribal Historic Preservation Officer
16281 Q Road, Mayetta, KS 66509

Office: 785-966-4048
Cell: 785-581-2517
RaphaelWahwassuck@pbpnation.org.

From:	Trautt, Meredith M CIV USARMY CEMVS (USA)
To:	Tara Mitchell
Cc:	Raphael Wahwassuck; Kalei Hale
Subject:	RE: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request
Date:	Monday, June 23, 2025 11:26:00 AM

Good morning, Ms. Mitchell,
I have spoken with the archaeologist on this project. There are known burials near the study area, but the nearest location is almost 2 ½ miles away on the bluffs. This project will be taking place within the Mississippi River. All work for this project will be taking place below the ordinary high water mark (OHWM) and the construction will take place via a floating barge.

The District appreciates the Prairie Band Potawatomi Nation bringing their concern pertaining to cultural resources in Calhoun County to our attention. However, given that all work will be taking place within the Mississippi River channel, the potential for archaeological sites is extremely low. The District does not see a need for an archaeological monitor for this project.

If you would like to discuss this further, please let me know and I can schedule a virtual meeting.

Sincerely,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
Mobile: (314) 798-2169

From: Tara Mitchell <TaraMitchell@pbpnation.org>
Sent: Monday, June 16, 2025 11:10 AM
To: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Cc: Raphael Wahwassuck <RaphaelWahwassuck@pbpnation.org>; Kalei Hale <KaleiHale@pbpnation.org>
Subject: [Non-DoD Source] RE: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request

Hello,

Our office does have information regarding this area. We have recently dealt with looting in Calhoun County due to burial sites and mounds throughout the county, usually along the rivers.

If there is a potential for unmarked sites in the area, we request on-site monitoring as a safety precaution.

Thank you,

Tara Mitchell
Deputy Tribal Historic Preservation Officer
Prairie Band Potawatomi Nation
16281 Q Rd Mayetta KS 66509
P: 785-966-3984

From: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Sent: Friday, June 13, 2025 9:18 AM
To: Tara Mitchell <TaraMitchell@pbpnation.org>
Cc: Raphael Wahwassuck <RaphaelWahwassuck@pbpnation.org>; Kalei Hale <KaleiHale@pbpnation.org>
Subject: RE: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request

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Good morning, Ms. Mitchell,
I believe there is some confusion pertaining to this project. In your response letter, monitoring was requested because archaeological sites were located within the APE. However, there have been no previously reported archaeological sites within the APE. Additionally, all work is being conducted within the water via a floating barge, so there will be no terrestrial disturbances. If there is information that your office has that is not available in the Illinois SHPO files, the District is willing to review that information and re-evaluate our determination of no historic properties affected.

Thank you,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
Mobile: (314) 798-2169

From: Tara Mitchell <TaraMitchell@pbpnation.org>

Sent: Wednesday, June 11, 2025 2:29 PM
To: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Cc: Raphael Wahwassuck <RaphaelWahwassuck@pbpnation.org>; Kalei Hale <KaleiHale@pbpnation.org>
Subject: [Non-DoD Source] Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request

Good afternoon,

I have attached our Section 106 Review for your proposed project, along with your initial letter. Please reach out to me if you have any questions.

Thank you,

Tara Mitchell
Deputy Tribal Historic Preservation Officer
Prairie Band Potawatomi Nation
16281 Q Rd Mayetta KS 66509
P: 785-966-3984

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To:	Tara Mitchell
Cc:	Raphael Wahwassuck; Kalei Hale
Subject:	RE: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request
Date:	Friday, June 27, 2025 3:01:00 PM
Attachments:	ia-il-mo-mn-wi.coe-c.st.paul-rock island-st.louis districts.nesp and umrr program pa.2024.pdf

Hi Ms. Mitchell,
We will be using the NESP/UMRR programmatic agreement for this project (attached). The post-review discovery and treatment of human remains and items of religious and cultural importance is outlined in Stipulations VIII-IX, pp. 21-23.

Please let me know if you have any further questions.

Thank you,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
Mobile: (314) 798-2169

From: Tara Mitchell <TaraMitchell@pbpnation.org>
Sent: Friday, June 27, 2025 2:43 PM
To: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Cc: Raphael Wahwassuck <RaphaelWahwassuck@pbpnation.org>; Kalei Hale <KaleiHale@pbpnation.org>
Subject: [Non-DoD Source] RE: Clarksville and Carroll Islands Side Channel Restoration, Ecosystem Restoration Project, Calhoun County, IL - On-site Monitoring Request

Good afternoon,

Can you provide your inadvertent discovery plan?

Thank you,

Tara Mitchell
Deputy Tribal Historic Preservation Officer
Prairie Band Potawatomi Nation
16281 Q Rd Mayetta, KS 66509
P: 785-966-3984

From: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Sent: Monday, June 23, 2025 11:27 AM
To: Tara Mitchell <TaraMitchell@pbpnation.org>
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Thank you,

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Prairie Band Potawatomi Nation
16281 Q Rd Mayetta KS 66509
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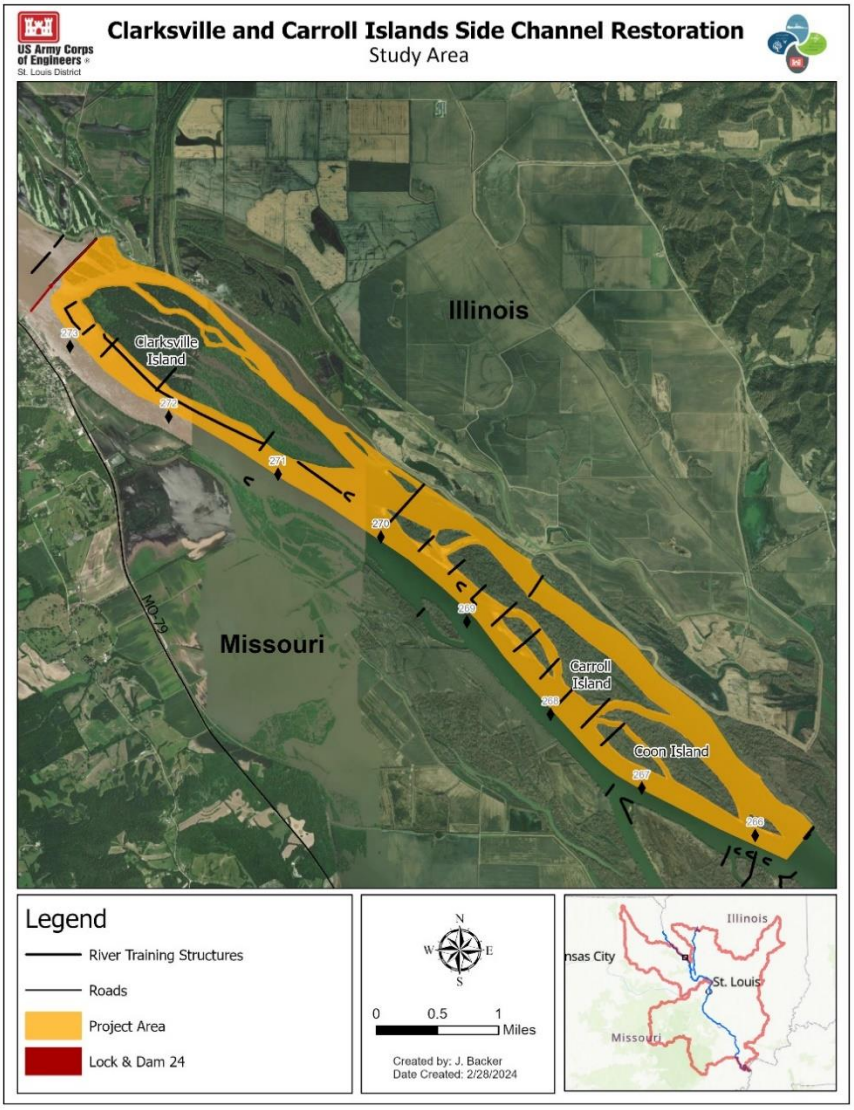
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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers
St. Louis District

July 2025
Appendix B
Habitat Evaluation

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Introduction

This appendix provides the documentation of the habitat evaluation and quantification process that was conducted to evaluate the benefits of various alternatives for the Navigation and Ecosystem Sustainability Program (NESP) Clarksville and Carroll Islands ecosystem restoration project. The evaluation was conducted by a multi-agency team with active participants that included biologists from the St. Louis District U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service from the Southern Illinois Ecological Services Office, and fisheries biologists from the Missouri Department of Conservation and Illinois Department of Natural Resources; names and disciplines are included in Table B-1 below.

Table B-1. Team that Participated in the Habitat Benefits Analysis for the Clarksville & Carroll Is. Ecosystem Restoration Project.

Team Member	Specialty	Affiliation
Justin Garrett	Biologist	USACE
Matt Mangan	Fish and Wildlife Biologist	USFWS
Charlie Deutsch	Refuge Manager	USFWS
Kirsten Schmidt	Wildlife Biologist	USFWS
Shane Simmons	Fisheries Biologist / Project Manager	USACE
Butch Atwood	Fisheries Biologist	IDNR
Travis Moore	Fisheries Biologist	MDC
Annie Hentschke	Fisheries Biologist	MDC
Sarah Peper	Fisheries Biologist	MDC

Habitat Benefit Evaluation Methodology

The purpose of the habitat benefits evaluation is to evaluate and quantify, to the extent possible, environmental benefits of alternative plans for the aquatic habitat improvements within the study area.

Aquatic benefits were quantified through the use of the Engineering Circular 1105-2-412, *Assuring Quality of Planning Models*, the General Freshwater Mussel Habitat Model (Herman et al., 2022), and the White Bass Habitat Suitability Index (HSI) (Hamilton & Nelson, 1984). The General Freshwater Mussel Model is certified for national use by the USACE Ecosystem Planning Center of Expertise (ECO-PCX), until February 15, 2030. The White Bass HSI model is an approved (bluebook) model, which is approved for regional and nationwide use by the USACE Ecosystem Restoration Planning Center of Expertise.

Habitat Suitability Index (HSI) spreadsheet calculators for each of these models was reviewed by the Ecosystem Restoration Planning Center of Expertise and were recommended for regional use (Memorandum for CECW-MVD; 15 September 2016; Enclosure 1). Consistent with guidance from the USACE Ecosystem Restoration Planning Center of Expertise, the Agency Technical Review (ATR) Team for the NESP Clarksville & Carroll Island ecosystem restoration

project will conduct an assessment of the models used for this project. This process will evaluate the technical quality and appropriateness of the models utilized.

1.1 Quantity Component

Traditionally, the USACE has used the quantity and quality of habitat jointly, in the form of habitat units, to measure the benefits provided by ecosystem restoration projects. The quantity portion is often measured as area (acres of habitat, landform, etc.) or number of species; in some systems, it is measured as length (feet of stream bank). The area associated with a given proposed feature must have a clear definition for use as guidance in estimating the area component of the ecosystem output model and must be applied consistently to all actions evaluated. Quantities of each measure varied depending on the alternative. Habitat was evaluated in the location in which each measure would be placed. Table B-4 at the end of this report provides the acres proposed for use for each alternative, and the applicable acreage for each model.

For the aquatic habitat, mussel habitat improvements will be quantified based on areas that would benefit from substrate enhancements. The mussel habitat measure found in the Intermediate Alternatives 2, and the Maximum Alternative 3, (see Section 4 of the main report), consist of sporadic placement of larger cobble sized stone that will create flow diversity and substrate heterogeneity across a larger area and will provide flow refugia and many substrate transition zones over time as sands and gravels move around these larger stones. It is anticipated that these substrate enhancements should also provide areas of transitional substrates and extend areas of potential benefit as flow moves and shifts the sands and smaller gravels around and near them over time. Table B-2 below illustrates the alternatives and their associated management measures included with each.

Table B-2. Measures and Alternatives.

Measure (Planning Objective)	No Action	Alt 1 Minimum	Alt 2 Intermediate	Alt 3 Maximum
Hard Points (2,3)			X	X
Partial Degradation/Notching of Closure Structures (1,2,4,5)			X	X
Side Channel Enhancement Dike (SCED273) (upstream) (1,2,4)			X	X
Side Channel Enhancement Dike (SCED268) (downstream) (1,2,4)			X	X
Dredging of Clarksville Slough pilot channel (1,2,4,5)		X	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement) (2,3,5)			X	X
Natural and Nature-Based Features (Woody Bundles) (2)				X

Measure	Obj 1: Increase side channel connectivity	Obj 2: Increase side channel flow diversity	Obj 3: Increase substrate diversity	Obj 4: Increase side channel sediment transport	Obj 5: Increase depth diversity	No Action	Alt 1: Minimum	Alt 2: Intermediate	Alt 3: Maximum
Hard Points		X			X			X	X
Partial Degradation/Nothing of Closure Structures (Flow)	X	X		X	X			X	X
Side Channel Enhancement Dike (Upstream)	X	X		X				X	X
Side Channel Enhancement Dike (Downstream)	X	X	X						X
Dredging	X	X		X	X		X	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement)		X	X		X			X	X
Natural and Nature-Based Features (Woody Bundles/Debris)		X							X

1.2 Quality Component

The qualitative component of the analysis is rated on a 0.0 to 1.0 scale, with higher values indicating better habitat for that species. The HSI for a particular habitat type is determined by selecting values that reflect present and future study area conditions from a series of abiotic and biotic metrics. Each value corresponds to a suitability index for each species. Future values are determined using management plans, historical conditions, and best professional judgment.

The quantitative component is the number of acres of the habitat being evaluated. From the calculated qualitative and quantitative values, the standard unit of measure, the habitat unit (HU) is calculated using the formula (HSI × Acres = HUs). Habitat units are calculated for specific target years to forecast changes in habitat values over the life of the project with- and without-project conditions. When HSI scores are not available for each year of analysis, a formula that requires only target year HSI and area estimates is used (USFWS, 1980). This formula is:

$$\int_0^T HU\ dt = (T_2 - T_1)\left[\left(\frac{A_1H_1 + A_2H_2}{3}\right) + \left(\frac{A_2H_1 + A_1H_2}{6}\right)\right]$$

Where:

$\int_0^T HU\ dt$ = *Cumulative HUs*
T_1 = first target year of time interval
T_2 = last target year of time interval
A_1 = area of available habitat at beginning of time interval
A_2 = area of available habitat at end of time interval
H_1 = habitat suitability index at the beginning of time interval
H_2 = habitat suitability index at the end of time interval
3 and 6= constants derived from integration of HSI × Area for the interval between any two target years.

This formula was developed to precisely calculate cumulative HUs when either HSI, or area, or both change over a time interval, which is common when dealing with the unpredictable fluctuations found in nature. Habitat Unit gains or losses are annualized by summing the cumulative HUs calculated using the above equation across all target years in the period of analysis and dividing the total (cumulative HUs) by the number of years in the life of the project (i.e., 50 years). This calculation results in the Average Annual Habitat Units (AAHUs) (USFWS, 2016). The calculation of the HUs and AAHUs were completed in a Microsoft Excel spreadsheet for each model containing the formula above.

The benefits of the proposed project measures (net AAHUs) are then determined by calculating the difference in AAHUs between the with-project benefits and the without-project benefits. The effects of various habitat improvement feature combinations (alternatives) can then be evaluated by comparing the net AAHUs and their associated costs for each alternative considered.

For the purpose of planning, design, and impact analysis, the period of analysis was established as 50 years. To facilitate comparison, target years were established at 0 (existing conditions), 1, 5, 25, and 50 years for both future with and without project features. Target years are used to analyze HUs and characterize habitat changes over the estimated period of analysis. Target

years of 1 and 5 capture short-term changes following construction completion. While target years 25 and 50 capture ecological changes that would occur over a longer period of time. The period of analysis was determined to be 50 years based on the prediction that some project features (e.g., development of key ecological processes needed to restore ecosystem structure and function) would need a longer period of time to reach maximum benefits; and the accrual of benefits were predicted to level off after 50 years. HSIs and cumulative HUs for each evaluation species were calculated at each of these target years.

Corps guidance requires that the team evaluate a suite of features that can be combined in various ways to form project alternatives. The approach used to assess the benefits at the Clarksville & Carroll Islands study area looked at benefits of project features and their combinations as alternatives and comparatively evaluated each alternative separately. This process is called the iterations process. To determine the habitat units created by each feature, the habitat affected by the feature would be evaluated using the applicable HSI spreadsheets.

This appendix contains HSI summary tables and other data derived from the spreadsheet files not included in this appendix. These spreadsheets are available upon request. Please contact, Justin Garrett, 314-331-8047, or by email at Justin.M.Garrett@usace.army.mil if you would like an electronic copy of these files.

Assumptions

In preparation of using the HSI models, the evaluation team conducted a site visit, reviewed aerial photography, topographic maps, and used the results from physical and numerical hydraulic modeling as well as fisheries and mussel survey and collection data provided by IDNR, MDC, and previous USACE survey efforts. During the evaluation, assumptions were developed regarding existing conditions and projected with-project conditions relative to habitat changes over time and management practices.

Side Channel Habitat

The USACE certified (per EC 1105-2-412) General Freshwater Mussel Habitat Model (Herman et al. 2022) was used to assess the aquatic habitat benefits resulting in the proposed project measures. The model is certified for national use until February 15, 2030. The proposed measures were developed to enhance substrate stability and heterogeneity, and improved flows and aquatic connectivity resulting in increased overall availability of suitable habitat for colonization of native freshwater mussels and their host fishes. Sediment stability is necessary within water bodies since increased sedimentation inhibits feeding and reproduction as well as promotes suffocation. Mussel occurrence is often related to substrate size with optimal conditions reflected by stream bed particle size large enough to remain stable at high flows and provide sufficient interstitial spaces for juvenile refugia and feeding (Herman, et al. 2022).

The following assumptions in applying the *General Freshwater Mussel Habitat Model* and *the White Bass HSI model* were made. For more detailed descriptions of the assumptions made for each model parameter for a given alternative, the excel spreadsheet is available upon request.

Baseline Condition:

There are approximately 1,100 acres of aquatic habitats within the project area, dominated by side channels with several tertiary channels and main channel border habitat. The project area

side channels are currently characterized by shallow depths with shifting sands as the primary substrate type. Two closing structures are located in the Carroll Island side channel, and the main entrance to the upper end of the Clarksville Island side channel has nearly disconnected due to heavy sedimentation. This slows velocities that come through the side channel, causing sediments to drop out, further exacerbating the shallow depths and connectivity of backwaters to side channels and the main channel.

Future Without Project Condition:

Without the project measures, it is anticipated that the side channel habitat within the project area will continue to degrade, primarily through expanding acreage of shallower depths due to sedimentation which will eventually cause areas to convert to more terrestrial habitat and further severing the connectivity of remaining aquatic habitats. These areas are also expected to experience higher water temperature and poorer water quality, with low dissolved oxygen levels making it unsuitable for most aquatic life. The shallower depths will also limit access for aquatic species to overwintering habitat as well as adequate foraging, spawning and rearing backwater habitats. The shifting sand substrate found throughout the side channel areas do not currently offer suitable habitat for freshwater mussels to colonize new areas, and recent mussel surveys reveal low densities of mussels throughout the project area.

Future With Project Condition:

With the proposed project measures of the Recommended Plan implemented, velocities and connectivity are anticipated to be enhanced such that access to backwaters for overwintering, foraging, spawning, and rearing for aquatic species will be greatly enhanced. Placed substrate for mussel riffle habitat is preliminarily designed to create large boulder fields, sporadically placed such that they provide flow refugia and shadows, allowing for gravels and other granular sediments to settle below, and provide the much needed, stable substrate areas for mussels to colonize. According to recent mussel surveys, there were 17 different species found within the project area, albeit in low densities. This is evidence that there is a great opportunity to provide suitable habitat to help expand those populations that are currently nearby but likely struggling due to lack of available habitat.

General Assumptions

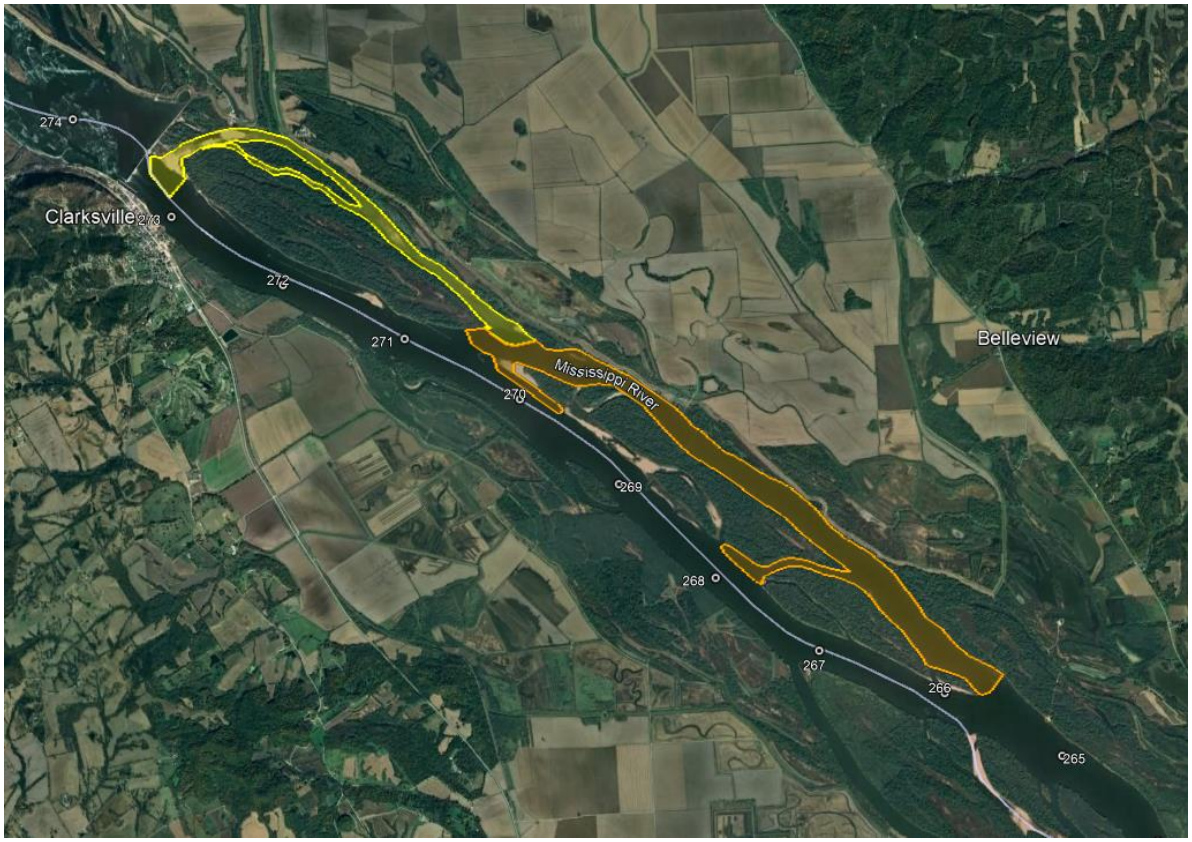
It was assumed that target years of 0 (existing condition), 1, 5, 25, and 50 (future without and future with project conditions) are sufficient to analyze HUs and characterize habitat changes over the estimated period of analysis. The period of analysis was determined to be 50 years based on the prediction that some project features (e.g., development of key ecological processes needed to restore ecosystem structure and function) would need a longer period of time to reach maximum benefits; and the accrual of benefits were predicted to level off after 50 years.

Model Acreage Delineation

Acreage identified in yellow polygon was captured in the White Bass HSI model, and the acreage identified as an orange polygon was captured in the General Freshwater Mussel Model, see Figure B-1. In general, the White Bass model was applied in the upper half of the project area due to the proposed measures for this area being more focused on flow and velocity manipulations. The White Bass model parameters are more inline with picking up nuance in flow and velocity changes than the General Mussel Model. The General Mussel Model was applied in the lower half of the project are due a heavier focus on direct substrate

enhancements in this area. The General Mussel Model has parameters that are directly correlated to substrate heterogeneity and was agreed upon by our group of biologists to be better fit for this area.

Figure B-1: Acreage delineation of each habitat model.



Results

Section 4 of the main report, *Plan Formulation*, describes each potential Project measure in detail. The Project planning team screened out several features and alternatives before this habitat quantification process began. Section 4, Table 4 in the PIR displays the proposed measures, screening criteria, and which measures were retained for inclusion in the project alternatives. The results of the habitat benefit evaluations respective to habitat model that was used to evaluate each alternative by habitat type is provided below in 4.1, Table B-3.

Total Habitat Benefits

Table B-3 lists the calculated net average annual habitat benefits by habitat model for the final array of alternatives. Table B-4 illustrates the acreage considered for habitat benefits, by alternative and model applied.

Table B-3: Results of the habitat benefit evaluations for each habitat model used to evaluate alternatives by habitat type.

Alternative	Mussel Model Net AAHU	White Bass HSI Model Net AAHU	Total Net AAHU
No Action	0	0	0

Alternative	Mussel Model Net AAHU	White Bass HSI Model Net AAHU	Total Net AAHU
Alternative 1 – Minimum	157	92	249
Alternative 2 – Intermediate	325	139	464
Alternative 3 - Maximum	343	154	497

Table B-4: Acreage considered for habitat benefits, by alternative and model utilized.

Alternative	Model	Acres per Habitat Type
FWOP - No Action	White Bass	405
FWOP - No Action	Freshwater Mussel	674
Alternative 1 - Minimum	White Bass	405
Alternative 1 - Minimum	Freshwater Mussel	674
Alternative 2 - Intermediate	White Bass	405
Alternative 2 - Intermediate	Freshwater Mussel	674
Alternative 3 - Maximum	White Bass	405
Alternative 3 - Maximum	Freshwater Mussel	674

References

Hamilton, K., & Nelson, P. (1984). Habitat Suitability Index Models and Instream Flow Suitability Index Curves: White Bass. US Department of Interior, Fish and Wildlife Services.

Herman, B. D., Slack, W. T., Carrillo, C. C., & Swannack, T. M. (2022). General freshwater mussel habitat model: development and user's guide. Environmental Laboratory, ERDC/EL TR-22-XX. 51 pp.

USFWS (US Fish and Wildlife Services). (2016, July 15). Habitat Evaluation Procedures (HEP) ESM 102. Retrieved from http://www.fws.gov/polociy/ESM102.pdf: http://www.fws.gov/polociy/ESM102.pdf

Enclosure 1

DEPARTMENT OF THE ARMY
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION OF:

CEMVD-PD-L 15 September 2016

MEMORANDUM FOR CECW-MVD (Redican)

SUBJECT: Recommendation for Regional Use Approval of 11 Spreadsheet Calculators for Application of Regionally Approved Habitat Suitability Index Models

1. References:
   a. Engineer Circular 1105-2-412: Assuring Quality of Planning Models, dated 31 March 2011.
   b. Final Planning Model Quality Assurance Review Comment Response Record for 11 Habitat Suitability Index Model Calculators, USACE (Encl 1).
   c. Ecosystem Restoration Model Library, Habitat Suitability Index Models

2. The National Ecosystem Restoration Planning Center of Expertise (ECO-PCX) evaluated spreadsheet calculators for the black capped chickadee, bullfrog, creek chub, fox squirrel, gray squirrel, least tern, smallmouth bass, smallmouth buffalo, striped bass, white bass, and wood duck habitat suitability index models following reference 1.a. Based on the review results (Encl 1), the ECO-PCX recommends Regional Use Approval of all spreadsheet calculators for use in the geographic area defined for each model. Please log in this recommendation with the Office of Water Project Review for the Model Certification Team to consider.

3. The black capped chickadee, bullfrog, creek chub, fox squirrel, gray squirrel, least tern, smallmouth bass, smallmouth buffalo, striped bass, white bass, and wood duck habitat suitability index models are approved for regional use per EC 1105-2-412 (Reference 1.c.). However, software was lacking which would allow planners to apply the models in a computational correct fashion for individual projects. Consequently, MVP, MVR, and MVS collaborated to develop a library of Microsoft Excel spreadsheet calculators. Each spreadsheet calculator is an independent spreadsheet built using the same variables, habitat suitability index curves, aggregation equations, and habitat cover types as displayed in the approved model documentation. Furthermore, all spreadsheet calculators employed a similar development scheme to include consistent use of formatting, input requirements, and output display. Each calculator includes user documentation or a link to a user's guide, and employs best spreadsheet practices.

4. The ECO-PCX and biologists from MVP, MVR, and MVS reviewed each spreadsheet calculator independently to assess the degree to which the spreadsheets meet the system quality and usability criteria in accordance with EC 1105-2-412. The spreadsheet development team and the spreadsheet reviewers included individuals with expertise in habitat benefit evaluations, Habitat Evaluation Procedures, plan formulation policies, and software/spreadsheet programming and auditing. Review results are found in the Final Planning Model Quality Assurance Review Comment Response Record for 11 Habitat Suitability Index Model Calculators, USACE (Encl 1).

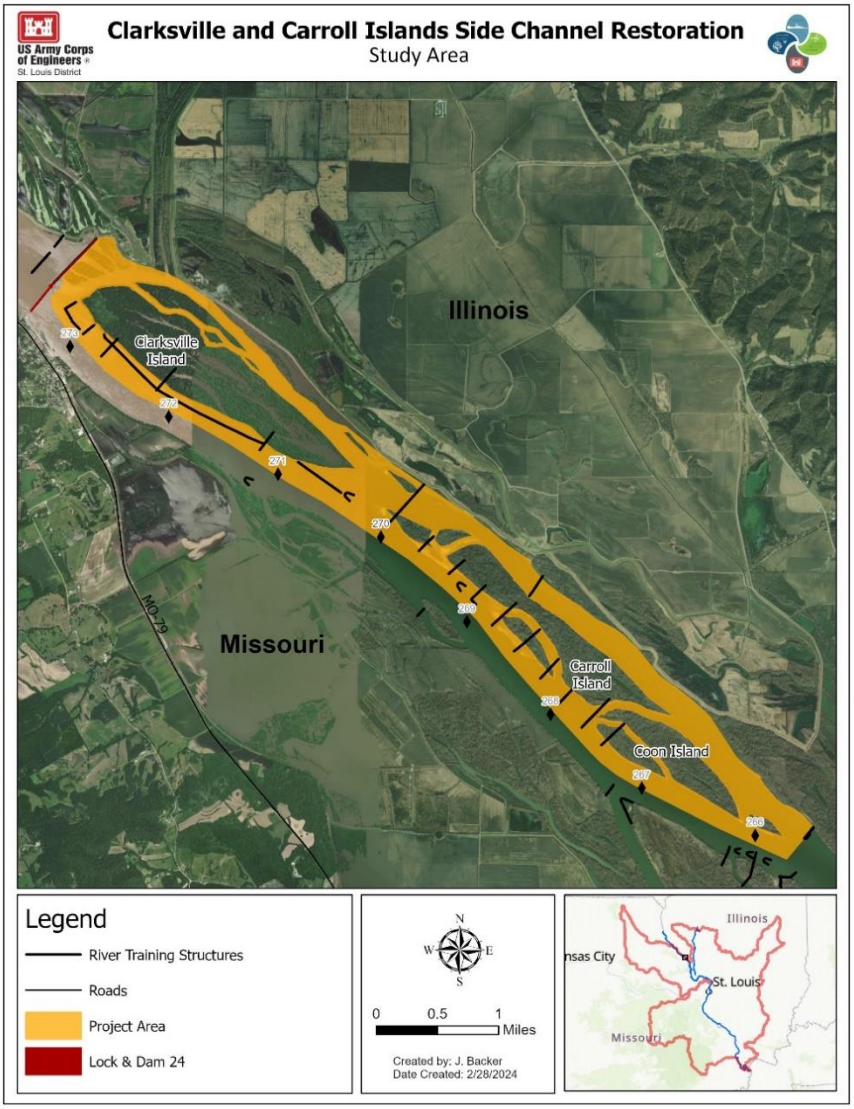
Review of the spreadsheet calculators resulted in 72 total comments. All comments were related to the system quality and usability of the model, all were of low to medium significance, and all evaluations resulted in concurrence with the comments. The ECO-PCX reviewed the comments, evaluations, and revisions made to the model. All were made to the satisfaction of the ECO-PCX and are in alignment with the requirements of assuring the quality of planning models. The following summarizes the overall review and modifications made to the spreadsheets to improve system quality and usability.

NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers
St. Louis District

July 2025

Appendix C
Monitoring and Adaptive Management

1. Introduction

The 1985 Supplemental Appropriations Act (Public Law 99-88) and Section 1103 of the Water Resources Development Act of 1986 (Public Law 99-662) authorized implementation of ecosystem restoration projects to ensure the coordinated development and improvement of the Upper Mississippi River System. Section 2039 of WRDA 2007 requires that when conducting a feasibility study for ecosystem restoration, the proposed project includes a plan for monitoring the success of the ecosystem restoration. The implementation guidance for Section 2039, in the form of a CECW-PB Memo dated 31 August 2009, also requires that an adaptive management plan be developed for all ecosystem restoration projects.

Adaptive management "prescribes a process wherein management actions can be changed in response to monitored system response, so as to maximize restoration efficacy or achieve a desired ecological state" (Fischenich et al. 2012).

At the programmatic level, knowledge gained from monitoring one project can be applied to other projects. Opportunities for this type of adaptive management are common within the UMRS. Using an adaptive management approach during project planning enabled better selection of appropriate design and operating scenarios to meet the NESP Clarksville & Carroll Islands Ecosystem Restoration project objectives. Lessons learned in designing, constructing, and operating similar restoration projects within the UMRS have been incorporated into the planning and design of this project to ensure that the proposed plan represents the most effective design and operation to achieve project goal and objectives.

The adaptive management for the Clarksville & Carroll Islands project describes and justifies whether adaptive management is needed in relation to the proposed project management alternatives identified in the project feasibility study. This appendix outlines how the results of the project-specific monitoring plan would be used to adaptively manage the project, including monitoring targets which demonstrate project success in meeting project objectives. The District's intent was to develop monitoring and adaptive management actions appropriate for the project's goals and objectives.

2. Goals and Objectives

The primary goal of the Clarksville & Carroll Islands project is to restore and improve the quality and diversity of aquatic ecosystem resources within the Project Area. Full realization of the potential habitat value in the project area has been hindered the loss of side channel depth and flow diversity, structural diversity, and aquatic connectivity has decreased habitat function, extent, and availability for native aquatic species. Restoring flow diversity, connectivity, and substrate heterogeneity throughout the project area would benefit a multitude of aquatic species and several habitat types (side channel, main channel border, tertiary channels, etc.).

The following restoration measures, also described in detail in Section 4.1 of the main report, were considered to achieve the Project goal and objectives:

- Hard Points
- Partial Degradation/Notching of Closure Structures (Flow)
- Side Channel Enhancement Dike (upstream)

- Side Channel Enhancement Dike (downstream)
- Dredging
- Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement)
- Natural and Nature-Based Features (Woody Bundles/Debris)

3. Sources of Uncertainty

Adaptive management provides a process for making decisions in the face of uncertainty. The primary incentive for implementing an adaptive management plan is an increased likelihood of achieving desired project outcomes given the identified uncertainties, which can include incomplete description and understanding of relevant ecosystem structure and function; imprecise relationships among project management actions and corresponding outcomes; engineering challenges in implementing project alternatives; and ambiguous management and decision-making processes. Below is a list of uncertainties associated with the aquatic habitat in the Clarksville & Carroll Islands Project.

3.2 Side Channel Habitat

Substrate enhancements to provide substrate heterogeneity and stable microhabitats will be utilized in the side channels. There is a risk that these project features may result in unintended and potentially unwanted changes to flow patterns and hydraulic effects. A modification to project features in the side channel may be required if this risk is realized, which could impact project costs and schedule.

The District evaluated the level of uncertainty and risk in the use of improperly-sized material for in-stream structures. Mussel riffles will essentially consist of scattered boulder fields constructed of large quarry stone in the side channels to provide substrate heterogeneity, flow diversity, flow refugia that provides microhabitats of stabile substrate for the colonization of native freshwater mussels. Due to the dynamic nature of the flows in the Mississippi River, there is a risk that the stone may shift and change sedimentation and/or erosion patterns over time, potentially to an extent that the measures are no longer performing as intended. A modification to the stone mussel riffle placement in the side channels may be required if this risk is realized, which could impact project costs and schedule.

Hard points and pilot channel dredging are measures intended to improve flow patterns within the side channel. Should the flows and velocities not actualize the intended ranges, some modification to hard points, or existing river training structures within the project area may be required, based on observed flows post-construction.

4. Monitoring of Objectives to Determine Project Success and Adaptive Management Measures

The power of a monitoring program developed to support determinations of project success and inform adaptive management lies in the establishment of feedback between continued project monitoring and corresponding project management. Performance indicators to the above objectives were developed with the best available knowledge. They were developed to be specific, measurable, attainable, realistic, and timely. Performance indicators, monitoring targets, and

Adaptive Management measures are summarized in Section 4.1 below. The conceptual monitoring schedule and estimated costs are provided in Table 1.

4.1 Aquatic Habitats

- **Flow Diversity:** ADCP surveys will be conducted upon completion of the project to determine baseline conditions and construction compliance. Comparison surveys will be conducted at years 3 and 7 to evaluate performance and changes within the project area over time. Monitoring is intended to measure an increase in flow diversity, as evidenced by flow profiles across side channel habitat.

  Success Criteria:

Monitoring Target	Management Measure Objective
Increase over baseline flow profiles throughout side channel.	Provide variation in flows found throughout side channel to increase overall range of available habitat types (i.e., riffle, run, pool).

  Adaptive Management Measure: Should surveys show lack of flow enhancements, several options would be available, up to, but limited to: Reconfiguring Hard Points, Modifying or Reconfiguring the SCEDs, and Re-Dredging the Pilot Channel.

- **Mussel Habitat Quality:** Targeted mussel surveys across the constructed measures at years 4 and 9 post-construction will be conducted to evaluate probability of mussel colonization. Presence/absence of mussels is not particularly evaluated for success, however, the primary metric for success would be the presence/absence of stable substrates conducive to mussel colony establishment within the flow refugia provided by the placed substrate. Surveys conducted during planning will be used as baseline for comparison.

  In addition, targeted multi-beam surveys of the placed mussel substrate will be used immediately following construction completion to determine location and placement. Comparison surveys will be conducted at years 3 and 7 to determine if the placed materials have been mobilized and moved out of the project area from high flows, or have become covered by unstable sediments and sands, which would make them no longer accessible for mussels to use as habitat.

  Success Criteria:

Monitoring Target	Management Measure Objective
Increase in quantity and quality of stable mussel habitat over baseline throughout side channel.	Boulder habitat that can provide flow refugia and substrate stability for mussels to colonize.
Placed material still located within project area, providing flow refugia and substrate stability for mussels to colonize below them.	In place, free from sediment burial, and stable to provide area available for mussel colonization.

  Adaptive Management Measure: Should surveys show lack of substrate stability and mussel colonization is not taking place on the created mussel

habitat, the AM measure of supplemental stone placement and or modification may be implemented.

5. Documentation, Implementation Costs, Responsibilities, and Project Close-Out

5.1 Documentation, Reporting, and Coordination. The Project Delivery Team will document each of the performed assessments and communicate the results to the NESP program manager. Performance Evaluation Reports will be produced at years 5 and 10 to measure progress towards the Project goal and objectives as characterized by the selected performance measures.

5.2 Cost. The costs associated with implementing monitoring and adaptive management measures were estimated based on currently available data and information developed during plan formulation as part of the feasibility study. Because uncertainties remain as to the exact Project measures, monitoring elements, and adaptive management opportunities, the estimated costs in Table 2 will need refinement in PED during the development of the Detailed Monitoring and Adaptive Management Plans.

5.3 Responsibilities. The Corps will be responsible for collecting surveys, data analysis, site inspections, and visual observations to assist in overall project success evaluation.

5.4 Project Close-Out. Close-out of the Project would occur when it is determined that the Project has successfully met the Project success criteria described above. Success would be considered to have been achieved when the Project objectives have been met, or when it is clear that they will be met based upon the trends for the site conditions and processes. Project success would be based on the following:

- Success criteria met,
- Continued site inspections to determine continued Project performance,
- and Continued OMRR&R into the future.

Table 2. NESP Clarksville & Carroll Islands project conceptual monitoring schedule and estimated monitoring costs. Construction completion is set to year 0.

		Target Year	1	2	3	4	5	6	7	8	9	10	
Side Channel Restoration	Monitoring, Analysis, & Reporting	Site Inspections			x				x				$1,350
		Bathymetry Survey (Multi-beam) and ADCP Flow Surveys			x				x				$30,000
		Mussel Survey				x					x		$367,360
Subtotal													$398,710

		Target Year	1	2	3	4	5	6	7	8	9	10	
Side Channel Restoration	AM Feature	Reconfigure Hardpoints				x				x			$378,950
		Modifying or Reconfiguring the SCEDs								x			$74,500
		Re-Dredging the Pilot Channel.				x				x			$1,959,300
		Modifying or Reconfiguring the Mussel Substrate Feature					x					x	$223,700
Subtotal													$2,636,450
Overall MAM Total													$3,035,160

6. References

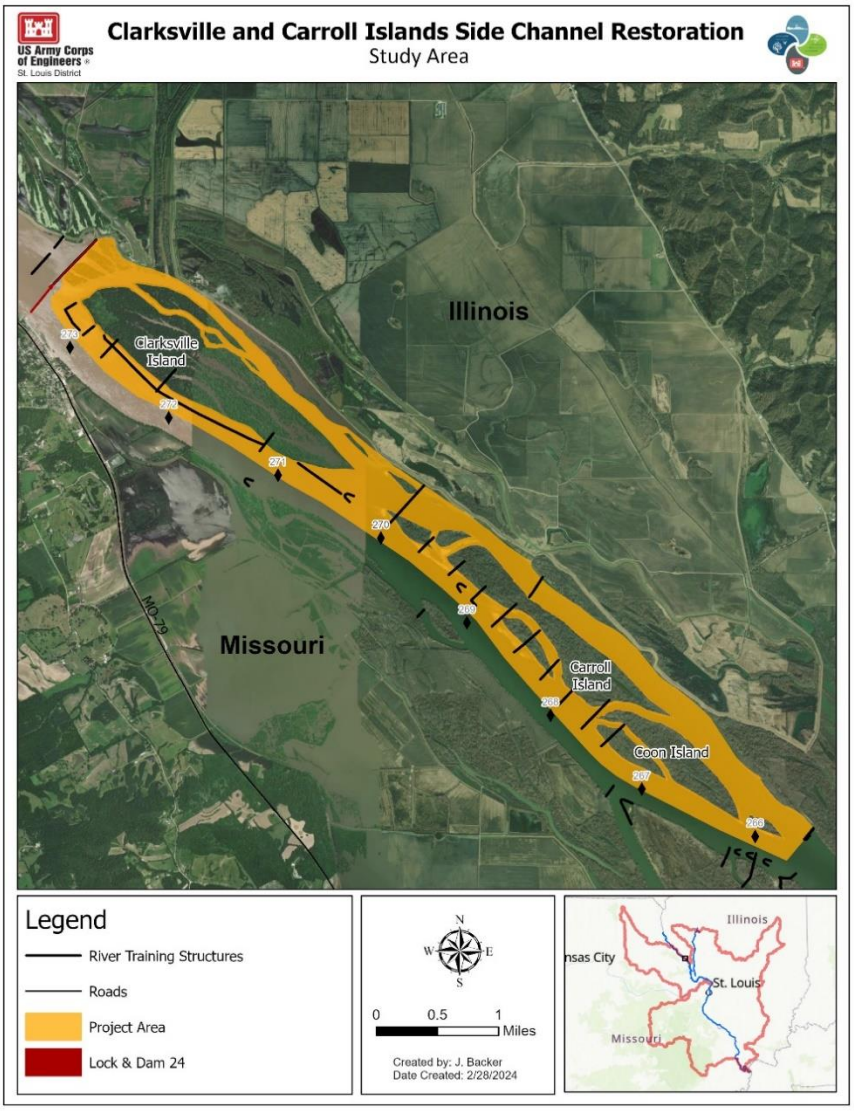
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POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers ®
St. Louis District

July 2025
Appendix D
Hydraulics and Hydrology

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1. Introduction

1.1 Project Location

The project area lies within Pool 25 of the Upper Mississippi River between Lock and Dam (L&D) 25 (RM 242) at Winfield, Missouri, and L&D 24 (RM 274) at Clarksville, Missouri. The Clarksville and Carroll Island complex is approximately 930 acres of side channel and backwater habitats between RM 274 and 266.

The proposed work would consist completely of aquatic habitat restoration along the Illinois bank. The work would be below the Ordinary High-Water Mark (OHWM); therefore, no landowners are identified, and operation and maintenance costs would be 100% federally funded. Potential measures that could be implemented with this work include dike alteration, river training structures, substrate enhancement, slope revetment, and other means of environmental restoration. The work would aim to restore side channel habitat and connectivity to benefit native species. The project boundary area and vicinity map are shaded in blue and purple respectively in Figure 1 and Figure 2 below.

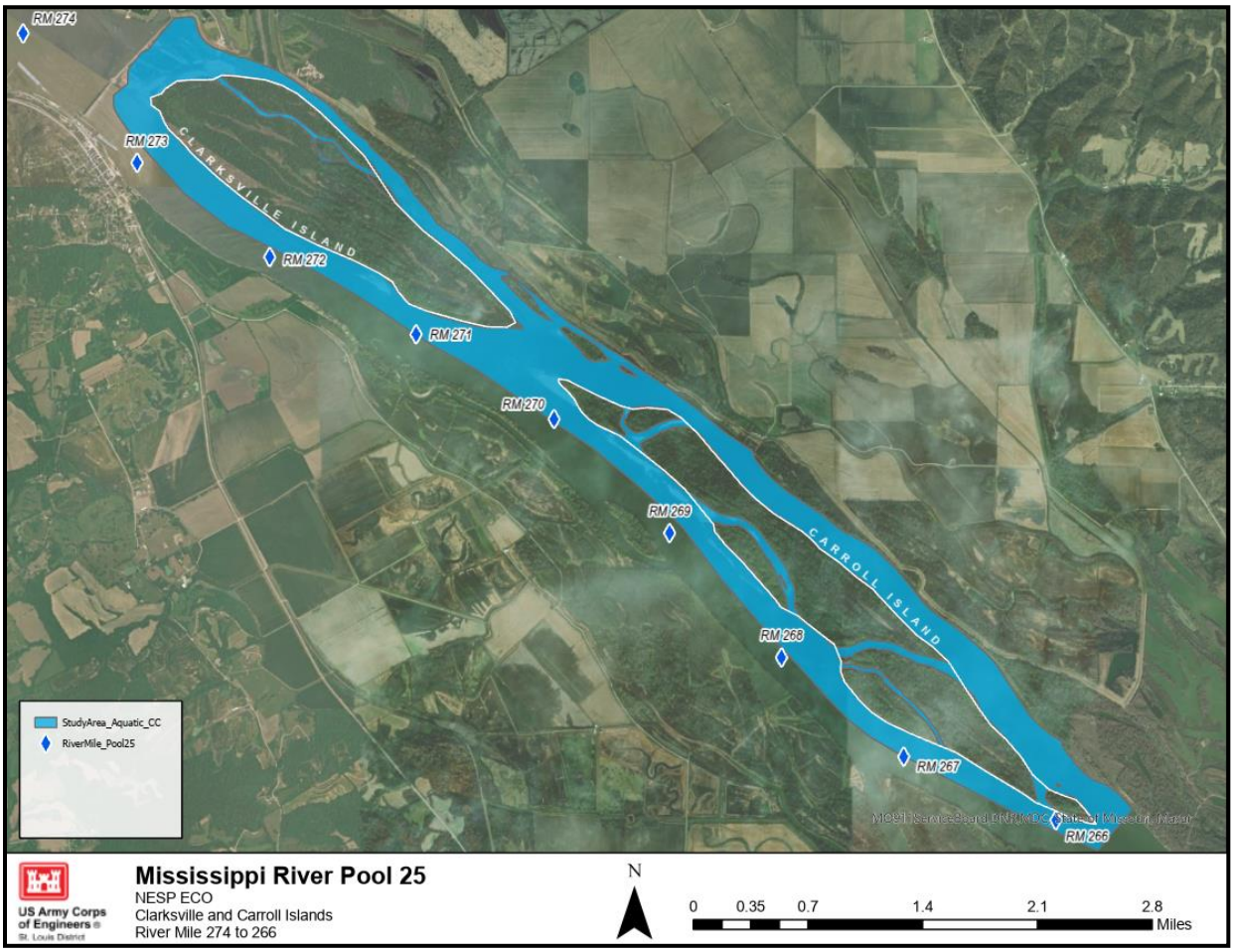


Figure 1. Clarksville and Carroll Islands

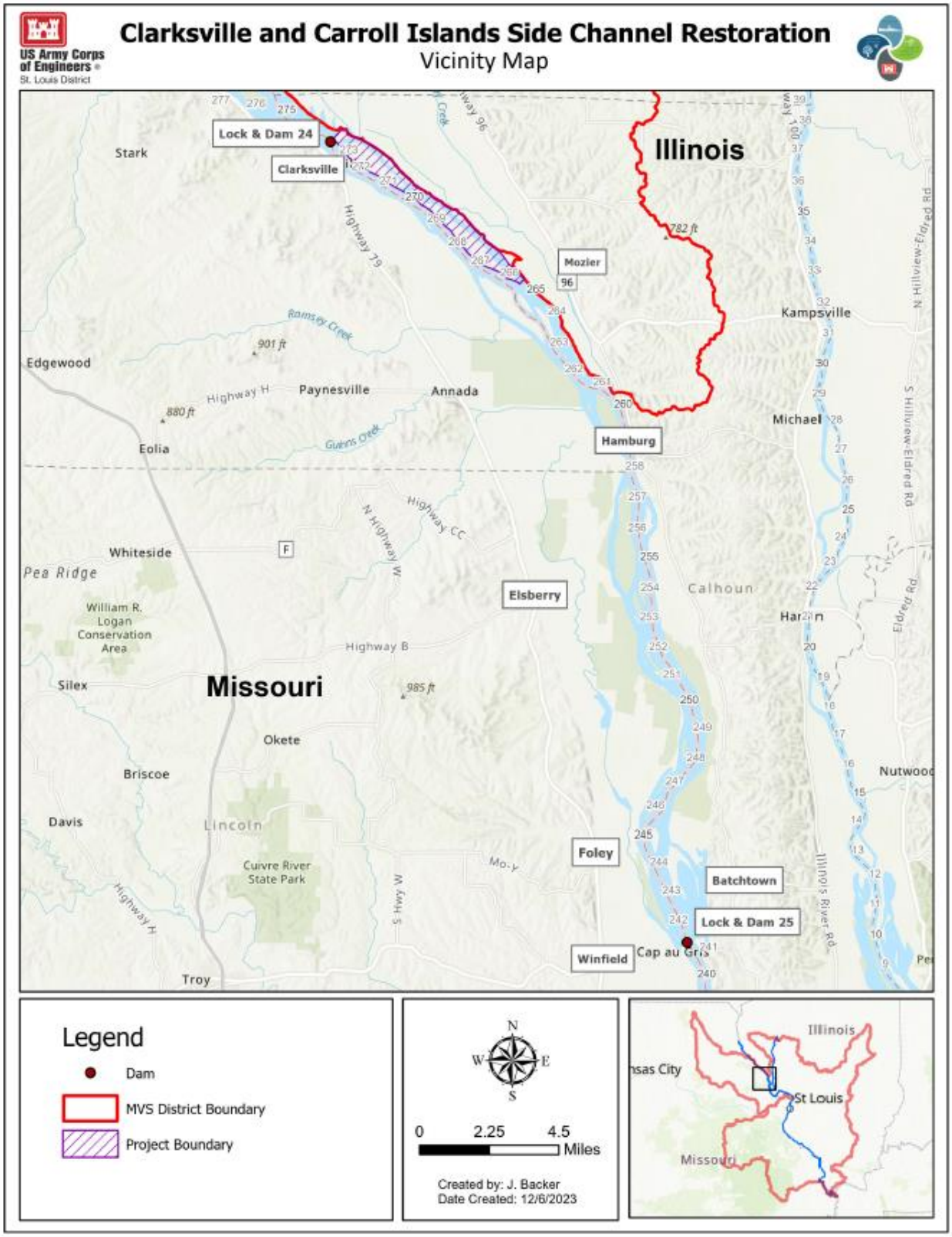


Figure 2. Vicinity Map

1.2 Historical Information

Since the mid-19th century, the U.S. Army Corps of Engineers (USACE) has been charged by Congress to improve the Mississippi River for navigation through dredging, snagging, clearing, and channel constriction. This was accomplished by the removal of shoals and sandbars, closing off meandering sloughs and backwaters to confine flow within the main channel, and excavating rock from a series of rapids to clear passage for navigational traffic. Starting in 1866, Congress began authorization to maintain a 4-foot channel, then increased channel depth to 4.5-foot channel in 1878, and again increased depth to a 6-foot channel in 1907. In 1930, Congress, authorized the 9-Foot Channel Navigation Project. Thus between 1930 and 1940, the USACE constructed the Upper Mississippi River and Illinois Waterway to provide a 9-foot navigation channel depth to a minimum width of 400 feet. As part of the construction of L&D 25 and the creation of Pool 25 in 1935, most of the islands within the study area of Pool 25 were acquired by the federal government. Construction on L&D 25 began in early November 1935, was formally initiated on July 21, 1936, and was completed on March 12, 1940. Since the 1880s, levees were constructed and continue to be maintained on the Upper Mississippi River System (UMRS). The project area entails side channels and backwaters of two primary islands Clarksville and Carroll Islands.

1.3 Project Purpose and Need

The purpose of the feasibility study determines whether there may be interest in restoring side channel and backwater habitats. Side channels are important aquatic habitat for many native species including UMR riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded side channel conditions (e.g., increased siltation, sediment homogenization). Restoring side channels to promote freshwater mussel habitat has been identified by the River Resources Action Team as a resource need within the Lower Impounded Reach of the Mississippi River

An initial site visit with USACE, Illinois Department of Natural Resources (IDNR), U.S. Fish and Wildlife Services (FWS), and Missouri Department of Conservation (MDC) team members was completed on November 3, 2023. Observed during an aerial investigation and confirmed by the site visit, the entrance to the Clarksville side channel has accumulated sediment material with mature plants starting to establish growth. It appears island building is occurring along the north end of Clarksville Island due to this sedimentation. During normal flow conditions, the side channel along Clarksville appears to be very shallow with depths less than 5 feet or not existent in some locations. Along Carroll Island, depths were varied with areas up to 15 feet or more. The Clarksville side channel exhibited lack of decent flow conditions along its upper regions, however, the Carroll side channel exhibited higher flow movement. There were some noticeable bank erosion occurring along the Illinois bank line. Without intervention, the team members are concerned the side channel will eventually become cut off from the main channel and habitat connectivity will be lost.

Sediment routinely builds up within the backwater areas and side channels after large flood events or during low flow situations. The rate at which sediment deposition occurs depends heavily on the duration and velocity of flow at specific time periods. Since there are no sediment gauge stations located within Pool 25 to provide accurate data, sediment rates within the project area had to be estimated using a comparison of bathymetric terrain data obtained through past

hydrographic surveys. Bathymetric survey data within the side channels from 2023 and 2012 was used for this elevation comparison to approximate a deposition rate range from 0.7 inches to 2.7 inches per year. The value mentioned could be highly variable due to limited data over the past decades and characteristic changes of these side channels. It should also be noted that bathymetric surveys are simply snapshots in time, hydrographic surveys have limited coverage within side channels and backwater areas, comparison terrain data was limited to only two surveys, and comparing two converted surveys can introduce statistical errors. The average daily sediment load of the Mississippi River at Hannibal, Missouri, is about 70,000 tons (USACE, 2001).



Figure 3. Google Earth (October 2023) Aerial Imagery of Side Channel Entrance



Figure 4. Entrance to Side Channel on Clarksville Island November 3, 2023

2. HEC-RAS 2D Modeling

The Hydraulic Engineering Center River Analysis System (HEC-RAS) version 6.3.1 was used to construct a 2D numerical model of the Clarksville and Carroll Island complex study area. The geometry from HEC-RAS was created from imported ArcGIS shapefiles. These shapefiles were used to establish the location of bank lines, river centerline, islands, river miles, and existing river training structures.

The HEC-RAS model starts near L&D 24 (RM 274) and extends downstream to Mosier Landing gauge (RM 260.3). The Clarksville and Carroll Island complex is situated directly downstream of L&D 24 (RM 266 to RM 273.5). The extent of model was limited by a series of levees along the Missouri right descending bank and the Illinois river bluff along North Mississippi River Road (Figure 5).

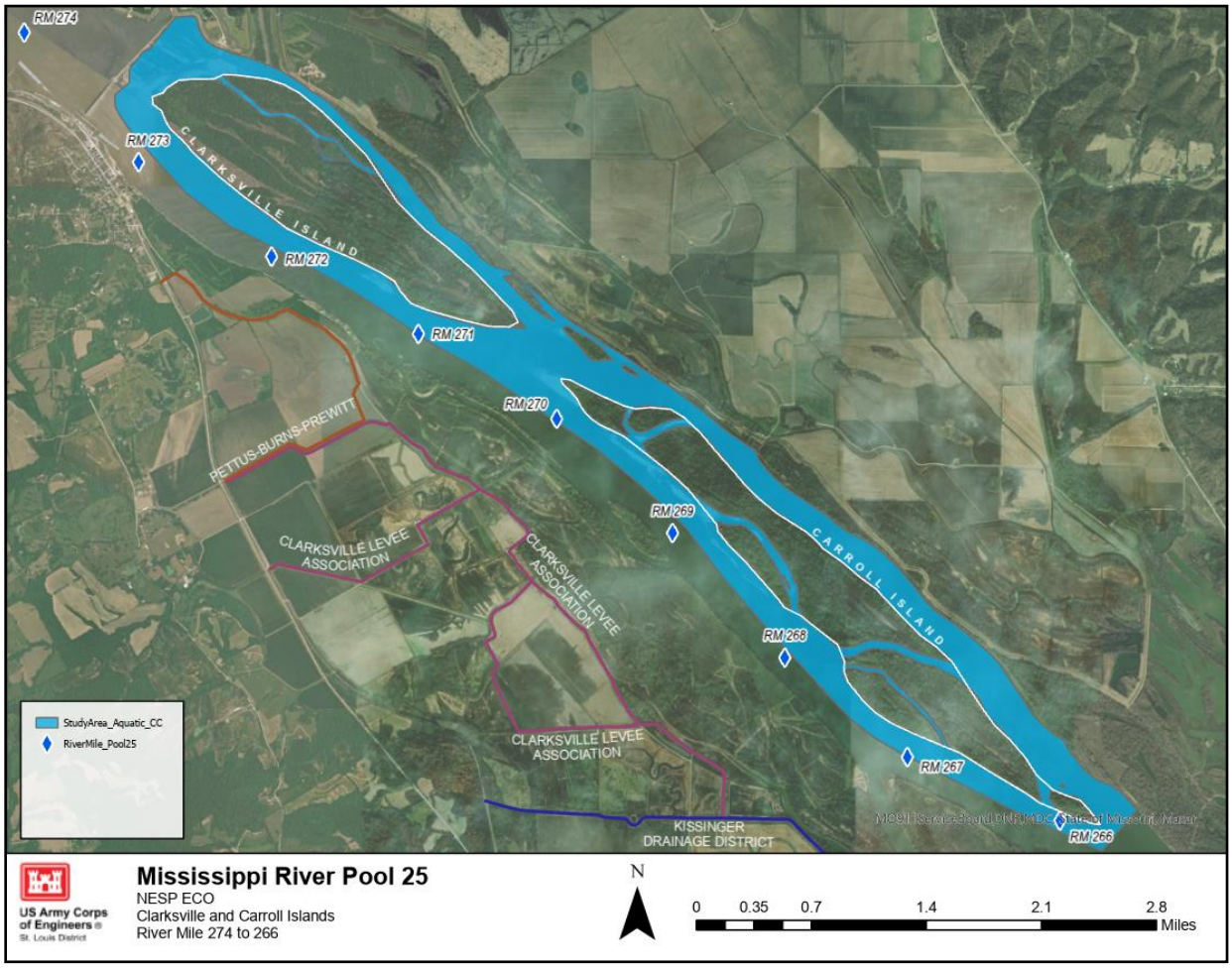


Figure 5. Clarksville Carroll Neighboring Levee Districts

The limits of the HEC-RAS 2D model are shown in red on Figure 6. The following sub-sections detail how the model was made and how it was used to evaluate project alternatives.

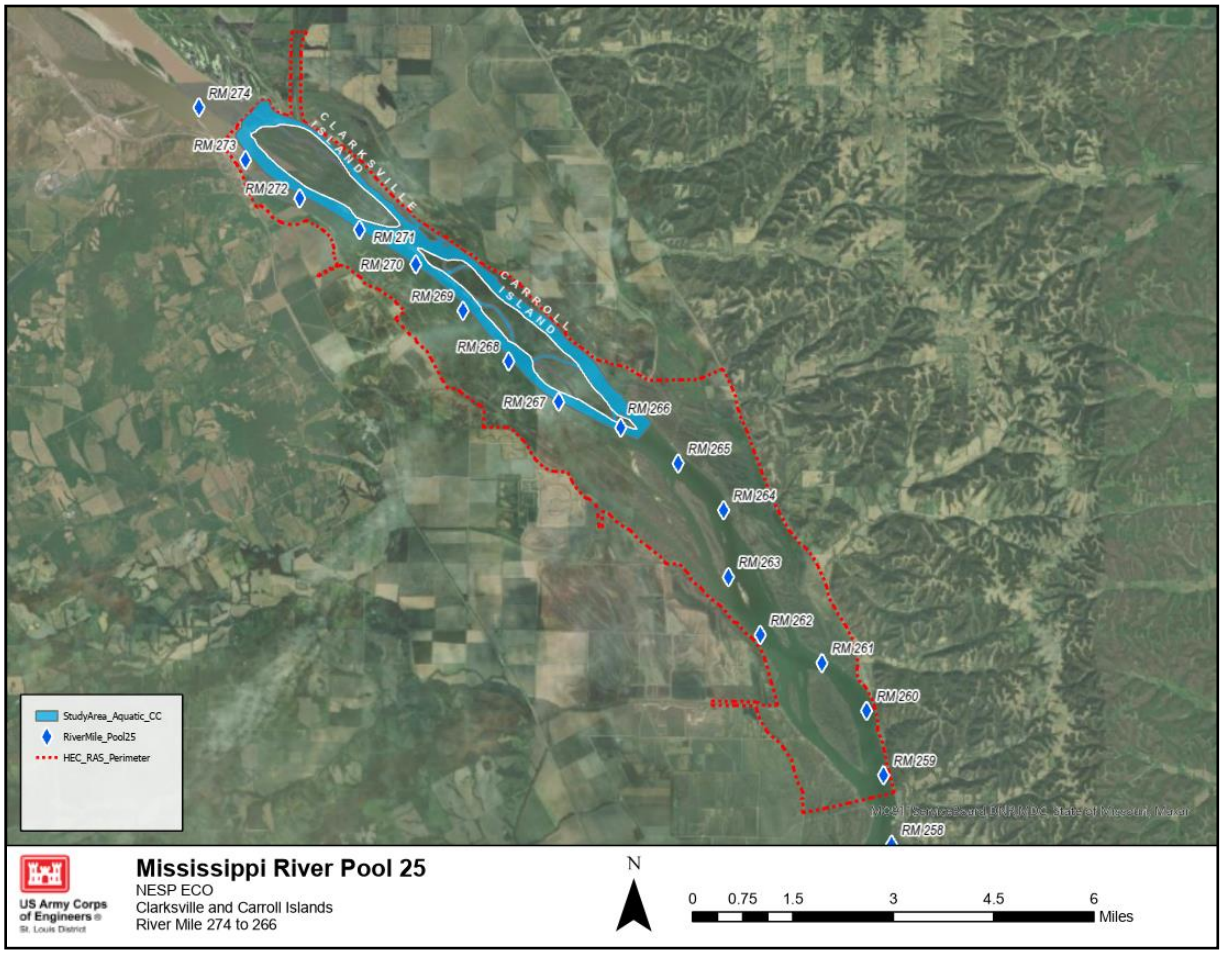


Figure 6. HEC-RAS 2D Model Limits

2.1 Geometry

2.1.1 Terrains

The existing conditions terrain compiles a combination of LiDAR ground elevation topography, and various bathymetric surveys collected by USACE (Table 1 & Table 2). The USGS topographic and bathymetric elevation data from 2016 was used as the base layer for the model terrain. All elevation data integrated into the terrain was converted to the North American Vertical Datum of 1988 (NAVD88) (feet) and reprojected into North American Datum (NAD) of 1983 State Plane MO East (US survey feet) coordinate system. These separate data sources were layered and merged using feathering and terrain painting functionality in ArcGIS Pro v3.1.0 and Global Mapper Pro v23.0. Project features represented in terrains include islands, side channels, dredged backwaters, levees, ridgelines, and river training structures (existing, altered, and new). These features were added to the existing terrain by further manipulation in Global Mapper Pro and/or by altering roughness values in the HEC-RAS model.

Table 1. Elevation Data Sources

Source	Survey Date	Coordinate System	Vertical Datum
USGS Aerial LiDAR (Pool 25)	2016	NAD 1983 UTM Zone 15N (m)	NAVD88 (ft)
USGS Bathymetry (Pool 25)	2016	NAD 1983 UTM Zone 15N (m)	NAVD88 (ft)
USACE Aerial LiDAR (Red's/Gilead)	2023	NAD 1983 UTM Zone 15N (m)	NAVD88 (ft)

Table 2. USACE Bathymetric Surveys

RM Coverage	Survey	Date	Type
RM 241-273	Pool 25 Comprehensive Main Channel	2016	Single Beam & Multi Beam Sonar
RM 258-262	Main Channel	7/31/2020	Multi Beam Sonar
RM 245-247	Hausgen Island	5/9/2023	Multi Beam Sonar
RM 269-273	Clarksville & Carroll Islands	5/17/2023	Single Beam & Multi Beam Sonar
RM 248-256	Red's Landing & Gilead Slough	8/15/2023	Single Beam & Multi Beam Sonar
RM 242-247	Hausgen Island	5/31/2024	Single Beam
RM 272-273	Clarksville Island	5/31/2024	Single Beam

Figure 7 below shows the extent of surveys for Pool 25 that comprise the terrain. Surveys are highlighted in blue with darker blue indicating the layering order.

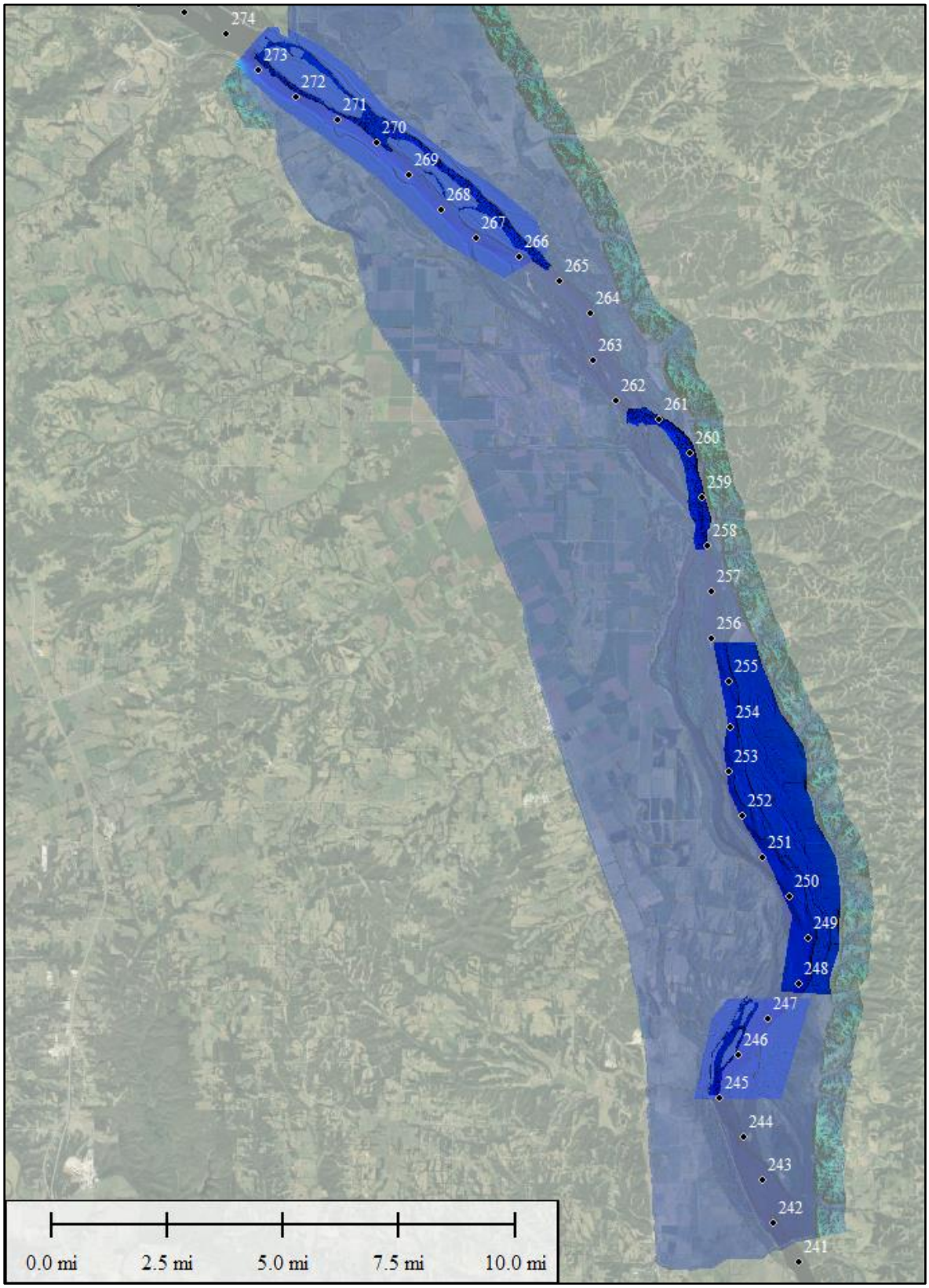


Figure 7 Pool 25 terrain extents

2.1.2 Mesh Development

The HEC-RAS 2D numerical modeling was setup with a 2D flow area covered with individual computation cells making up a model mesh network. Each individual cell element was spaced every 100 feet by 100 feet. These cells allow volumetric computations to be performed on an individual cell by cell basis. Breaklines were established to further refine the model into smaller mesh areas. Breaklines were used to establish the river centerline so the mesh would align perpendicular to flow. Breaklines were added to topographic and bathymetric features along riverbanks, levees, island, and other river training structures throughout the 2D modeled area. These breaklines were enforced and the model was then edited to ensure each computation cell element did not exceed 8 sides to allow for faster model analysis run times. After model simulations run through multiple iterations, the data output provides calculated water surface elevations (WSEs), velocities, flow depths, etc. at each cell location for the entire modeled mesh 2D flow area. The figures show a typical 2D flow area mesh created from the topographic, bathymetric, cell elements, and breaklines for the existing and proposed conditions.



Figure 8. Existing Model Conditions

2.1.3 Model Features

Existing features were setup, adjusted, or assumed within the existing model to provide representative conditions that were not identified, surveyed, or provided during data collection. Features included backwaters, scour structures, dikes, and other river training structures. These features were modeled by modifying the raster terrain layer in Global Mapper Pro using terrain painting functionality. River training structures, such as dikes, were placed into the surface at their respective locations and adjusted accordingly to their terrain locations. The materials used to construct the dikes consisted of stone grade A. Table 3 shows a list of the River Training Structure Inventory within the project region.

Table 3. River Training Structures RM 265 – RM 274

Structure Name	Dike ID	River Mile	Descending Bank Side
Dike 265.5R	265.50R	265.5	Right
MRS 265.69L	265.69L	265.7	Left
MRS 265.7L	265.70L	265.7	Left
Chevron 265.8R	265.80R	265.8	Right
Dike 265.9R	265.90R	265.9	Right
Chevron 266.0R	266.00R	266.0	Right
Chevron 266.1R	266.10R	266.1	Right
Dike 266.2R	266.20R	266.2	Right
Bullnose 267.0R	267.00R	267.0	Right
Dike 267.2R	267.20R	267.2	Right
Dike 267.5L	267.50L	267.5	Left
Dike 267.7L	267.70L	267.7	Left
Dike 268.0L	268.00L	268.0	Left
Dike 268.3L	268.30L	268.3	Left
Dike 268.6L	268.60L	268.6	Left
Dike 268.8L	268.80L	268.8	Left
Dike 268.9L	268.90L	268.9	Left
Dike 269.1L	269.10L	269.1	Left
Chevron 269.3L	269.30L	269.3	Left
Dike 269.3R	269.30R	269.3	Right
Dike 269.4L	269.40L	269.4	Left
Dike 269.7L	269.70L	269.7	Left
Dike 270.0L	270.00L	270.0	Left
Chevron 270.5L	270.5L	270.5	Left
Dike 270.6L	270.60L	270.6	Left
Dike 270.8L	270.60L	270.8	Left
Chevron 271.2R	271.2R	271.2	Right
Dike 271.2L	271.20L	271.2	Left
Dike 272.8L	272.8L	272.0	Left
Dike 272.2L	272.20L	272.2	Left
Dike 272.7L	272.70L	272.7	Left
Dike 272.9L	272.90L	272.9	Left
Dike 273.2L	273.20L	273.2	Left
Lock & Dam 24 Overflow Dike	Overflow Dam	273.5	Left

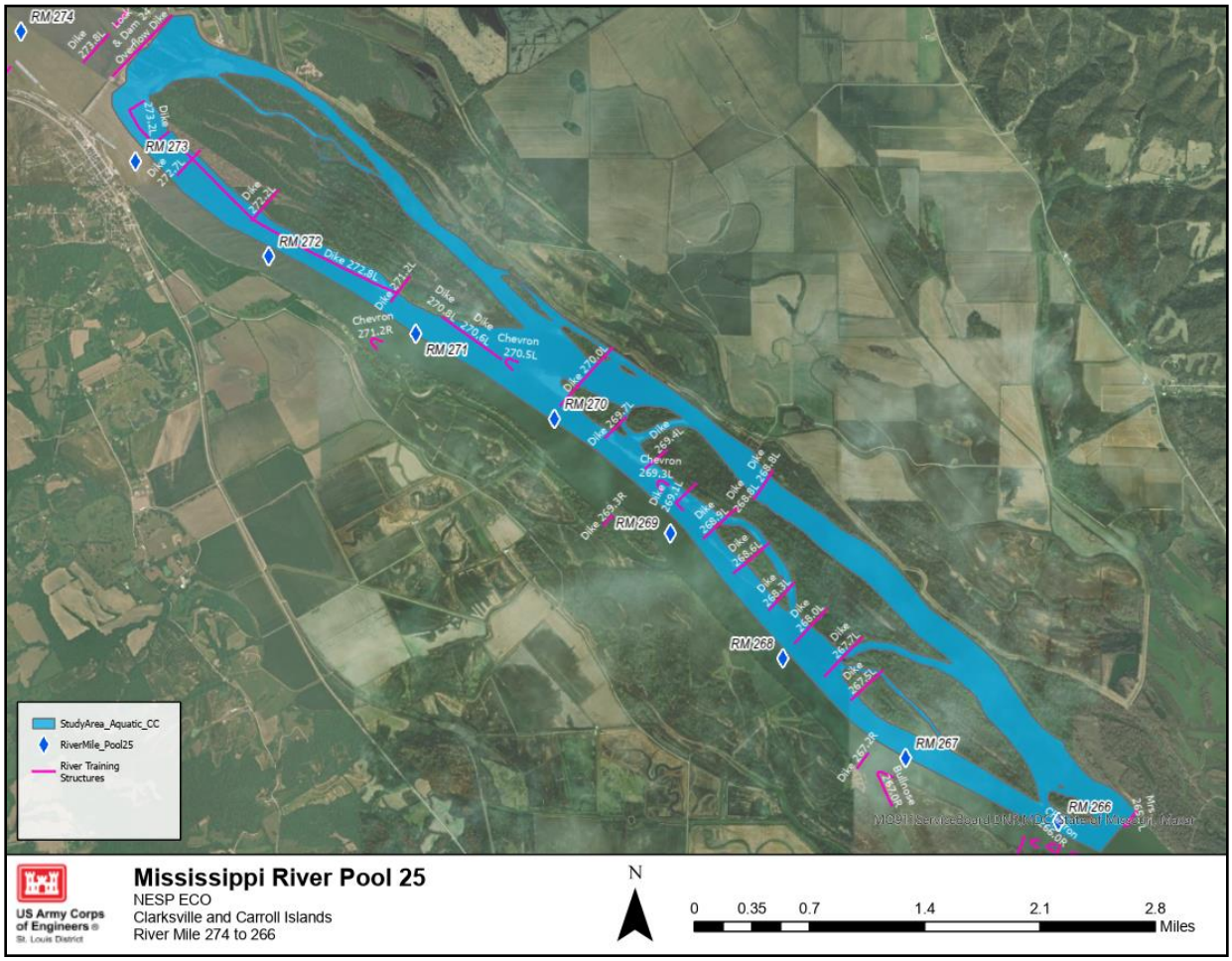


Figure 9. River Training Structures Clarksville and Carroll Islands (RM 274 – 266)

2.2 Calibration

2.2.1 Boundary Conditions

The upstream boundary condition was set at L&D 24 tailwater (RM 274), and flow information was taken from the *Upper Mississippi River System Flow Frequency Study* (USACE, 2004) for larger flow models. The downstream boundary condition was set at Mosier Landing (RM 260.3) for corresponding stage elevation for each studied flow condition. An energy grade slope of 0.001178 ft/ft was measured along the thalweg of the channel at the downstream boundary condition as a basis to set the flow distribution for model simulations. The boundary conditions allow 2D HEC-RAS to calculate starting and ending flow distributions across these terrain sections through each simulation analysis.

Table 4. Average Monthly Discharges (2009-2023)

Month	L&D 24 Tailwater: 2009 - 2023 Average Discharge (cfs)	Mosier Landing: 2009 - 2023 Average Discharge (cfs)
January	85,699	98,855
February	89,503	99,267
March	143,589	145,902
April	173,652	181,988
May	191,002	196,356
June	178,431	184,641
July	153,501	156,901
August	96,826	99,899
September	98,053	101,858
October	119,231	124,125
November	104,789	111,658
December	91,316	99,825

Table 5. Relevant Design Data

	Current Discharge (cfs)	Discharge from FFS (cfs)	RM 260.30 Elevation (ft NAVD 88)	RM 273.32 Elevation (ft NAVD 88)	Daily Percent Exceedance
Existing Channel Bottom	-	-	398.63	383.11	-
L&D 25 Normal Pool	20,000	-	-	-	99.92 %
Pool 25 Flow	55,000	-	-	-	87.80 %
ADCP Survey 5/4/2023	284,554	-	446.02	451.66	3.16 %
50% AEP2-year	-	210,000	441.48	448.14	13.94 %
20% AEP 5-year	-	269,000	444.68	450.34	4.05 %
10% AEP 10-year	-	310,000	446.38	452.14	2.15 %
1% AEP 100-year	-	443,000	450.58	456.44	0.22 %
Levee Crown	-	-	451.76	N/A	-

* Elevation conversion from NGVD29 to NAVD88 may not be constant throughout (ft)

An interpolated value for the datum conversion was used. The NGVD29 to NAVD88 conversion at L&D 24 tailwater was noted as -0.22 and the NGVD29 to NAVD88 conversion at Mosier was noted as -0.46. The interpolated value is listed and all WSE values from the Flow Frequency Study are reported in NAVD88 elevation and are listed in Table 6.

Table 6. Water Surface Elevations based on the Flow Frequency Study

River Mile	Datum Conversion	50% AEP 2-year	20% AEP 5-year	10% AEP 10-year	1% AEP 100-year
260.30	0.22	441.48	444.68	446.38	450.58
260.68	0.23	441.67	444.87	446.57	450.77
261.41	0.24	442.06	445.26	446.96	451.16
261.98	0.25	442.35	445.55	447.25	451.45
262.47	0.26	442.54	445.84	447.54	451.64
263.14	0.27	442.93	446.23	447.83	452.03
263.75	0.28	443.22	446.52	448.22	452.32
264.40	0.30	443.50	446.90	448.50	452.60
264.96	0.31	443.79	447.19	448.79	452.89
265.59	0.32	444.08	447.48	449.08	453.18
265.98	0.32	444.18	447.58	449.18	453.38
266.55	0.34	444.46	447.86	449.46	453.66
267.22	0.35	444.65	448.05	449.75	453.95
267.62	0.35	444.85	448.25	449.95	454.15
268.23	0.37	445.13	448.53	450.13	454.33
268.76	0.38	445.32	448.72	450.42	454.62
269.31	0.39	445.51	448.91	450.61	454.91
269.91	0.40	445.80	449.20	450.90	455.10
270.45	0.41	445.99	449.39	451.09	455.39
270.98	0.42	446.38	449.58	451.28	455.58
271.66	0.43	446.87	449.77	451.57	455.87
272.22	0.44	447.36	449.96	451.76	456.06
272.59	0.45	447.55	450.05	451.85	456.15
272.98	0.45	447.85	450.25	452.05	456.35
273.32	0.46	448.14	450.34	452.14	456.44
273.53	0.46	448.64	450.84	452.64	456.94

* Elevation conversion from NGVD29 to NAVD88 may not be constant throughout (ft)

2.2.2 Initial Conditions

The model was set to run from 00:00 to 24:00 hour to calibrate the model within a 24-hour period to allow for model stabilization. The model was set with a ramp-up time of 12 hours and set at 1-minute computational time step intervals for stabilization and calibration. The model warm-up period consists of 1-hour intervals starting from zero flow to the first flow value in the hydrograph, then maintaining that flow during the simulation. Data output intervals were set to 15-minute intervals.

2.2.3 Roughness Values

Manning's n roughness values were established and assigned according to 2019 National Land Cover Database (NLCD) land cover designations for model analysis. Table 7 shows the

Manning's "n" values for various land cover types. Each Manning's "n" value was reviewed and adjusted accordingly during calibration. The adjusted calibrated Manning's "n" values can be found in the third column of the table.

Table 7. Manning's "n" Values by Land Cover (NLCD)

Land Cover Region Description	NLCD Range Manning's "n" Values	Calibrated Manning's "n" Values
Open Water	0.025 - 0.05	0.031
Developed, Open Space	0.03 - 0.05	0.030
Developed, Low Density	0.06 - 0.12	0.060
Developed, Medium Density	0.08 - 0.16	0.080
Developed, High Density	0.12 - 0.20	0.120
Barren Land	0.023 - 0.030	0.025
Grassland/Herbaceous	0.025 - 0.05	0.030
Shrub/Scrub	0.07 - 0.16	0.070
Mixed Forest	0.08 - 0.20	0.100
Undeveloped, Deciduous Forest	0.10 - 0.20	0.100
Undeveloped, Evergreen Forest	0.08 - 0.16	0.150
Agricultural, Cultivated Crops	0.020 - 0.05	0.040
Agricultural, Pasture/Hay	0.025 - 0.05	0.040
Wetlands, Forested (Woody)	0.045 - 0.15	0.070
Wetlands, Non-Forested (Emergent Herbaceous)	0.05 - 0.085	0.070

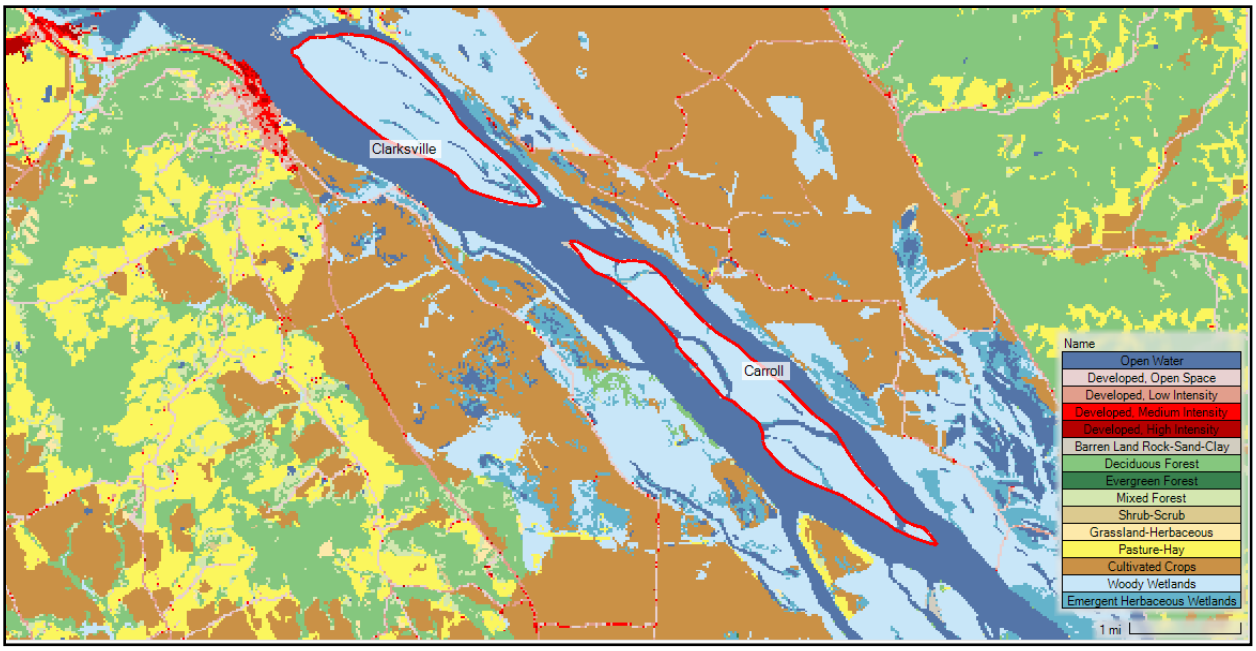


Figure 10. Land Cover Regions from 2019 NLCD

River training structures were not captured in the NLCD. Roughness values were manually applied on river training structures within the project boundary area and set to a Manning's "n" value of 0.04 for all river training structures (Arcement & Schneider, 1984).

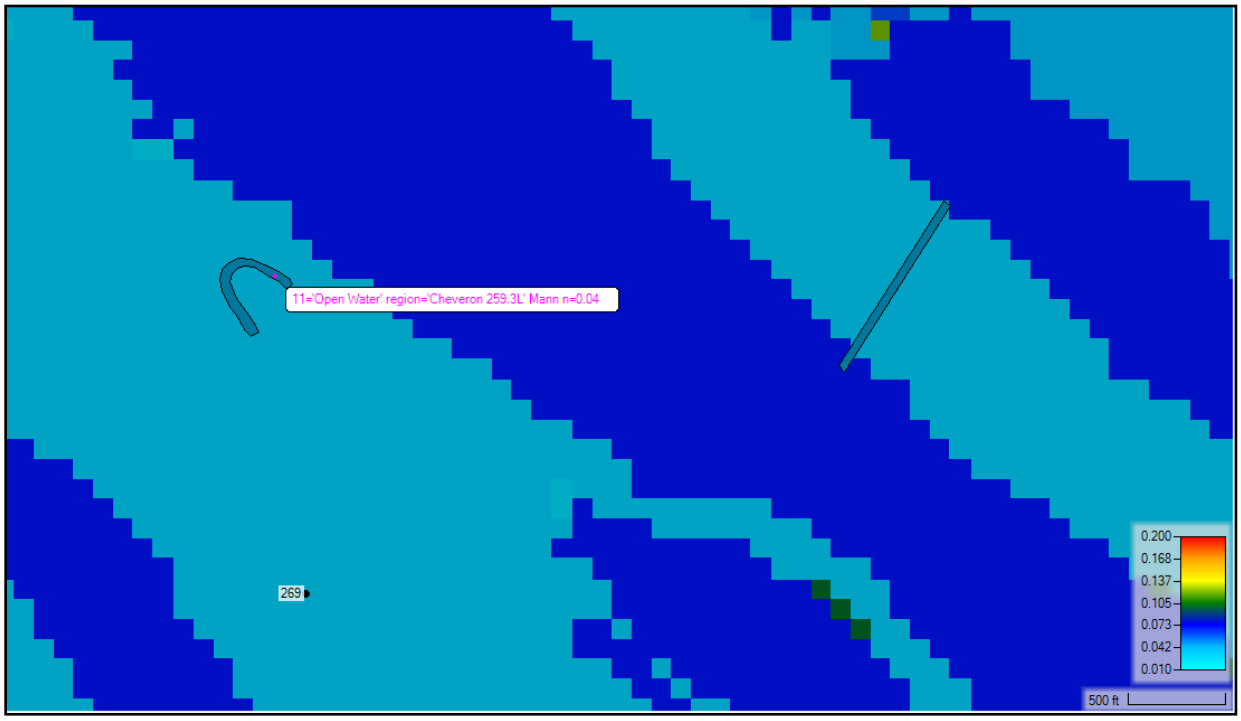


Figure 11. Modified Manning's "n" Values on river training structures

2.2.4 Calibration Results

The WSEs within the upper portion of Pool 25, from the tailwater at L&D 24 to the hinge point near Mosier Landing, were calibrated to the 1% Annual Exceedance Probability (AEP) or 100-year flood. Table 8 and Figure 12 compares the WSE values from the Flow Frequency Study, FEMA FIRM Flood Data, and the HEC-RAS 2D model. Cross sections were determined using sections that overlapped on the FEMA database and USACE database. The model was also calibrated to WSE for flow frequency events of 50% AEP (2-year), 20% AEP (5-year), and 10% AEP (10-year) events (Table 9 and Figure 13).

Table 8. HEC-RAS Calibration Results

FEMA_CS #	**River Mile**	100-Year (1% AEP) WSE **MVS Flow Frequency Study (ft)**	100-Year (1% AEP) WSE **FEMA FIRM Flood Data (ft)**	100-Year (1% AEP) WSE **HEC-RAS 2D Model (ft)**
FEMA_CS1	273.32	456.44	456.60	457.21
FEMA_CS2	272.22	456.06	456.20	456.33
FEMA_CS3	270.98	455.58	455.70	455.67
FEMA_CS4	269.31	454.91	455.00	454.77
FEMA_CS5	267.22	453.95	454.00	453.65
FEMA_CS6	265.98	453.38	453.40	453.11
FEMA_CS7	263.75	452.32	452.30	452.22
FEMA_CS8	262.47	451.64	451.60	451.67
FEMA_CS9	260.68	450.77	450.70	450.69

* Elevation conversion from NGVD29 to NAVD88 may not be constant throughout (ft)

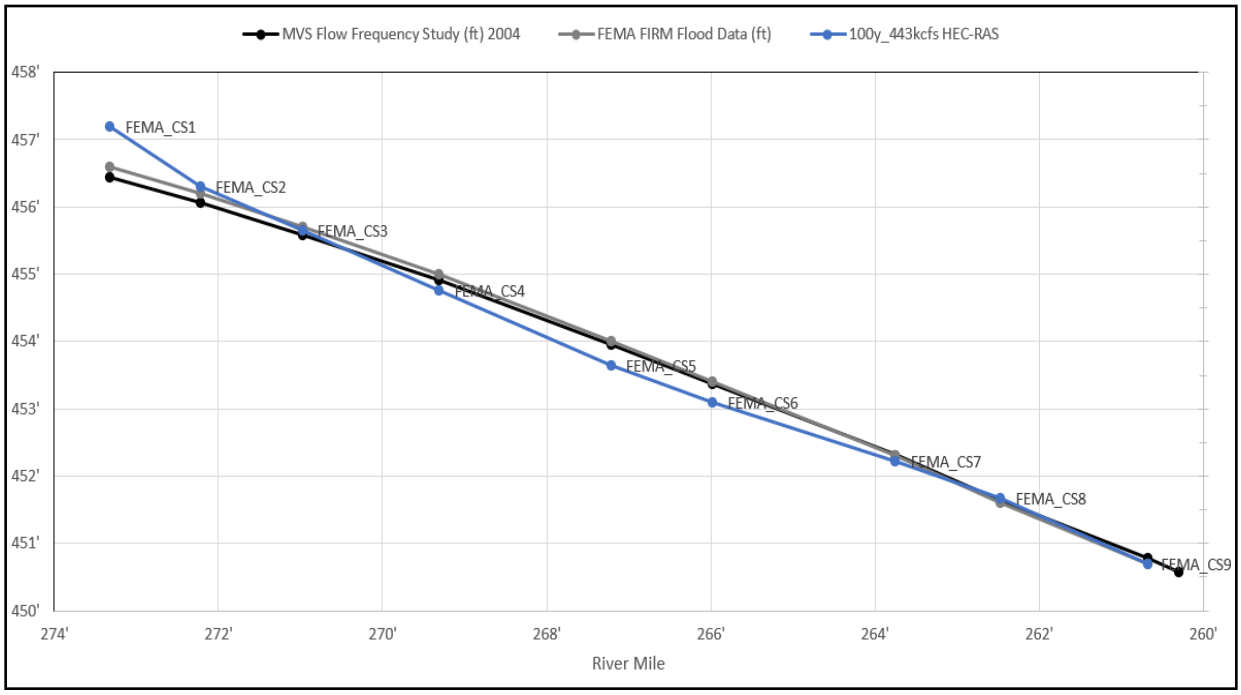


Figure 12. 100-year HEC-RAS Calibration

Table 9. MVS Flow Frequency Study – HEC-RAS Calibration

River Mile	**1% AEP** (100-year) 443,000 cfs		**10% AEP** (10-year) 310,000 cfs		**20% AEP** (5-year) 269,000 cfs		**50 % AEP** (2-year) 210,000 cfs	
	MVS Flow Frequency Study 2004 (ft)	HEC-RAS 2D Model (ft)	MVS Flow Frequency Study 2004 (ft)	HEC-RAS 2D Model (ft)	MVS Flow Frequency Study 2004 (ft)	HEC-RAS 2D Model (ft)	MVS Flow Frequency Study 2004 (ft)	HEC-RAS 2D Model (ft)
273.32	456.44	457.21	452.14	452.83	450.34	451.32	448.14	448.97
272.22	456.06	456.33	451.76	451.85	449.96	450.18	447.36	447.07
270.98	455.58	455.67	451.28	451.28	449.58	449.64	446.38	446.69
269.31	454.91	454.77	450.61	450.44	448.91	448.79	445.51	445.64
267.22	453.95	453.65	449.75	449.38	448.05	447.76	444.65	444.74
265.98	453.38	453.11	449.18	448.81	447.58	447.06	444.18	443.57
263.75	452.32	452.22	448.22	447.94	446.52	446.23	443.22	442.70
262.47	451.64	451.67	447.54	447.41	445.84	445.72	442.54	442.28
260.68	450.77	450.69	446.57	446.47	444.87	444.75	441.67	441.56
260.30	450.58	-	446.38	-	444.68	-	441.48	-

* Elevation conversion from NGVD29 to NAVD88 may not be constant throughout (ft)

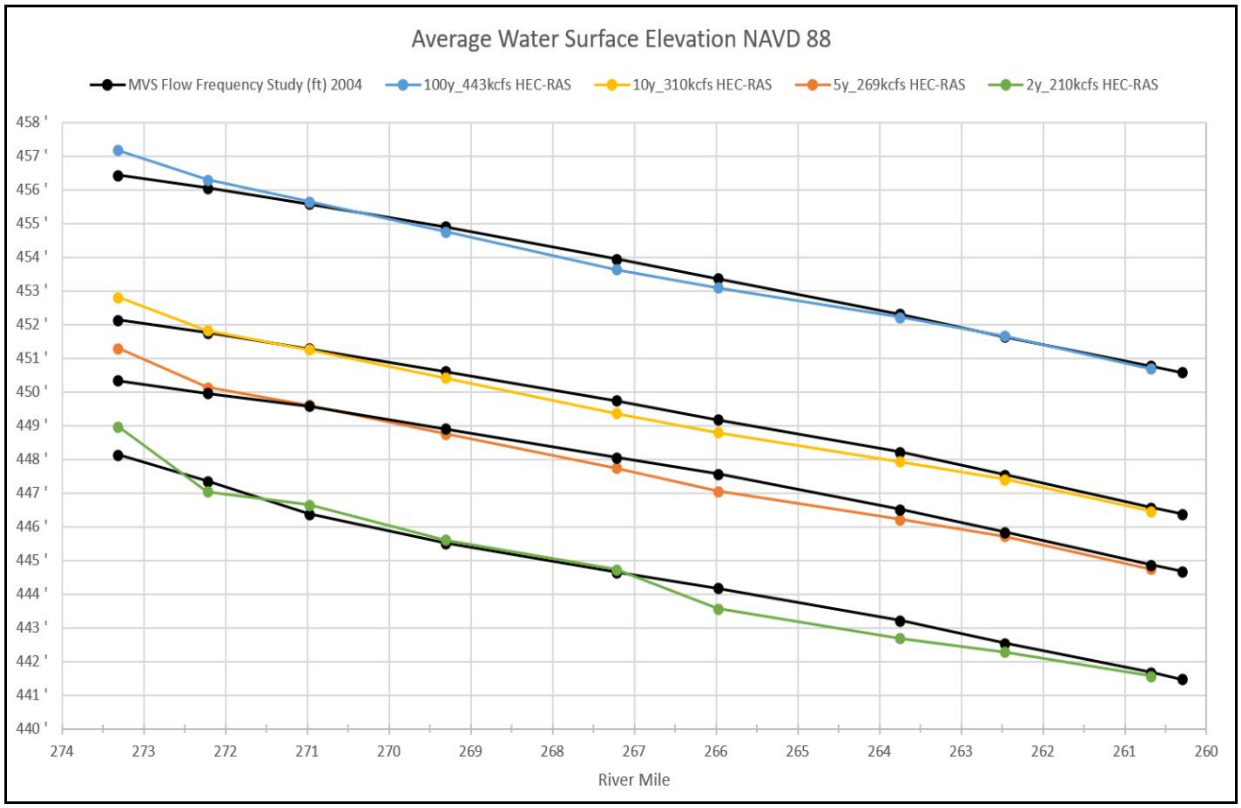


Figure 13. MVS Flow Frequency Study – HEC-RAS Calibration

Velocities within the model were also calibrated to measured acoustic doppler current profiler (ADCP) flow events. The ADCP survey collection was taken by the Geospatial Branch on 5/4/2023 within the side channels of Clarksville and Carroll Island during a flow condition of approximately 284,554 cfs, averaged over a 24-hour period on the survey date. The flow data for the hydraulic model was obtained from USACE's Mosier Landing gauge on the same day as the ADCP survey. The velocities from the ADCP survey were then compared to the hydraulic model. The ADCP collection is depicted with velocity arrows and the hydraulic model velocity shading results shown underneath. Figure 14 and Figure 15 shows the velocity calibration results. It is noted that both velocities in HEC-RAS and the ADCP survey are depth-averaged. Meaning the velocities within the water column are averaged.

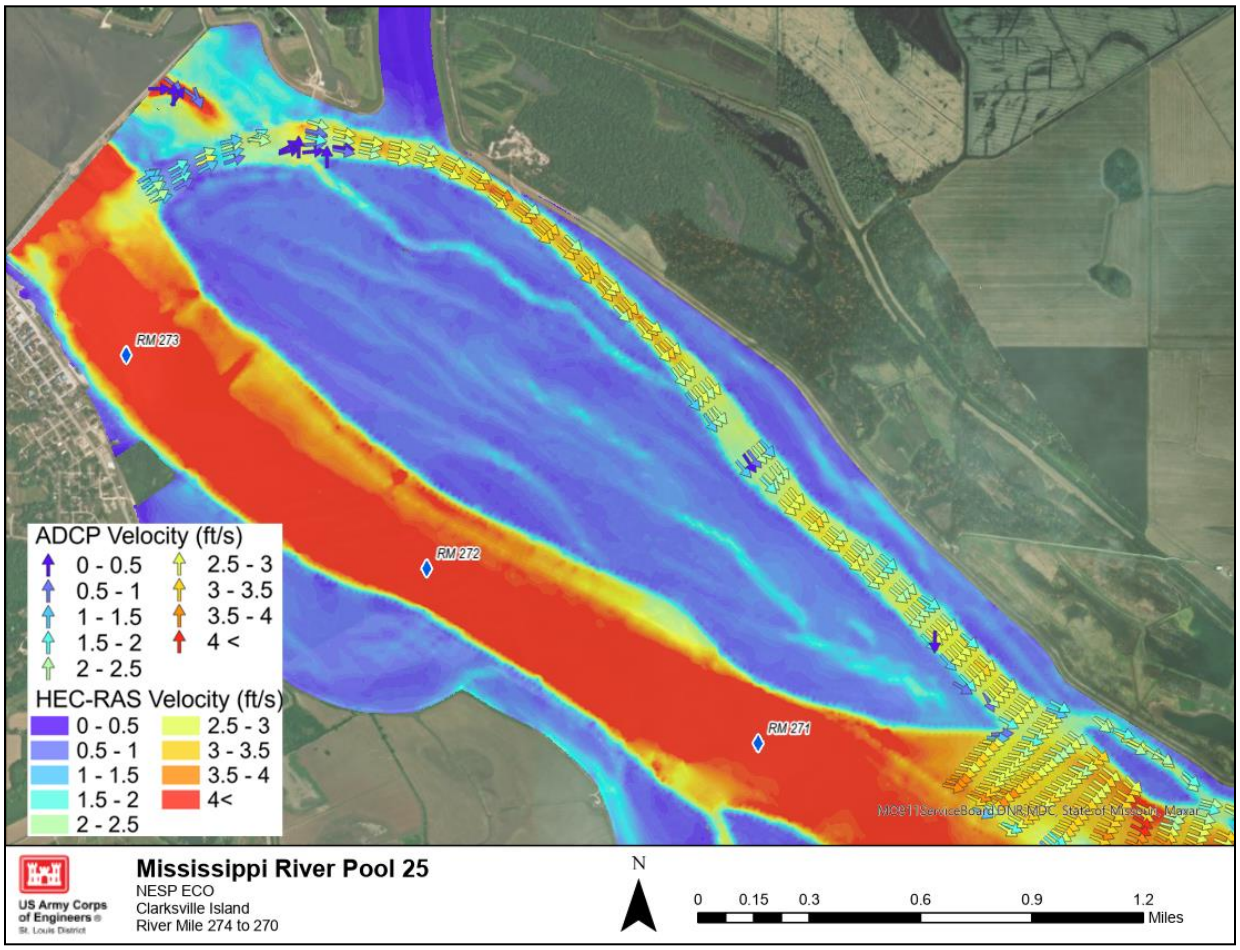


Figure 14. ADCP Model Calibration Clarksville Island RM 274-270

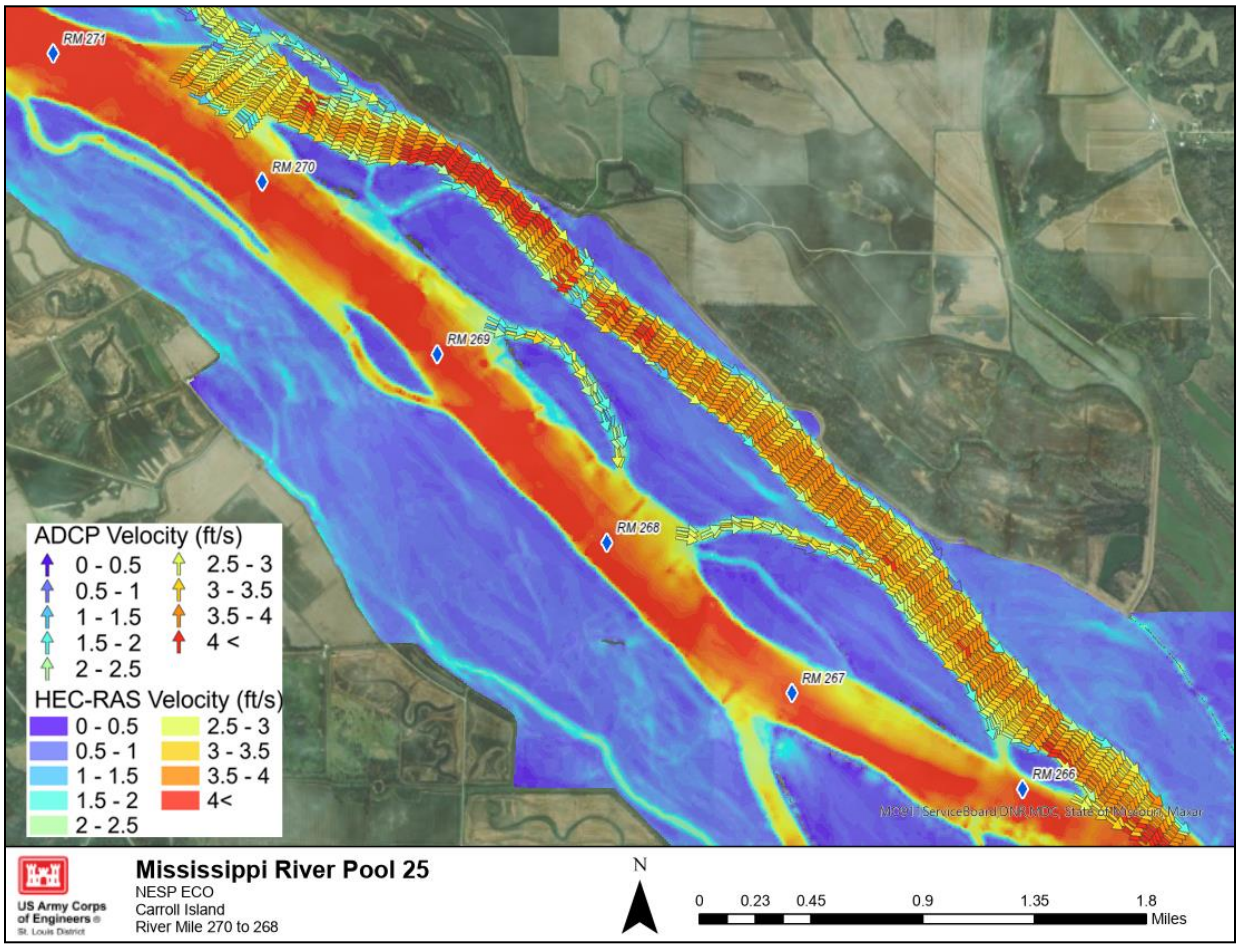


Figure 15. ADCP Model Calibration Carroll Island RM 270-266

After the model was calibrated, other low-flow scenarios were tested using L&D 24 Tailwater discharges and Mosier gauge readings provided from USACE St. Louis District Water Control. The same mesh, manning's "n" values, boundary locations, and cross sections were used for these runs. Monthly average discharges, along with select pool discharges, were pulled from USACE records between the years 2009 to 2023. The normal pool, moderate pool, ADCP flow, average monthly minimum, average monthly median, and average monthly maximum were calculated; and these events were run within the HEC-RAS program. The WSEs for these conditions are shown in

Table 10 for each existing HEC-RAS flow condition. The results were deemed acceptable by hydraulic engineers given the different parameters and therefore the model was calibrated.

Table 10. Low Flow Model Scenarios

River Mile	Discharge **Normal Pool 20,000 cfs**	Discharge **Moderate Pool 55,000 cfs**	Discharge **ADCP 5/4/2023 284,554 cfs**	Discharge 2009-2023 Monthly Average **Avg. Min. 95,000 cfs**	Discharge 2009-2023 Monthly Average **Avg. Med. 120,000 cfs**	Discharge 2009-2023 Monthly Average **Avg. Max. 175,000 cfs**
RM 273.32	435.83	438.53	452.09	441.91	443.88	447.62
RM 272.22	435.12	437.52	451.10	440.15	441.79	445.44
RM 270.98	435.10	437.20	450.57	439.82	441.42	445.08
RM 269.31	435.01	436.71	449.77	439.19	440.72	444.27
RM 267.22	434.76	435.63	448.78	438.05	439.57	443.24
RM 265.98	434.70	435.32	448.23	437.61	439.11	442.47
RM 263.75	434.62	434.79	447.43	436.71	438.08	441.48
RM 262.47	434.58	434.51	446.95	436.20	437.45	441.10
RM 260.68	434.54	434.19	446.09	435.56	436.73	440.49

* Elevation conversion from NGVD29 to NAVD88 may not be constant throughout (ft)

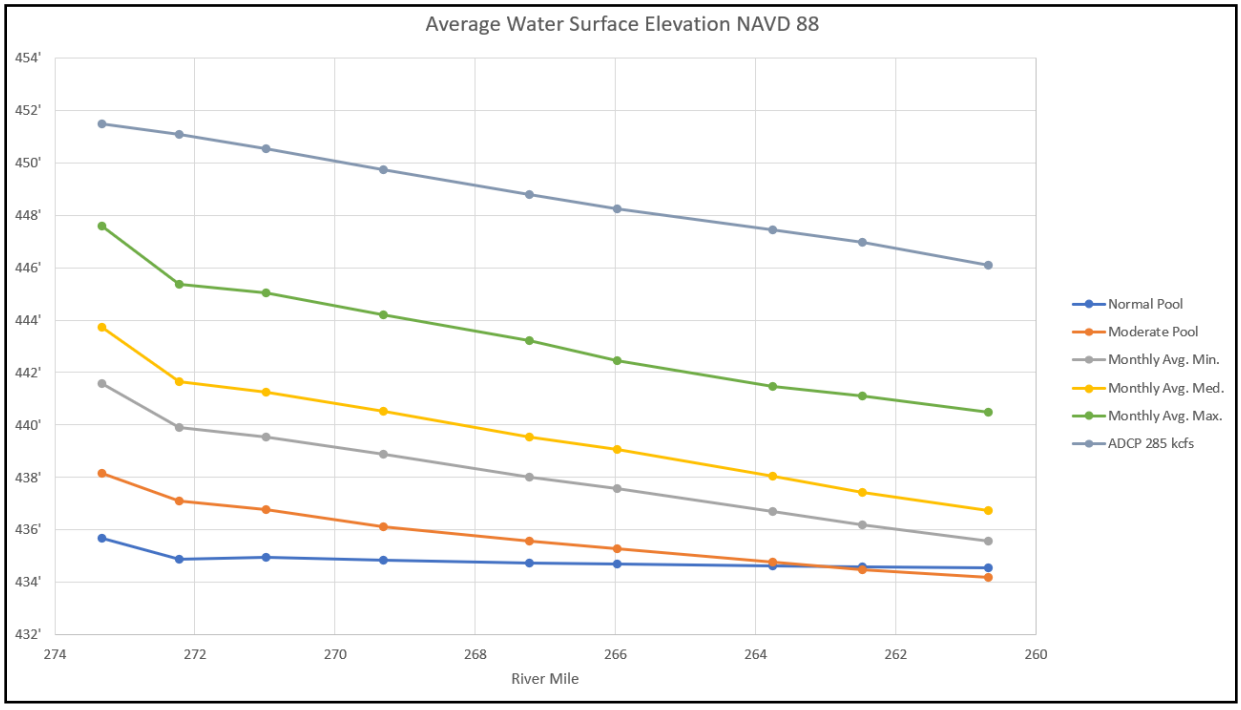


Figure 16. Low Flow Model Scenarios

This concludes the calibration phase of the 2D HEC-RAS model for the Clarksville and Carroll Island complex study area.

3. Design Alternatives

Four design alternatives were developed by the PDT for the study area. The design alternatives (FWOP, Minimum Habitat Benefit, Intermediate Habitat Benefit, and Maximum Habitat Benefit) consist of with or without the project features detailed within the following subsections. This section summarizes the corresponding project features contained within each design alternative of the study area. The design alternatives were then analyzed at the flow conditions shown in Table 11 for each habitat benefit alternative and corresponding selected project features contained within each alternative. The flow conditions selected represent significant targets for proposed features modeled within each habitat benefit alternative.

Table 11. Modeled Flow Conditions

Flow Condition	L&D 25 Pool Flow (CFS)
Moderate Pool	55,000
Avg. Median Pool	120,000
Avg. Maximum Pool	175,000
50% AEP (2-year)	210,000
20% AEP (5-year)	269,000
1% AEP (100-year)	443,000

The moderate pool was selected to represent a low flow condition. The average median pool will be used to help analyze habitat features such as mussel riffles and woody bundles. The average maximum pool represents a higher flow, but below significant flood events as a check on habitat features within the model. The 50% AEP was used to closely represent the OHWM, a benchmark set by the PDT for side channel restoration. The 20% AEP was utilized to analyze a low-level flood event with project features. Finally, the 1% AEP will be used to analyze the tentatively selected plan (TSP) for a No-Rise Analysis as required when constructing projects within FEMA designated waterways. A summary of the alternative analysis can be found at the end of this section. The TSP and No-Rise Analysis discussion can be found in Section 0 “

Proposed Design".

3.1 Project Features

The features chosen for analysis include dredging pilot channels, river training structure modifications, such as hard points or side channel enhancement dikes (SCEDs), mussel habitat enhancement with rock-gravel substrate (GSR), and natured-based features with woody bundles. Each of the project features were placed into three design alternatives: minimum habitat benefit, intermediate habitat benefit, and maximum habitat benefit. A No Action, Future Without Project (FWOP) was also analyzed with no project features nor improvements. Features contained within each alternative are shown in Table 12 below. Specifics of each feature will be discussed in the following sections.

Table 12. Project Alternatives

Feature(s)	**FWOP** No Action	**Alt 1** Minimum Habitat Benefit	**Alt 2** Intermediate Habitat Benefit	**Alt 3** Maximum Habitat Benefit
Dredging (Pilot Channels)	-	X	X	X
River Training Structure (Hard Points, SCED)	-	-	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate)	-	-	X	X
Nature-Based Features (Woody Bundles)	-	-	-	X

3.1.1 Dredging

The project's objective is to restore the side channel habitats of Clarksville and Carroll Islands. Increased sedimentation has been observed in these channels, primarily in the mouth of Clarksville Island. The implementation of dredging will re-establish regular flow through the channel by initiating flow paths, with the hope of inducing natural scouring to "open up" the channel over time. Without intervention, the channel will continue to become cut off from the main river, degrading the aquatic habitat.

Design criteria for dredging was taken from the NESP Environmental Design Toolkit. The Toolkit outlines basic parameters for constructability and design elements for consideration. These include location of dredge material disposal, water quality monitoring, material type, adjacent banks, and river connectivity. It is suggested that a short segment of high ground should be placed at the entrance of the dredged channel to minimize sedimentation of the channel.

There are two main forms of dredging discussed in the Toolkit: mechanical dredging and hydraulic dredging. Mechanical dredging involves an excavator or similar machine, either based

on a barge or driven on land to remove material. Hydraulic dredging utilizes water pressure to agitate material and then a suction to it transport it though a pipe to a disposal site.

Mechanical dredging has a lower mobilization component when compared to hydraulic dredging. Mechanical dredging can be fairly precise and shape channel bank lines to design specifications. Due to this precision, less turbidity is created during the process which helps meet water quality standards. Mechanical dredging works well in stiff clays and stump fields with the materials removed containing higher solids content. A concern with mechanical dredging is a lower production rate which makes it less cost effective for large-scale operations.

Hydraulic dredging boasts a higher production rate with sands and silts. It has a higher mobilization cost, lower precision, and high turbidity. Materials that are removed contain a higher water content, so more space is required for placement areas. This method is not as suitable for stiffer clays and stump fields. Due to these considerations, mechanical dredging has been listed as the preferred method of dredging on this project.

Dredge centerlines were aligned to favor the left descending bank of the side channel. Three profiles were chosen: Pilot Channel (red), Pilot Chute (green), and Pilot Side (blue) as seen illustrated in Figure 17. The Pilot Channel will allow the main flow from the river to enter the side channel and is expected to provide majority of the flow needed for restoration. The Pilot Chute will enhance the existing overflow chute and allow aquatic habitat connectivity. There is an estimated 16-foot-deep scour pocket located at the downstream of the chute. The deep scour pocket feature would be retained for habitat and bathymetric diversity. Finally, the Pilot Side profile was chosen to reopen the tertiary channel flowing through Clarksville Island. After some investigation using Google Earth, evidence of fallen trees may have created a debris jam, which has built up sediment over the years. Removing the debris and creating a pilot channel here will re-establish this channel.

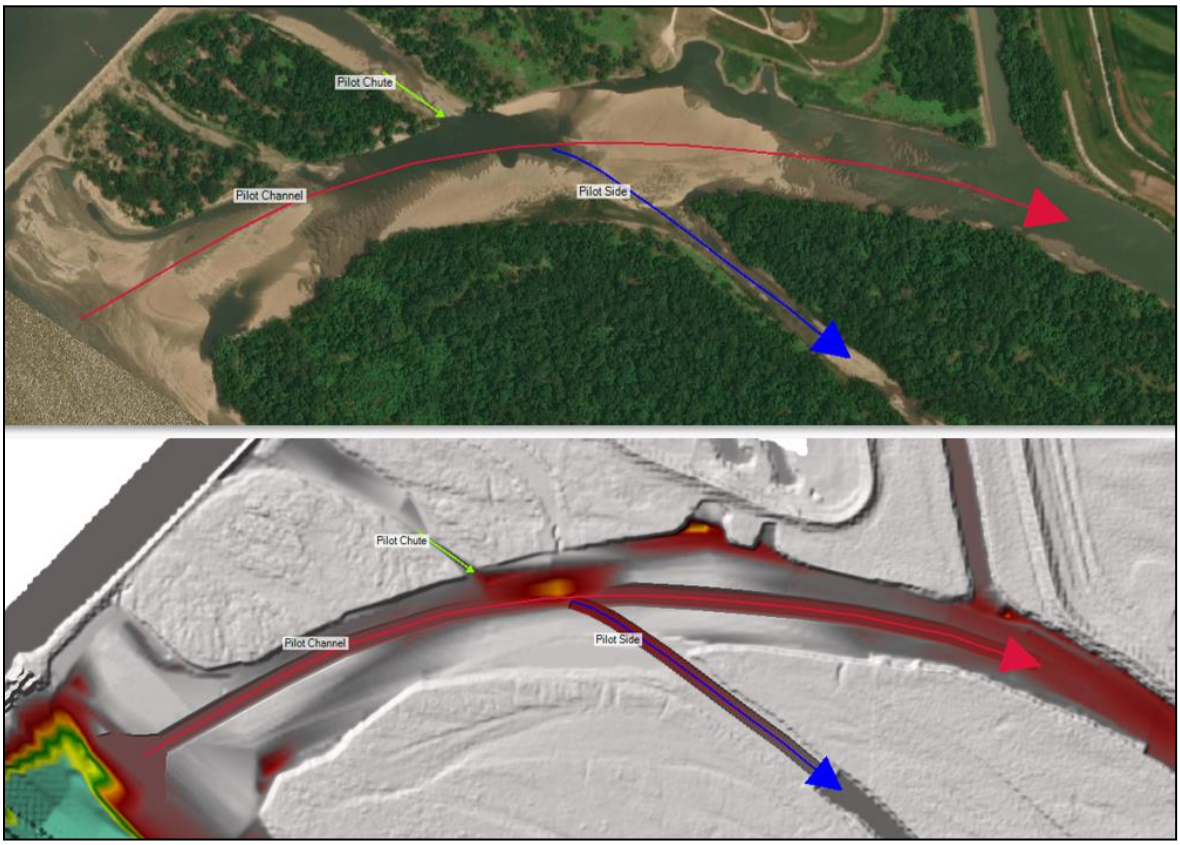


Figure 17. Dredge Paths

Dredge dimensions are found in Table 13. Dredge paths follow a trapezoidal cross section. Refinement of dredge dimensions and methods may be altered during construction.

Table 13. Dredge Dimensions

	Pilot Channel	Pilot Chute	Pilot Side
Bottom Width	83 ft	20 ft	53 ft
Left Side Slope V:H	1:6	1:2	1:6
Right Side Slope V:H	1:6	1:2	1:6
Max Top Extent	125 ft	30 ft	80 ft
Length	4950 ft	365 ft	1745 ft
Dredge Depth Range	3 ft - 5 ft	0 ft - 2 ft	6 ft – 10 ft

3.1.2 River Training Structure Modification

River training structures (RTS) redistribute or redirect the river's energy to achieve various flow patterns and velocity results. Such results include scouring or deepening a channel for navigation, enhancing shoreline stabilization, managing sediment distribution, or increasing habitat by inducing bathymetric diversity. RTS should be keyed or tied into the existing bankline to avoid flanking or bypassing of the river, which may pose detrimental results. Current RTS modifications for this project includes the creation of side channel enhancement dikes (SCEDs) and hard points.

3.1.2.1 Side Channel Enhancement Dikes

SCEDs are river training structures that extend into the river, comparable to a regular dike, but typically feature a curved "hook" upstream to capture and direct flow from the main channel into the side channels. Two SCEDs are being proposed for this project. SCED273, located at the mouth of Clarksville Island and SCED268 located near RM 268 on Carroll Island. SCED273 should be well armored to withstand high flows directly downstream of L&D 24 operations. Sediment accumulation on the upstream portion of SCED273 was considered but determined to be a minimal risk due to varying flows from L&D 24 gate operations. Existing RTS nearby have been degraded significantly due to these flows.

SCED268 will direct flow into the side channel of Carroll Island. The sediment accumulation risk for SCED268 is also minor as the proposed alignment is more in line (parallel) with the river's flow lines. Both SCEDs follow similar geometry with a crown width of 10 ft extending to existing grade with side slopes of 1V:2H. SCEDs will be built with a crest elevation of 438 feet which is a similar elevation to neighboring structures and below the OHWM.



Figure 18. SCED 273 (Clarksville, left) and SCED 268 (Carroll, right)

Table 14 SCED Geometry

	SCED273	SCED268
Left Side Slope V:H	1:2	1:2
Right Side Slope V:H	1:2	1:2
Crown Length Extent	10 ft	10 ft
Crest Elevation	438 ft	438 ft
Length	750 ft	550 ft

3.1.2.2 Hard Points

Hard Points are smaller training structures that extend perpendicular to the bankline and protect the bankline from erosion. It has been observed that hard points create aggradation (accumulation of material) on the upstream portion and degradation (removal of material) on the downstream portion.

The hard points for this project will follow a geometry of a 10H:1V slope, 40 feet from the bankline to a hinge elevation of 445 feet, determined by the OHWM (50% AEP), and then follow a 5H:1V slope down to the existing channel elevation.

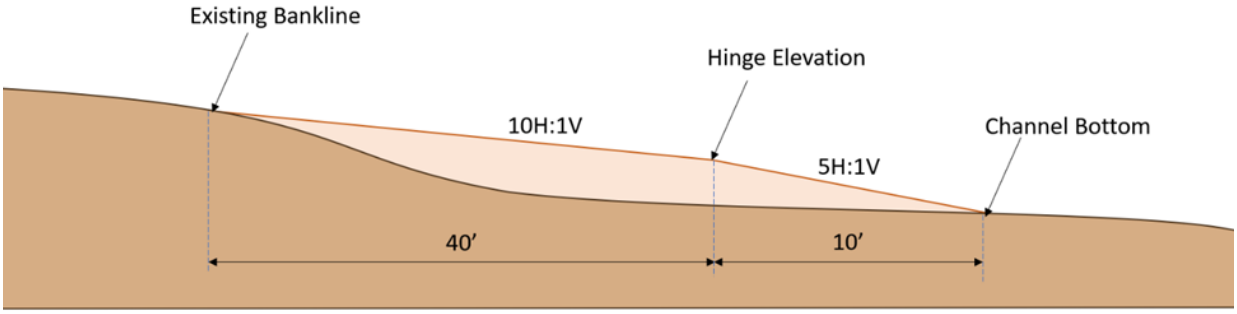


Figure 19. Example Hard Point Profile

Different configurations of hard points were analyzed for this reach. Figure 20 below shows three of the configurations that were analyzed. Alternative 2 consisted of alternating hard points, Alternative 2 – HP1 consisted of hard points that were placed on opposing banklines, parallel to each other, and Alternative 2-HP2 consisted of hard points on the left descending bank only. Hard Point 1, located below the pilot chute region remains consistent for all hard point alternatives. This hard point will help direct flow from the pilot chute. For visibility purposes in the figure below, hard points are outlined in yellow, and cross sections used during analysis are highlighted in green.

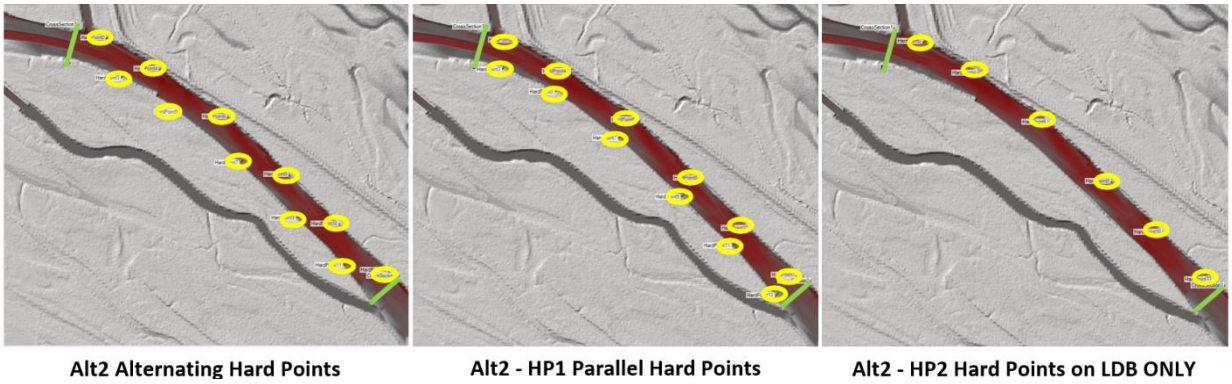


Figure 20. Hard Point Configuration

Two cross sections were used in this analysis, one before the influence of the Bay Creek, and one downstream of the hard points, but before the Clarksville interior tertiary channel. Each of the hard point configurations were modeled and compared to the existing conditions. It is noted that the proposed dredge channels and SCED273 were included in this analysis since they would be present within any alternative that included the hard points.

Velocity and flow changes were monitored and tabulated below in

Table 15. Both the 50% AEP (210 kcfs, 2-year, OHW) and the Average Median (120 kcfs, Habitat flows) flows were tested.

Table 15. Hard Point Configuration Analysis

Cross Section 1 - Upstream	Vel (ft/s)	+/- ft/s	% change	Flow (cfs)	+/- cfs	% change
210 kcfs Existing	**1.63**	**-**	**-**	**11,274**	**-**	**-**
210 kcfs Alt 2 - Alternating	1.33	-0.30	-18.44%	11,339	64.49	0.57%
210 kcfs Alt 2 - HP 1- Parallel	1.33	-0.30	-18.36%	11,343	68.99	0.61%
210 kcfs Alt 2 - HP2- LDB Only	1.33	-0.30	-18.34%	11,347	72.41	0.64%
120 kcfs Existing	**0.93**	**-**	**-**	**3,929**	**-**	**-**
120 kcfs Alt 2 - Alternating	0.63	-0.30	-32.25%	3,905	-23.56	-0.60%
120 kcfs Alt 2 - HP 1- Parallel	0.63	-0.29	-31.58%	3,905	-23.62	-0.60%
120 kcfs Alt 2 - HP2- LDB Only	0.63	-0.29	-31.54%	3,907	-21.61	-0.55%
Cross Section 2 - Downstream	Vel (ft/s)	+/- ft/s	% change	Flow (cfs)	+/- cfs	% change
210 kcfs Existing	**1.89**	**-**	**-**	**11,025**	**-**	**-**
210 kcfs Alt 2 - Alternating	1.96	0.06	3.35%	11,384	359.63	3.26%
210 kcfs Alt 2 - HP 1- Parallel	1.95	0.06	3.22%	11,405	380.77	3.45%
210 kcfs Alt 2 - HP2- LDB Only	1.95	0.06	3.21%	11,398	373.24	3.39%
120 kcfs Existing	**1.19**	**-**	**-**	**3,891**	**-**	**-**
120 kcfs Alt 2 - Alternating	1.21	0.01	1.11%	3,886	-5.31	-0.14%
120 kcfs Alt 2 - HP 1- Parallel	1.20	0.01	0.63%	3,887	-4.02	-0.10%
120 kcfs Alt 2 - HP2- LDB Only	1.20	0.01	0.80%	3,888	-2.85	-0.07%

Minimal changes in flow and velocity were recorded, however, Alternate 2 with the alternating hard points showed an increase in velocity along Cross Section 2, and an increase in flow when compared to the existing conditions. It should be taken into consideration the limitations to this modeling exercise which involve difficulties in locating cross sections. Cross sections should be drawn perpendicular to the flow. With the boundary condition located at L&D 24, and the project site located within close vicinity, the results may not be representative of true existing conditions. However, despite these limitations, alternating hard points were favorable for habitat diversity. Engineers took into consideration existing projects which utilized hard points in an alternating pattern, which have been proven to be successful.

It should be acknowledged that the velocity values from the cross section are averaged along the whole line as well as depth averaged. The individual values at certain points may vary slightly. For feasibility modeling purposes, these averages are deemed acceptable by hydraulic engineers. Further refinement and detail will be analyzed during the tentatively selected plan phase

For this measure, eleven alternating hard points will be located along the side channel of Clarksville as well as one singular hard point near the pilot chute to help direct flow. Figure 21 shows the preferred placement of the hard points.



Figure 21. Clarksville Hard Points

3.1.3 Mussel Habitat Enhancement

Mussels are a freshwater species responsible for filtering water and play a crucial role in the overall health of the ecosystem. With increased sedimentation due to pooling of water since the construction of Locks and Dams, mussel habitat has become at risk. Biologists are interested in supporting these ecosystems by creating more desirable substrate for mussel beds to form. Ideal mussel habitat consists of even-sized stone gradations so that natural sediment deposition may occur within the voids.

To determine suitable mussel habitat, biologists specified the desired mussel substrate would fall within areas where depths were 3 feet or greater and velocity profiles were between 1 ft/s and 3 ft/s based on an upstream boundary flow regime of 120 kcfs.

Utilizing RAS calculators, areas where the depth and velocity criteria were highlighted. This was then sent to the biologists who determined ideal pockets where mussel substrate would be placed. In Figure 22 below, the purple denotes all areas where the criteria were met. The red polygons show the regions where the mussel riffles will be tested. A Sturgeon habitat was

analyzed near the mouth of Clarksville. For modeling purposes, it will be treated the same as the mussel habitat.

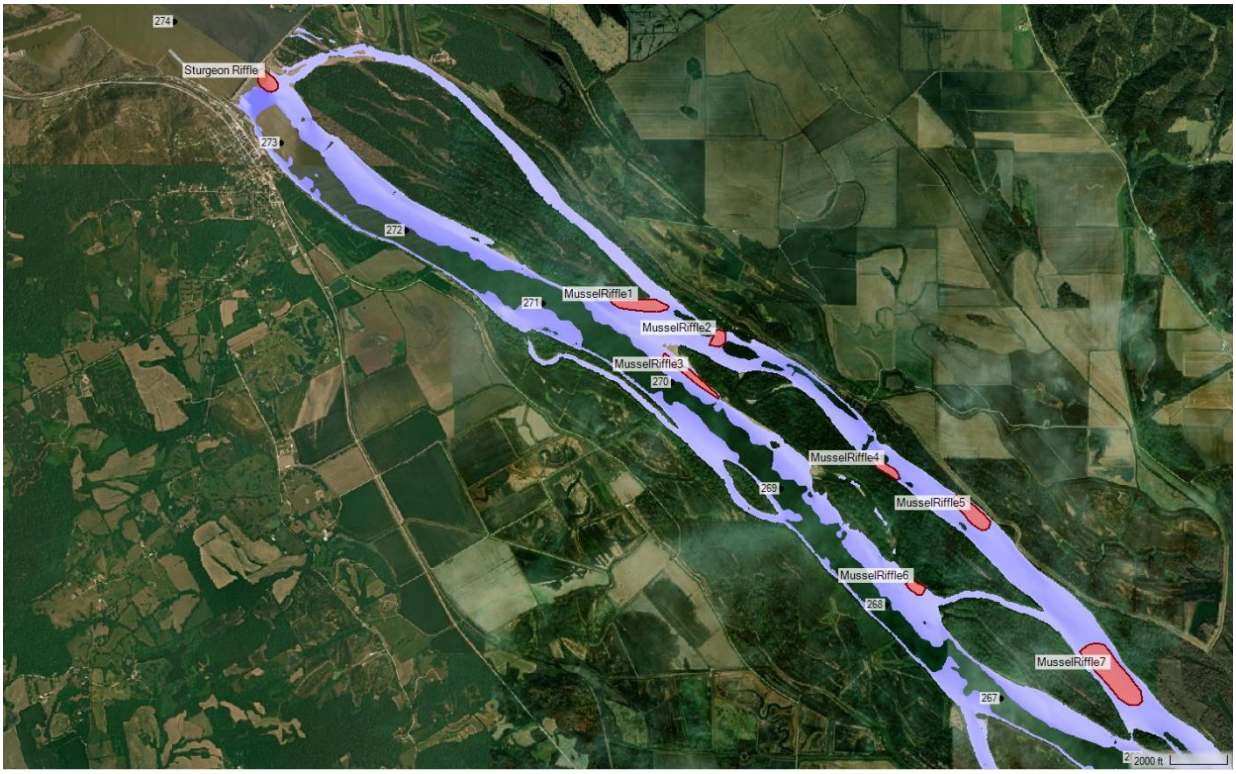


Figure 22. Mussel Riffle Locations

Since 2D HEC-RAS produces depth-averaged velocities, which averages the velocity of the whole water column, biologists were made aware of this limitation when modeling habitat locations. Manning's roughness n-values were increased to 0.032 within mussel habitats regions for the alternative models. More on the biological aspect of the mussel habitats can be found in the Appendix B – Habitat Evaluation.

3.1.4 Nature-Based Features

Nature-Based Features for this project include the placement of woody bundles for habitat diversity. Woody bundles have been installed in aquatic areas to dissipate flow energy. This results in channel stability, enhanced substrate diversity, and improved fish and aquatic species habitat.

When designing the woody bundles, it is best to ensure they will be constructed to remain submerged year-round to prevent the wetting and drying cycle and avoid rot degradation. Woody bundles should be anchored appropriately to avoid mobilization during high flow events, ice jams, or other events.

Woody bundles were modeled as 30 feet by 50 feet regions, placed 50 feet off the bank for ideal aquatic habitat. Manning's roughness n-values were increased to 0.04.



Figure 23. Woody Bundle Placement

3.2 No Action – Future Without Project (FWOP)

There are no features, so no additional modeling was needed for the No Action – Future without Project model. The Existing Conditions model shown in Section 2 HEC-RAS 2D Modeling would be most representative for hydraulic analysis.

Table 16. FWOP

Feature(s)	**No Action** FWOP	**Alt 1** Minimum Habitat Benefit	**Alt 2** Intermediate Habitat Benefit	**Alt 3** Maximum Habitat Benefit
Dredging (Pilot Channels)	-	X	X	X
River Training Structure (Hard Points, SCED)	-	-	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate)	-	-	X	X
Nature-Based Features (Woody Bundles)	-	-	-	X

Without action, it is anticipated that the upper side channel of Clarksville Island would continue to degrade causing the side channel to eventually close off completely as high loads of sediments continue to build within the upper reach of Clarksville Island's side channel. The backwater (low flow area) aquatic habitat within the study area would continue to degrade due to loss of flow, depth diversity, and loss of side channel connection and the island complex.

Island building and side channel cutoff would continue at the upper end of Clarksville Island. Clarksville Island would eventually connect into the overflow dike at L&D 24, thereby cutting off connectivity of the side channel habitat. The aquatic habitat would convert into a low quality, terrestrial area comprised almost completely of sand that allows for only a few species such as willow and cottonwood to establish. Eventually over time, Carroll Island would experience the same degradation as sediments move further downstream.

L&D 24 operations are not expected to change from existing conditions and will continue to function according to congressional directives and gate release criteria. Navigation along the main channel will continue to have adverse effects and impacts on important habitats within side channel and backwaters within Pool 25 of the Mississippi River. Navigation induced shoreline erosion would continue degrading both islands and aquatic habitats. If an alternative plan is not selected, habitats within the study area would be impacted even further with sediments and lose connectivity.

3.3 Minimum Habitat Benefit

This alternative will only feature the dredging and excavation of pilot channels along the Clarksville Island side channel.

Table 17. Alternative 1 – Minimum Habitat Benefit

Feature(s)	**No Action** FWOP	**Alt 1** Minimum Habitat Benefit	**Alt 2** Intermediate Habitat Benefit	**Alt 3** Maximum Habitat Benefit
Dredging (Pilot Channels)	-	X	X	X
River Training Structure (Hard Points, SCED)	-	-	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate)	-	-	X	X
Nature-Based Features (Woody Bundles)	-	-	-	X

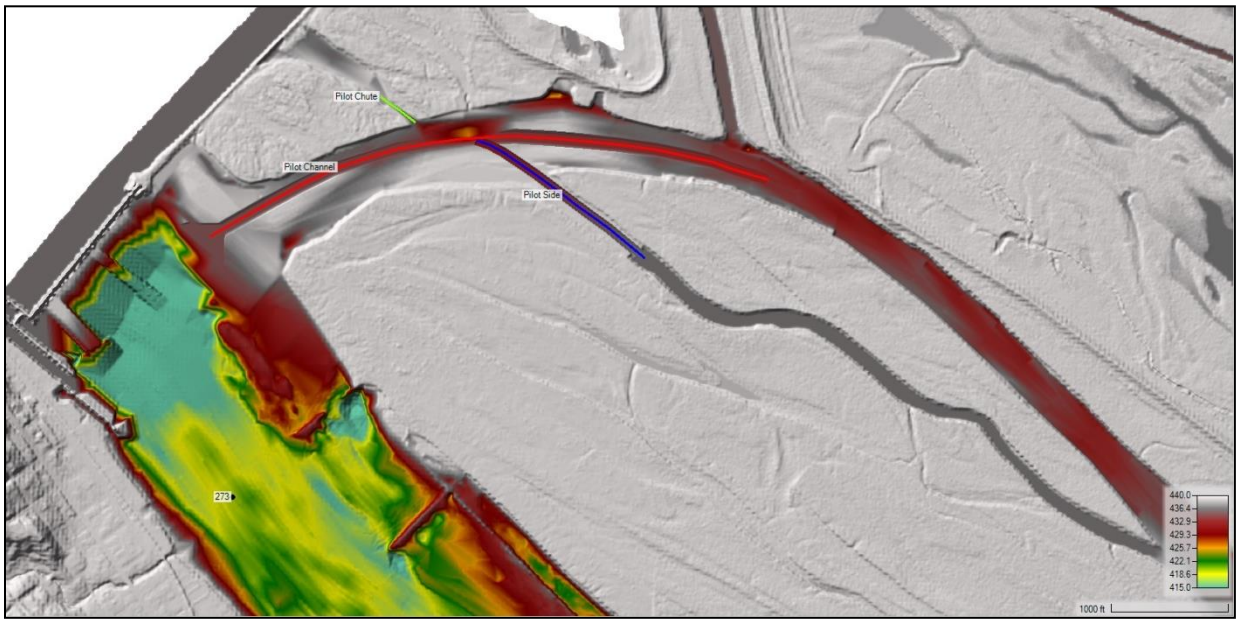


Figure 24. Alternative 1 – Minimum Habitat Benefit - Clarksville

The objective of dredging a pilot channel is to widen and deepen the existing side channel at the head of Clarksville Island's side channel to improve flows for aquatic habitat and initiate scour at lower flow events on the Mississippi River. Additional flow will assist current flow conditions in transporting sediments downstream. This will extend the amount of time the channel is submerged and allow for additional connectivity of aquatic habitat.

3.4 Intermediate Habitat Benefit

This alternative will feature the dredging and excavation of pilot channels, creation of River Training Structures (Hard Points, Side Channel Enhancement Dikes), and placement of Mussel Riffle Rock-Gravel Substrate.

Table 18. Alternative 2 –Intermediate Habitat Benefit

Feature(s)	**No Action**/ FWOP	**Alt 1** Minimum Habitat Benefit	**Alt 2** Intermediate Habitat Benefit	**Alt 3** Maximum Habitat Benefit
Dredging (Pilot Channels)	-	X	X	X
River Training Structure (Hard Points, SCED)	-	-	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate)	-	-	X	X
Nature-Based Features (Woody Bundles)	-	-	-	X

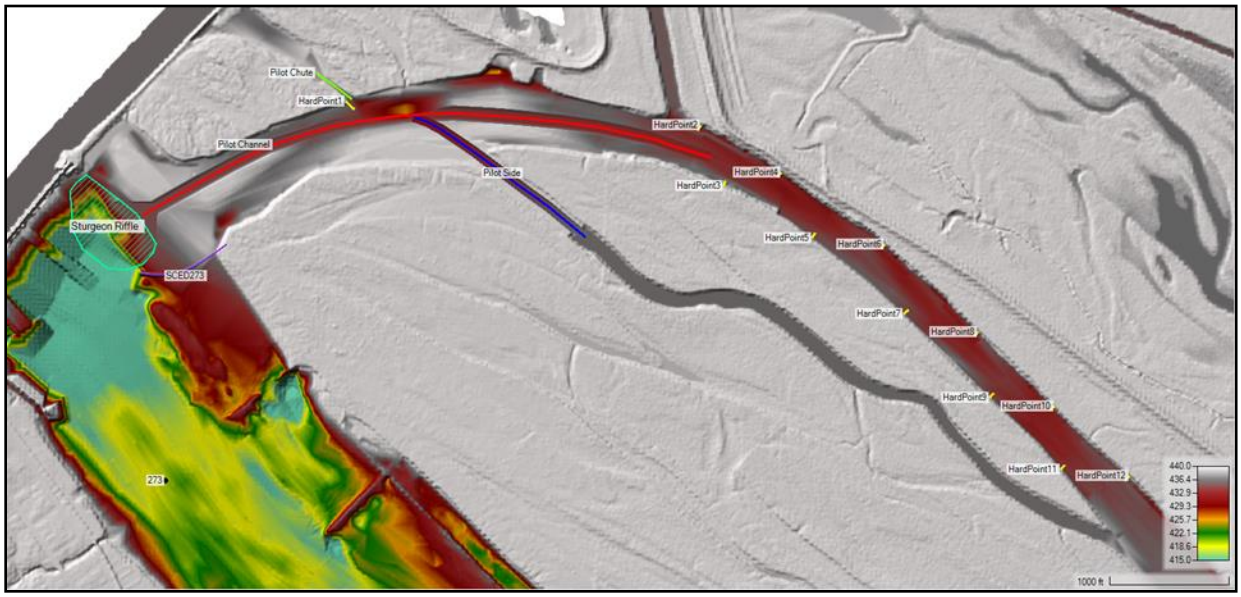


Figure 25. Alternative 2 –Intermediate Habitat Benefit – Clarksville

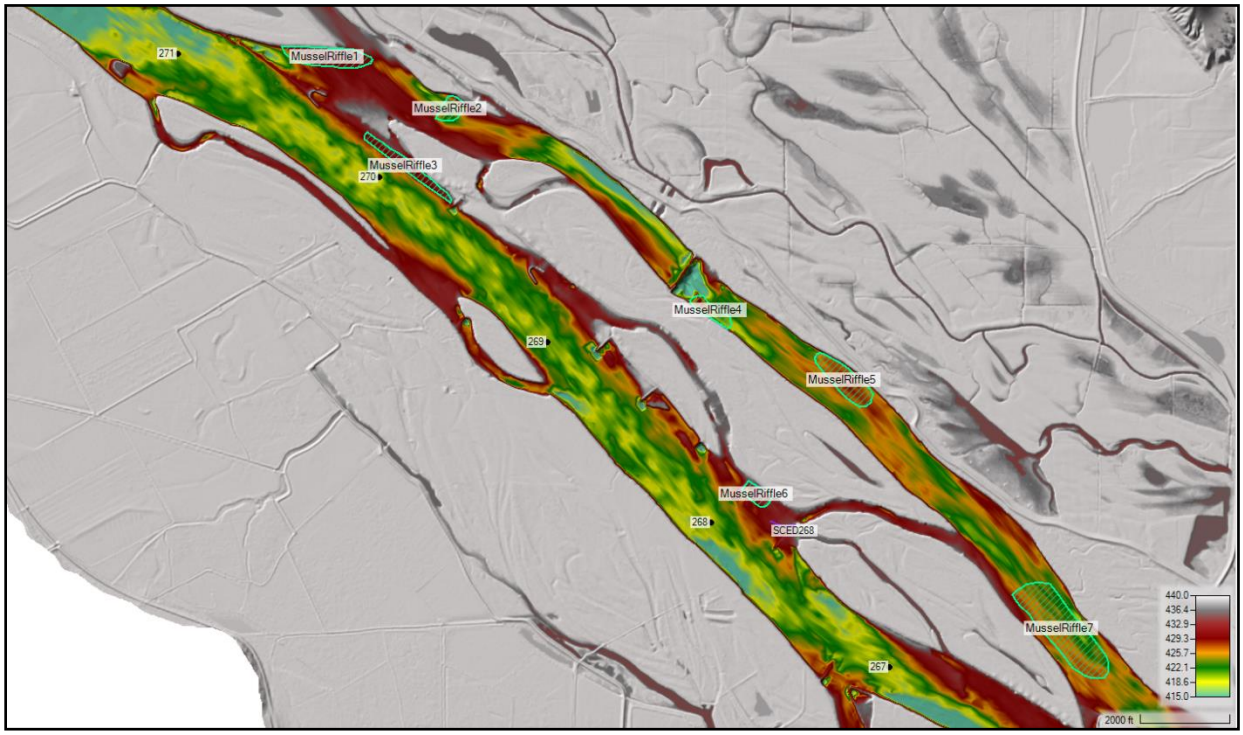


Figure 26. Alternative 2 –Intermediate Habitat Benefit – Carroll

In addition to the features described within the Minimum Habitat Benefit alternative, this alternative included a SCED to assist in diverting an additional flow into the side channel. Hard Points were provided for bank protection, directing water during low flow events, and directing scouring away from the bank line within the Clarksville side channel. The SCED will include

restoring an existing river training structure along the left descending bank of the main channel at RM 273 and will also have an extension upstream at an angle of 35 degrees from the existing dike. Another SCED is located further downstream along the left descending bank of the main channel along Carroll Island at RM 268. This SCED at RM 268 will help divert flow into a tertiary channel that flows into the side channel of Carroll Island. Other features within this alternative include rock-gravel substrate for mussel riffles. This feature will accommodate habitable conditions for mussels with larger voids suitable to other aquatic fish. During hydraulic analysis manning's roughness coefficients were increased to match the placement of rock and gravel features.

3.5 Maximum Habitat Benefit

This alternative will feature the dredging and excavation of pilot channels, creation of River Training Structures (Hard Points, Side Channel Enhancement Dikes), placement of Mussel Riffle Rock-Gravel Substrate, and the inclusion of Nature-Based Features (Woody Bundles).

Table 19. Alternative 3 – Maximum Habitat Benefit

Feature(s)	**No Action** FWOP	**Alt 1** Minimum Habitat Benefit	**Alt 2** Intermediate Habitat Benefit	**Alt 3** Maximum Habitat Benefit
Dredging (Pilot Channels)	-	X	X	X
River Training Structure (Hard Points, SCED)	-	-	X	X
Mussel Habitat Enhancement (Rock-Gravel Substrate)	-	-	X	X
Nature-Based Features (Woody Bundles)	-	-	-	X

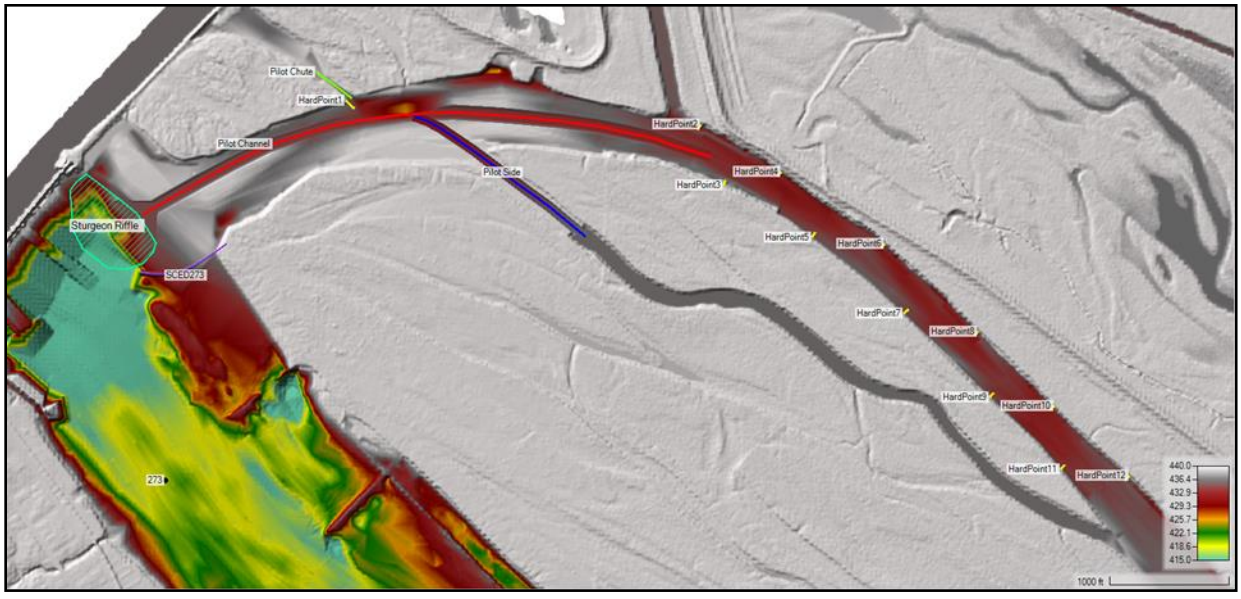


Figure 27. Alternative 3 - Maximum Habitat Benefit - Clarksville

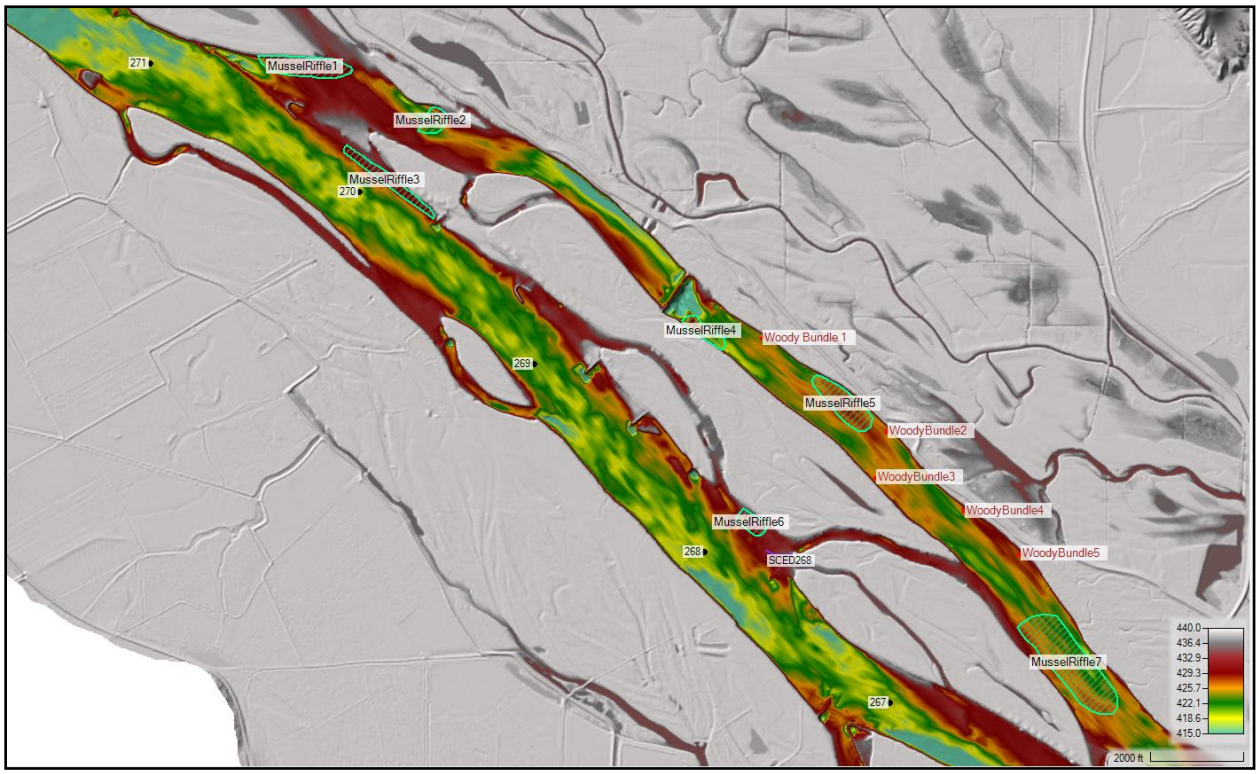


Figure 28. Alternative 3 - Maximum Habitat Benefit – Carroll

In addition to the features described within the Minimum and Intermediate Habitat Benefit alternatives, this alternative included the nature-based feature of woody bundles. During hydraulic analysis of this feature, the manning's roughness coefficient was increased in the placement areas of the woody bundles within the lower portion of Carroll Island side channel. The results showed no significant impact to flows, velocities, nor water surface elevations with the addition of this feature. The woody bundles feature was solely designed to provide additional aquatic habitat for fish and other riverine species.

3.6 Alternatives Analysis Summary

For each design alternative, project features were input into the terrain utilizing HEC-RAS terrain editing functions. The features were merged into the terrain following the specifications previously mentioned. The Manning's roughness values were edited on those features. For these analyses, the 50% AEP (210 kcfs) represents the OHWM, and the Average Median flow (120 kcfs) was used to analyze habitat features.

Cross sections were chosen throughout the Clarksville and Carroll backwaters to determine changes in velocity and flow between the alternatives (Figure 29). Each cross section was determined to capture terrain changes between the different alternatives and were drawn from left descending bank to the right descending bank. Clarksville 1 was located to analyze the immediate effects of dredging, Clarksville 2 is located after the hardpoints, and Clarksville 3 is the most downstream of the Clarksville reach, below the tertiary channel that runs through the

island. Carroll 1 is the most upstream of the Carroll reach, Carroll 2 is downstream of the cross dike 268.8L, Carroll 3 is on the side channel after the proposed SCED 268, and Carroll 4 represents the most downstream portion of the project limits. The results for each design alternative were then compared to the existing conditions model.



Figure 29. Design Alternative Cross Sections

Overall trends show that all three alternatives along the Clarksville cross sections remained similar, with Alternative 3 producing slightly higher velocity values. Clarksville 1 cross section produced lower velocity values when compared to the existing values. This decrease in velocity may be attributed to the sturgeon riffle located towards the mouth of Clarksville side channel. Clarksville 2 cross section showed an increase in velocity for the higher flow event, but similar velocity for the lower flow event. This shows the minimal effects on velocity as you travel downstream for lower flows. Clarksville 3 produced a slight increase in velocity for all alternatives. Overall, this increase in velocity is favorable for sedimentation transport and habitat benefit.

For the flow analysis, the main distinction occurred along the Clarksville 3 cross section. All alternatives trended slightly higher than the existing conditions for both flow events. This proves the measures are increasing the overall flow as it exits the side channel with velocity increase ever so slightly as to not impact habitats.

Table 20. Alternative 3 – Maximum Habitat Benefit - Alternative Cross Sections - Clarksville

Site	kcfs	Vel (ft/s)	+/- FT/S	% change	Flow (cfs)	+/- CFS	% change
Clarksville 1	**Ex - 210 kcfs**	**1.88**			**11441.94**		
	Alt 1 - 210 kcfs	1.50	-0.38	-0.20	11418.10	-23.84	0.00
	Alt 2 - 210 kcfs	1.53	-0.35	-0.19	11567.25	125.31	0.01
	Alt 3 - 210 kcfs	1.53	-0.35	-0.19	11578.98	137.05	0.01
	Ex - 120 kcfs	**1.28**			**4186.67**		
	Alt 1 - 120 kcfs	0.90	-0.39	-0.30	4045.86	-140.81	-0.03
	Alt 2 - 120 kcfs	0.91	-0.37	-0.29	4163.70	-22.97	-0.01
	Alt 3 - 120 kcfs	0.91	-0.37	-0.29	4165.65	-21.02	-0.01
Clarksville 2	**Ex - 210 kcfs**	**2.11**			**11200.49**		
	Alt 1 - 210 kcfs	2.17	0.06	0.03	11460.35	259.86	0.02
	Alt 2 - 210 kcfs	2.19	0.08	0.04	11616.97	416.48	0.04
	Alt 3 - 210 kcfs	2.19	0.09	0.04	11627.38	426.89	0.04
	Ex - 120 kcfs	**1.40**			**4149.65**		
	Alt 1 - 120 kcfs	1.38	-0.02	-0.02	4024.99	-124.66	-0.03
	Alt 2 - 120 kcfs	1.41	0.01	0.00	4142.02	-7.63	0.00
	Alt 3 - 120 kcfs	1.41	0.01	0.00	4143.94	-5.71	0.00
Clarksville 3	**Ex - 210 kcfs**	**1.74**			**12481.34**		
	Alt 1 - 210 kcfs	1.82	0.08	0.04	13046.01	564.67	0.05
	Alt 2 - 210 kcfs	1.83	0.09	0.05	13204.53	723.20	0.06
	Alt 3 - 210 kcfs	1.83	0.09	0.05	13214.15	732.81	0.06
	Ex - 120 kcfs	**1.00**			**4186.67**		
	Alt 1 - 120 kcfs	1.07	0.07	0.07	4523.21	336.54	0.08
	Alt 2 - 120 kcfs	1.10	-0.78	0.10	4658.28	471.62	0.11
	Alt 3 - 120 kcfs	1.10	-0.78	0.10	4660.00	473.34	0.11

The Carroll cross sections showed an increase in velocity along Alternatives 1 and 2. Alternative 3 showed a slight decrease in velocity. This may be attributed to the increase of Manning's regions in woody bundles on Alternative 3. This decrease is not significant enough to cause issue with sedimentation, and the woody bundles provide a greater habitat benefit to outweigh the effects of this decrease in velocity. The flow mimicked existing conditions, increasing only slightly along all cross sections.

Table 21. Alternative 3 – Maximum Habitat Benefit - Alternative Cross Sections - Carroll

Site	kcfs	Vel (ft/s)	+/- FT/S	% change	Flow (cfs)	+/- CFS	% change
Carroll 1	**Ex - 210 kcfs**	**2.64**			**60554.11**		
	Alt 1 - 210 kcfs	2.64	0.00	0.00	60544.95	-9.15	0.00
	Alt 2 - 210 kcfs	2.60	-0.04	-0.02	59591.54	-962.57	-0.02
	Alt 3 - 210 kcfs	2.60	-0.04	-0.02	59589.39	-964.71	-0.02
	Ex - 120 kcfs	**2.04**			**34465.01**		
	Alt 1 - 120 kcfs	2.05	0.00	0.00	34486.94	21.93	0.00
	Alt 2 - 120 kcfs	2.01	-0.03	-0.02	33889.88	-575.13	-0.02
	Alt 3 - 120 kcfs	2.01	-0.03	-0.02	33888.63	-576.38	-0.02
Carroll 2	**Ex - 210 kcfs**	**2.60**			**63339.10**		
	Alt 1 - 210 kcfs	2.60	0.00	0.00	63296.19	-42.91	0.00
	Alt 2 - 210 kcfs	2.54	-0.06	-0.02	62212.09	-1127.01	-0.02
	Alt 3 - 210 kcfs	2.54	-0.06	-0.02	62209.17	-1129.93	-0.02
	Ex - 120 kcfs	**1.87**			**34775.49**		
	Alt 1 - 120 kcfs	1.88	0.00	0.00	34797.66	22.17	0.00
	Alt 2 - 120 kcfs	1.84	-0.04	-0.02	34202.94	-572.55	-0.02
	Alt 3 - 120 kcfs	1.84	-0.04	-0.02	34201.67	-573.82	-0.02
Carroll 3	**Ex - 210 kcfs**	**1.49**			**8048.73**		
	Alt 1 - 210 kcfs	1.49	0.00	0.00	8225.87	177.14	0.02
	Alt 2 - 210 kcfs	1.44	-0.05	-0.04	7918.27	-130.45	-0.02
	Alt 3 - 210 kcfs	1.44	-0.05	-0.04	7918.95	-129.78	-0.02
	Ex - 120 kcfs	**0.91**			**3233.37**		
	Alt 1 - 120 kcfs	0.89	-0.02	-0.02	3289.91	56.54	0.02
	Alt 2 - 120 kcfs	0.86	-1.78	-0.05	3205.97	-27.40	-0.01
	Alt 3 - 120 kcfs	0.86	-1.78	-0.05	3206.15	-27.22	-0.01
Carroll 4	**Ex - 210 kcfs**	**2.39**			**71604.73**		
	Alt 1 - 210 kcfs	2.39	0.00	0.60	71773.18	168.45	7.92
	Alt 2 - 210 kcfs	2.36	-0.04	0.58	70377.33	-1227.41	7.74
	Alt 3 - 210 kcfs	2.36	-0.04	0.58	70375.06	-1229.68	7.74
	Ex - 120 kcfs	**1.72**			**38008.86**		
	Alt 1 - 120 kcfs	1.72	-0.01	0.89	38087.57	78.71	10.78
	Alt 2 - 120 kcfs	1.70	-0.02	0.87	37408.90	-599.96	10.57
	Alt 3 - 120 kcfs	1.70	-0.02	0.87	37407.82	-601.03	10.57

4. Proposed Design

4.1 Tentatively Selected Plan (TSP)

The TSP was determined to be Alternative 3 – Maximum Habitat Benefit. The PDT saw this alternative as the most beneficial habitat enhancements for the aquatic species inhabiting these side channels. All features were retained within this alternative and placed to produce the best hydraulic function.

Figure 30 and Figure 31 below show the existing terrains for Clarksville and Carroll Islands.

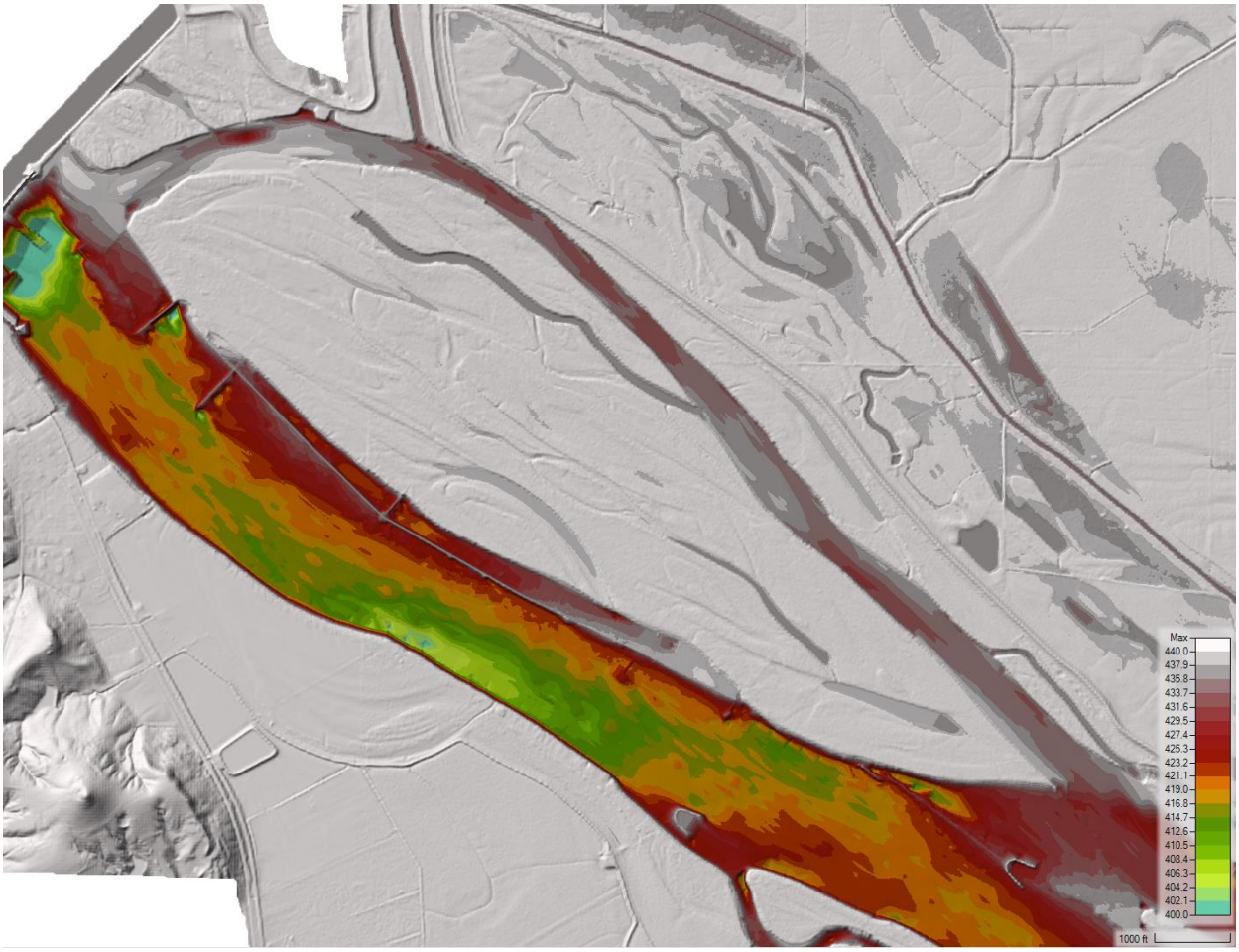


Figure 30. Clarksville Existing Terrain

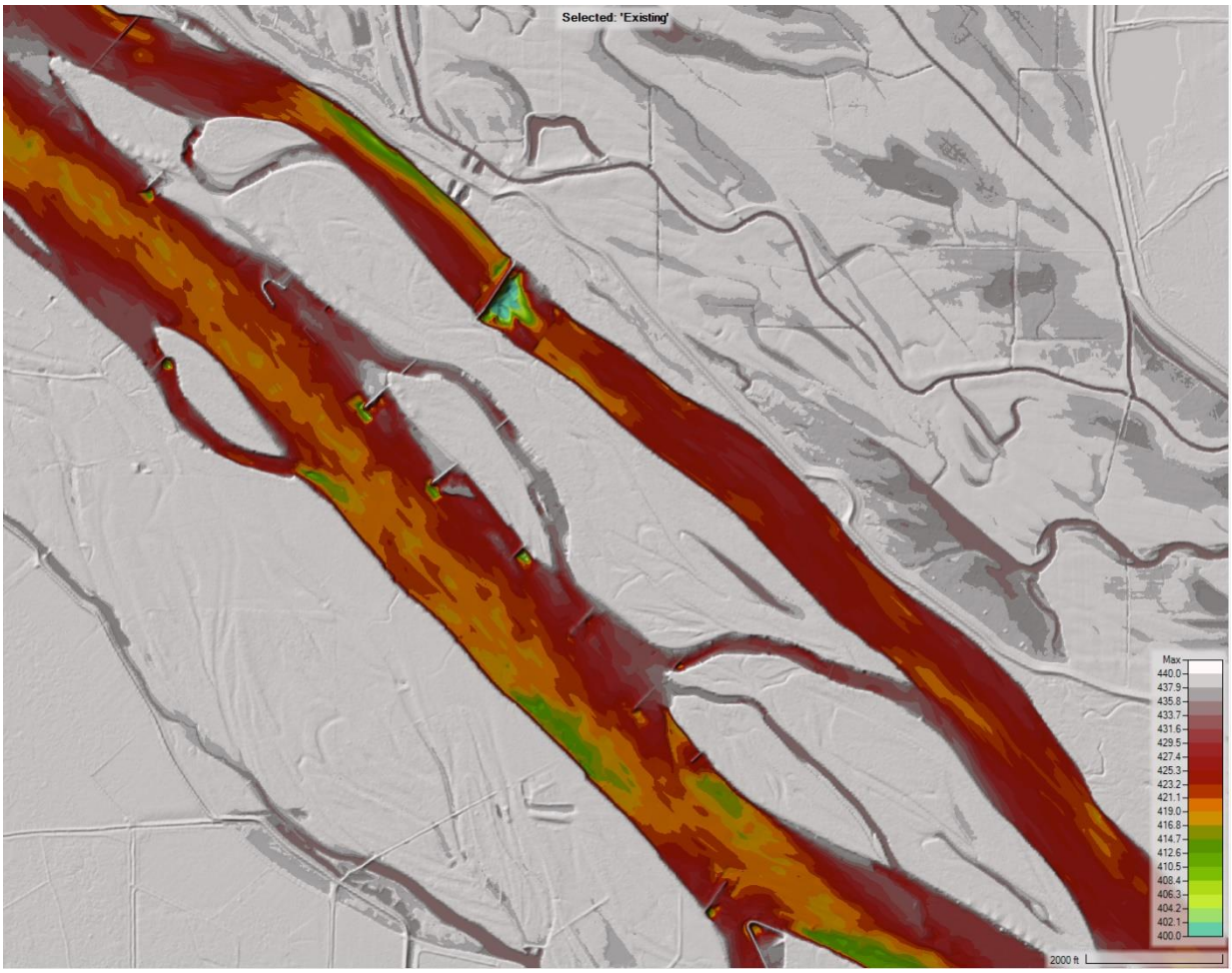


Figure 31. Carroll Existing Terrain

The TSP will include the features of dredging and excavation of pilot channels and connections, SCEDs, hard points, mussel riffles with rock-gravel substrate, and woody bundle nature-based features. All these features provided the best habitat benefits for the Clarksville and Carroll Islands.

Figure 32 and Figure 33 show the TSP terrains for Clarksville and Carroll Islands.

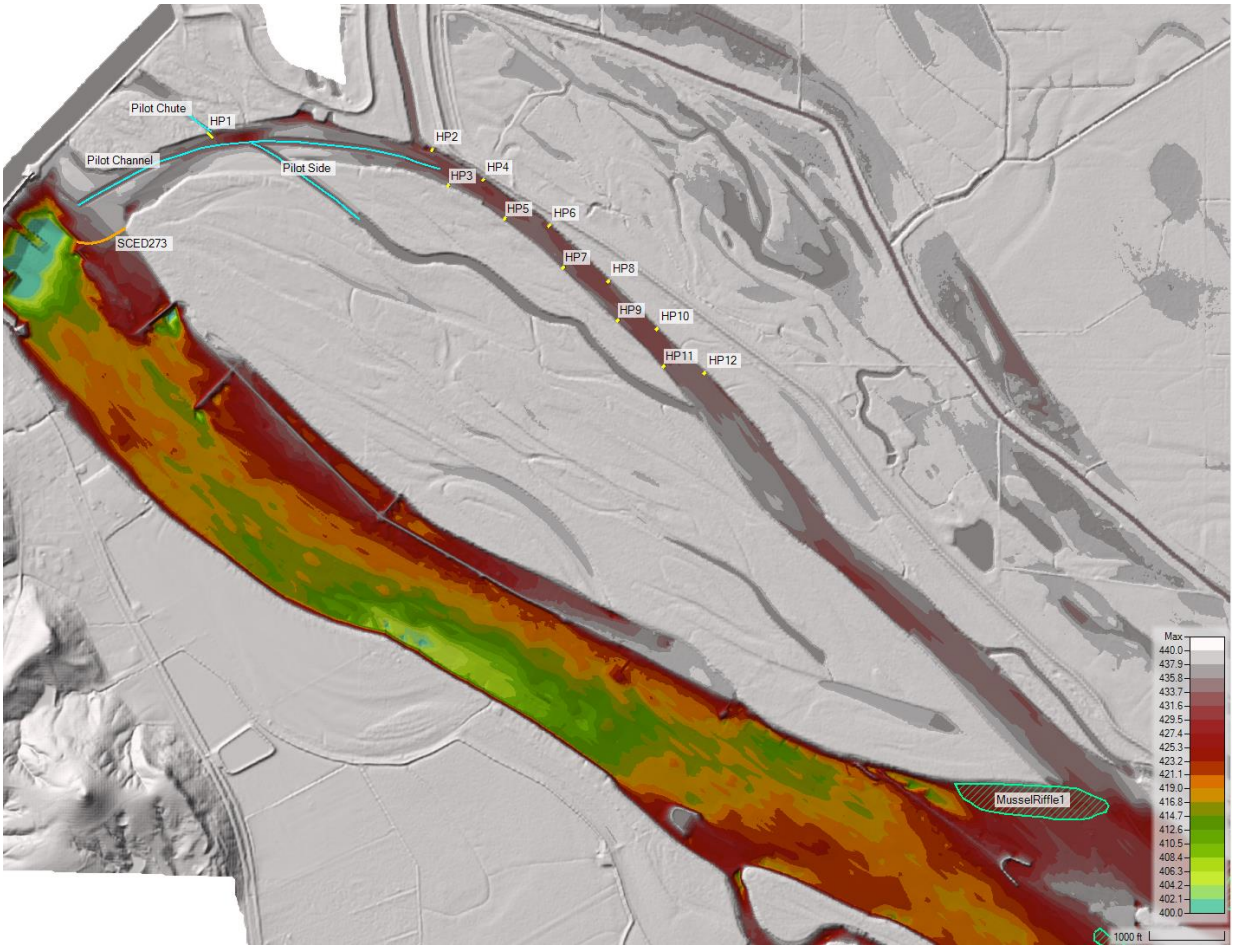


Figure 32 Clarksville TSP Terrain

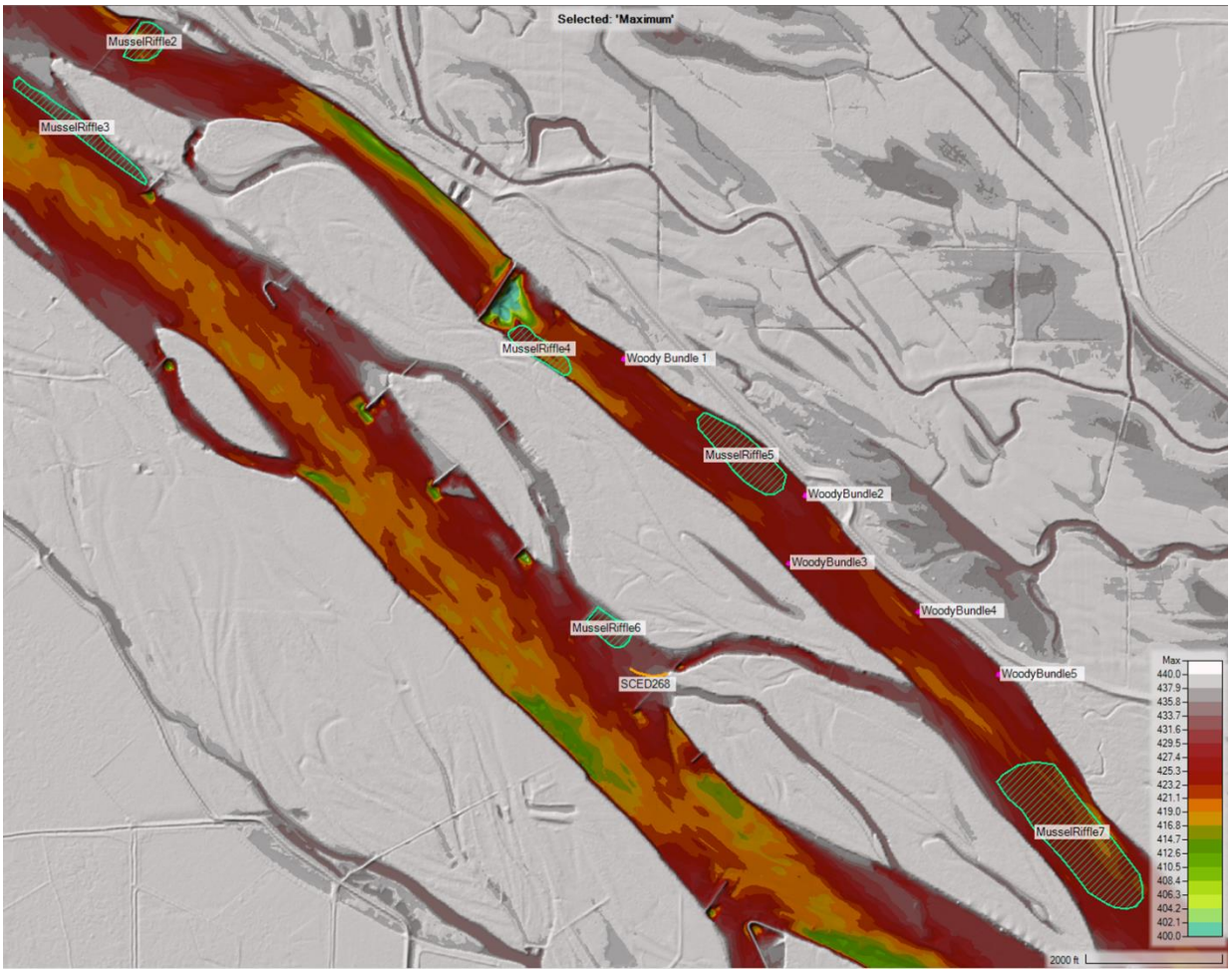


Figure 33. Carroll TSP Terrain

The final velocities were analyzed for various flows. The Average Median flow (120 kcfs) was used to analyze habitat features, the 50% AEP (210 kcfs) represents the OHWM, and the 5-year (269 kcfs) represents a higher flow, yet below the 1% AEP. Figure 34, Figure 35, Figure 36, Figure 37, Figure 38, and Figure 39 below show a comparison between the existing and the TSP project areas within the project bounds. Areas where mussel riffles were located produced a slightly lower velocity, which is deemed favorable by biologists. The pilot channels increased overall velocities in the side channel, which was favorable to transport sediment.

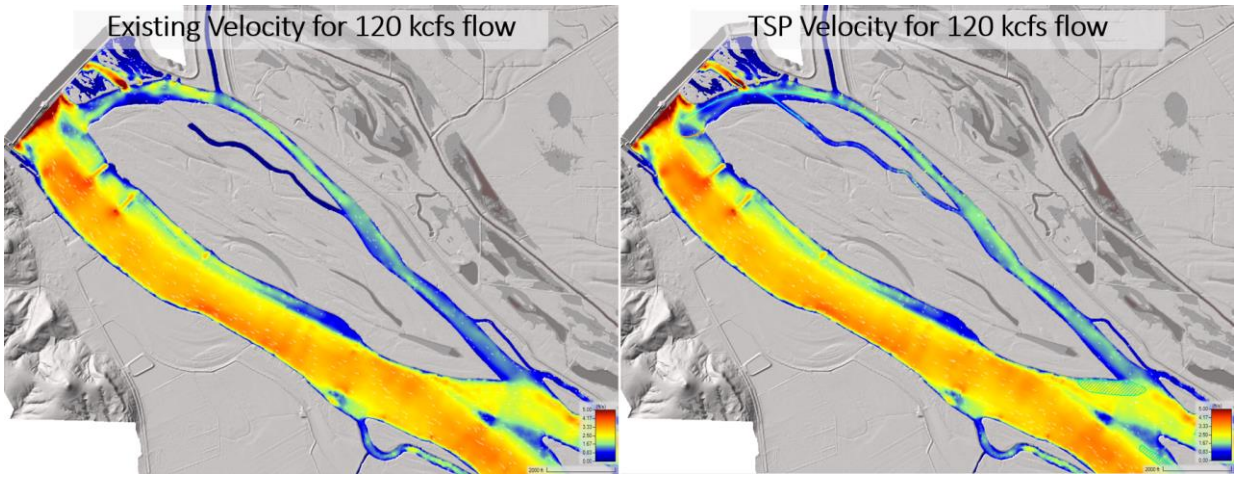


Figure 34. Clarksville Island Velocity Existing vs TSP 120 kcfs

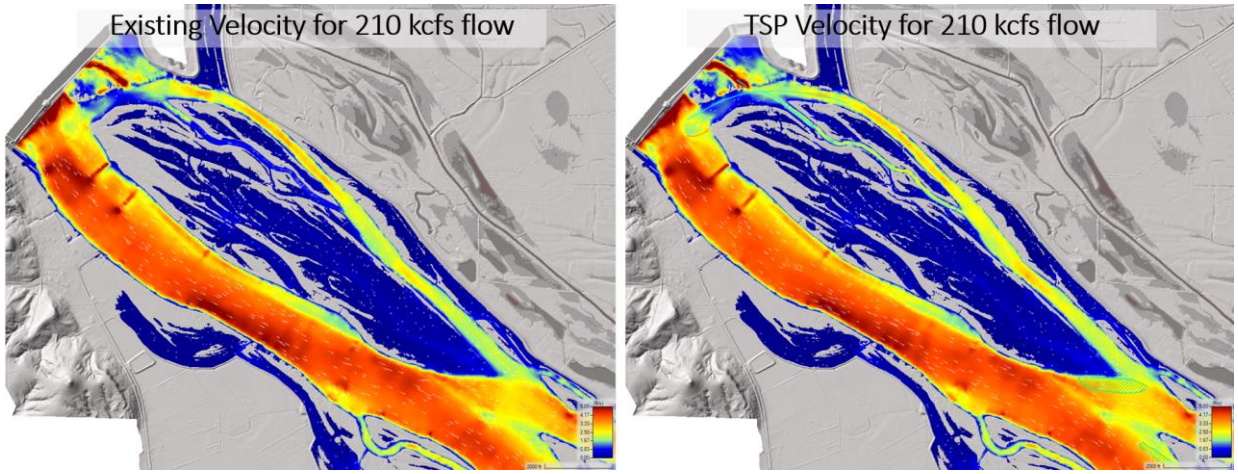


Figure 35. Clarksville Island Velocity Existing vs TSP 210 kcfs

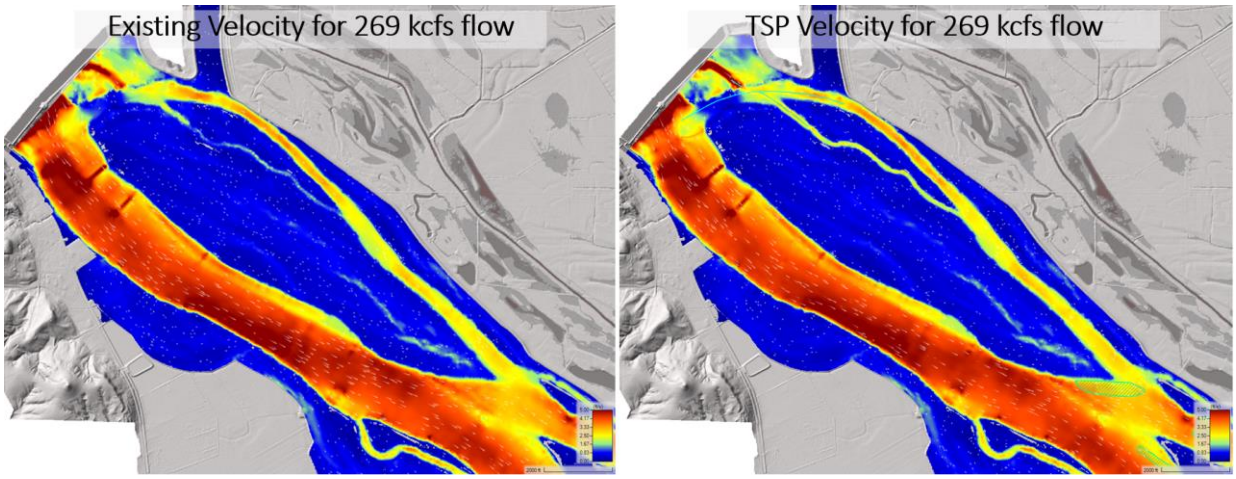


Figure 36. Clarksville Island Velocity Existing vs TSP 269 kcfs

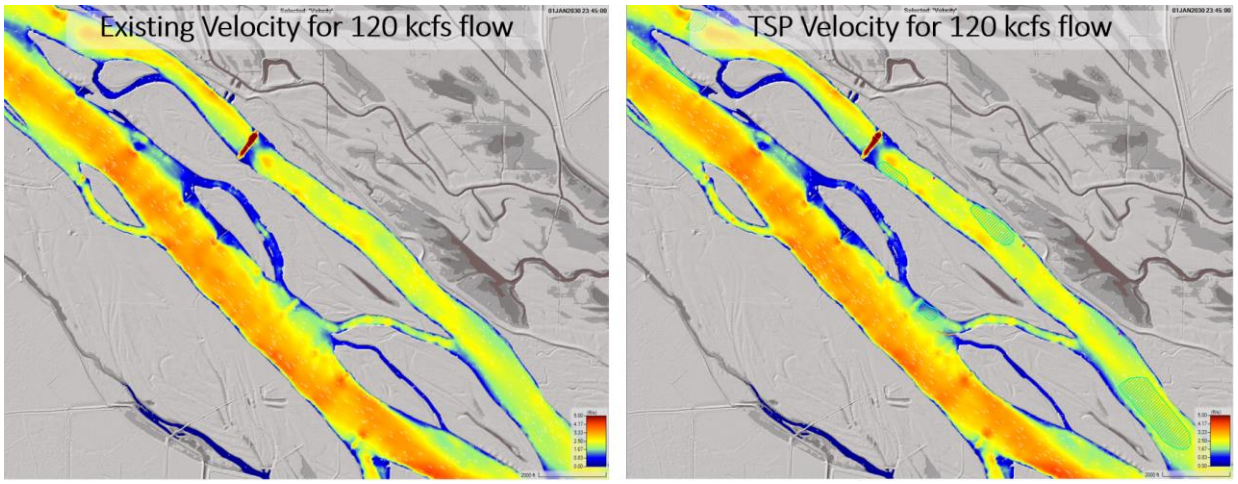


Figure 37. Carroll Island Velocity Existing vs TSP 120 kcfs

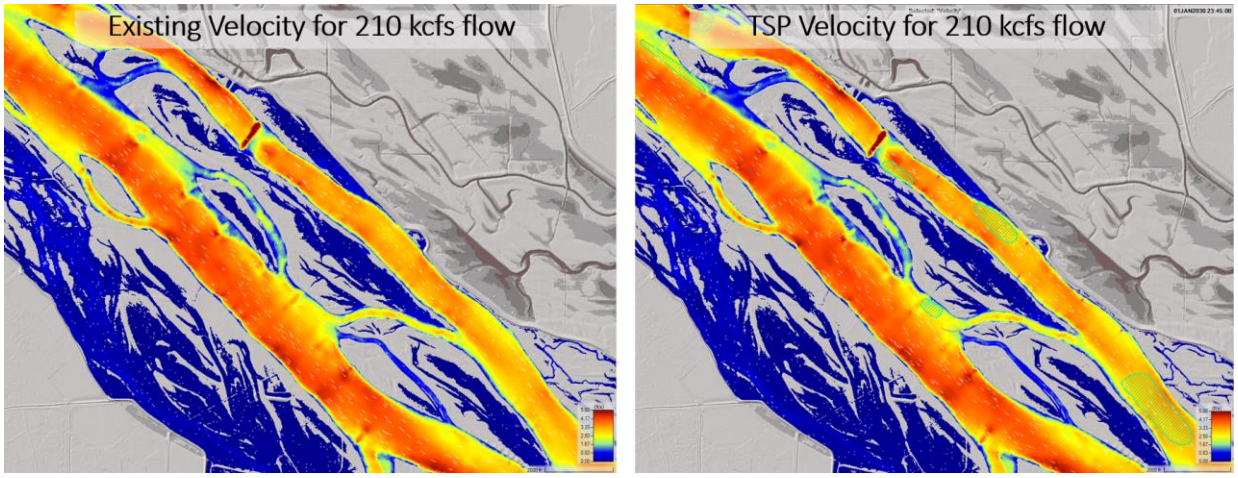


Figure 38. Carroll Island Velocity Existing vs TSP 210 kcfs

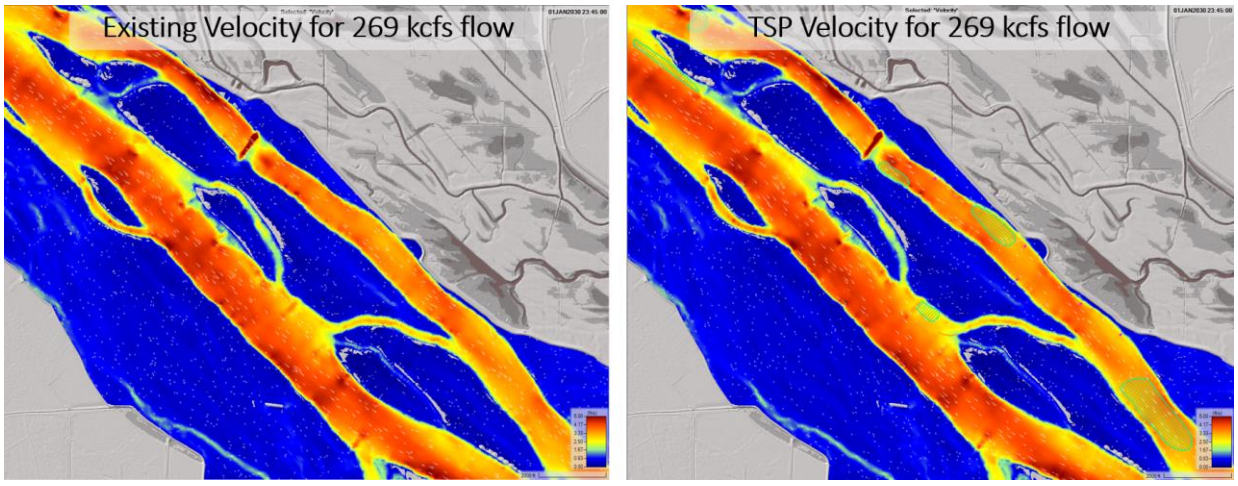


Figure 39. Carroll Island Velocity Existing vs TSP 269 kcfs

Although this model is not a mobile bed model, depths were analyzed. Figure 40, Figure 41, Figure 42, Figure 43, Figure 44, and Figure 45 below show a comparison between the existing and the TSP project areas within the project bounds. The lower flows showed adequate depths for mussel habitat.

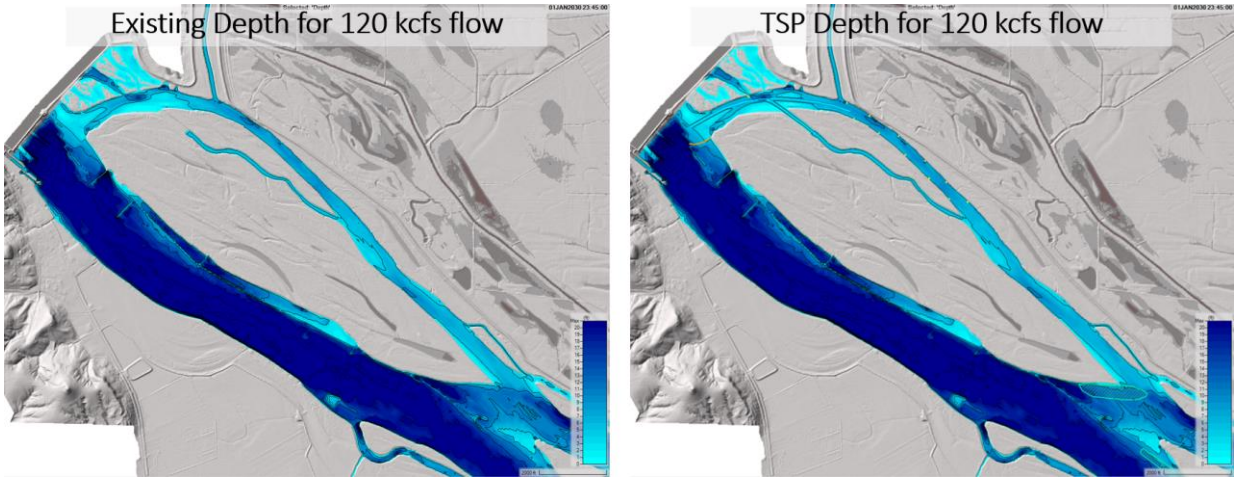


Figure 40. Clarksville Island Depth Existing vs TSP 120 kcfs

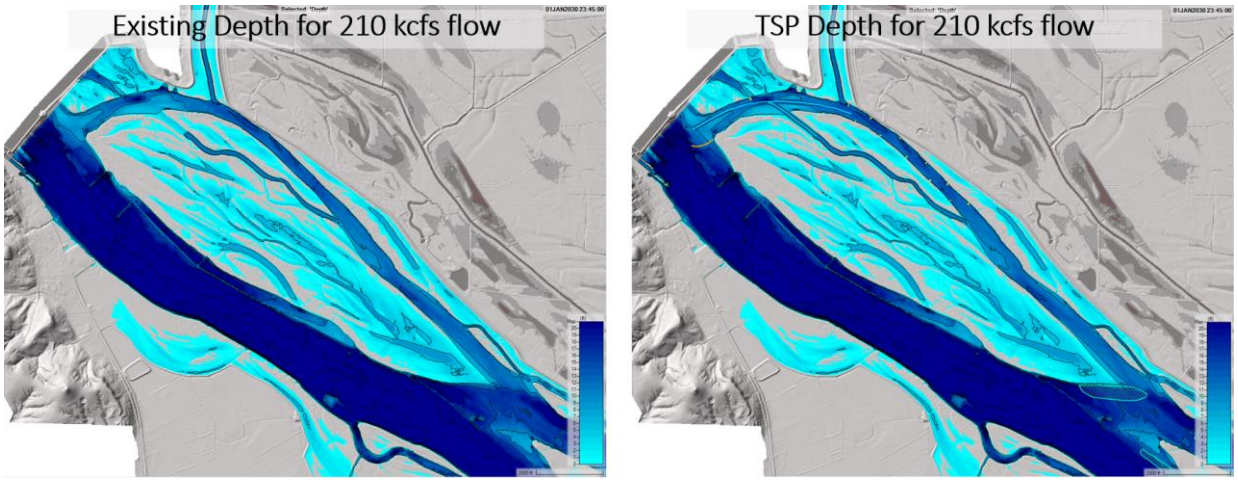


Figure 41. Clarksville Island Depth Existing vs TSP 210 kcfs

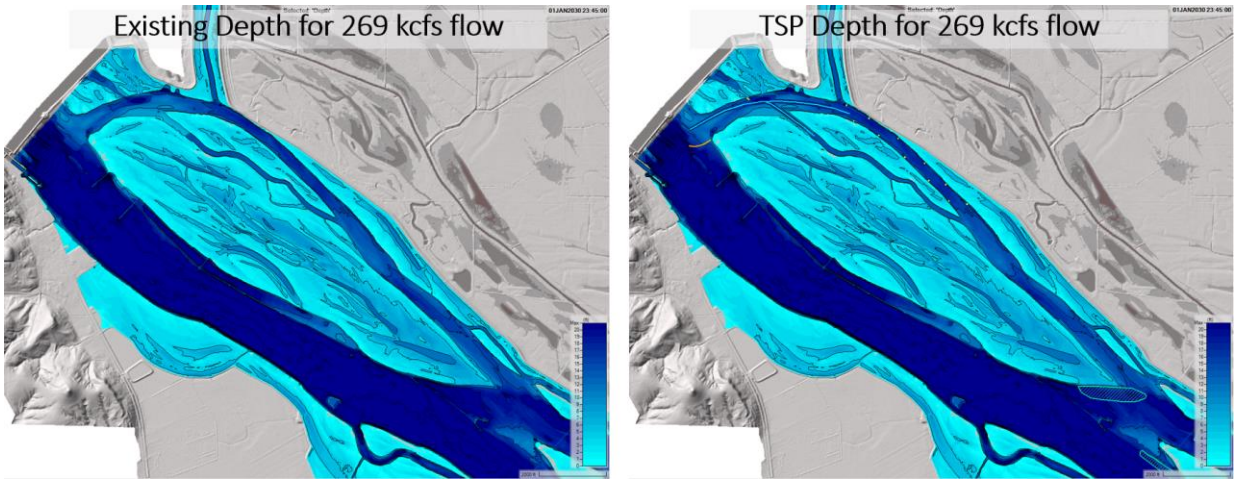


Figure 42. Clarksville Island Depth Existing vs TSP 269 kcfs

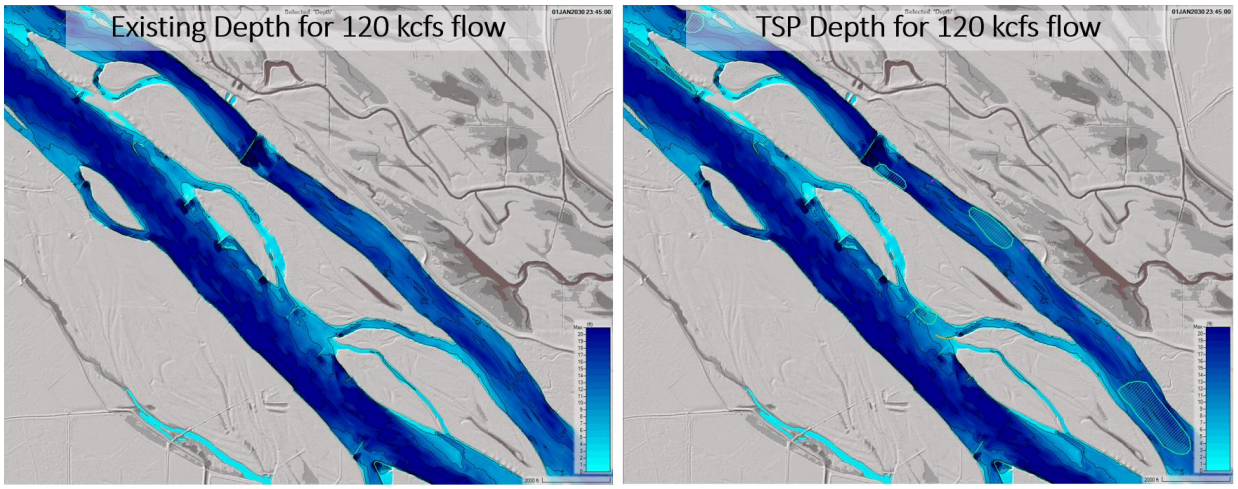


Figure 43. Carroll Island Depth Existing vs TSP 120 kcfs

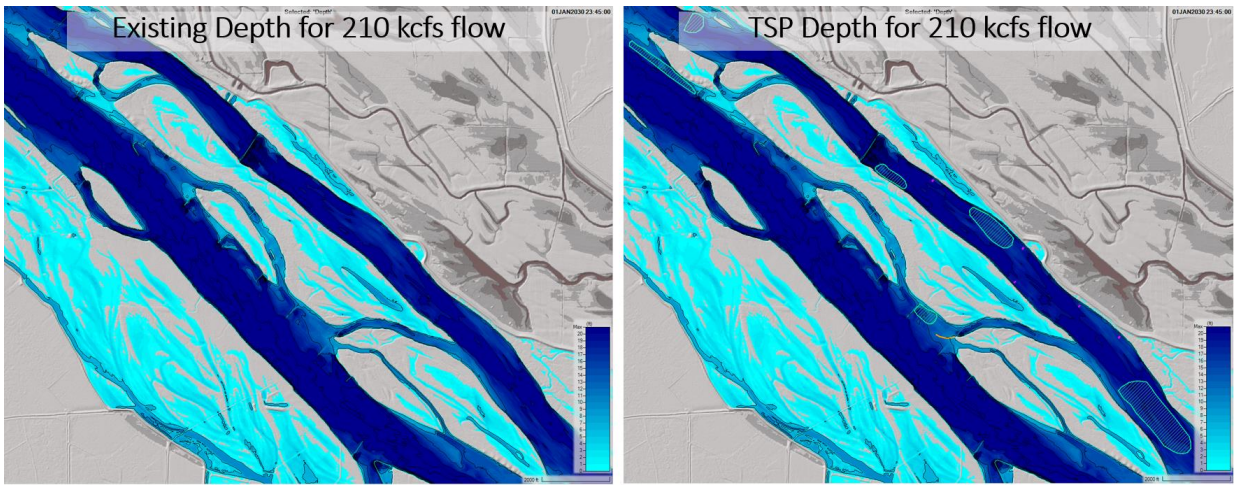


Figure 44. Carroll Island Depth Existing vs TSP 210 kcfs

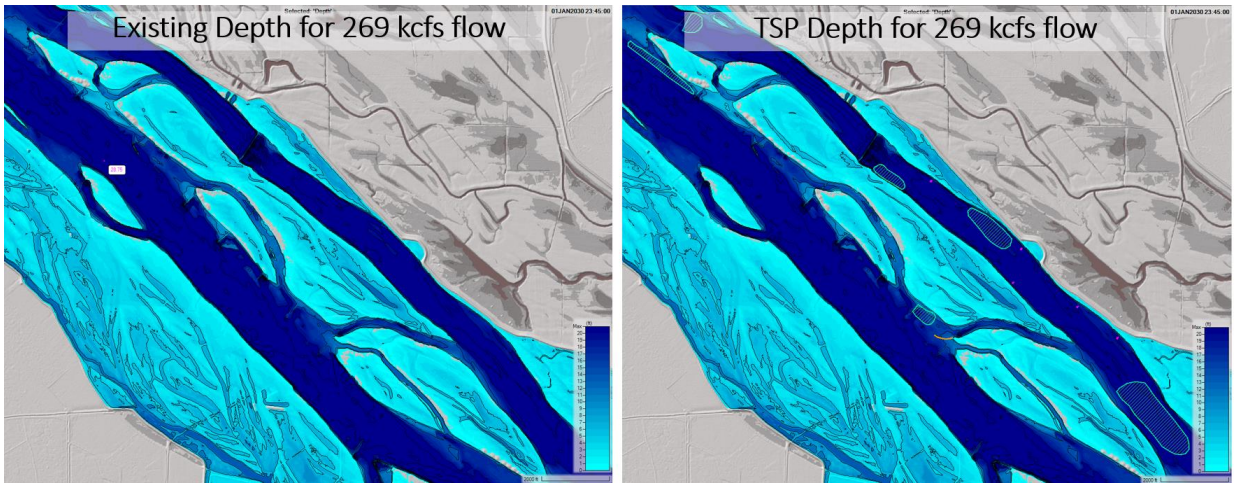


Figure 45. Carroll Island Depth Existing vs TSP 269 kcfs

4.2 No-Rise Analysis

For any project in the FEMA regulatory floodway, a 'no-rise' determination must be made to ensure adverse flooding along neighboring structures will not be impacted.

The criteria for no rise specify that an increase in water surface of 0.0049 feet or more would not be allowed. Using the criteria of 0.0049 feet, most water surface elevations for the cross sections were less than the maximum allowable rise. The cross sections used during calibration were used for the no rise comparison throughout the stretch. The 1% AEP event was used for this comparison. Further investigation of 'no rise' will be conducted in the design phase of this project.

Table 22. No Rise Analysis - 1% AEP

River Mile	**1% AEP WSE ft** Existing	**1% AEP WSE ft** TSP	**No Rise ft**
273.32	457.2038	457.1378	-0.0659
272.22	456.3245	456.3276	0.0030
270.98	455.6650	455.6703	**0.0054**
269.31	454.7680	454.7718	0.0039
267.22	453.6511	453.6539	0.0027
265.98	453.1068	453.1069	0.0001
263.75	452.2244	452.2244	0.0000
262.47	451.6691	451.6691	0.0000
260.68	450.6885	450.6885	0.0000
273.32	457.2038	457.1378	-0.0659

An additional comparison for the 2 year, 210 kcfs flow event was analyzed. Most water surface elevations for the cross sections were less than the maximum allowable rise .

Table 23. No Rise Analysis - OHWM

River Mile	**210 kcfs OHWM WSE ft** Existing	**210 kcfs OHWM WSE ft** TSP	**No Rise ft**
273.32	448.9673	448.6958	-0.2715
272.22	447.0653	447.0903	**0.0251**
270.98	446.6901	446.7013	**0.0111**
269.31	445.6451	445.6475	0.0025
267.22	444.7380	444.7402	0.0021
265.98	443.5737	443.5738	0.0001
263.75	442.6983	442.6984	0.0002
262.47	442.2776	442.2776	0.0000
260.68	441.5621	441.5621	0.0000
273.32	448.9673	448.6958	-0.2715

For the PIR-level analysis, most cross sections were less than the maximum allowable rise, so the 'no-rise' check was determined complete. However, further investigation and refinement will be completed in the design portion of this project.

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6.

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Clarksville and Carroll Islands

Appendix E - Economics

July 2025

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Section 1
Cost Effective and Incremental Cost Analyses

1.1 INTRODUCTION

For environmental planning, where traditional benefit-cost analysis is not possible because costs and benefits are expressed in different units, two analytical methods are used to assist Corps planners in the decision process. First, cost effectiveness (CE) analysis is conducted to ensure that the least cost solution is identified for each possible level of environmental output. Subsequent incremental cost analysis (ICA) of the cost-effective solutions is conducted to reveal changes in costs for increasing levels of environmental outputs. In the absence of a common measurement unit for comparing the non-monetary benefits with the monetary costs of environmental plans, cost effectiveness and incremental cost analysis are valuable tools to assist in decision making.

It is important to keep in mind that the most useful information developed by these two methods is what it tells decision makers about the relative relationships among solutions – that one will likely produce greater output than another, or one is likely to be more costly than another – rather than the specific numbers that are calculated. Furthermore, these analyses will usually not lead, and are not intended to lead, to a single best solution (as in economic cost-benefit analysis); however, they will improve the quality of decision making by ensuring that a rational, supportable approach is used in considering and selecting alternative methods to produce environmental outputs.

To perform the CE/ICA, use was made of the IWR Planning Suite Decision Support Software developed by the US Army Corps of Engineers Institute for Water Resources (IWR). IWR Planning Suite has been developed to assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are the best financial investments ("Best Buys"), and displaying the effects of each on a range of decision variables. The software is available via the IWR Planning Suite Internet. The latest version (2.0.9.35) has been certified for use by USACE Headquarters, meaning that it has been reviewed and certified by the appropriate Planning Center of Expertise (PCX) and represents a corporate approval that the model is sound and functional.

1.2 COST EFFECTIVE SOLUTIONS (CE)

In cost effectiveness analysis, it is necessary to filter out plans that produce the same output level as another plan, but cost more; or cost the same amount or more than another plan, but produce less output. This CE analysis was performed by the IWR planning model.

Table 1 displays the expected environmental outputs in terms of average annual habitat units along with the total first cost, interest during construction, and total average annual cost for each of the restoration alternatives and No Action plans. In this instance all of the alternatives are cost effective.

1.3 COST EFFECTIVE AND INCREMENTALLY JUSTIFIED (BEST BUY PLANS)

The final step in the analysis is to determine which subset of the cost-effective solutions is also incrementally justified. These solutions, also known as Best Buy Plans or Best Buy Alternatives, are those plans that provide increases in benefits at the lowest average cost (per habitat unit). The IWR Planning model was run to make the necessary calculations producing the results shown in Table 2. In this case, Alternative 3 Max is a Best Buy Plan. The No Action alternative is always, by default, a Best Buy Plan as well.

Included in Table 2 are the incremental costs per habitat unit for the Best Buy Plans. Incremental cost is calculated by dividing the difference between the solution's costs by the difference between the solution's outputs. Reviewing this table with the incremental cost information now allows the decision maker to make the following comparisons of alternative restoration plans and to progressively ask "Is it worth it?"

As noted previously, neither cost effectiveness analysis nor incremental cost analysis will tell the decision maker what choice to make. However, the information developed by both analyses will help the decision maker make a more-informed decision and, once a decision is made, better understand its consequences in relation to other choices. Figure 1 shows the full range of solutions and highlights the cost-effective solutions and the incrementally justified (Best Buy) solutions. Figure 2 shows the incremental cost and output for the Best Buy Plans.

Table 1. Summary of Outputs (AAHUs) and Costs

Name of Alternative	First Cost	Interest During Construction	Average Annual Construction	Average Annual O&M and MAM	Average Annual Cost	AAHUs	Cost Effective or Best Buy
No Action	$ -	$ -	$ -	$ -	$ -	-	
Min Alt 1	$ 6,881,000	$ 102,452	$ 271,415	$ 87,254	$ 358,669	249.00	Cost Effective
Int Alt 2	$ 9,713,000	$ 144,618	$ 383,121	$ 123,052	$ 506,174	464.00	Cost Effective
Max Alt 3	$ 9,767,000	$ 145,422	$ 385,251	$ 125,787	$ 511,038	497.00	**Best Buy**

Note: Costs are shown at the 2025 price level and were annualized using the current FY25 Federal discount rate of 3.0 percent over a 50-year period of analysis.

Table 2. Best Buy Plans and Incremental Costs (AAHUs)

Name of Alternative	AAHUs	First Cost	Interest During Construction	Average Annual Cost	Average Annual Cost per AAHU	Additional Average Annual Cost	Additional Output (AAHUs)	Incremental Cost (per AAHU)
No Action	-	$ -	$ -	$ -	$ -	$ -	-	$ -
Max Alt 3	497.00	$9,767,000	$145,422	$511,038	$1,028	$511,038	497.00	$1,028

Note: Costs are shown at the 2025 price level and were annualized using the current FY25 Federal discount rate of 3.0 percent over a 50-year period of analysis.

Figure 1. Full Range of Solutions

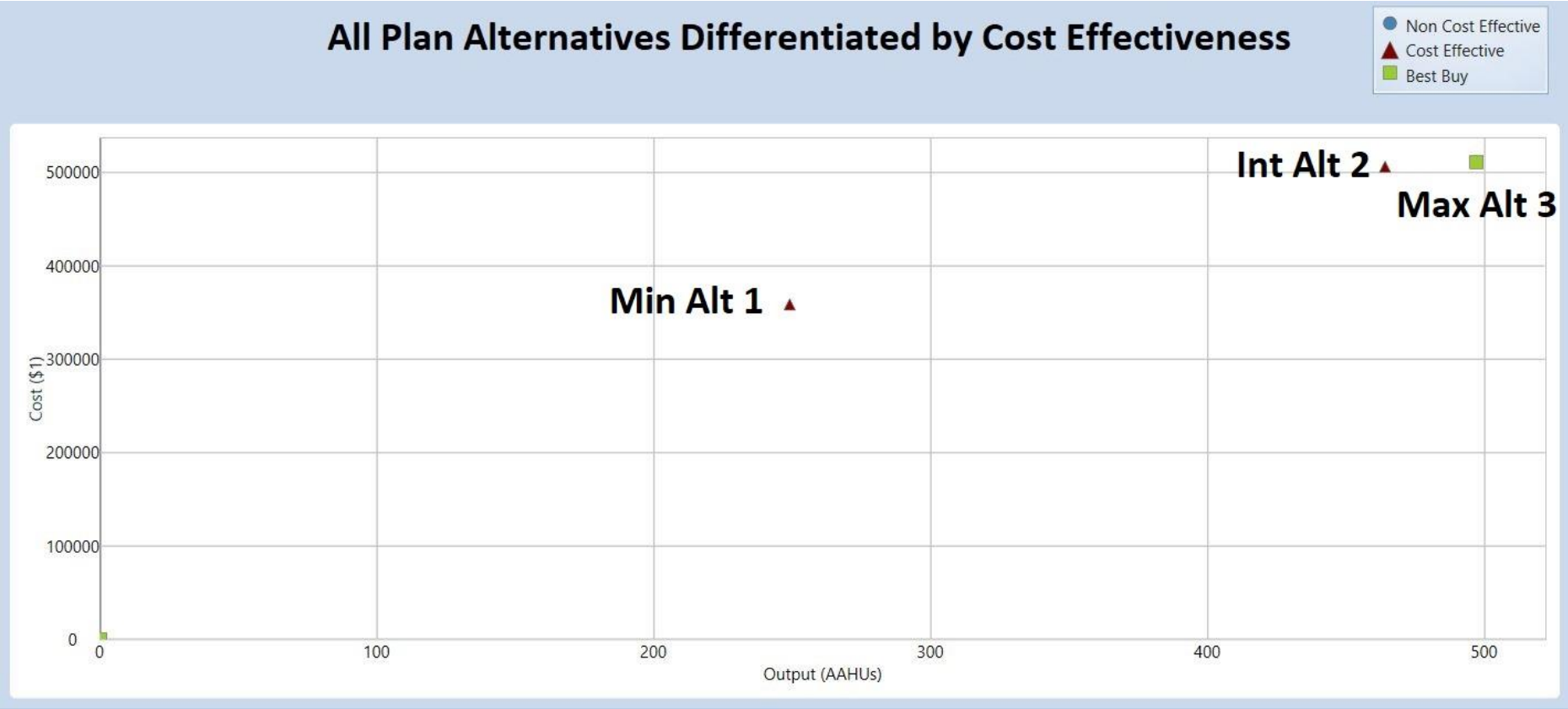


Figure 2. Incremental Cost of Best Buy Plans



Section 2
Regional Economic Development

2.1 RECONS MODEL

The U.S. Army Corps of Engineers (USACE) Institute for Water Resources, Louis Berger, and Michigan State University have developed a regional economic impact modeling tool, RECONS (Regional ECONomic System), that provides estimates of jobs and other economic measures such as labor income, value added, and sales that are supported by USACE programs, projects, and activities. This modeling tool automates calculations and generates estimates of jobs, labor income, value added, and sales through the use of IMPLAN®'s multipliers and ratios, customized impact areas for USACE project locations, and customized spending profiles for USACE projects, business lines, and work activities. RECONS allows the USACE to evaluate the regional economic impact and contribution associated with USACE expenditures, activities, and infrastructure.

2.2 RESULTS

Table 3. Local, State, and National Impacts: Minimum Alt 1

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		$4,283,090	39.7	$2,518,934	$2,467,824
Secondary Impact		$1,047,952	7.4	$185,118	$546,534
Total Impact	$4,283,090	$5,331,042	47.1	$2,704,052	$3,014,358
State					
Direct Impact		$5,658,896	51.2	$4,301,907	$3,394,417
Secondary Impact		$6,982,406	33.7	$2,381,082	$4,134,378
Total Impact	$5,658,896	$12,641,302	84.9	$6,682,988	$7,528,795
US					
Direct Impact		$6,833,564	71.5	$5,500,281	$4,354,021
Secondary Impact		$14,079,595	62.6	$4,426,941	$7,641,183
Total Impact	$6,833,564	$20,913,159	134.1	$9,927,221	$11,995,204

* Jobs are presented in full-time equivalence (FTE)

Table 4. Local, State, and National Impacts: Intermediate Alt 2

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		$6,045,874	56.1	$3,555,646	$3,483,502
Secondary Impact		$1,479,256	10.4	$261,307	$771,469
Total Impact	$6,045,874	$7,525,129	66.5	$3,816,953	$4,254,971
State					
Direct Impact		$7,987,917	72.3	$6,072,434	$4,791,450

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Secondary Impact		$9,856,141	47.5	$3,361,059	$5,835,957
Total Impact	$7,987,917	$17,844,058	119.8	$9,433,493	$10,627,407
US					
Direct Impact		$9,646,041	100.9	$7,764,021	$6,145,997
Secondary Impact		$19,874,307	88.3	$6,248,928	$10,786,050
Total Impact	$9,646,041	$29,520,348	189.2	$14,012,949	$16,932,047

* Jobs are presented in full-time equivalence (FTE)

Table 5. Local, State, and National Impacts: Maximum Alt 3

Area	Local Capture	Output	Jobs*	Labor Income	Value Added
Local					
Direct Impact		$6,079,486	56.4	$3,575,414	$3,502,869
Secondary Impact		$1,487,480	10.5	$262,760	$775,758
Total Impact	$6,079,486	$7,566,966	66.9	$3,838,174	$4,278,627
State					
Direct Impact		$8,032,326	72.7	$6,106,194	$4,818,089
Secondary Impact		$9,910,937	47.8	$3,379,745	$5,868,402
Total Impact	$8,032,326	$17,943,263	120.5	$9,485,939	$10,686,491
US					
Direct Impact		$9,699,669	101.5	$7,807,185	$6,180,166
Secondary Impact		$19,984,800	88.8	$6,283,670	$10,846,016
Total Impact	$9,699,669	$29,684,468	190.3	$14,090,855	$17,026,181

* Jobs are presented in full-time equivalence (FTE)

US Army Corps of Engineers
St. Louis District®

Environmental Quality Section
1222 Spruce Street
St Louis, Missouri 63103

ENVIRONMENTAL SITE ASSESSMENT REPORT: CLARKSVILLE AND CARROLL ISLANDS NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM PROJECT IMPLEMENTATION

PREPARED FOR:

The U.S. Army Corps of Engineers
St. Louis District
1222 Spruce Steet
St. Louis, Missouri 63103

December 10, 2024

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1.0 ABBREVIATIONS

ABV	Description
AST	Above Ground Storage Tank
ATSM	American Society for Testing and Materials
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
DOD	Department of Defense
EDR	Environmental Data Resources
EMF	Electromotive force
ES	Enforcement Standard
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FRDS	Federal Reporting Data System
HTRW	Hazardous Toxic Radioactive Waste
IEMA	Illinois Emergency Management Agency
LLC	Limited Liability Company
MDL	Method Detection Limit
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NWI	National Wetlands Inventory
PAL	Preventative Action Limit
PCB	Polychlorinated Biphenyl
PQL	Practical Quantitation Limit
RCL	Residual Contaminant Levels
REC	Recognized Environmental Condition
SEMS	Superfund Enterprise Management System
SSURGO	Soil Survey Geographic Database
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank

2.0 ACKNOWLEDGEMENTS AND QUALIFICATIONS

Project Name:	Clarksville and Carroll Islands Navigation and Ecosystem Sustainability Program Project Implementation
Site Information:	Mississippi River Miles 266 - 273
County:	Calhoun County
Latitude, Longitude:	39.342629°, -90.833312°

Site Assessor: _____

Kaleb Rakers
Environmental Specialist

Environmental Professional Qualification:

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312.10.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

_____

Kevin P Slattery
Senior Reviewer
Supervisory Environmental Specialist

3.0 EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers regulations (ER-1165-2-132, ER 200-2-3) and Division policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in reconnaissance, feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting a Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting Phase I ESA's published by the American Society for Testing and Materials (ASTM).

The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. Recognized Environmental Conditions, RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW to the extent practicable or until hazard risks and potential liability are mitigated.

A Phase I ESA has been conducted for the Clarksville-Carroll Islands Navigation and Ecosystem Sustainability Program (NESP) project using methods outlined by ASTM 1527-13. This included a records review, physical site visit, and communications with persons knowledgeable of the project footprint and adjoining properties. Generally, the project area contains no major sites of interest, which pose significant HTRW concerns. The environmental impact for the migration of off-site contaminants onto the project property is negligible. Therefore, no special considerations are being recommended for the project to proceed to construction. It is however recommended that a Site Health and Safety Plan, and a Quality Control Plan are submitted by the awarded contractor, discussed internally by USACE personnel, and implemented to prevent environmental hazards from being developed during construction. CEMVS EC-EQ should be contacted immediately if future development of the property discovers hazardous or toxic materials.

4.0 INTRODUCTION

4.1 **Background**

The purpose of this Environmental Site Assessment (ESA) was to evaluate the current and historical conditions of the subject property in an effort to identify Recognized Environmental Conditions (RECs) in connection with the subject property and surrounding operations. Recognized Environmental Conditions are defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not recognized environmental conditions.

4.2 **Scope of Work**

A Phase I ESA was conducted at the subject property in accordance with ASTM Standards Practice E 1527-13, 1903-44, and further defined below:

- USACE has engaged with individuals having institutional knowledge of the subject properties to discuss environmental conditions. Documented conversations and questionnaires are available in Supplementary Materials A.

- USACE has physically inspected the subject property via walking survey, looking for signs of recognized environmental conditions such as stressed vegetation, soil staining, dumping, and evidence of aboveground and underground storage tanks. Photo documentation for the site visit is available in Supplementary Materials B.

- USACE has gathered and reviewed available Federal, State, and tribal environmental records. Standard environmental records reviewed included Federal NPL; Federal and State CERCLIS; Federal and State institutional controls/engineering controls registries; Federal ERNS list; State and tribal landfill and/or disposal site lists; State and tribal leaking storage tank lists; State and tribal registered storage tank lists; State and tribal voluntary cleanup sites; and State Brownfield sites. Details from the standard environmental records review are available in Supplementary Materials C.

- USACE has physically observed adjoining properties, paying particular attention to evidence of aboveground and underground storage tanks, questionable housekeeping practices, or unusual business practices.

4.3 **Limitations**

The observations, measurements, and research reported herein are considered sufficient in detail and scope to form a reasonable basis for a limited Phase I ESA of the subject property (ASTM 1527-13). The assessment, conclusions, and recommendations presented herein are based upon the subjective evaluation of limited data. The data may not represent all conditions at the subject site, as they reflect the information gathered from specific locations. The limitations of this assessment should be recognized as the client formulates conclusions on the environmental risks associated with these properties.

5.0 GENERAL PROJECT AND SITE INFORMATION

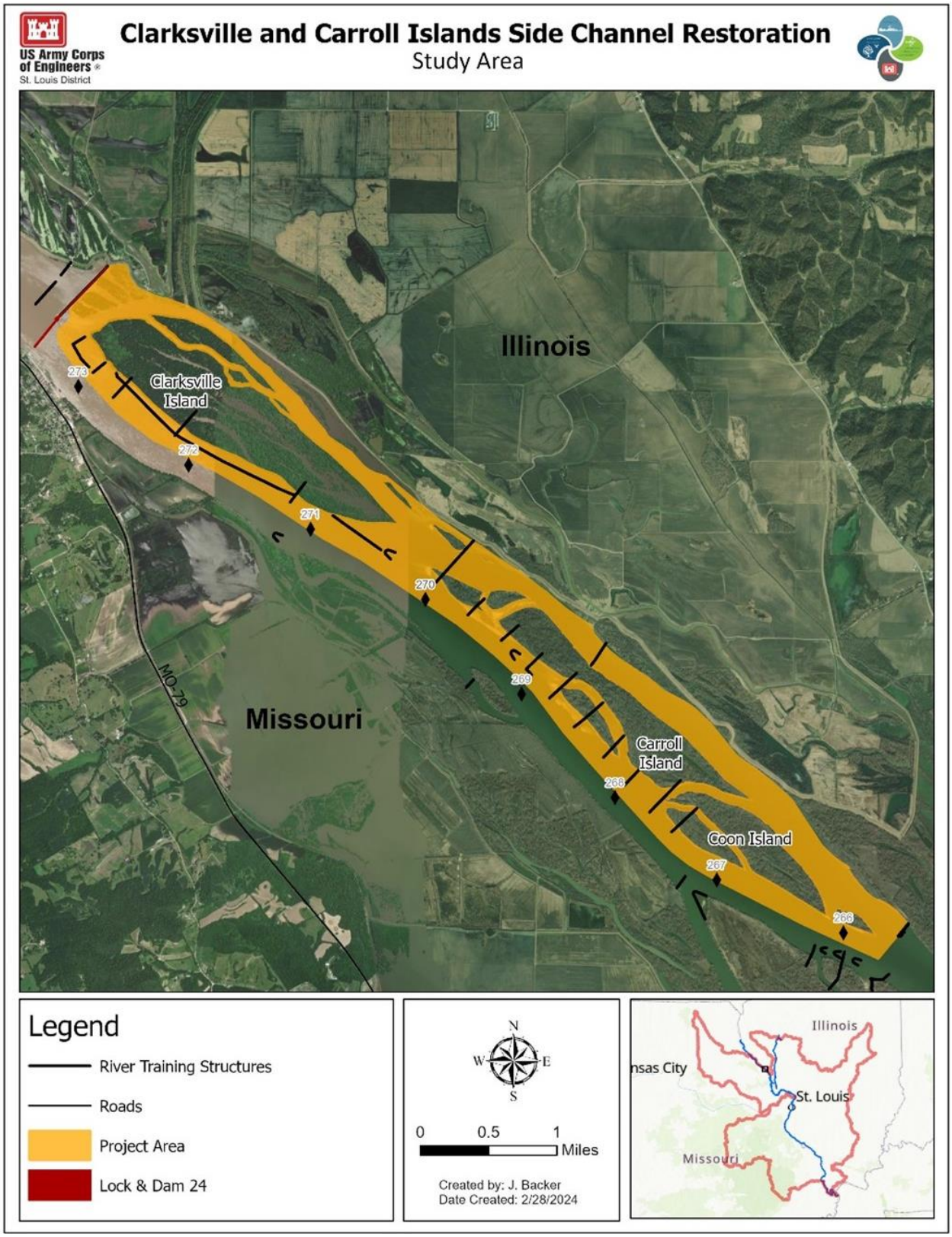


Figure 1: Project Map.

5.1 **Project Description**

The project is located on the left descending bank of the Mississippi River, immediately downstream of Lock and Dam 24, near Clarksville, Missouri in Calhoun County, Illinois. The proposed project lies in the upper portion of Pool 25 between river miles 273 and 266. Project features will be located fully below the ordinary high-water mark. The approximately 950-acre area consists of side channels and connected backwaters in the vicinity of Clarksville, Carroll, and Coon Islands. The project objective is to increase depth and flow diversity of aquatic side channels throughout the project area.

5.2 **Physical Site Description**

The proposed project features will largely occur in the side channel created between the Illinois bank and Clarksville, Carroll, and Coon Islands, with some proposed features planned on the main channel side of each island. All of these islands are heavily forested with a various inlets and small channels cutting through each island.

5.3 **Historical and Current Land Use**

All of the islands are heavily forested with a few hunting cabins and temporary camps set up during various hunting seasons. The area is largely used for duck hunting with numerous duck blinds throughout the project area. Aerial imagery dating back to 1940 show a majority of the island areas to be forested with a few areas cleared and possibly being used for farming. These cleared areas do not show on aerial imagery from 1956 with the islands being completely forested.

5.4 **Adjoining Property Use**

The main channel of the Mississippi River boarders the project area to the south and the west with the city of Clarksville, Missouri across the main channel from the northern extent of the project. Directly north of the project area is Lock and Dam 24 with the emergency spillway as the northern boundary. The Illinois bank of the Mississippi River boarders the project area to the east. The Sny Levee district has two pump stations on the Illinois bank with one located in the northern portion of the project and the second near Carroll Island. The levee on the Illinois bank largely separates the project area from forested and farmed area in Illinois.

6.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT DUE DILIGENCE

6.1 **Interview(s) with Past and Present Owners, Operators, and Occupants**

The content of the questions asked followed the format of ASTM 2247-16. Relevant information discovered during the interview is summarized in Supplementary Materials A. A questionnaire was sent to the United States Fish and Wildlife Service (USFWS) since they have owned and managed Clarksville Island for 11 years. The questionnaire was completed by Charlie Deutsch who has served as the refuge manager for 4 years.

6.2 **Interview(s) with State and/or Local Government Officials**

The United States Coast Guard was contacted for an interview with emergency response officials, but no response was received. The National Response Center database was reviewed for any emergency responses that would have occurred by the Coast Guard in the site area.

6.3 **Site Reconnaissance**

On November 3, 2023, Environmental Specialist Kaleb Rakers of CEMVS-EC-EQ and other members of the study team performed a site visit for the Clarksville and Carroll Islands NESP project. Members of USFWS who are knowledgeable about the site area were also present for this site visit. On February 8, 2024, Environmental Specialists Kaleb Rakers and Travis Schepker of CEMVS-EC-EQ performed a more extensive site visit for the Clarksville and Carroll Islands NESP project. All accessible areas of the project were covered during this site visit. Photo documentation for the site visit can be reviewed in the table of referenced figures (pg. 14).

6.4 **Records Review**

Table 1 provides a full list of records reviewed by the Environmental Professional for this assessment. These records assist in meeting the requirements of EPA's Standards and Practices for All Appropriate Inquiry (AAI; 40 CFR Part 312), and the ASTM Standard Practice for Environmental Site Assessments (ASTM E1527-13). In addition, the physical setting was assessed for the project area by reviewing topographic maps to identify conditions in which hazardous substances or petroleum products could migrate. Additional details can be reviewed in Supplemental Materials B.

Table 1: Government Records Reviewed

Standard Environmental Record Resources Provided by EDR Lightbox	**Search Distance miles (kilometers)**
Federal NPL (Superfund) sites	1.0 (1.6)
Federal Delisted NPL sites	0.5 (0.8)
Federal sites subject to CERCLA removals and CERCLA orders	0.5 (0.8)
Federal CERCLA sites with NFRAP	0.5 (0.8)
Federal RCRA facilities undergoing Corrective Action	1.0 (1.6)
Federal RCRA TSD facilities	0.5 (0.8)
Federal RCRA generators	Target property and adjoining properties
Federal institutional control/engineering control registries	Target Property Only
Federal ERNS list	Target Property Only
State and tribal "Superfund" equivalent sites	1.0 (1.6)
State and tribal hazardous waste facilities	0.5 (0.8)
State and tribal landfills and solid waste disposal facilities	0.5 (0.8)
State and tribal leaking storage tanks	0.5 (0.8)
State and tribal registered storage tanks	Target property and adjoining properties
State and tribal institutional control/engineering control registries	Target Property Only

State and tribal voluntary cleanup sites	0.5 (0.8)
State and tribal brownfield sites	0.5 (0.8)

7.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

A Records review, site reconnaissance, and interviews with knowledgeable persons identified no RECs near or within the Clarksville and Carroll Islands NESP project footprint. Finding of this effort are summarized below:

Generally, the project area contains no major sites of interest, which pose significant environmental concerns. The environmental impact for the migration of off-site contaminants onto the project property is negligible. Therefore, a Phase II Environmental Site Assessment is not being recommended currently. A Site Health and Safety Plan, and a Quality Control Plan should be required, discussed, and implemented to prevent environmental hazards from being developed during construction. CEMVS-EC-EQ should be contacted immediately if future development of the property indicates the presence of hazardous or toxic materials.

8.0 OPINION OF THE ENVIRONMENTAL PROFESIONAL

Based on the data and resources available for this assessment, it is the Environmental Professional's opinion that the Project Area contains no major sites of interest that would impact the project's design, cost, or schedule. The environmental impact for the migration of off-site contaminants onto the Project Area is negligible, a Phase II ESA is not recommended at this time.

The CEMVS-EC-EQ should be contacted with any known or suspected variations from the conditions described herein. If future development of the properties indicates the presence of hazardous or toxic materials, CEMVS-EC-EQ should be notified.

9.0 DEVIATIONS

There were no interviews conducted with emergency response officials for this site area, this is considered a deviation from the ASTM method used for this Phase I. A review of emergency response records was used to supplement the missing interviews.

10.0 LIMITATIONS AND EXCEPTIONS

U.S. Army Corps of Engineers, Environmental Quality and HTRW Section, Environmental and Munitions Branch (CEMVS-EC-EQ) should be contacted with any known or suspected variations from the conditions described herein. If future development of the property indicates the presence of hazardous or toxic materials, USACE should be notified to perform a re-evaluation of the environmental conditions.

The scope of this assessment did not include any additional environmental investigation, not outlined herein, or analyses for the presence or absence of hazardous or toxic materials in the soil, ground water, surface water, or air, in, on, under, or above the subject tract.

This site assessment was performed in accordance with generally accepted practices of consultants undertaking similar studies at the same time and in the same geographical area, and USACE observed that degree of care and skill generally exercised by consultants under similar circumstances and conditions. The findings and conclusions stated herein must be considered not as scientific certainties, but rather as professional opinions concerning the significance of the limited data gathered during the course of the environmental site assessment. No other warranty, expressed or implied, is made.

Specifically, USACE does not and cannot represent that the site contains no hazardous waste or material, oil (including petroleum products), or other latent condition beyond that observed by USACE during its site assessment.

The observations described in this report were made under the conditions stated herein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedure beyond the scope of described services or the time and budgetary constraints imposed by the client. Furthermore, such conclusions are based solely on site conditions and rules and regulations, which were in effect at the time of the study.

In preparing this report, USACE relied on certain information provided by State and local officials and other parties referenced herein, and on information contained in the files of State and/or local agencies available to USACE at the time of the site assessment. Although there may have been some degree of overlap in the information provided by these various sources, an attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment was not made.

Observations were made of the site and of structures on the site as indicated within the report. Where access to portions of the site or to structures on the site was unavailable or limited, USACE renders no opinion as to the presence of indirect evidence relating to hazardous waste, material, oil, or other petroleum products in that portion of the site or structure. In addition, USACE renders no opinion as to the presence of hazardous waste or material, oil, or other petroleum products or to the presence of indirect evidence relating to hazardous material, oil, or petroleum products where direct observation of the interior walls, floor, roof, or ceiling of a structure on a site was obstructed by objects or coverings on or over these surfaces.

Unless otherwise specified in the report, USACE did not perform testing or analyses to determine the presence or concentration of asbestos, radon, formaldehyde, lead-based paint, lead in drinking water, electromagnetic fields (EMFs), or polychlorinated biphenyls (PCBs) at the site or in the environment at the site.

The purpose of this report is to assess the physical characteristics of the subject site with respect to the presence of hazardous waste, material, oil, or petroleum products in the environment. Except as otherwise described in this report, no specific attempt was made to check on the compliance of present or past owners or operators of the site with Federal, State, or local laws and regulations, environmental or otherwise.

Personnel from CEMVS-EC-EQ have specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property and declare that, to the best of their professional knowledge and belief, meet the definitions of Environmental Professionals as defined under 40 CFR 312.

11.0 REFERENCES

ASTM, 2021. 1527-21 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

ASTM, 2021. E2247-16 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property.

USACE, 1992. ER 1165-2-132 Hazardous Toxic and Radioactive Waste Guidance for Civil Works Projects, Washington DC: Department of the Army.

USACE, 2010. ER 200-2-3 *Environmental Compliance Policies*, Washington D. C.: Department of the Army.

USEPA, 2005. 40 CFR 312: Innocent Landowners, Standards for Conducting All Appropriate Inquiries. *Code of Federal Regulations.*

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Figure 2: Side channel near the southern portion of Carroll Island.

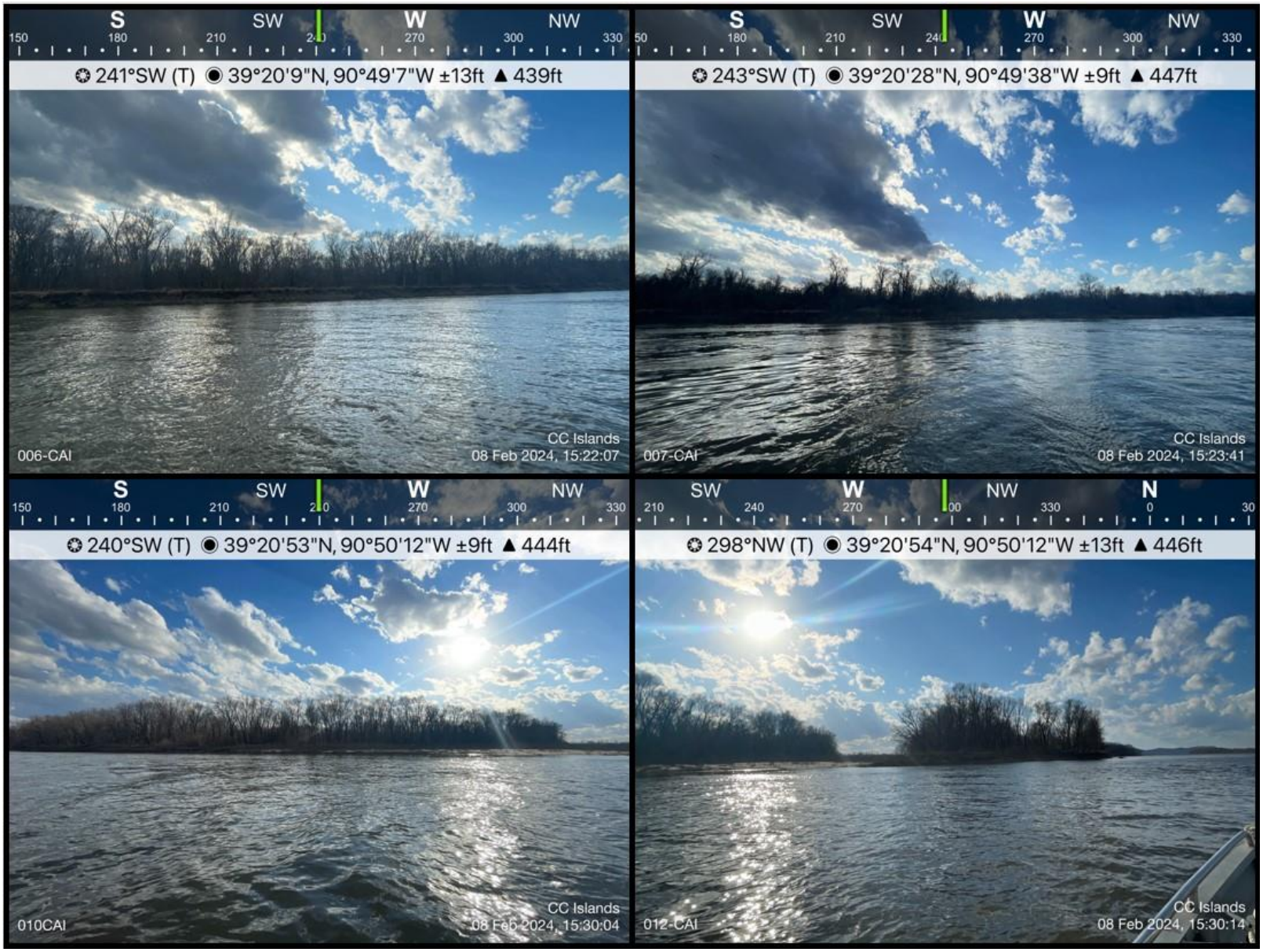


Figure 3: Side channel at the top of Carroll Island.

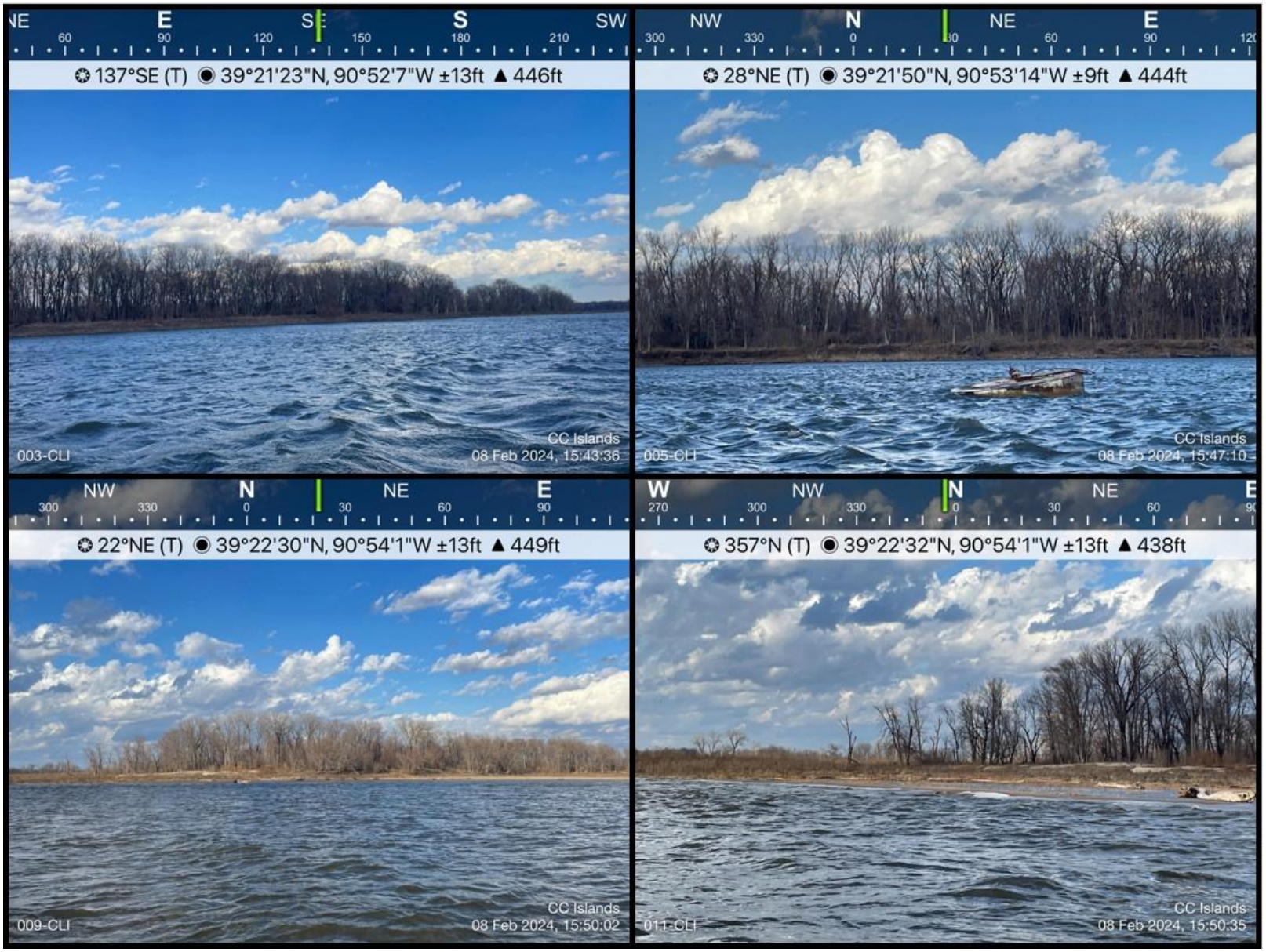


Figure 4: Main channel at the top of Clarksville Island.

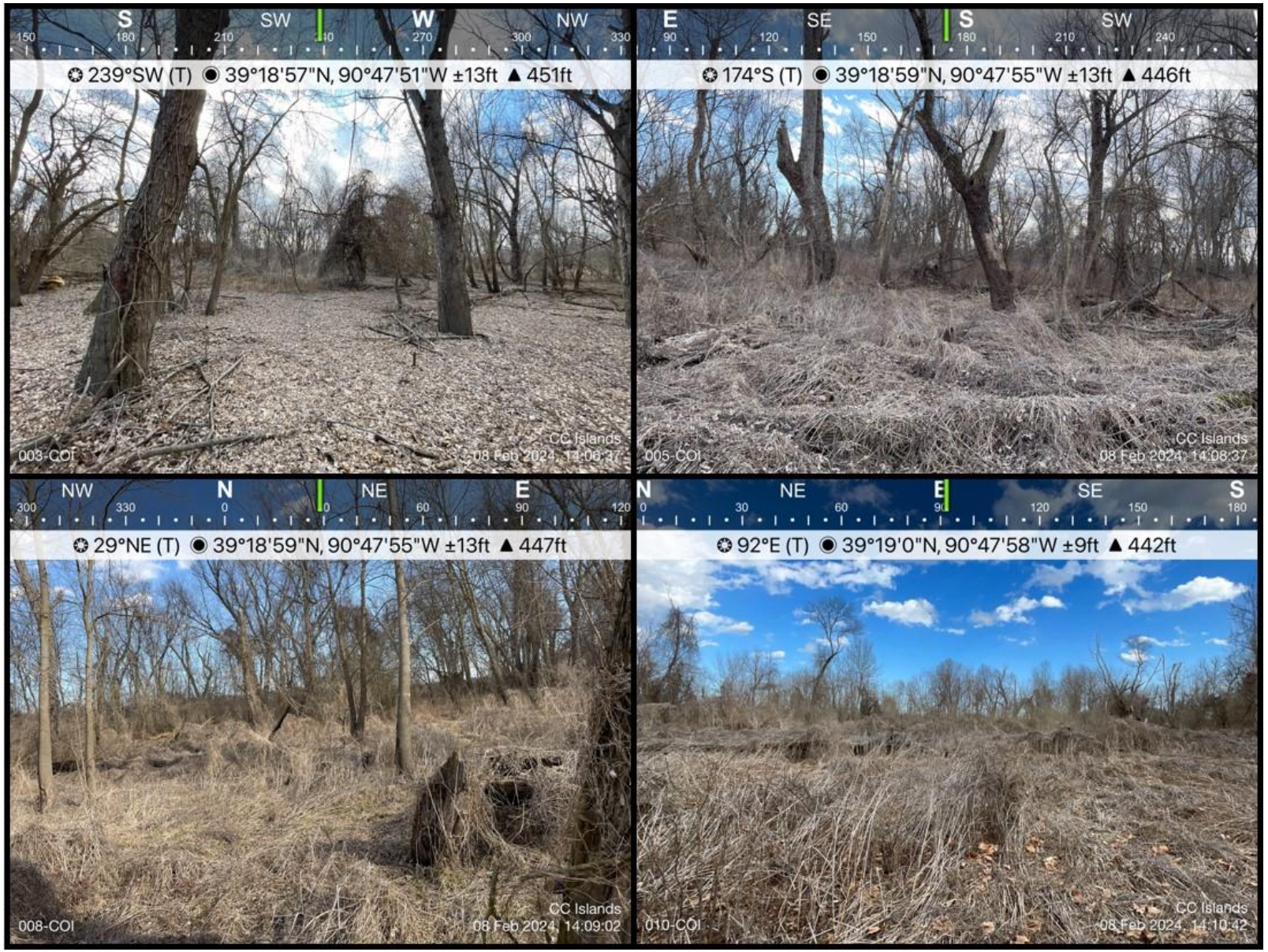


Figure 5: Southern tip of Coon Island.

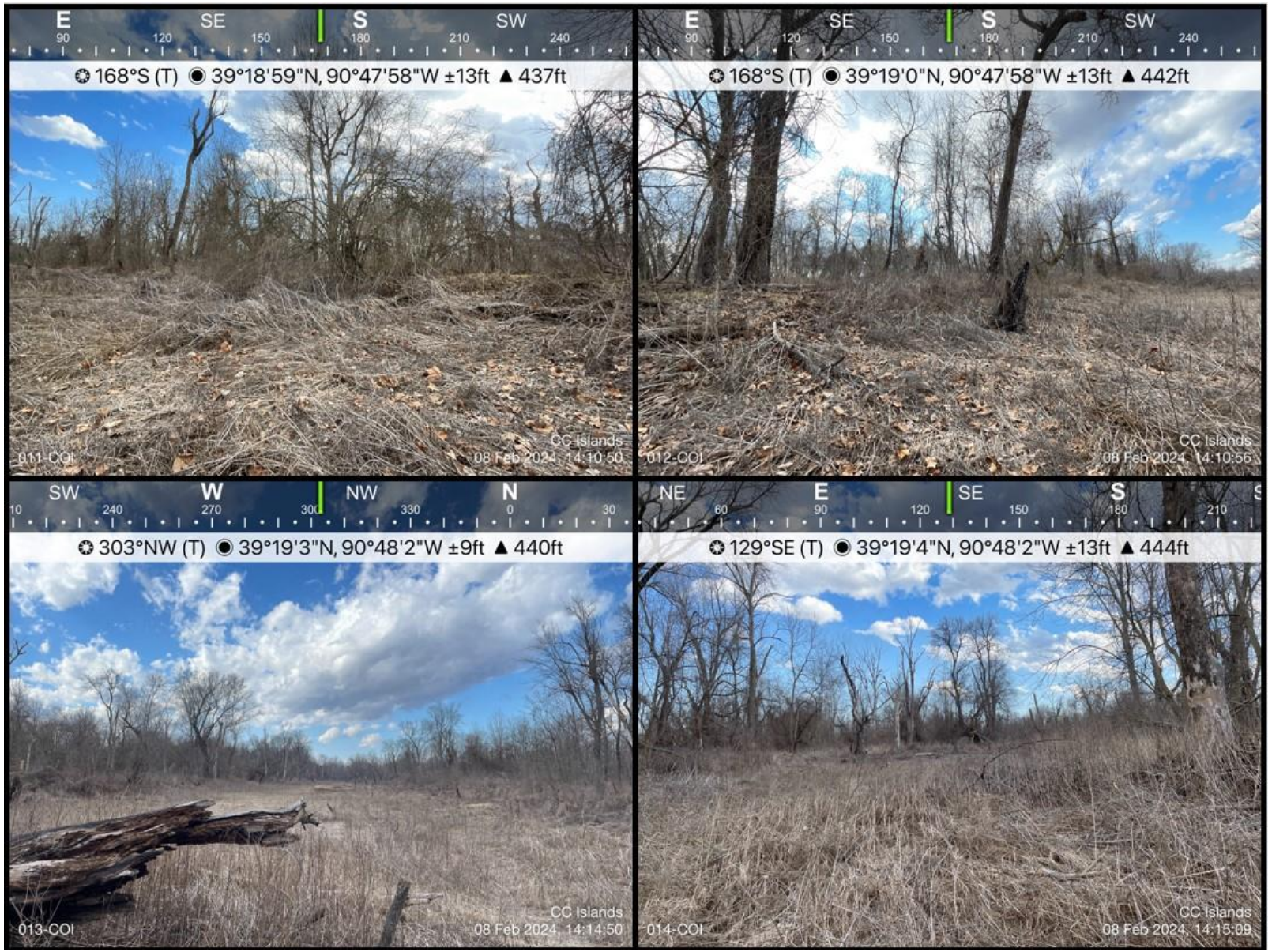


Figure 6: Sothern portion of Coon Island.

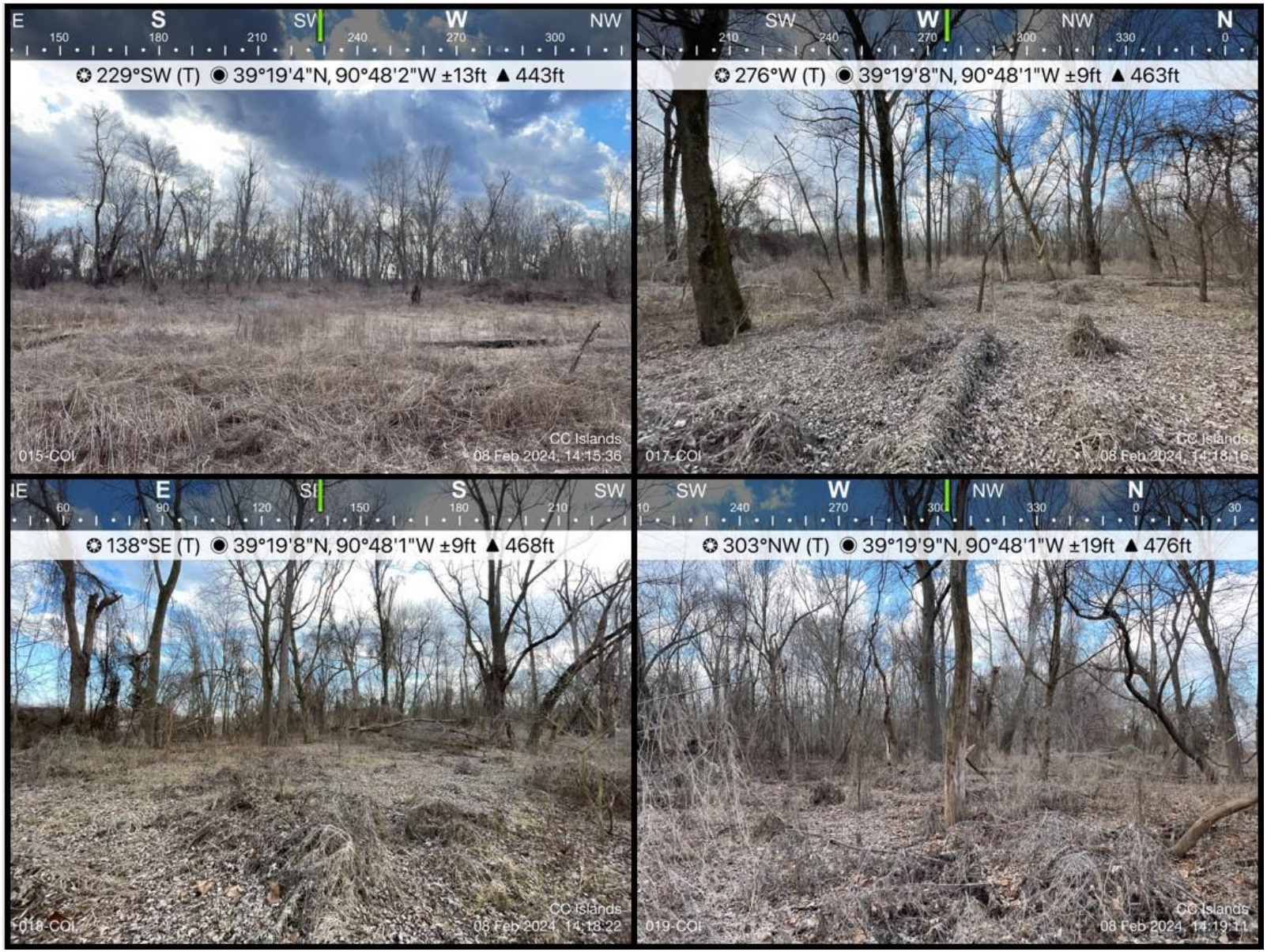


Figure 7: Middle area of Coon Island near the main channel.



Figure 8: Middle section of Coon Island near the side channel.



Figure 9: Northern section of Coon Island near the side channel.



Figure 10: Northern section of Coon Island.



Figure 11: Northern tip of Coon Island.

SUPPLEMENTARY MATERIALS A: INTERVIEW QUESTIONNAIR

Name: Charles Deutsch
Agency: U.S. Fish and Wildlife Service
Position/Role on Property: Refuge Manager / Landowner of Clarksville Island
Time in Position: 4 years

1. How long has the current owner owned this property?
   11 Years.

2. Has there ever been any herbicide or pesticide application to the property?
   Not that I know of.

3. Has there ever been any type of spill (oil products, chemicals, etc.) on the property?
   Not that I know of.

4. Was the property ever used for an industrial use? If so, what type?
   Not that I know of.

5. Were the properties ever used as a dump site (metal, tires, glass, chemical containers, old drums, etc.), either household or industrial?
   Not that I know of.

6. Were there or are there any storage tanks either underground or aboveground?
   If so, how many gallons, what did they store, gasoline, fuel oil, etc.?
   Not that I know of.

7. Are there any wells (drinking or other) on this property?
   Not that I know of.

8. Were there or are there any wastewater treatment or sewage disposal facilities (septic systems, lagoons, etc.) on this property?
   Not that I know of.

9. Were there or are there any transformers, capacitors or hydraulic equipment which could have contained PCB's?
   Not that I know of.

10 Any storage of hazardous materials? If so, how much, when, for how many years? Where on property?
   Not that I know of.

11. Any burn pits on this property?
   Not that I know of.

12. Any buildings on this property?
   No.

13. Has an asbestos and lead based paint survey been completed for the buildings?
N/A

14. Is the property served by a public or private drinking water supply?
No.

15. Are there pipelines on or near this property? If so, where are they located? What are they transporting?
Not that I know of.

16. Does the property require a National Pollutant Discharge Elimination System? If so, what is the NPDES number? Have there been any violations?
No.

SUPPLEMENTARY MATERIALS B: RECORDS REVIEW

Clarksville and Carroll Islands
Clarksville and Carroll Islands
Nebo, IL 62355

Inquiry Number: 7523573.5s
December 19, 2023

EDR Area / Corridor Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

SUBJECT PROPERTY INFORMATION

ADDRESS

CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

TARGET PROPERTY SEARCH RESULTS

The Target Property was identified in the following databases.

Page Numbers and Map Identifcations refer to the EDR Area/Corridor Report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

STANDARD ENVIRONMENTAL RECORDS

Federal ERNS list

ERNS: Emergency Response Notification System

A review of the ERNS list, as provided by EDR, and dated 09/18/2023 has revealed that there is 1 ERNS site within the requested target property.

Site	Address	Map ID / Focus Map(s)	Page
Not reported	CARROLL ISLAND AREA	1 / 11	46
NRC Report #: 1010320			
Incident Date Time: 2012-05-02 10:30:00			

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Page Numbers and Map Identifcations refer to the EDR Area/Corridor Report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

A review of the CORRACTS list, as provided by EDR, and dated 12/04/2023 has revealed that there is 1 CORRACTS site within approximately1 mile of the requested target property.

Site	Address	Direction / Distance	Map ID / Focus Map(s)	Page
HOLNAM INC SAFETY KL	***HWY 79 N***	***WSW 1/2 - 1 (0.963 mi.)***	***3 / 4***	***52***

Lists of state and tribal leaking storage tanks

MO LUST: Leaking Underground Storage Tanks

A review of the MO LUST list, as provided by EDR, and dated 08/28/2023 has revealed that there is 1 MO LUST site within approximately 0.5 miles of the requested target property.

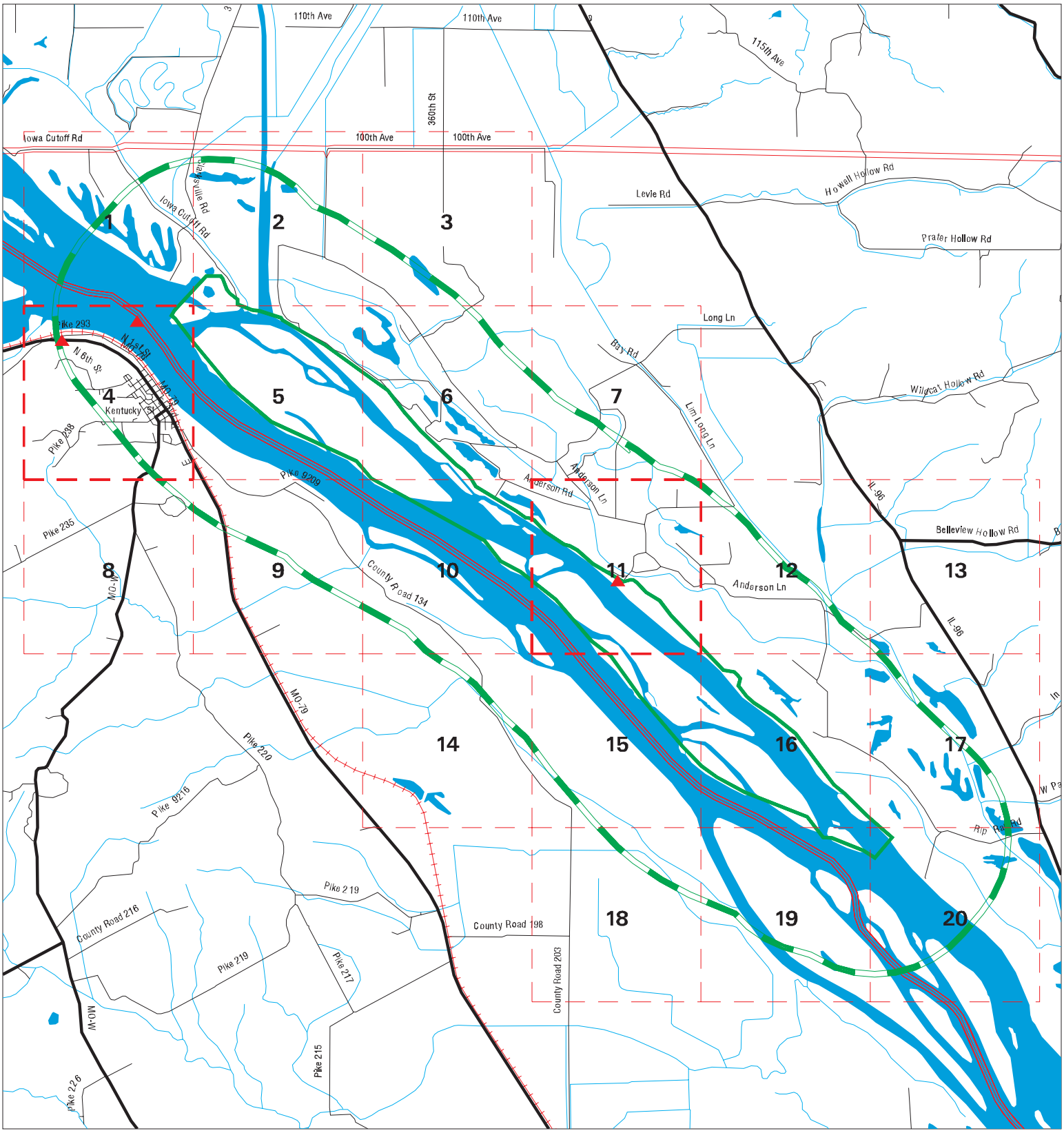
Site	Address	Direction / Distance	Map ID / Focus Map(s)	Page
US ARMY CORPS OF ENG	***LOCK AND DAM 24***	***W 1/4 - 1/2 (0.297 mi.)***	***2 / 4***	***46***
Facility Id: ST0005522				
Date Of NFA Letter From DNR: 1991-12-09 00:00:00				

MAPPED SITES SUMMARY

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION		
1 / 11		CARROLL ISLAND AREA	ERNS	TP		
2 / 4	US ARMY CORPS OF ENG	LOCK AND DAM 24	MO LUST, MO UST	1569	0.297	West
3 / 4	HOLNAM INC SAFETY KL	HWY 79 N	CORRACTS, RCRA-TSDF, US INST CONTROLS, R..	5083	0.963	WSW

Key Map - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1 2 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23 9:18 AM

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	1	NR	1
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP	1	NR	NR	NR	NR	NR	1
Lists of state- and tribal hazardous waste facilities								
IL SSU	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
IL SWF/LF	0.500		0	0	0	NR	NR	0
IL CCDD	0.500		0	0	0	NR	NR	0
IL LF SPECIAL WASTE	0.500		0	0	0	NR	NR	0
IL NIPC	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
IL LUST	0.500		0	0	0	NR	NR	0
MO LUST	0.500		0	0	1	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
IL LUST TRUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
IL UST	0.250		0	0	NR	NR	NR	0
MO UST	0.250		0	0	NR	NR	NR	0
IL AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
IL ENG CONTROLS	0.500		0	0	0	NR	NR	0
IL INST CONTROL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
IL SRP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
IL BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL		TP	NR	NR	NR	NR	NR	0
IL CDL		TP	NR	NR	NR	NR	NR	0
US CDL		TP	NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS		TP	NR	NR	NR	NR	NR	0
IL SPILLS		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
IL SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
IL PFAS	0.250		0	0	NR	NR	NR	0
IL AIRS	TP		NR	NR	NR	NR	NR	0
IL ASBESTOS	TP		NR	NR	NR	NR	NR	0
IL BOL	TP		NR	NR	NR	NR	NR	0
IL COAL ASH	0.500		0	0	0	NR	NR	0
IL DRYCLEANERS	0.250		0	0	NR	NR	NR	0
IL Financial Assurance	TP		NR	NR	NR	NR	NR	0
IL HWAR	TP		NR	NR	NR	NR	NR	0
IL IMPDMENT	0.500		0	0	0	NR	NR	0
WI MANIFEST	0.250		0	0	NR	NR	NR	0
IL NPDES	TP		NR	NR	NR	NR	NR	0
IL PIMW	0.250		0	0	NR	NR	NR	0
IL TIER 2	TP		NR	NR	NR	NR	NR	0
IL UIC	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
IL RGA HWS	TP		NR	NR	NR	NR	NR	0
IL RGA LF	TP		NR	NR	NR	NR	NR	0
IL RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		1	0	0	1	1	0	3

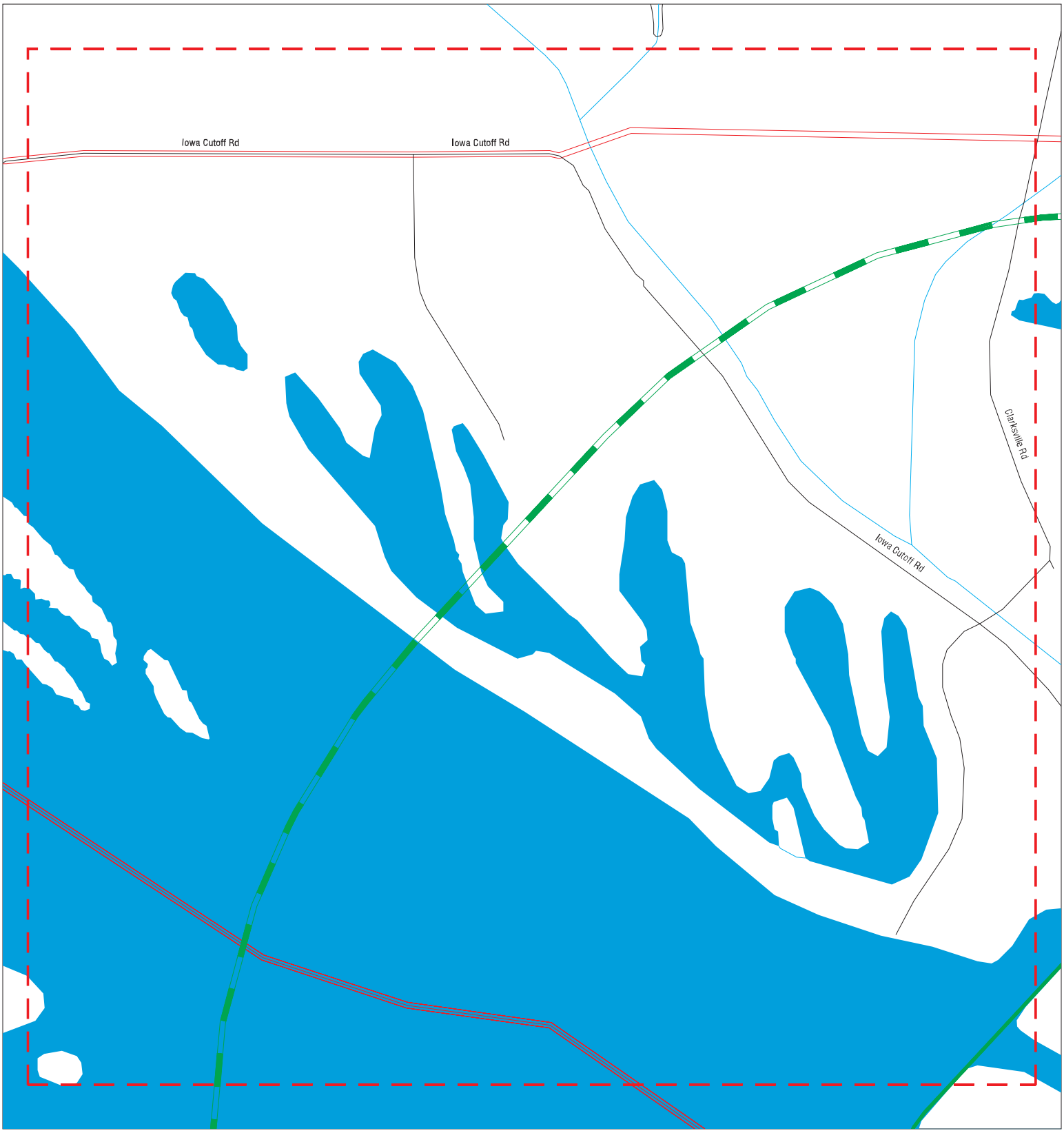
NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Focus Map - 1 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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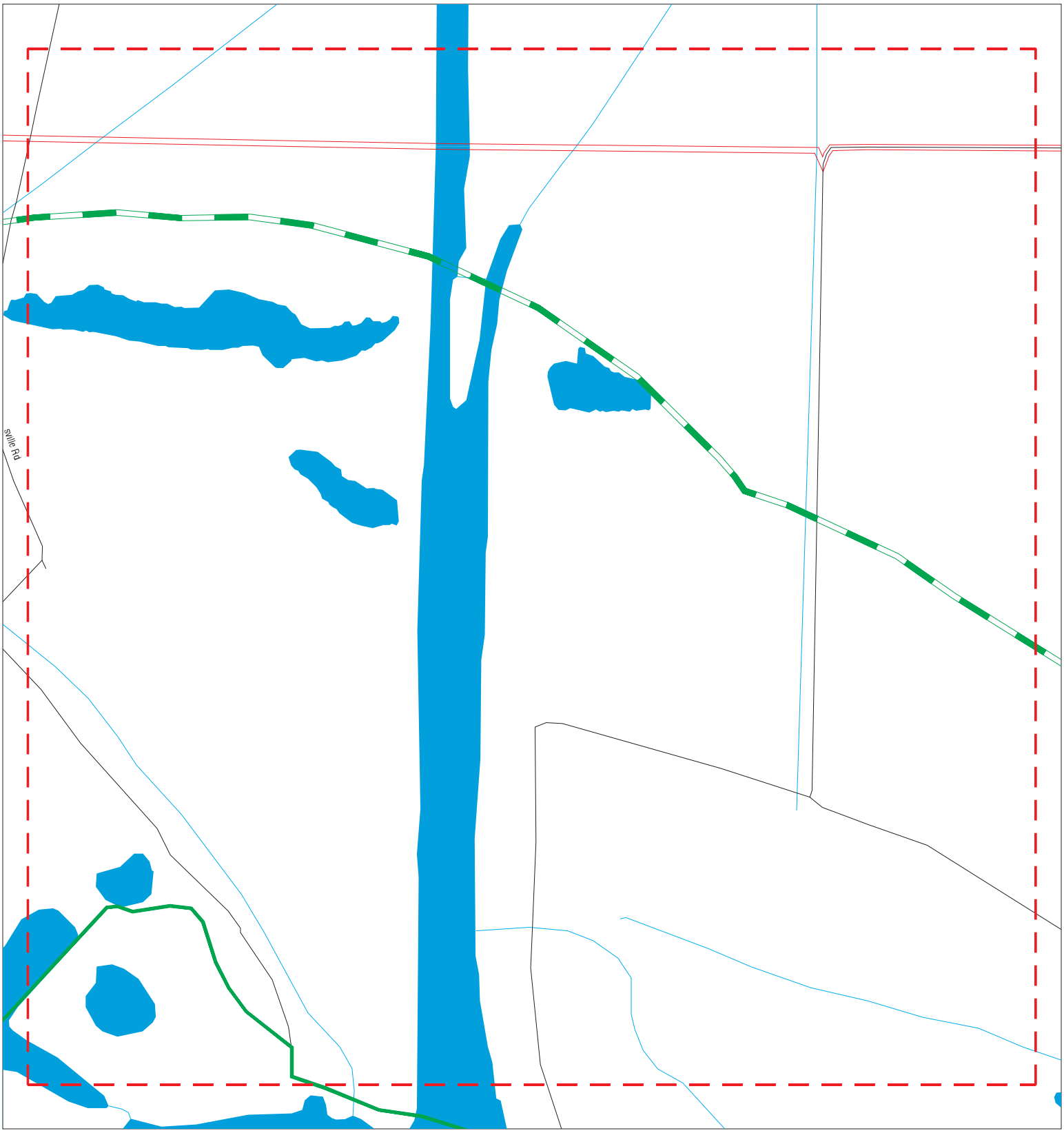
MAPPED SITES SUMMARY - FOCUS MAP 1

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 2 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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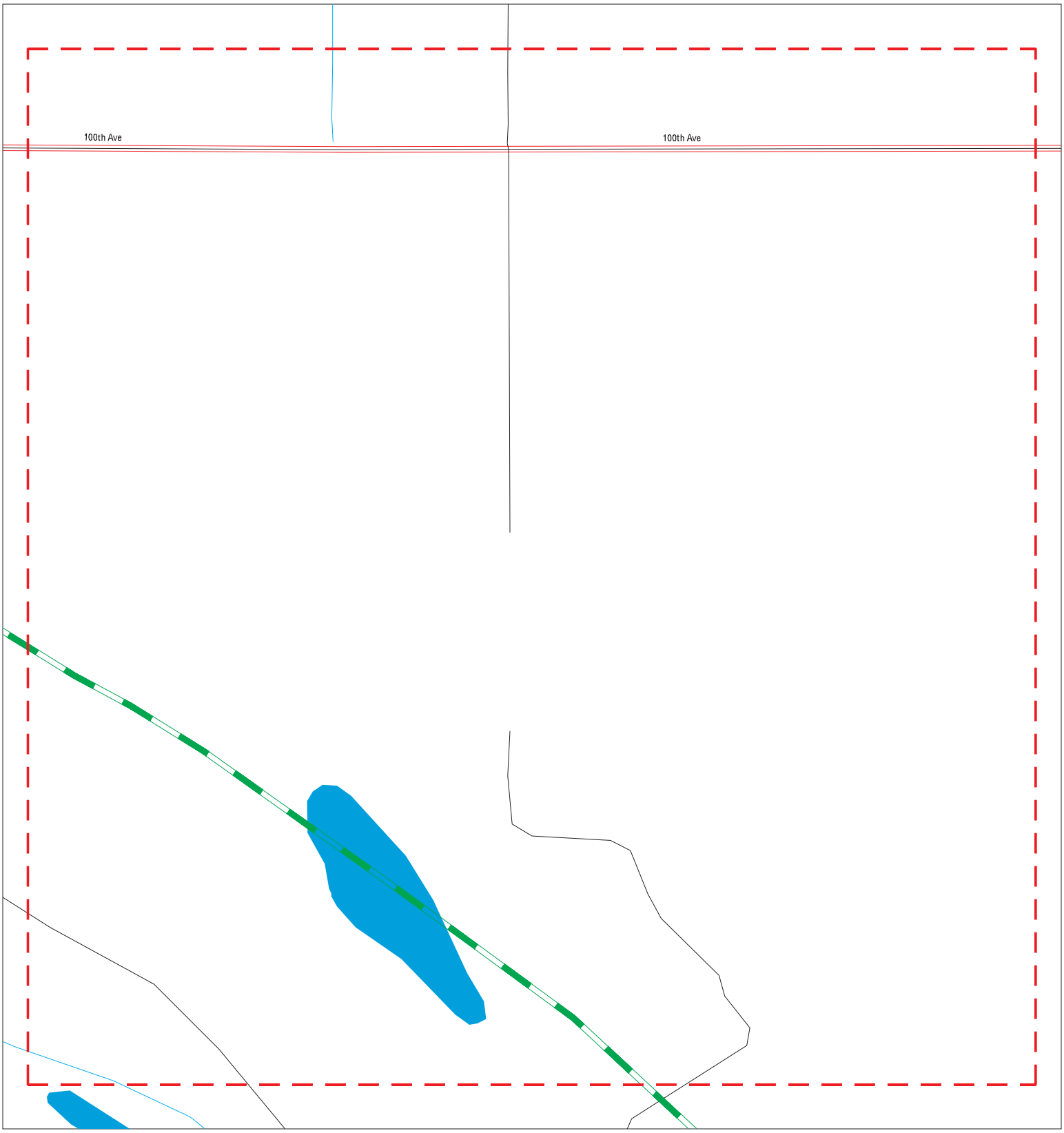
MAPPED SITES SUMMARY - FOCUS MAP 2

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 3 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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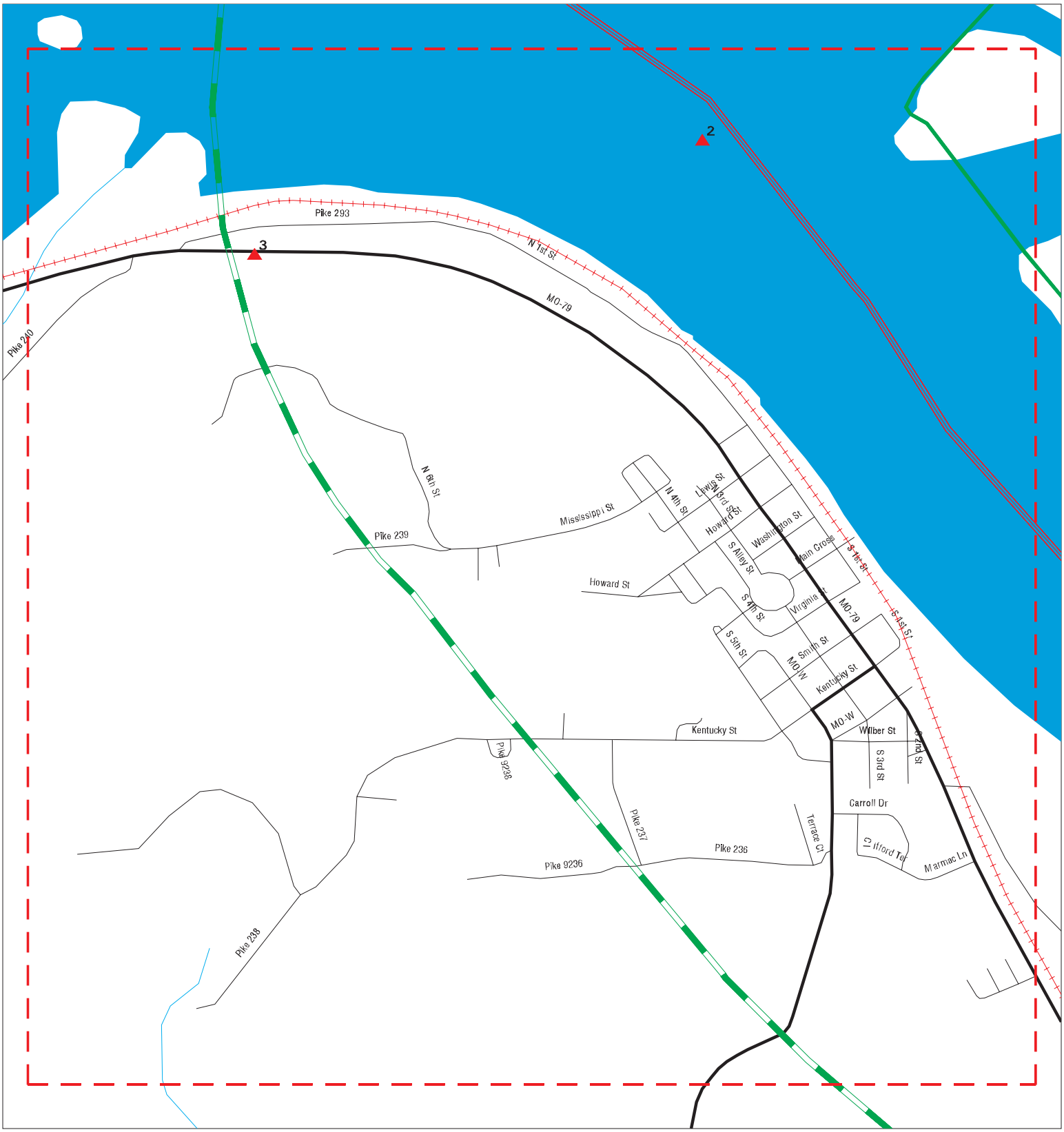
MAPPED SITES SUMMARY - FOCUS MAP 3

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 4 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

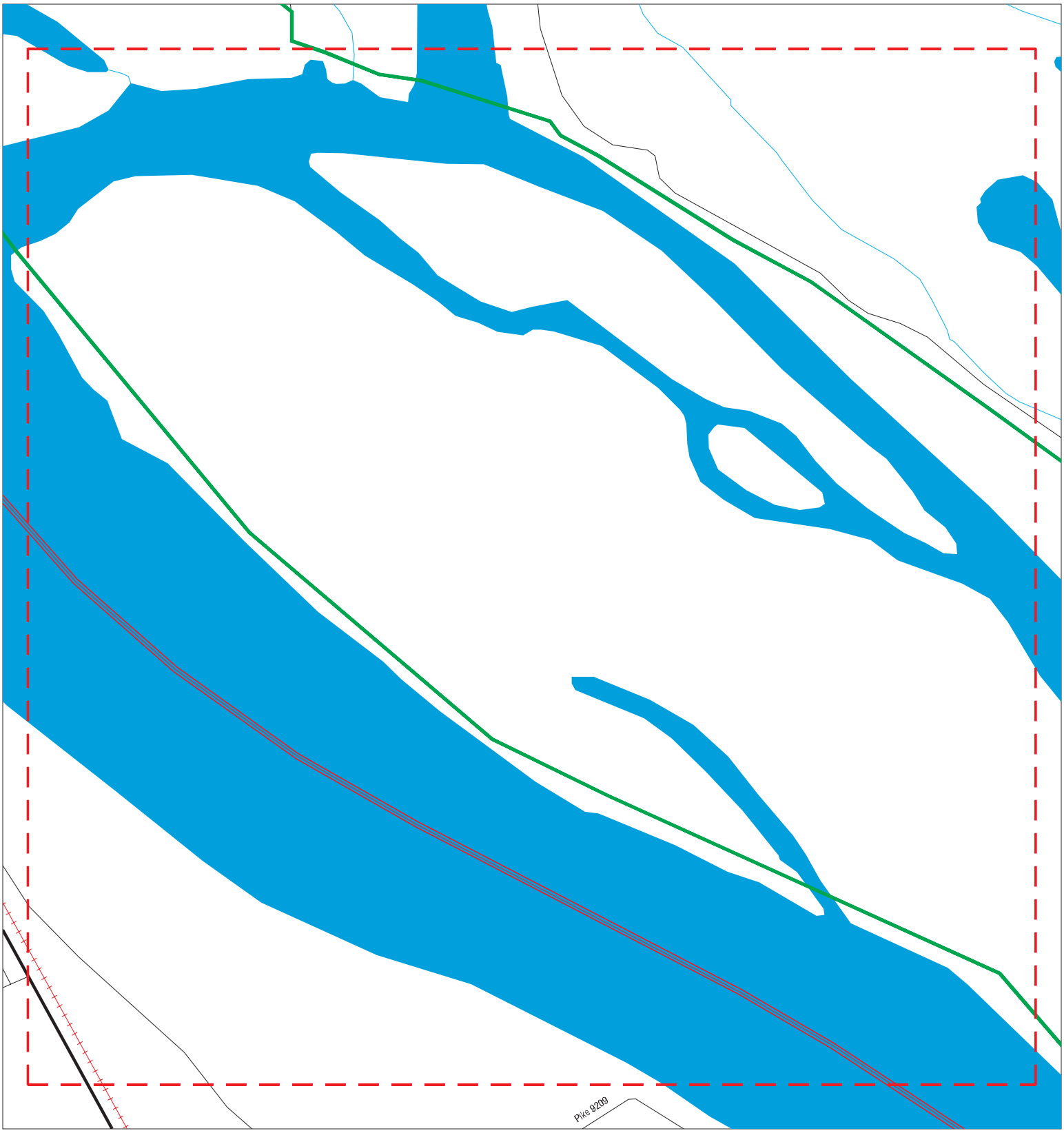
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MAPPED SITES SUMMARY - FOCUS MAP 4

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION		
2 / 4	US ARMY CORPS OF ENG	LOCK AND DAM 24	MO LUST, MO UST	1569	0.297	West
3 / 4	HOLNAM INC SAFETY KL	HWY 79 N	CORRACTS, RCRA-TSDF, US INST CONTROLS, R.	5083	0.963	WSW

Focus Map - 5 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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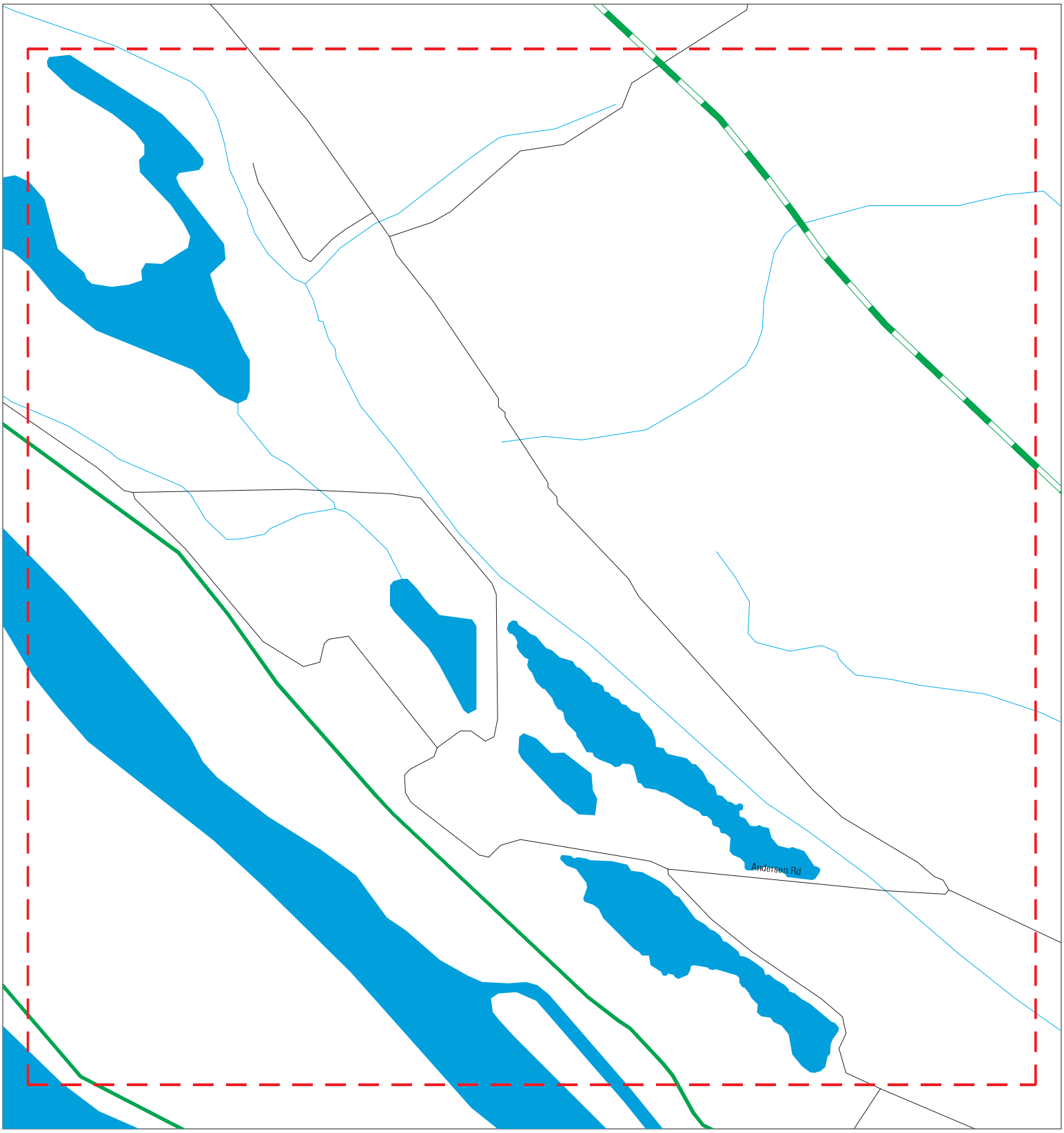
MAPPED SITES SUMMARY - FOCUS MAP 5

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 6 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands ADDRESS: Clarksville and Carroll Islands CITY/STATE: Nebo IL ZIP: 62355	CLIENT: U.S. Army Corps of Engineers CONTACT: Kaleb Rakers INQUIRY #: 7523573.5s DATE: 12/19/23

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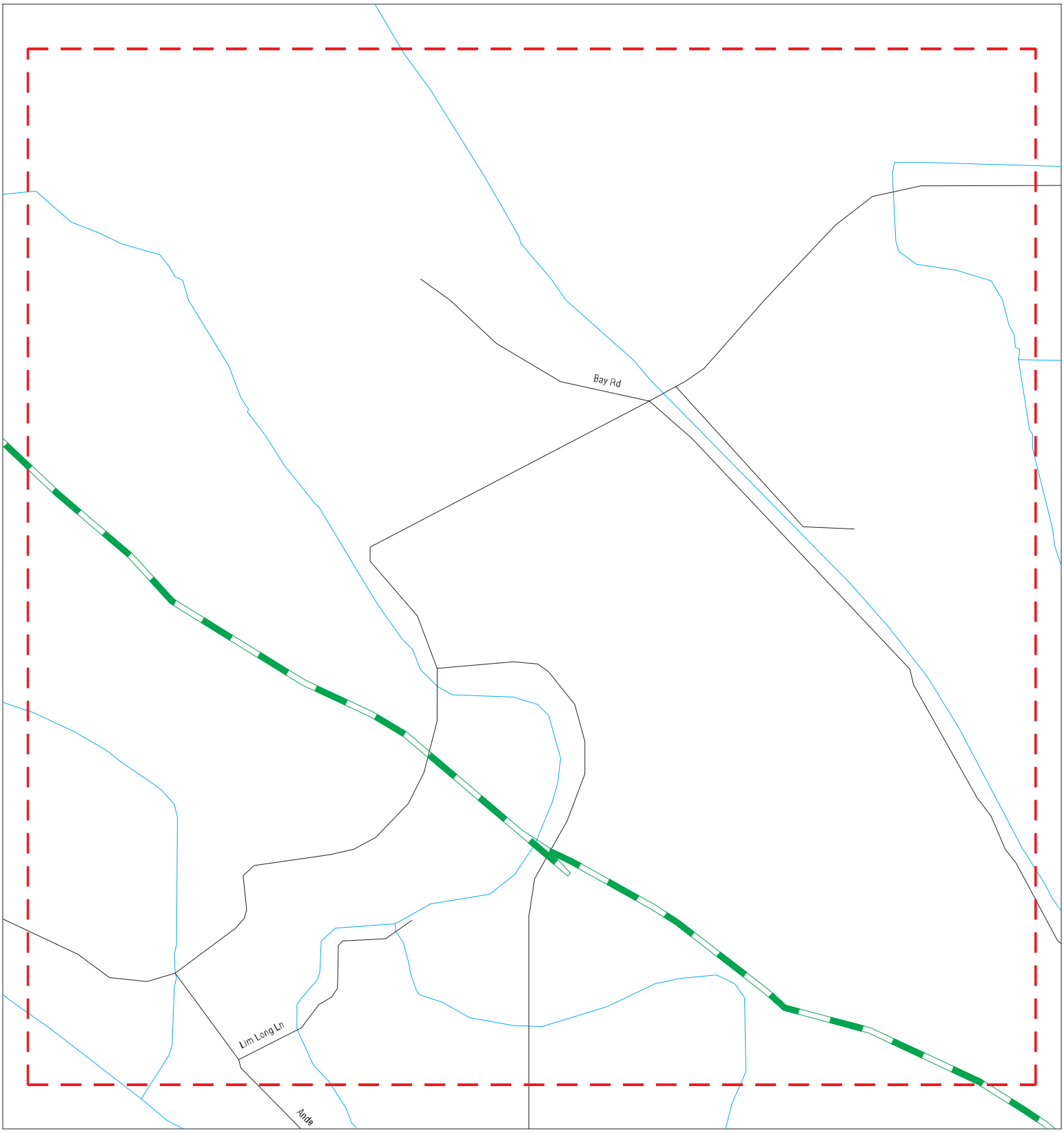
MAPPED SITES SUMMARY - FOCUS MAP 6

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 7 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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MAPPED SITES SUMMARY - FOCUS MAP 7

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 8 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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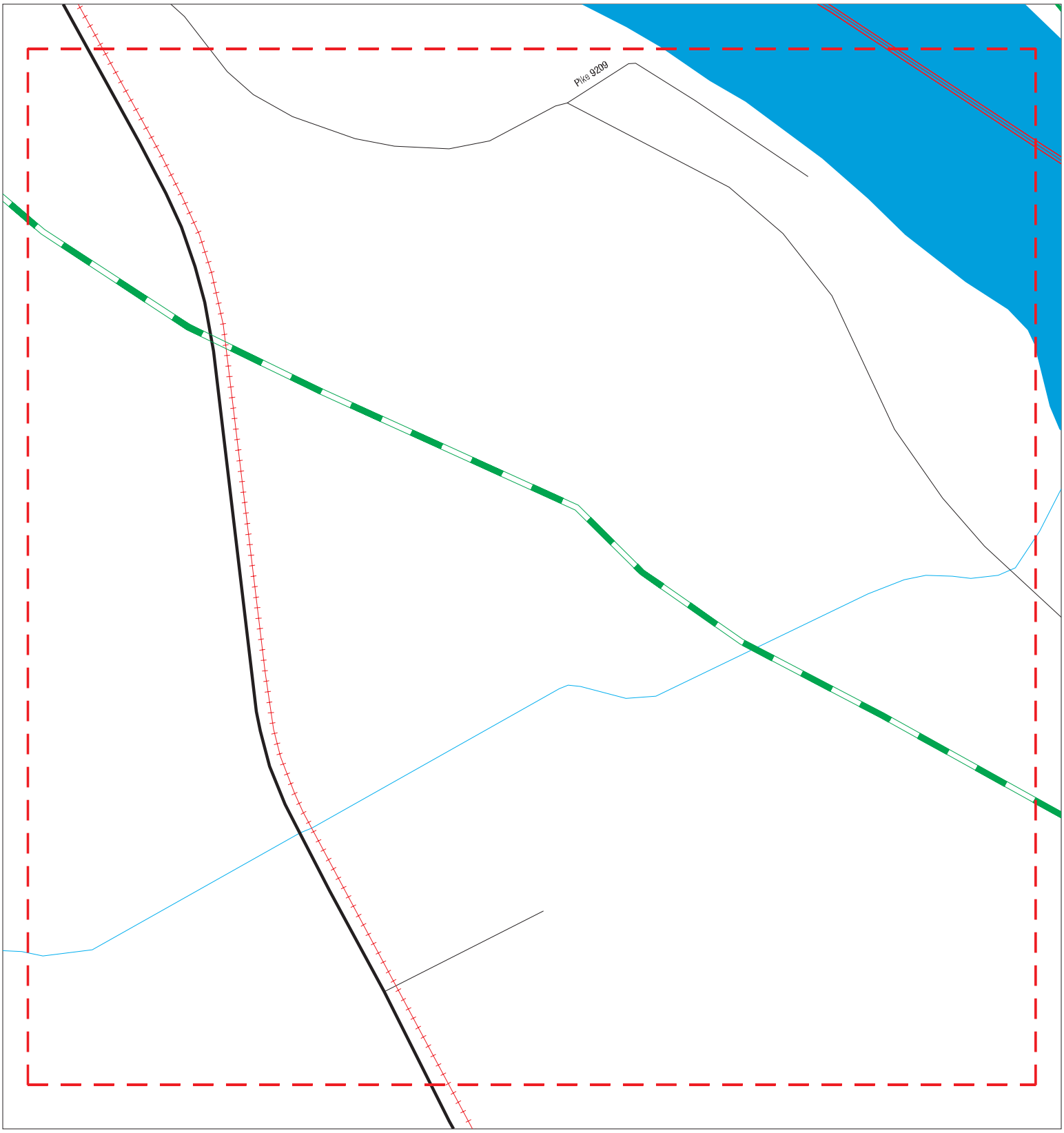
MAPPED SITES SUMMARY - FOCUS MAP 8

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 9 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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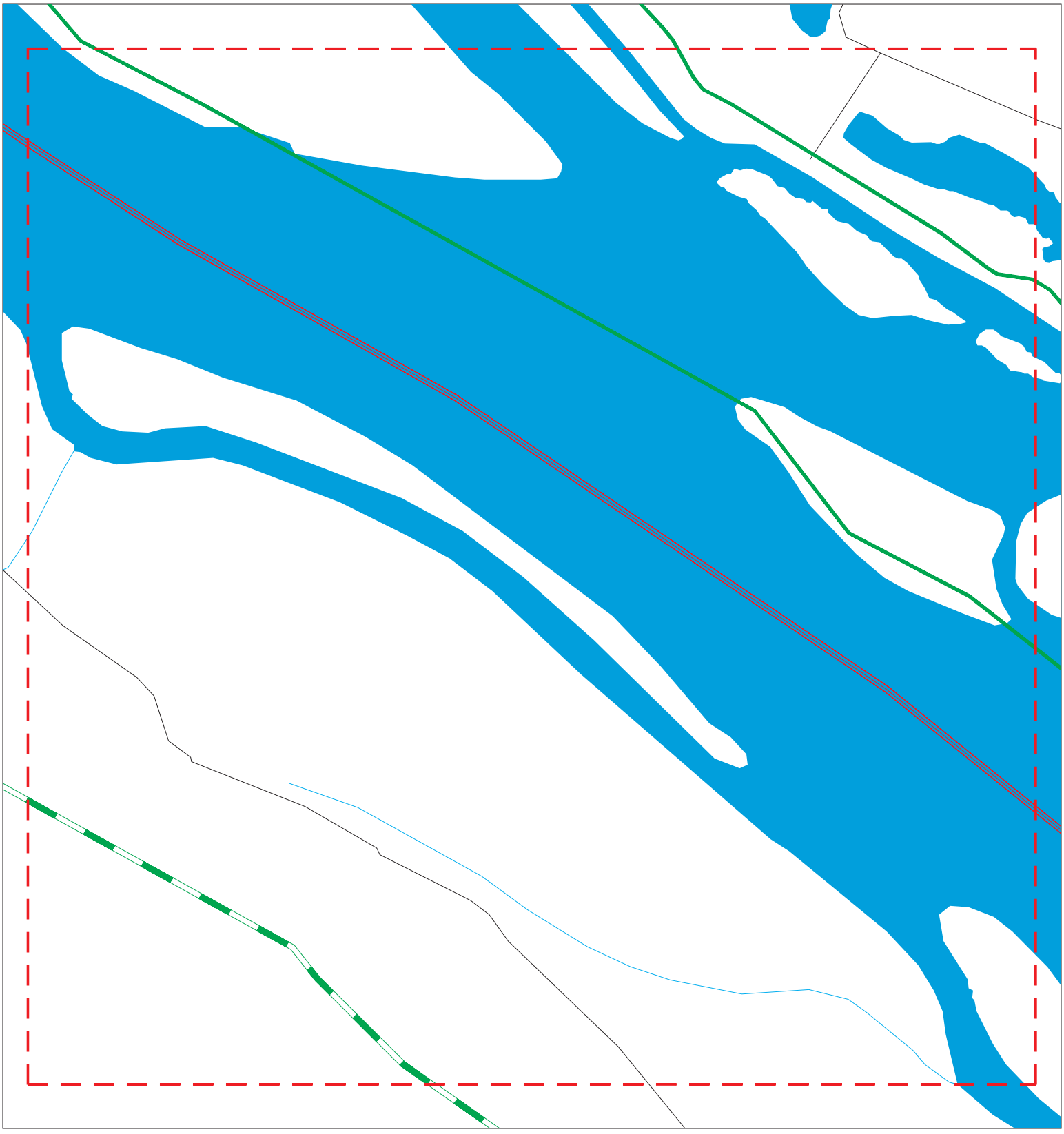
MAPPED SITES SUMMARY - FOCUS MAP 9

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 10 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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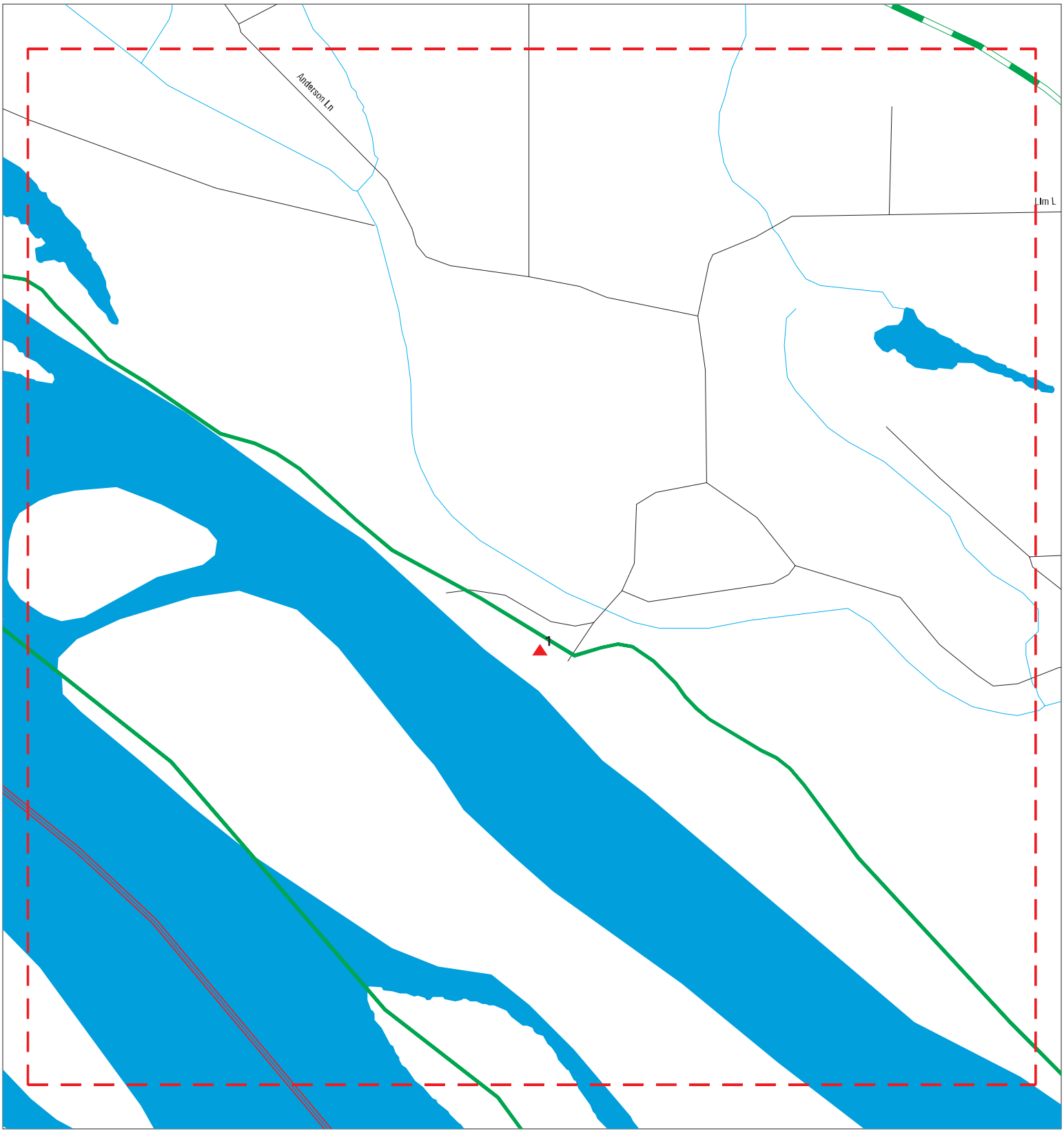
MAPPED SITES SUMMARY - FOCUS MAP 10

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 11 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

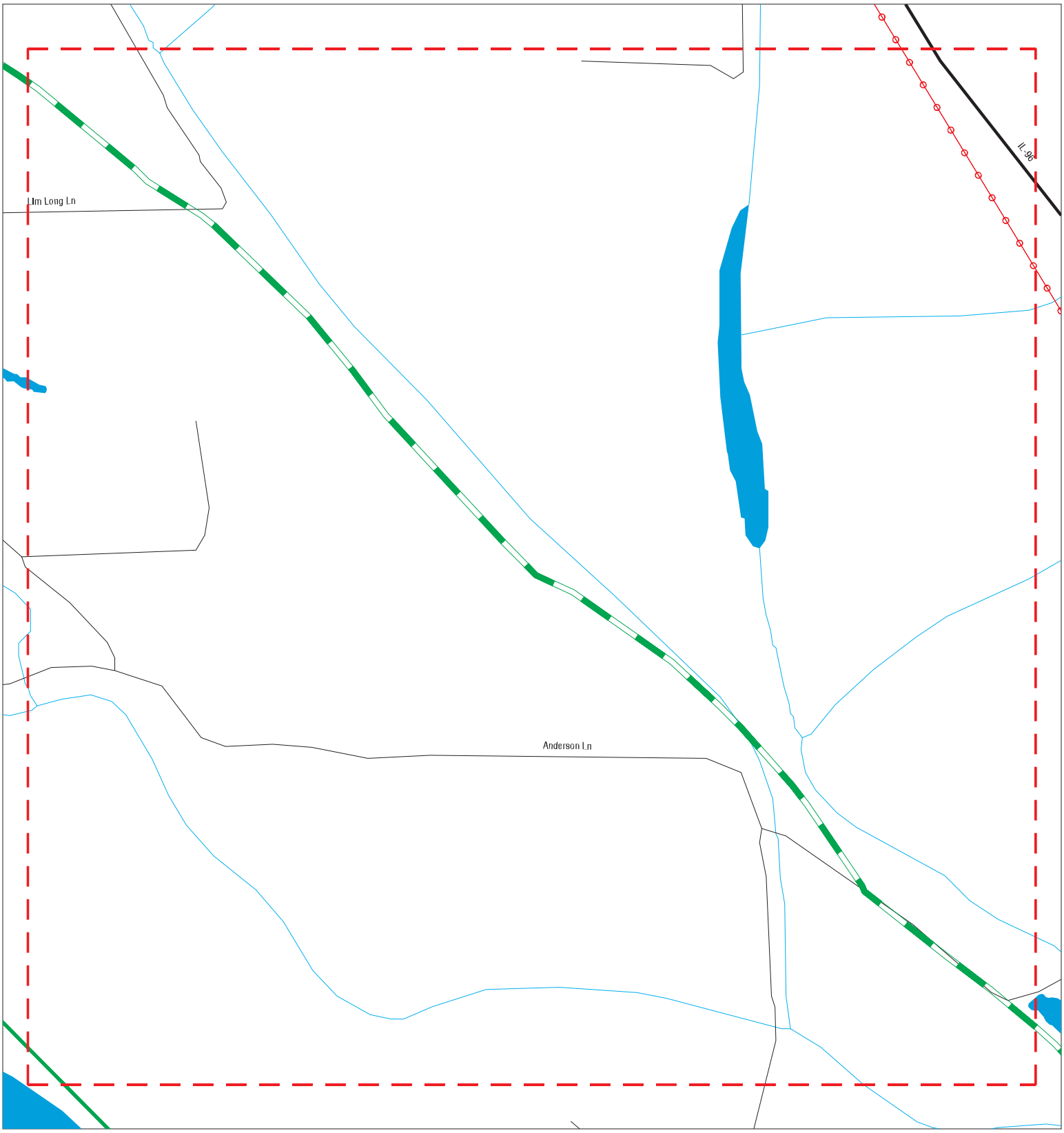
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MAPPED SITES SUMMARY - FOCUS MAP 11

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION
1 / 11		CARROLL ISLAND AREA	ERNS	TP

Focus Map - 12 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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MAPPED SITES SUMMARY - FOCUS MAP 12

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 13 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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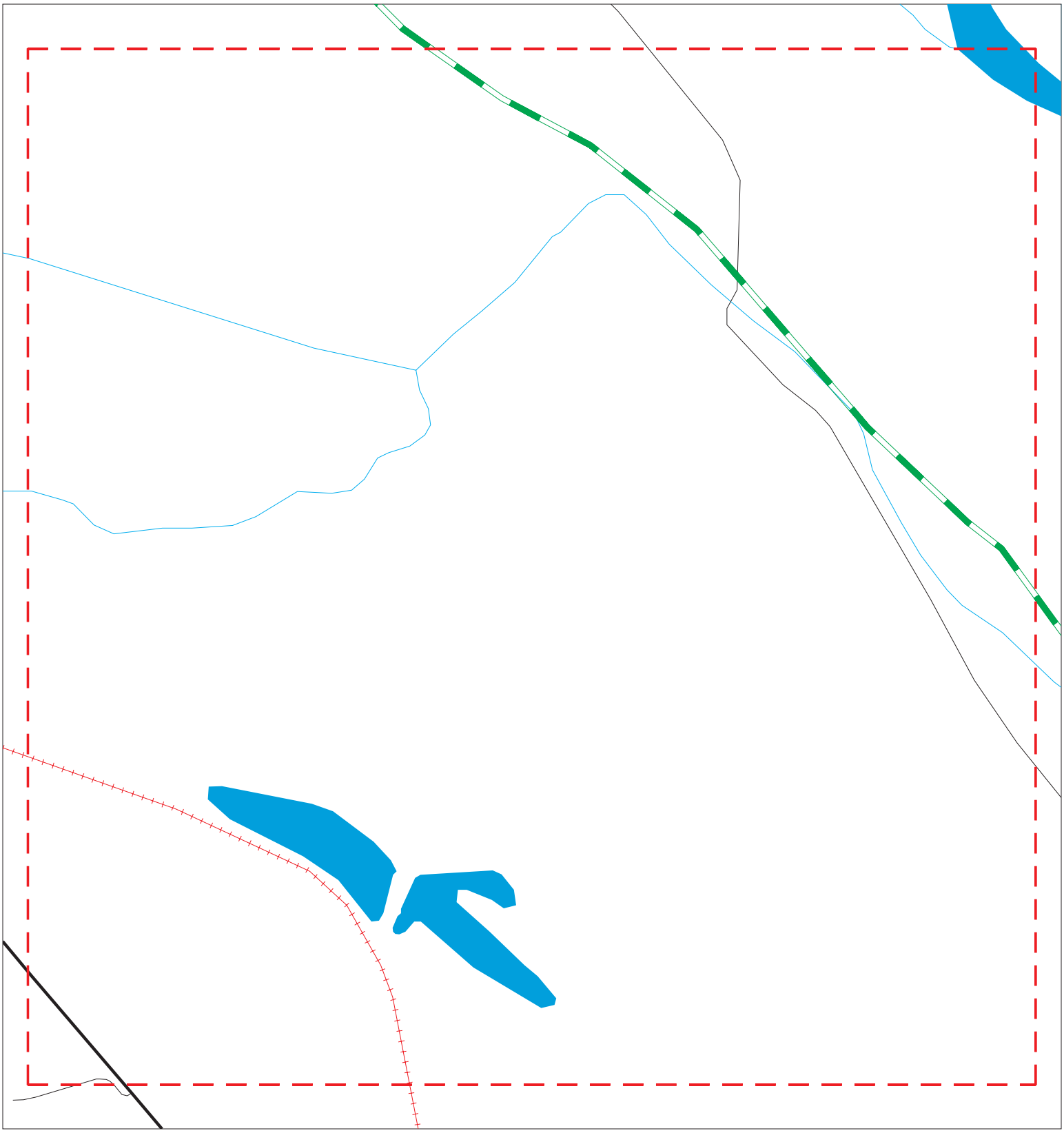
MAPPED SITES SUMMARY - FOCUS MAP 13

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 14 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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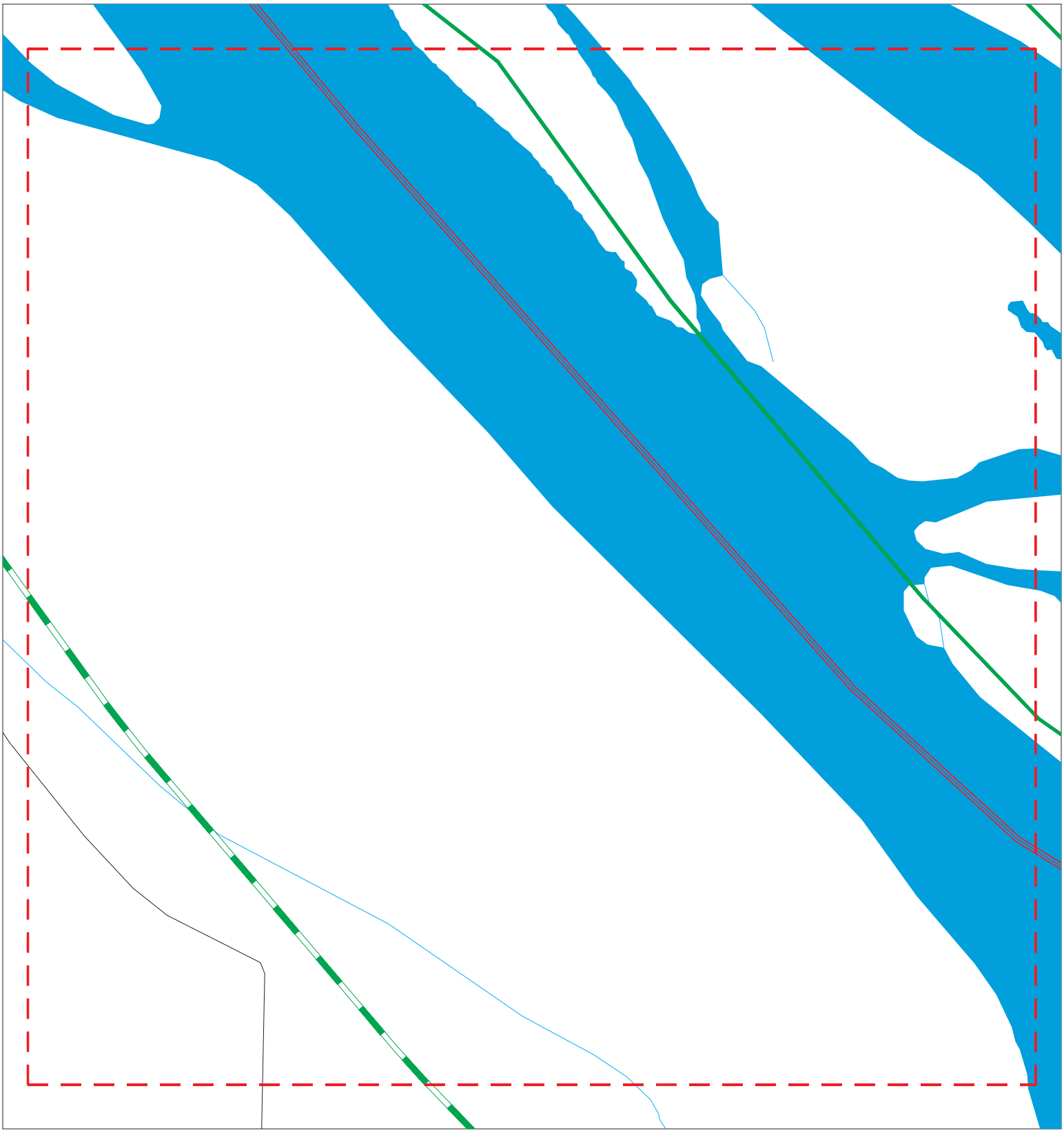
MAPPED SITES SUMMARY - FOCUS MAP 14

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 15 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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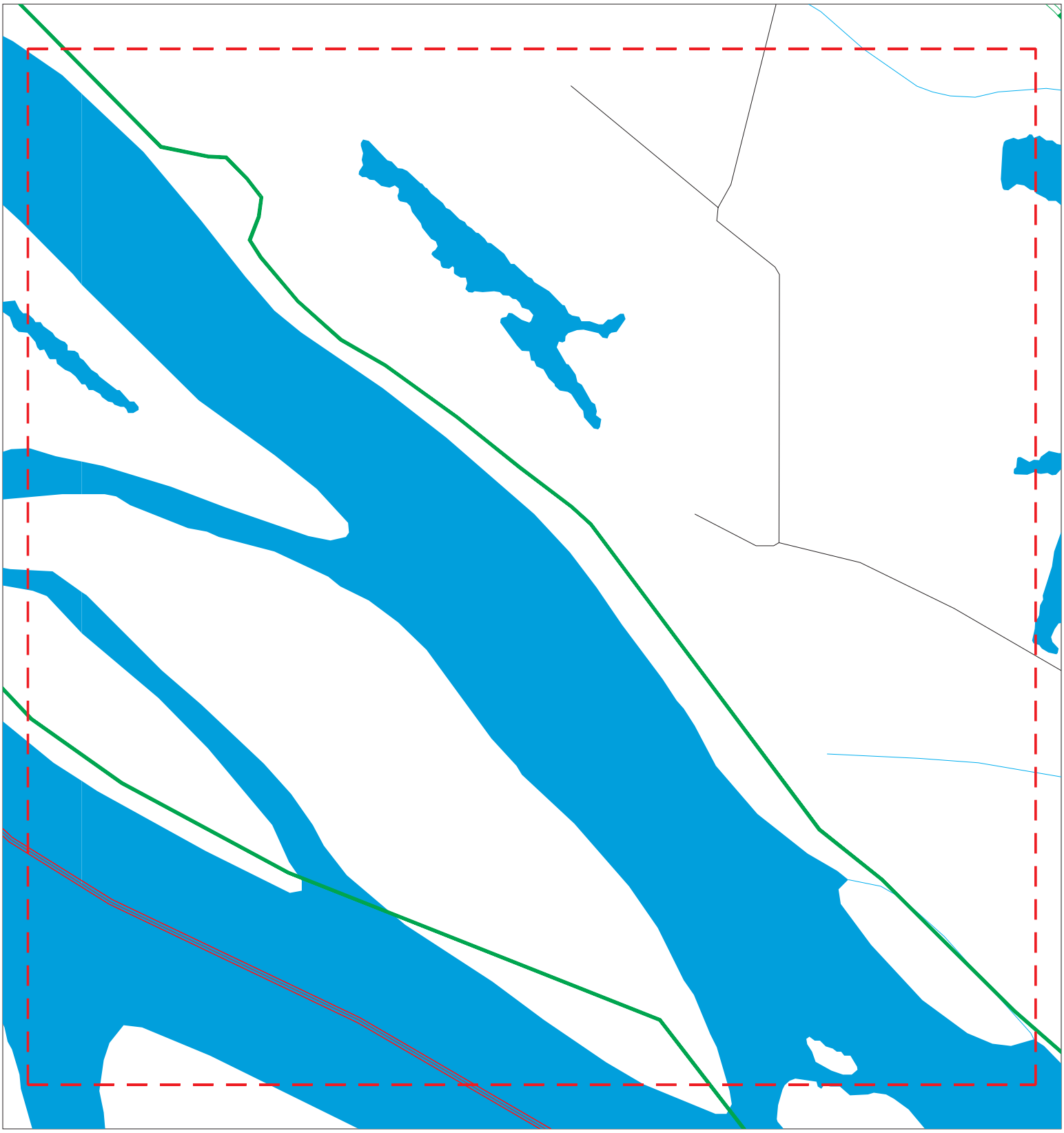
MAPPED SITES SUMMARY - FOCUS MAP 15

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 16 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands ADDRESS: Clarksville and Carroll Islands CITY/STATE: Nebo IL ZIP: 62355	CLIENT: U.S. Army Corps of Engineers CONTACT: Kaleb Rakers INQUIRY #: 7523573.5s DATE: 12/19/23

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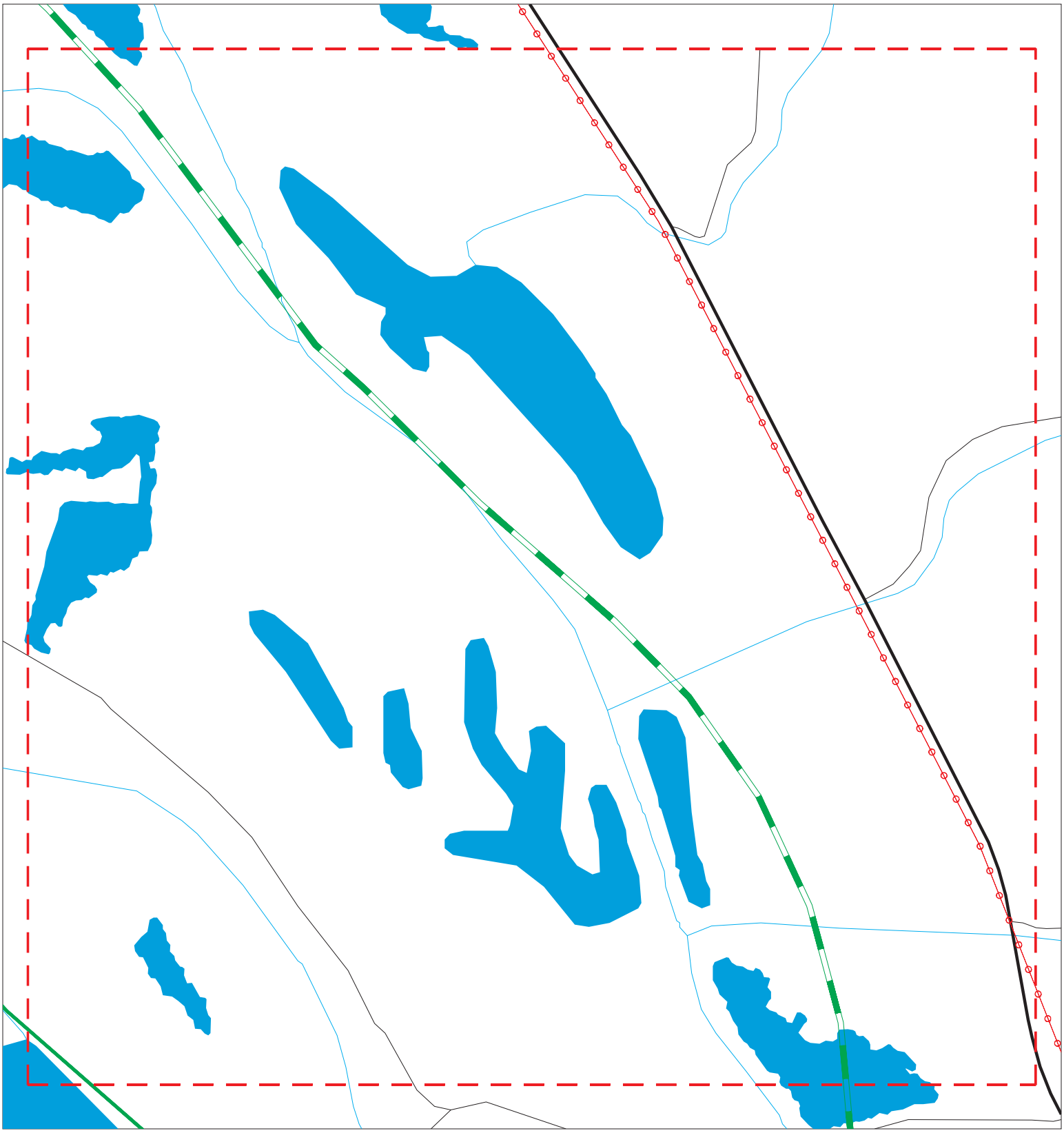
MAPPED SITES SUMMARY - FOCUS MAP 16

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 17 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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MAPPED SITES SUMMARY - FOCUS MAP 17

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 18 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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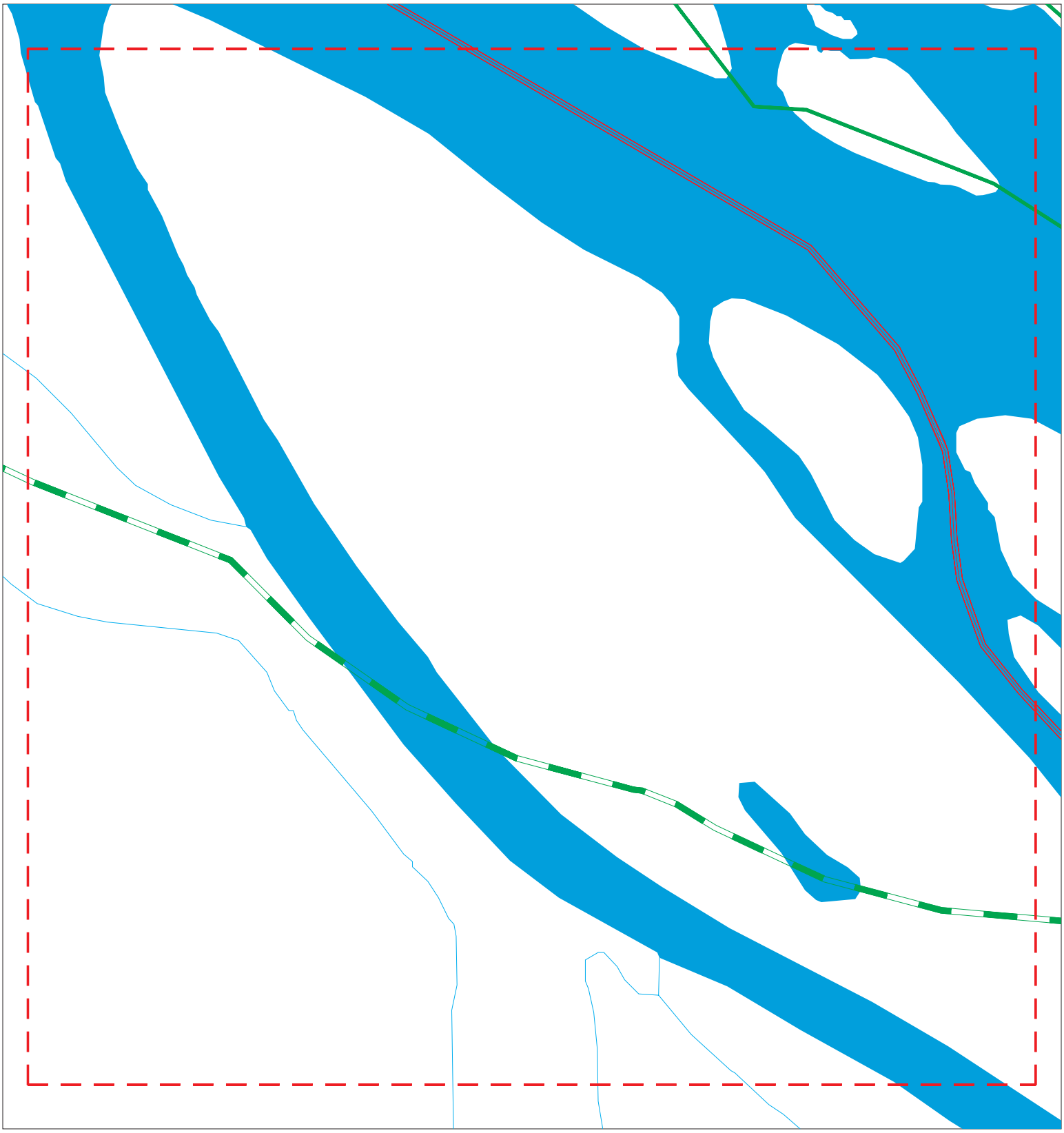
MAPPED SITES SUMMARY - FOCUS MAP 18

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 19 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME: Clarksville and Carroll Islands	CLIENT: U.S. Army Corps of Engineers
ADDRESS: Clarksville and Carroll Islands	CONTACT: Kaleb Rakers
CITY/STATE: Nebo IL	INQUIRY #: 7523573.5s
ZIP: 62355	DATE: 12/19/23

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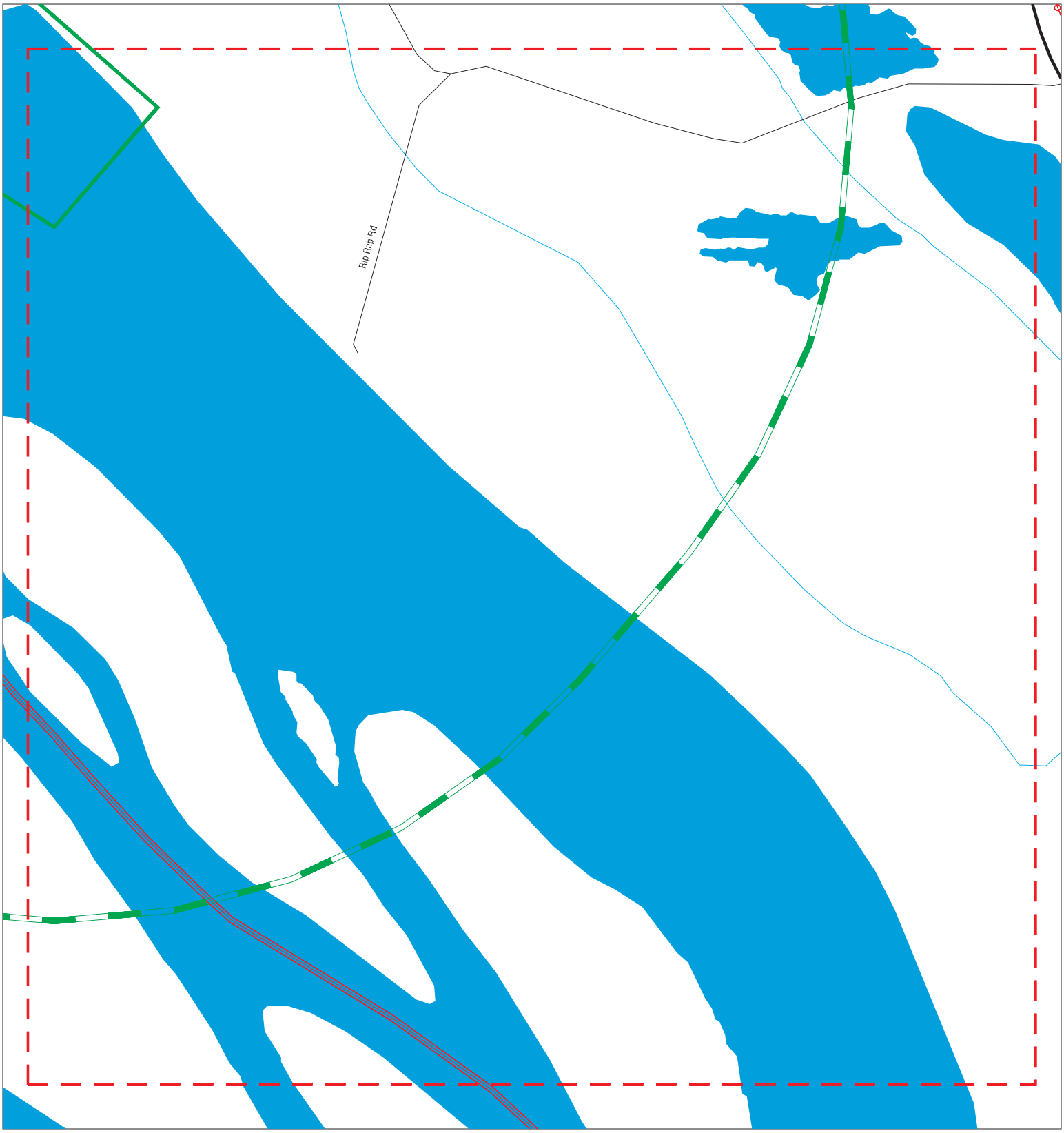
MAPPED SITES SUMMARY - FOCUS MAP 19

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

Focus Map - 20 - 7523573.5s



Sites
Target Property
Search Buffer
Focus Map - No Sites
Focus Map - Sites
Power Line
National Priority List Sites
Dept. Defense Sites
Indian Reservations BIA

0 1/8 1/4 Miles

SITE NAME:	Clarksville and Carroll Islands	CLIENT:	U.S. Army Corps of Engineers
ADDRESS:	Clarksville and Carroll Islands	CONTACT:	Kaleb Rakers
CITY/STATE:	Nebo IL	INQUIRY #:	7523573.5s
ZIP:	62355	DATE:	12/19/23

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MAPPED SITES SUMMARY - FOCUS MAP 20

Target Property:
CLARKSVILLE AND CARROLL ISLANDS
NEBO, IL 62355

MAP ID / FOCUS MAP	SITE NAME	ADDRESS	DATABASE ACRONYMS	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

1
Target Property
CARROLL ISLAND AREA
ST. CLAIR (County), IL

ERNS **2012010320**
N/A

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual:
443 ft.

Focus Map:
11

2
West
1/4-1/2
0.297 mi.
1569 ft.

US ARMY CORPS OF ENG LOCK & DAM
LOCK AND DAM 24
CLARKSVILLE, MO 63389

MO LUST **U001158761**
MO UST **N/A**

Actual:
449 ft.

Focus Map:
4

LUST:

Name:	US ARMY CORPS OF ENG LOCK & DAM
Address:	LOCK AND DAM 24
City,State,Zip:	CLARKSVILLE, MO 63389
Facility ID:	ST0005522
Region:	NE - Northeast Regional Office
Lat/Long (dms):	Not reported
Spill Number:	Not reported
Release Date:	08/15/1991
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	08/15/1991
Date Cleanup Finished:	11/21/1991
Expedited:	No
Expedited Date:	Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Reopened Date:	Not reported
Number Of Remediation Monitoring Wells:	0
Active:	No
Date Of NFA Letter From DNR:	**1991-12-09 00:00:00**
Date Record Meets Archive Criteria:	Not reported
Remediation ID:	R002792
Rank:	Not reported
Emergeny Response Date:	Not reported
Emergency Cleanup Start:	Not reported
Referred To DGLS for Investigation:	Not reported
Contractor Performing Clean Up:	Not reported
RBCA NFA:	No
Project Manager:	L
Next Correspondence/Update With Fac:	Not reported
Date Added:	06/30/1995
Date Record Edited:	01/03/2019
Person Adding Or Editing Record:	BROWN, R
Facility Sent To State Archive:	Yes
Date Remediation Unit Closed The File:	Not reported
Site Affectd By Funding Level From PSTIF:	No
General Comments:	Not reported

UST:

Facility ID:	ST0005522
Region:	NE
Easting:	680287.199
Northing:	4360396.70

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	CORBIN, M
Date GIS Data Collected:	12/15/2011
Lat/Long:	38.97368 / -90.81362
Lat/Long (dms):	Not reported

Tanks:

Owner:

Owner ID:	OW04114
Owner Name:	US ARMY CORPS OF ENGINEERS
Owner Address:	210 TUCKER
Owner City,St,Zip:	ST LOUIS, MO 63101
Owner County Code:	Not reported
Owner Phone:	2635855
Mail Was Not Deliverable:	Yes
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$DANDJ

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Not reported
Date Tank Installed:	01/01/1939
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	12/09/1991
Date Tank Permanently Closed/ Removed:	12/05/1991
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	12/05/1991
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	06/14/1991
Date Of Aprroval Letter:	12/05/1991
Firm Closing Tank:	DEPT OF ARMY
Date Closure Report Received:	11/15/1991
Registration End Date:	Not reported

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

LockOut Flag:	No
Comments:	Not reported

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	13559
Tank PK:	13559
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	1000
Substance:	Gasoline, Including Blends
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1991-12-09 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	1
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW04114
Owner Name:	US ARMY CORPS OF ENGINEERS
Owner Address:	210 TUCKER
Owner City,St,Zip:	ST LOUIS, MO 63101
Owner County Code:	Not reported
Owner Phone:	2635855
Mail Was Not Deliverable:	Yes
Is Owner Active?:	No
Date Registration Received:	Not reported
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$DANDJ

Tank ID:	2
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Not reported
Date Tank Installed:	01/01/1961
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

Tank External Protec Date:	Not reported
Date Tank Last Used:	11/22/1991
Date Tank Permanently Closed/ Removed:	11/22/1991
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	11/22/1991
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	11/22/1992
Date Of Aprroval Letter:	11/22/1991
Firm Closing Tank:	CORPS OF ENGINEERS
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	NO PRIOR NOTICE

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	13560
Tank PK:	13560
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	300
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1991-11-22 00:00:00
Pipe Installation Date:	Not reported
Pipe System:	Not reported
Pipe Material:	3
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW04114
Owner Name:	US ARMY CORPS OF ENGINEERS
Owner Address:	210 TUCKER
Owner City,St,Zip:	ST LOUIS, MO 63101
Owner County Code:	Not reported
Owner Phone:	2635855
Mail Was Not Deliverable:	Yes
Is Owner Active?:	No
Date Registration Received:	Not reported

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-11-18 00:00:00
Name of Person Editing Record:	N$DANDJ

Tank ID:	3
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Meet 98 Update Requirements:	Not reported
Date Tank Installed:	01/01/1971
Tank Material:	Steel
Code for Tank Material Manufacturer:	Not reported
Code for Tank Installer:	Not reported
Other Type Of Tank Material:	Not reported
Tank Internal Protection:	Not reported
Other Tank Internal Protection:	Not reported
Tank Internal Protection Date:	Not reported
Tank External Protection:	Not reported
Other Type Tank Extrn Protec:	Not reported
Tank External Protec Date:	Not reported
Date Tank Last Used:	11/22/1991
Date Tank Permanently Closed/ Removed:	11/22/1991
Dt Tk Exp Brought InUse/Internal Tracking:	Not reported
Tank Fees Waived:	Yes
Expedite Closure On Tank?:	No
Responsible Person Expediting Closure:	Not reported
Temporary Status Verified Date:	Not reported
Admin Fee 585:	Not reported
Date Administratively Closed:	Not reported
Date Record Added:	06/30/1995
Date Record Edited:	Not reported
Person Adding/Editing Record:	Not reported
Date Of NFA Letter:	11/22/1991
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	11/22/1992
Date Of Aprroval Letter:	11/22/1991
Firm Closing Tank:	CORPS OF ENGINEERS
Date Closure Report Received:	Not reported
Registration End Date:	Not reported
LockOut Flag:	No
Comments:	NO PRIOR NOTICE

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	13561
Tank PK:	13561
Case Number:	Not reported
Compartment Status:	Removed
Compartment Temp Verified Dt:	Not reported
Capacity:	2000
Substance:	Diesel
Substance Other:	Not reported
Hazardous Substance:	Not reported
Mixture:	False
Date of Last Use:	1991-11-22 00:00:00
Pipe Installation Date:	Not reported

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

Pipe System:	Not reported
Pipe Material:	3
Pipe Material Other:	Not reported
Pipe Protection:	Not reported
Pipe Protection Date:	Not reported
Pipe Double Wall:	0
Spill Protection:	False

Tank Aug 2011:

Facility Id:	ST0005522
Tank Id:	1
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0005522
Tank Id:	2
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0005522
Tank Id:	3
Site Usage:	Not reported
Risk Type:	Not reported
Soil Type:	Not reported
GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No

US ARMY CORPS OF ENG LOCK & DAM (Continued) **U001158761**

No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

3
WSW
1/2-1
0.963 mi.
5083 ft.

Actual:
519 ft.

Focus Map:
4

HOLNAM INC SAFETY KLEEN CORP
HWY 79 N
CLARKSVILLE, MO 63336

CORRACTS **1000185891**
RCRA-TSDF **MOD029729688**
US INST CONTROLS
RCRA NonGen / NLR
RAATS
WI MANIFEST

CORRACTS:

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
EPA ID:	MOD029729688
Area Name:	AOC 7
Corrective Action:	INVESTIGATION IMPOSITION
Actual Date:	20121210
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
EPA ID:	MOD029729688
Area Name:	ENTIRE FACILITY
Corrective Action:	RFA COMPLETED-ASSESSMENT WAS A RFA
Actual Date:	19921029
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
EPA ID:	MOD029729688
Area Name:	ENTIRE FACILITY
Corrective Action:	DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY
Actual Date:	19921029
Air Release Indicator:	Not reported
Groundwater Release Indicator:	Not reported
Soil Release Indicator:	Not reported
Surface Water Release Indicator:	Not reported

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
EPA ID:	MOD029729688
Area Name:	ENTIRE FACILITY
Corrective Action:	CA PRIORITIZATION-MEDIUM CA PRIORITY
Actual Date:	19920128

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: ENTIRE FACILITY
Corrective Action: STABILIZATION MEASURES EVALUATION-FURTHER INVESTIGATION NECESSARY
Actual Date: 19950720
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: ENTIRE FACILITY
Corrective Action: DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NOT NECESSARY
Actual Date: 20000502
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: AOC 6
Corrective Action: INVESTIGATION IMPOSITION
Actual Date: 20140204
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Y
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: SWMU 18
Corrective Action: INVESTIGATION IMPOSITION
Actual Date: 20140204
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Y
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

EPA ID: MOD029729688
Area Name: AOC 7
Corrective Action: INVESTIGATION WORKPLAN RECEIVED
Actual Date: 20121210
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: SWMU 26
Corrective Action: INVESTIGATION WORKPLAN RECEIVED
Actual Date: 20121210
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Name: HOLCIM (US) INC/GEOCYCLE LLC
Address: 14744 HWY 79
Address 2: Not reported
EPA ID: MOD029729688
Area Name: AOC 7
Corrective Action: INVESTIGATION WORKPLAN APPROVED
Actual Date: 20130205
Air Release Indicator: Not reported
Groundwater Release Indicator: Not reported
Soil Release Indicator: Not reported
Surface Water Release Indicator: Not reported

Click this hyperlink while viewing on your computer to access
65 additional CORRACTS: record(s) in the EDR Site Report.

RCRA TSDF:
Treatment Storage and Disposal Type: Boiler/Industrial Furnace, Storage, Treatment
Full Enforcement Universe: Not reported
Corrective Action Workload Universe: No
Permit Renewals Workload Universe: Not reported
Permit Workload Universe: Not reported
Permit Progress Universe: Boiler/Industrial Furnace, Storage, Treatment
Post-Closure Workload Universe: Not reported
Closure Workload Universe: Not reported
Operating TSDF Universe: Not reported
Commercial TSD Indicator: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe: No
TSDFs Only Subject to CA under Discretionary Auth Universe: Yes

Biennial: List of Years
Year: 2021

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Click Here for Biennial Reporting System Data:
Year: 2019

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Year: 2017

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Year: 2015

Click Here for Biennial Reporting System Data:
Year: 2009

Click Here for Biennial Reporting System Data:
Year: 2007

Click Here for Biennial Reporting System Data:
Year: 2005

Click Here for Biennial Reporting System Data:
Year: 2003

Click Here for Biennial Reporting System Data:
Year: 2001

Click Here for Biennial Reporting System Data:

US INST CONTROLS:

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
City,State,Zip:	CLARKSVILLE, MO 63336-2044
EPA ID:	MOD029729688
Action Name:	Not reported
Action ID:	Not reported
Operable Unit:	Not reported
Actual Date:	Not reported
Contaminated Media:	Not reported
Event Code:	CA772ID
Contact Name:	TRAVIS B WEIDE
Contact Telephone:	989-916-9637
Event:	INSTITUTIONAL CONTROLS ESTABLISHED-INFORMATIONAL DEVICE
Federal Facility:	Not reported
Fiscal Year:	Not reported
NPL Status:	Not reported
Superfund Alternative Agreement:	Not reported
Latitude:	Not reported
Longitude:	Not reported

Name:	HOLCIM (US) INC/GEOCYCLE LLC
Address:	14744 HWY 79
Address 2:	Not reported
City,State,Zip:	CLARKSVILLE, MO 63336-2044
EPA ID:	MOD029729688
Action Name:	Not reported
Action ID:	Not reported
Operable Unit:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Actual Date:	Not reported
Contaminated Media:	Not reported
Event Code:	CA772PR
Contact Name:	TRAVIS B WEIDE
Contact Telephone:	989-916-9637
Event:	INSTITUTIONAL CONTROLS ESTABLISHED-PROPRIETARY CONTROL
Federal Facility:	Not reported
Fiscal Year:	Not reported
NPL Status:	Not reported
Superfund Alternative Agreement:	Not reported
Latitude:	Not reported
Longitude:	Not reported

RCRA Listings:

Date Form Received by Agency:	20220419
Handler Name:	Holcim (Us) Inc/Geocycle Llc
Handler Address:	HWY 79
Handler City,State,Zip:	CLARKSVILLE, MO 63336-2044
EPA ID:	MOD029729688
Contact Name:	TRAVIS B WEIDE
Contact Address:	FORD AVENUE
Contact City,State,Zip:	ALPENA, MI 49707
Contact Telephone:	989-916-9637
Contact Fax:	Not reported
Contact Email:	TRAVIS.WEIDE@HOLCIM.COM
Contact Title:	SR. MANAGER, CLOSED SITES
EPA Region:	07
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	2021
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	HWY N
Mailing City,State,Zip:	CLARKSVILLE, MO 63336
Owner Name:	Holcim (Us) Inc / Geocycle
Owner Type:	Private
Operator Name:	Holcim (Us) Inc / Geocycle
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	Yes
Subject to Corrective Action Universe:	Yes
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	Medium
Environmental Control Indicator:	Yes
Institutional Control Indicator:	Yes
Human Exposure Controls Indicator:	Yes
Groundwater Controls Indicator:	Yes
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20220419
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Biennial: List of Years
Year: 2021

Click Here for Biennial Reporting System Data:
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Year: 2005

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Year: 2001

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Hazardous Waste Summary:
Waste Code: D000

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Not Defined

Waste Code: D001
Waste Description: Ignitable Waste

Waste Code: D002
Waste Description: Corrosive Waste

Waste Code: D004
Waste Description: Arsenic

Waste Code: D005
Waste Description: Barium

Waste Code: D006
Waste Description: Cadmium

Waste Code: D007
Waste Description: Chromium

Waste Code: D008
Waste Description: Lead

Waste Code: D009
Waste Description: Mercury

Waste Code: D010
Waste Description: Selenium

Waste Code: D011
Waste Description: Silver

Waste Code: D018
Waste Description: Benzene

Waste Code: D019
Waste Description: Carbon Tetrachloride

Waste Code: D020
Waste Description: Chlordane

Waste Code: D021
Waste Description: Chlorobenzene

Waste Code: D022
Waste Description: Chloroform

Waste Code: D023
Waste Description: O-Cresol

Waste Code: D024
Waste Description: M-Cresol

Waste Code: D025
Waste Description: P-Cresol

Waste Code: D026

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description:	Cresol
Waste Code:	D027
Waste Description:	1,4-Dichlorobenzene
Waste Code:	D028
Waste Description:	1,2-Dichloroethane
Waste Code:	D029
Waste Description:	1,1-Dichloroethylene
Waste Code:	D030
Waste Description:	2,4-Dinitrotoluene
Waste Code:	D032
Waste Description:	Hexachlorobenzene
Waste Code:	D033
Waste Description:	Hexachlorobutadiene
Waste Code:	D034
Waste Description:	Hexachloroethane
Waste Code:	D035
Waste Description:	Methyl Ethyl Ketone
Waste Code:	D036
Waste Description:	Nitrobenzene
Waste Code:	D037
Waste Description:	Pentachlorophenol
Waste Code:	D038
Waste Description:	Pyridine
Waste Code:	D039
Waste Description:	Tetrachloroethylene
Waste Code:	D040
Waste Description:	Trichlorethylene
Waste Code:	D041
Waste Description:	2,4,5-Trichlorophenol
Waste Code:	D042
Waste Description:	2,4,6-Trichlorophenol
Waste Code:	D043
Waste Description:	Vinyl Chloride
Waste Code:	F001
Waste Description:	The Following Spent Halogenated Solvents Used In Degreasing: Tetrachloroethylene, Trichlorethylene, Methylene Chloride, 1,1,1-Trichloroethane, Carbon Tetrachloride And Chlorinated Fluorocarbons; All Spent Solvent Mixtures/Blends Used In Degreasing Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Halogenated Solvents Or Those Solvents Listed

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

In F002, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F002
Waste Description: The Following Spent Halogenated Solvents: Tetrachloroethylene, Methylene Chloride, Trichloroethylene, 1,1,1-Trichloroethane, Chlorobenzene, 1,1,2-Trichloro-1,2,2-Trifluoroethane, Ortho-Dichlorobenzene, Trichlorofluoromethane, And 1,1,2, Trichloroethane; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Halogenated Solvents Or Those Solvents Listed In F001, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F003
Waste Description: The Following Spent Nonhalogenated Solvents: Xylene, Acetone, Ethyl Acetate, Ethyl Benzene, Ethyl Ether, Methyl Isobutyl Ketone, N-Butyl Alcohol, Cyclohexanone, And Methanol; All Spent Solvent Mixtures/Blends Containing, Before Use, Only The Above Spent Nonhalogenated Solvents; And All Spent Solvent Mixtures/Blends Containing, Before Use, One Or More Of The Above Nonhalogenated Solvents, And A Total Of Ten Percent Or More (By Volume) Of One Or More Of Those Solvents Listed In F001, F002, F004, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F004
Waste Description: The Following Spent Nonhalogenated Solvents: Cresols, Cresylic Acid, And Nitrobenzene; And The Still Bottoms From The Recovery Of These Solvents; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Nonhalogenated Solvents Or Those Solvents Listed In F001, F002, And F005; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F005
Waste Description: The Following Spent Nonhalogenated Solvents: Toluene, Methyl Ethyl Ketone, Carbon Disulfide, Isobutanol, Pyridine, Benzene, 2-Ethoxyethanol, And 2-Nitropropane; All Spent Solvent Mixtures/Blends Containing, Before Use, A Total Of Ten Percent Or More (By Volume) Of One Or More Of The Above Nonhalogenated Solvents Or Those Solvents Listed In F001, F002, Or F004; And Still Bottoms From The Recovery Of These Spent Solvents And Spent Solvent Mixtures.

Waste Code: F006
Waste Description: Wastewater Treatment Sludges From Electroplating Operations, Except From The Following Processes: (1) Sulfuric Acid Anodizing Of Aluminum; (2) Tin Plating On Carbon Steel; (3) Zinc Plating (Segregated Basis) On Carbon Steel; (4) Aluminum Or Zinc-Aluminum Plating On Carbon Steel; (5) Cleaning/Stripping Associated With Tin, Zinc, And Aluminum Plating On Carbon Steel; And (6) Chemical Etching And Milling Of Aluminum.

Waste Code: F007
Waste Description: Spent Cyanide Plating Bath Solutions From Electroplating Operations.

Waste Code: F008

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Plating Bath Residues From The Bottom Of Plating Baths From Electroplating Operations In Which Cyanides Are Used In The Process.

Waste Code: F009
Waste Description: Spent Stripping And Cleaning Bath Solutions From Electroplating Operations In Which Cyanides Are Used In The Process.

Waste Code: F010
Waste Description: Quenching Bath Residues From Oil Baths From Metal Heat Treating Operations In Which Cyanides Are Used In The Process.

Waste Code: F011
Waste Description: Spent Cyanide Solutions From Slat Bath Pot Cleaning From Metal Heat Treating Operations.

Waste Code: F012
Waste Description: Quenching Wastewater Treatment Sludges From Metal Heat Treating Operations In Which Cyanides Are Used In The Process.

Waste Code: F019
Waste Description: Wastewater Treatment Sludges From The Chemical Conversion Coating Of Aluminum, Except From Zirconium Phosphating In Aluminum Can Washing When Such Phosphating Is An Exclusive Conversion Coating Process.

Waste Code: F024
Waste Description: Process Wastes Including, But Not Limited To, Distillation Residues, Heavy Ends, Tars, And Reactor Clean-Out Wastes From The Production Of Certain Chlorinated Aliphatic Hydrocarbons By Free Radical Catalyzed Processes. These Chlorinated Aliphatic Hydrocarbons Are Those Having Carbon Chain Lengths Ranging From One To, And Including Five, With Varying Amounts And Positions Of Chlorine Substitution. (This Listing Does Not Include Wastewaters, Wastewater Treatment Sludge, Spent Catalysts, And Wastes Listed In Sections 261.31. Or 261.32)

Waste Code: F032
Waste Description: Wastewaters, Process Residuals, Preservative Drippage, And Spent Formulations From Wood Preserving Processes Generated At Plants That Currently Use, Or Have Previously Used, Chlorophenolic Formulations [Except Potentially Cross-Contaminated Wastes That Have Had The F032 Waste Code Deleted In Accordance With Section 261.35 (I.E., The Newly Promulgated Equipment Cleaning Or Replacement Standards), And Where The Generator Does Not Resume Or Initiate Use Of Chlorophenolic Formulations]. (This Listing Does Not Include K001 Bottom Sediment Sludge From The Treatment Of Wastewater From Wood Preserving Processes That Use Creosote And/Or Pentachlorophenol.)

Waste Code: F034
Waste Description: Wastewaters, Process Residuals, Preservative Drippage, And Spent Formulations From Wood Preserving Processes Generated At Plants That Use Creosote Formulations. This Listing Does Not Include K001 Bottom Sediment Sludge From The Treatment Of Wastewater From Wood Preserving Processes That Use Creosote And/Or Pentachlorophenol.

Waste Code: F035
Waste Description: Wastewaters, Process Residuals, Preservative Drippage, And Spent Formulations From Wood Preserving Processes Generated At Plants That Use Inorganic Preservatives Containing Arsenic Or Chromium. This

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Listing Does Not Include K001 Bottom Sediment Sludge From The Treatment Of Wastewater From Wood Preserving Processes That Use Creosote And/Or Pentachlorophenol.

Waste Code: F037
Waste Description: Petroleum Refinery Primary Oil/Water/Solids Separation Sludge - Any Sludge Generated From The Gravitational Separation Of Oil/Water/Solids During The Storage Or Treatment Of Process Wastewaters And Oily Cooling Wastewaters From Petroleum Refineries. Such Sludges Include, But Are Not Limited To, Those Generated In Oil/Water/Solids Separators; Tanks And Impoundments; Ditches And Other Conveyances; Sumps; And Storm Water Units Receiving Dry Weather Flow. Sludges Generated In Storm Water Units That Do Not Receive Dry Weather Flow, Sludges Generated In Aggressive Biological Treatment Units As Defined In Section 261.31(B)(2) (Including Sludges Generated In One Or More Additional Units After Wastewaters Have Been Treated In Aggressive Biological Treatment Units), And K051 Wastes Are Exempted From This Listing.

Waste Code: F038
Waste Description: Petroleum Refinery Secondary (Emulsified) Oil/Water/Solids Separation Sludge - Any Sludge And/Or Float Generated From The Physical And/Or Chemical Separation Of Oil/Water/Solids In Process Wastewaters And Oily Cooling Wastewaters From Petroleum Refineries. Such Wastes Include, But Are Not Limited To, All Sludges And Floats Generated In Induced Air Flotation (Iaf) Units, Tanks And Impoundments, And All Sludges Generated In Daf Units. Sludges Generated In Stormwater Units That Do Not Receive Dry Weather Flow, Sludges Generated In Aggressive Biological Treatment Units As Defined In Section 261.31(B)(2) (Including Sludges Generated In One Or More Additional Units After Wastewaters Have Been Treated In Aggressive Biological Treatment Units), And F037, K048, And K051 Wastes Are Exempted From This Listing.

Waste Code: F039
Waste Description: Leachate Resulting From The Treatment, Storage, Or Disposal Of Wastes Classified By More Than One Waste Code Under Subpart D, Or From A Mixture Of Wastes Classified Under Subparts C And D Of This Part. (Leachate Resulting From The Management Of One Or More Of The Following Epa Hazardous Wastes And No Other Hazardous Wastes Retains Its Hazardous Waste Code(S): F020, F021, F022, F023, F026, F027, And/Or F028.)

Waste Code: K001
Waste Description: Bottom Sediment Sludge From The Treatment Of Wastewaters From Wood Preserving Processes That Use Creosote And/Or Pentachlorophenol.

Waste Code: K002
Waste Description: Wastewater Treatment Sludge From The Production Of Chrome Yellow And Orange Pigments.

Waste Code: K003
Waste Description: Wastewater Treatment Sludge From The Production Of Molybdate Orange Pigments.

Waste Code: K004
Waste Description: Wastewater Treatment Sludge From The Production Of Zinc Yellow

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Pigments.

Waste Code: K005
Waste Description: Wastewater Treatment Sludge From The Production Of Chrome Green Pigments.

Waste Code: K006
Waste Description: Wastewater Treatment Sludge From The Production Of Chrome Oxide Green Pigments (Anhydrous And Hydrated).

Waste Code: K007
Waste Description: Wastewater Treatment Sludge From The Production Of Iron Blue Pigments.

Waste Code: K008
Waste Description: Oven Residue From The Production Of Chrome Oxide Green Pigments.

Waste Code: K009
Waste Description: Distillation Bottoms From The Production Of Acetaldehyde From Ethylene.

Waste Code: K010
Waste Description: Distillation Side Cuts From The Production Of Acetaldehyde From Ethylene.

Waste Code: K011
Waste Description: Bottom Stream From The Wastewater Stripper In The Production Of Acrylonitrile.

Waste Code: K013
Waste Description: Bottom Stream From The Acetonitrile Column In The Production Of Acrylonitrile.

Waste Code: K014
Waste Description: Bottoms From The Acetonitrile Purification Column In The Production Of Acrylonitrile.

Waste Code: K015
Waste Description: Still Bottoms From The Distillation Of Benzyl Chloride.

Waste Code: K016
Waste Description: Heavy Ends Or Distillation Residues From The Production Of Carbon Tetrachloride.

Waste Code: K017
Waste Description: Heavy Ends (Still Bottoms) From The Purification Column In The Production Of Epichlorohydrin.

Waste Code: K018
Waste Description: Heavy Ends From The Fractionation Column In Ethyl Chloride Production.

Waste Code: K019
Waste Description: Heavy Ends From The Distillation Of Ethylene Dichloride In Ethylene Dichloride Production.

Waste Code: K020
Waste Description: Heavy Ends From The Distillation Of Vinyl Chloride In Vinyl Chloride Monomer Production.

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code:	K021
Waste Description:	Aqueous Spent Antimony Catalyst Waste From Fluoromethane Production.
Waste Code:	K022
Waste Description:	Distillation Bottom Tars From The Production Of Phenol/Acetone From Cumene.
Waste Code:	K023
Waste Description:	Distillation Light Ends From The Production Of Phthalic Anhydride From Naphthalene.
Waste Code:	K024
Waste Description:	Distillation Bottoms From The Production Of Phthalic Anhydride From Naphthalene.
Waste Code:	K025
Waste Description:	Distillation Bottoms From The Production Of Nitrobenzene By The Nitration Of Benzene.
Waste Code:	K026
Waste Description:	Stripping Still Tails From The Production Of Methyl Ethyl Pyridines.
Waste Code:	K027
Waste Description:	Centrifuge And Distillation Residues From Toluene Diisocyanate Production.
Waste Code:	K028
Waste Description:	Spent Catalyst From The Hydrochlorinator Reactor In The Production Of 1,1,1-Trichloroethane.
Waste Code:	K029
Waste Description:	Waste From The Product Steam Stripper In The Production Of 1,1,1-Trichloroethane.
Waste Code:	K030
Waste Description:	Column Bottoms Or Heavy Ends From The Combined Production Of Trichloroethylene And Perchloroethylene.
Waste Code:	K048
Waste Description:	Dissolved Air Flotation (Daf) Float From The Petroleum Refining Industry.
Waste Code:	K049
Waste Description:	Slop Oil Emulsion Solids From The Petroleum Refining Industry.
Waste Code:	K050
Waste Description:	Heat Exchanger Bundle Cleaning Sludge From The Petroleum Refining Industry.
Waste Code:	K051
Waste Description:	Api Separator Sludge From The Petroleum Refining Industry.
Waste Code:	K052
Waste Description:	Tank Bottoms (Leaded) From The Petroleum Refining Industry.
Waste Code:	K060
Waste Description:	Ammonia Still Lime Sludge From Coking Operations.

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code:	K061
Waste Description:	Emission Control Dust/Sludge From The Primary Production Of Steel In Electric Furnaces.
Waste Code:	K062
Waste Description:	Spent Pickle Liquor From Steel Finishing Operations Of Plants That Produce Iron Or Steel.
Waste Code:	K064
Waste Description:	Acid Plant Blowdown Slurry/Sludge Resulting From The Thickening Of Blowdown Slurry From Primary Copper Production.
Waste Code:	K065
Waste Description:	Surface Impoundment Solids Contained In And Dredged From Surface Impoundments At Primary Lead Smelting Facilities.
Waste Code:	K066
Waste Description:	Sludge From Treatment Of Process Wastewater And/Or Acid Plant Blowdown From Primary Zinc Production.
Waste Code:	K069
Waste Description:	Emission Control Dust/Sludge From Secondary Lead Smelting.
Waste Code:	K071
Waste Description:	Brine Purification Muds From The Mercury Cell Process In Chlorine Production, In Which Separately Prepurified Brine Is Not Used.
Waste Code:	K073
Waste Description:	Chlorinated Hydrocarbon Waste From The Purification Step Of The Diaphragm Cell Process Using Graphite Anodes In Chlorine Production.
Waste Code:	K083
Waste Description:	Distillation Bottoms From Aniline Production.
Waste Code:	K084
Waste Description:	Wastewater Treatment Sludges Generated During The Production Of Veterinary Pharmaceuticals From Arsenic Or Organo-Arsenic Compounds.
Waste Code:	K085
Waste Description:	Distillation Or Fractionation Column Bottoms From The Production Of Chlorobenzenes.
Waste Code:	K086
Waste Description:	Solvent Washes And Sludges, Caustic Washes And Sludges, Or Water Washes And Sludges From Cleaning Tubs And Equipment Used In The Formulation Of Ink From Pigments, Driers, Soaps, And Stabilizers Containing Chromium And Lead.
Waste Code:	K087
Waste Description:	Decanter Tank Tar Sludge From Coking Operations.
Waste Code:	K088
Waste Description:	Spent Potliners From Primary Aluminum Reduction.
Waste Code:	K090
Waste Description:	Emission Control Dust Or Sludge From Ferrochromiumsilicon Production.

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code: K091
Waste Description: Emission Control Dust Or Sludge From Ferrochromium Production.

Waste Code: K093
Waste Description: Distillation Light Ends From The Production Of Phthalic Anhydride From Ortho-Xylene.

Waste Code: K094
Waste Description: Distillation Bottoms From The Production Of Phthalic Anhydride From Ortho-Xylene.

Waste Code: K095
Waste Description: Distillation Bottoms From The Production Of 1,1,1-Trichloroethane.

Waste Code: K096
Waste Description: Heavy Ends From The Heavy Ends Column From The Production Of 1,1,1-Trichloroethane.

Waste Code: K100
Waste Description: Waste Leaching Solution From Acid Leaching Of Emission Control Dust/Sludge From Secondary Lead Smelting.

Waste Code: K101
Waste Description: Distillation Tar Residues From The Distillation Of Aniline-Based Compounds In The Production Of Veterinary Pharmaceuticals From Arsenic Or Organo-Arsenic Compounds.

Waste Code: K102
Waste Description: Residue From The Use Of Activated Carbon For Decolorization In The Production Of Veterinary Pharmaceuticals From Arsenic Or Organo-Arsenic Compounds.

Waste Code: K103
Waste Description: Process Residues From Aniline Extraction From The Production Of Aniline.

Waste Code: K104
Waste Description: Combined Wastewaters Generated From Nitrobenzene/Aniline Production.

Waste Code: K105
Waste Description: Separated Aqueous Stream From The Reactor Product Washing Step In The Production Of Chlorobenzenes.

Waste Code: K106
Waste Description: Wastewater Treatment Sludge From The Mercury Cell Process In Chlorine Production.

Waste Code: K107
Waste Description: Column Bottoms From Product Separation From The Production Of 1,1-Dimethylhydrazine (Udmh) From Carboxylic Acid Hydrazides.

Waste Code: K108
Waste Description: Condensed Column Overheads From Product Separation And Condensed Reactor Vent Gases From The Production Of 1,1-Dimethylhydrazine From Carboxylic Acid Hydrazides.

Waste Code: K109

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Spent Filter Cartridges From Product Purification From The Product Of 1,1-Dimethylhydrazine From Carboxylic Acid Hydrazides.

Waste Code: K110
Waste Description: Condensed Column Overheads From Intermediate Separation From The Production Of 1,1-Dimethylhydrazine From Carboxylic Acid Hydrazides.

Waste Code: K111
Waste Description: Product Washwaters From The Production Of Dinitrotoluene Via Nitration Of Toluene.

Waste Code: K112
Waste Description: Reaction By-Product Water From The Drying Column In The Production Of Toluenediamine Via Hydrogenation Of Dinitrotoluene.

Waste Code: K113
Waste Description: Condensed Liquid Light Ends From Purification Of Toluenediamine In Production Of Toluenediamine Via Hydrogenation Of Dinitrotoluene.

Waste Code: K114
Waste Description: Vicinals From The Purification Of Toluenediamine In Production Of Toluenediamine Via Hydrogenation Of Dinitrotoluene.

Waste Code: K115
Waste Description: Heavy Ends From Purification Of Toluenediamine In The Production Of Toluenediamine Via Hydrogenation Of Dinitrotoluene.

Waste Code: K116
Waste Description: Organic Condensate From The Solvent Recovery Column In The Production Of Toluene Diisocyanate Via Phosgenation Of Toluenediamine.

Waste Code: K117
Waste Description: Wastewater From The Reactor Vent Gas Scrubber In The Production Of Ethylene Dibromide Via Bromination Of Ethene.

Waste Code: K118
Waste Description: Spent Adsorbent Solids From Purification Of Ethylene Dibromide In The Production Of Ethylene Dibromide Via Bromination Of Ethene.

Waste Code: K136
Waste Description: Still Bottoms From The Purification Of Ethylene Dibromide In The Production Of Ethylene Dibromide Via Bromination Of Ethene.

Waste Code: K141
Waste Description: Process Residues From The Recovery Of Coal Tar, Including, But Not Limited To, Tar Collecting Sump Residues From The Production Of Coke From Coal Or The Recovery Of Coke By-Products Produced From Coal. This Listing Does Not Include K087 (Decanter Tank Sludge From Coking Operations).

Waste Code: K142
Waste Description: Tank Storage Residues From The Production Of Coke From Coal Or From The Recovery Of Coke By-Products From Coal.

Waste Code: K143
Waste Description: Process Residues From The Recovery Of Light Oil, Including, But Not Limited To, Those Generated In Stills, Decanters, And Wash Oil

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Recovery Units From The Recovery Of Coke By-Products Produced From Coal.

Waste Code: K144
Waste Description: Wastewater Sump Residues From Light Oil Refining, Including, But Not Limited To, Intercepting Or Contamination Sump Sludges From The Recovery Of Coke By-Products Produced From Coal.

Waste Code: K145
Waste Description: Residues From Naphthalene Collection And Recovery Operations From The Recovery Of Coke By-Products Produced From Coal.

Waste Code: K147
Waste Description: Tar Storage Residues From Coal Tar Refining.

Waste Code: K148
Waste Description: Residues From Coal Tar Distillation, Including, But Not Limited To, Still Bottoms.

Waste Code: K149
Waste Description: Distillation Bottoms From The Production Of Alpha (Or Methyl-) Chlorinated Tolunes, Ring-Chlorinated Tolunes, Benzoyl Chlorides, And Compounds With Mixtures Of These Functional Groups. [This Waste Does Not Include Still Bottoms From The Distillation Of Benzoyl Chloride]

Waste Code: K150
Waste Description: Organic Residules Excluding Spent Carbon Adsorbent, From The Spent Chlorine Gas And Hydrochloric Acid Recovery Processes Associated With The Production Of Alpha (Or Methyl-) Chlorinated Tolunes, Benzoyl Chlorides, And Compounds With Mixtures Of These Functional Groups.

Waste Code: K151
Waste Description: Wastewater Treatment Sludges, Excluding Neutralization And Biological Sludges, Generated During The Treatment Of Wastewaters From The Production Of Alpha (Or Methyl-) Chlorinated Tolunes, Benzoyl Chlorides, And Compounds With Mixtures Of These Functional Groups.

Waste Code: K156
Waste Description: Organic Waste (Including Heavy Ends, Still Bottoms, Light Ends, Spent Solvents, Filtrates, And Decantates) From The Production Of Carbamates And Carbamoyl Oximes.

Waste Code: K157
Waste Description: Wastewaters (Including Scrubber Waters, Condenser Waters, Washwaters, And Separation Waters) From The Production Of Carbamates And Carbamoyl Oximes.

Waste Code: K158
Waste Description: Bag House Dusts And Filter/Separation Solids From The Production Of Carbamates And Carbamoyl Oximes.

Waste Code: K159
Waste Description: Organics From The Treatment Of Thiocarbamate Wastes.

Waste Code: K160
Waste Description: Solids (Including Filter Wastes, Separation Solids, And Spent Catalysts) From The Production Of Thiocarbamates And Solids From The

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Treatment Of Thiocarbamate Wastes.

Waste Code: K161
Waste Description: Purification Solids (Including Filtration, Evaporation, And Centrifugation Solids), Bag House Dust And Floor Sweepings From The Production Of Dithiocarbamate Acids And Their Salts. (This Listing Does Not Include K125 Or K126).

Waste Code: K169
Waste Description: K169

Waste Code: K170
Waste Description: K170

Waste Code: K171
Waste Description: K171

Waste Code: K172
Waste Description: K172

Waste Code: NONE
Waste Description: None

Waste Code: U001
Waste Description: Acetaldehyde (I) (Or) Ethanal (I)

Waste Code: U002
Waste Description: 2-Propanone (I) (Or) Acetone (I)

Waste Code: U003
Waste Description: Acetonitrile (I,T)

Waste Code: U004
Waste Description: Acetophenone (Or) Ethanone, 1-Phenyl-

Waste Code: U005
Waste Description: 2-Acetylaminofluorene (Or) Acetamide, N-9h-Fluoren-2-Yl

Waste Code: U006
Waste Description: Acetyl Chloride (C,R,T)

Waste Code: U007
Waste Description: 2-Propenamide (Or) Acrylamide

Waste Code: U008
Waste Description: 2-Propenoic Acid (I) (Or) Acrylic Acid (I)

Waste Code: U009
Waste Description: 2-Propenenitrile (Or) Acrylonitrile

Waste Code: U010
Waste Description: Azirino [2',3':3,4]Pyrrolo[1,2-A]Indole-4,7-Dione, 6-Amino-8-[[(Aminocarbonyl)Oxy]Methyl]-1,1a,2,8,8a,8b-Hexahydro-8a-Methoxy-5-Methyl-, [1as-(1aalpha, 8beta, 8aalpha, 8balpha)]- (Or) Mitomycin C

Waste Code: U012

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description:	Aniline (I,T) (Or) Benzenamine (I,T)
Waste Code:	U013
Waste Description:	Not Defined
Waste Code:	U014
Waste Description:	Auramine (Or) Benzenamine, 4,4'-Carbonimidoylbis[N,N-Dimethyl-
Waste Code:	U015
Waste Description:	Azaserine (Or) L-Serine, Diazoacetate (Ester)
Waste Code:	U016
Waste Description:	Benz[C]Acridine
Waste Code:	U017
Waste Description:	Benzal Chloride (Or) Benzene, (Dichloromethyl)-
Waste Code:	U018
Waste Description:	Benz[A]Anthracene
Waste Code:	U019
Waste Description:	Benzene (I,T)
Waste Code:	U020
Waste Description:	Benzenesulfonic Acid Chloride (C,R) (Or) Benzenesulfonyl Chloride (C,R)
Waste Code:	U021
Waste Description:	[1,1'-Biphenyl]-4,4'-Diamine (Or) Benzidine
Waste Code:	U022
Waste Description:	Benzo[A]Pyrene
Waste Code:	U023
Waste Description:	Benzene, (Trichloromethyl)- (Or) Benzotrichloride (C,R,T)
Waste Code:	U024
Waste Description:	Dichloromethoxy Ethane (Or) Ethane, 1,1'-[Methylenebis(Oxy)]Bis[2-Chloro-
Waste Code:	U025
Waste Description:	Dichloroethyl Ether (Or) Ethane, 1,1'-Oxybis[2-Chloro-
Waste Code:	U026
Waste Description:	Chlornaphazin (Or) Naphthalenamine, N,N'-Bis(2-Chloroethyl)-
Waste Code:	U027
Waste Description:	Dichloroisopropyl Ether (Or) Propane, 2,2'-Oxybis[2-Chloro-
Waste Code:	U028
Waste Description:	1,2-Benzenedicarboxylic Acid, Bis(2-Ethylhexyl) Ester (Or) Diethylhexyl Phthalate
Waste Code:	U029
Waste Description:	Methane, Bromo- (Or) Methyl Bromide
Waste Code:	U030

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: 4-Bromophenyl Phenyl Ether (Or) Benzene, 1-Bromo-4-Phenoxy-

Waste Code: U031
Waste Description: 1-Butanol (I) (Or) N-Butyl Alcohol (I)

Waste Code: U032
Waste Description: Calcium Chromate (Or) Chromic Acid H2cro4, Calcium Salt

Waste Code: U033
Waste Description: Carbon Oxyfluoride (R,T) (Or) Carbonic Difluoride

Waste Code: U034
Waste Description: Acetaldehyde, Trichloro- (Or) Chloral

Waste Code: U035
Waste Description: Benzenebutanoic Acid, 4-[Bis(2-Chloroethyl)Amino]- (Or) Chlorambucil

Waste Code: U037
Waste Description: Benzene, Chloro- (Or) Chlorobenzene

Waste Code: U038
Waste Description: Benzeneacetic Acid, 4-Chloro-Alpha-(4-Chlorophenyl)-Alpha-Hydroxy-, Ethyl Ester (Or) Chlorobenzilate

Waste Code: U039
Waste Description: P-Chloro-M-Cresol (Or) Phenol, 4-Chloro-3-Methyl-

Waste Code: U041
Waste Description: Epichlorohydrin (Or) Oxirane, (Chloromethyl)-

Waste Code: U042
Waste Description: 2-Chloroethyl Vinyl Ether (Or) Ethene, (2-Chloroethoxy)-

Waste Code: U043
Waste Description: Ethene, Chloro- (Or) Vinyl Chloride

Waste Code: U044
Waste Description: Chloroform (Or) Methane, Trichloro-

Waste Code: U045
Waste Description: Methane, Chloro- (I,T) (Or) Methyl Chloride (I,T)

Waste Code: U046
Waste Description: Chloromethyl Methyl Ether (Or) Methane, Chloromethoxy-

Waste Code: U047
Waste Description: Beta-Chloronaphthalene (Or) Naphthalene, 2-Chloro-

Waste Code: U048
Waste Description: O-Chlorophenol (Or) Phenol, 2-Chloro-

Waste Code: U049
Waste Description: 4-Chloro-O-Toluidine, Hydrochloride (Or) Benzenamine, 4-Chloro-2-Methyl-, Hydrochloride

Waste Code: U050
Waste Description: Chrysene

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code:	U051
Waste Description:	Creosote
Waste Code:	U052
Waste Description:	Cresol (Cresylic Acid) (Or) Phenol, Methyl-
Waste Code:	U053
Waste Description:	2-Butenal (Or) Crotonaldehyde
Waste Code:	U055
Waste Description:	Benzene, (1-Methylethyl)- (I) (Or) Cumene (I)
Waste Code:	U056
Waste Description:	Benzene, Hexahydro- (I) (Or) Cyclohexane (I)
Waste Code:	U057
Waste Description:	Cyclohexanone (I)
Waste Code:	U058
Waste Description:	2h-1,3,2-Oxazaphosphorin-2-Amine, N,N-Bis(2-Chloroethyl)Tetrahydro-, 2-Oxide (Or) Cyclophosphamide
Waste Code:	U059
Waste Description:	5,12-Naphthacenedione, 8-Acetyl-10-[(3-Amino-2,3,6-Trideoxy)-Alpha-L-Lyxo-Hexopyranosyl)Oxy]-7,8,9,10-Tetrahydro-6,8,11-Trihydroxy-1-Methoxy-, (8s-Cis)- (Or) Daunomycin
Waste Code:	U062
Waste Description:	Carbamothioic Acid, Bis(1-Methylethyl)-, S-(2,3-Dichloro-2-Propenyl) Ester (Or) Diallate
Waste Code:	U063
Waste Description:	Dibenz[A,H]Anthracene
Waste Code:	U064
Waste Description:	Benzo[Rst]Pentaphene (Or) Dibenzo[A,I]Pyrene
Waste Code:	U066
Waste Description:	1,2-Dibromo-3-Chloropropane (Or) Propane, 1,2-Dibromo-3-Chloro-
Waste Code:	U067
Waste Description:	Ethane, 1,2-Dibromo- (Or) Ethylene Dibromide
Waste Code:	U068
Waste Description:	Methane, Dibromo- (Or) Methylene Bromide
Waste Code:	U069
Waste Description:	1,2-Benzenedicarboxylic Acid, Dibutyl Ester (Or) Dibutyl Phthalate
Waste Code:	U070
Waste Description:	Benzene, 1,2-Dichloro- (Or) O-Dichlorobenzene
Waste Code:	U071
Waste Description:	Benzene, 1,3-Dichloro- (Or) M-Dichlorobenzene
Waste Code:	U072

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Benzene, 1,4-Dichloro- (Or) P-Dichlorobenzene

Waste Code: U073
Waste Description: [1,1'-Biphenyl]-4,4'-Diamine, 3,3'-Dichloro- (Or) 3,3'-Dichlorobenzidine

Waste Code: U074
Waste Description: 1,4-Dichloro-2-Butene (I,T) (Or) 2-Butene, 1,4-Dichloro- (I,T)

Waste Code: U075
Waste Description: Dichlorodifluoromethane (Or) Methane, Dichlorodifluoro-

Waste Code: U076
Waste Description: Ethane, 1,1-Dichloro- (Or) Ethylidene Dichloride

Waste Code: U077
Waste Description: Ethane, 1,2-Dichloro- (Or) Ethylene Dichloride

Waste Code: U078
Waste Description: 1,1-Dichloroethylene (Or) Ethene, 1,1-Dichloro-

Waste Code: U079
Waste Description: 1,2-Dichloroethylene (Or) Ethene, 1,2-Dichloro-,(E)-

Waste Code: U080
Waste Description: Methane, Dichloro- (Or) Methylene Chloride

Waste Code: U081
Waste Description: 2,4-Dichlorophenol (Or) Phenol, 2,4-Dichloro-

Waste Code: U082
Waste Description: 2,6-Dichlorophenol (Or) Phenol, 2,6-Dichloro-

Waste Code: U083
Waste Description: Propane, 1,2-Dichloro- (Or) Propylene Dichloride

Waste Code: U084
Waste Description: 1,3-Dichloropropene (Or) 1-Propene, 1,3-Dichloro-

Waste Code: U085
Waste Description: 1,2:3,4-Diepoxybutane (I,T) (Or) 2,2'-Bioxirane

Waste Code: U086
Waste Description: Hydrazine, 1,2-Diethyl- (Or) N,N'-Diethylhydrazine

Waste Code: U087
Waste Description: O,O-Diethyl S-Methyl Dithiophosphate (Or) Phosphorodithioic Acid, O,O-Diethyl S-Methyl Ester

Waste Code: U088
Waste Description: 1,2-Benzenedicarboxylic Acid, Diethyl Ester (Or) Diethyl Phthalate

Waste Code: U089
Waste Description: Diethylstilbesterol (Or) Phenol, 4,4'-(1,2-Diethyl-1,2-Ethenediyl)Bis, (E)-

Waste Code: U090

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: 1,3-Benzodioxole, 5-Propyl- (Or) Dihydrosafrole

Waste Code: U091
Waste Description: [1,1'-Biphenyl]-4,4'-Diamine, 3,3'-Dimethoxy- (Or) 3,3'-Dimethoxybenzidine

Waste Code: U092
Waste Description: Dimethylamine (I) (Or) Methanamine, N-Methyl- (I)

Waste Code: U093
Waste Description: Benzenamine, N,N-Dimethyl-4-(Phenylazo)- (Or) P-Dimethylaminoazobenzene

Waste Code: U094
Waste Description: 7,12-Dimethylbenz[A]Anthracene (Or) Benz[A]Anthracene, 7,12-Dimethyl-

Waste Code: U095
Waste Description: [1,1'-Biphenyl]-4,4'-Diamine, 3,3'-Dimethyl- (Or) 3,3'-Dimethylbenzidine

Waste Code: U096
Waste Description: Alpha,Alpha-Dimethylbenzylhydroperoxide (R) (Or) Hydroperoxide, 1-Methyl-1-Phenylethyl- (R)

Waste Code: U097
Waste Description: Carbamic Chloride, Dimethyl- (Or) Dimethylcarbamoyl Chloride

Waste Code: U098
Waste Description: 1,1-Dimethylhydrazine (Or) Hydrazine, 1,1-Dimethyl-

Waste Code: U099
Waste Description: 1,2-Dimethylhydrazine (Or) Hydrazine, 1,2-Diphenyl-

Waste Code: U101
Waste Description: 2,4-Dimethylphenol (Or) Phenol, 2,4-Dimethyl-

Waste Code: U102
Waste Description: 1,2-Benzenedicarboxylic Acid, Dimethyl Ester (Or) Dimethyl Phthalate

Waste Code: U103
Waste Description: Dimethyl Sulfate (Or) Sulfuric Acid, Dimethyl Ester

Waste Code: U105
Waste Description: 2,4-Dinitrotoluene (Or) Benzene, 1-Methyl-2,4-Dinitro-

Waste Code: U106
Waste Description: 2,6-Dinitrotoluene (Or) Benzene, 2-Methyl-1,3-Dinitro-

Waste Code: U107
Waste Description: 1,2-Benzenedicarboxylic Acid, Dioctyl Ester (Or) Di-N-Octyl Phthalate

Waste Code: U108
Waste Description: 1,4-Diethyleneoxide (Or) 1,4-Dioxane

Waste Code: U109
Waste Description: 1,2-Diphenylhydrazine (Or) Hydrazine, 1,2-Diphenyl-

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code:	U110
Waste Description:	1-Propanimine, N-Propyl-(I) (Or) Dipropylamine (I)
Waste Code:	U111
Waste Description:	1-Propanamine, N-Nitroso-N-Propyl- (Or) Di-N-Propylnitrosamine
Waste Code:	U112
Waste Description:	Acetic Acid, Ethyl Ester (I) (Or) Ethyl Acetate (I)
Waste Code:	U113
Waste Description:	2-Propenoic Acid, Ethyl Ester (I) (Or) Ethyl Acrylate (I)
Waste Code:	U114
Waste Description:	Carbamodithioic Acid, 1,2-Ethanediylbis-, Salts & Esters (Or) Ethylenebisdithiocarbamic Acid, Salts & Esters
Waste Code:	U115
Waste Description:	Ethylene Oxide (I,T) (Or) Oxirane (I,T)
Waste Code:	U116
Waste Description:	2-Imidazolidinethione (Or) Ethylenethiourea
Waste Code:	U117
Waste Description:	Ethane, 1,1'-Oxybis-(I) (Or) Ethyl Ether (I)
Waste Code:	U118
Waste Description:	2-Propenoic Acid, 2-Methyl-, Ethyl Ester (Or) Ethyl Methacrylate
Waste Code:	U119
Waste Description:	Ethyl Methanesulfonate (Or) Methanesulfonic Acid, Ethyl Ester
Waste Code:	U120
Waste Description:	Fluoranthene
Waste Code:	U121
Waste Description:	Methane, Trichlorofluoro- (Or) Trichloromonofluoromethane
Waste Code:	U122
Waste Description:	Formaldehyde
Waste Code:	U123
Waste Description:	Formic Acid (C,T)
Waste Code:	U124
Waste Description:	Furan (I) (Or) Furfuran (I)
Waste Code:	U125
Waste Description:	2-Furancarboxaldehyde (I) (Or) Furfural (I)
Waste Code:	U126
Waste Description:	Glycidylaldehyde (Or) Oxiranecarboxyaldehyde
Waste Code:	U127
Waste Description:	Benzene, Hexachloro- (Or) Hexachlorobenzene
Waste Code:	U128
Waste Description:	1,3-Butadiene, 1,1,2,3,4,4-Hexachloro- (Or) Hexachlorobutadiene

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code: U130
Waste Description: 1,3-Cyclopentadiene, 1,2,3,4,5,5-Hexachloro- (Or) Hexachlorocyclopentadiene

Waste Code: U131
Waste Description: Ethane, Hexachloro- (Or) Hexachloroethane

Waste Code: U132
Waste Description: Hexachlorophene (Or) Phenol, 2,2'-Methylenebis[3,4,6-Trichloro-

Waste Code: U133
Waste Description: Hydrazine (R,T)

Waste Code: U134
Waste Description: Hydrofluoric Acid (C,T) (Or) Hydrogen Fluoride (C,T)

Waste Code: U135
Waste Description: Hydrogen Sulfide (Or) Hydrogen Sulfide H2s

Waste Code: U137
Waste Description: Indeno[1,2,3-Cd]Pyrene

Waste Code: U138
Waste Description: Methane, Iodo- (Or) Methyl Iodide

Waste Code: U140
Waste Description: 1-Propanol, 2-Methyl- (I,T) (Or) Isobutyl Alcohol (I,T)

Waste Code: U141
Waste Description: 1,3-Benzodioxole, 5-(1-Propenyl)- (Or) Isosafrole

Waste Code: U142
Waste Description: 1,3,4-Metheno-2h-Cyclobuta[Cd]Pentalen-2-One, 1,1a,3,3a,4,5,5,5a,5b,6-Decachlorooctahydro- (Or) Kepone

Waste Code: U143
Waste Description: 2-Butenoic Acid, 2-Methyl-, 7-[[2,3-Dihydroxy-2-(1-Methoxyethyl)-3-Methyl-1-Oxobutoxy]Methyl]-2,3,5,7a-Tetrahydro-1h-Pyrrolizin-1-Yl Ester, [1s-[1alpha(Z), 7(2s*,3r*), 7aalpha]]- (Or) Lasiocarpine

Waste Code: U144
Waste Description: Acetic Acid, Lead(2+) Salt (Or) Lead Acetate

Waste Code: U145
Waste Description: Lead Phosphate (Or) Phosphoric Acid, Lead(2+) Salt (2:3)

Waste Code: U146
Waste Description: Lead Subacetate (Or) Lead, Bis(Acetato-O)Tetrahydroxytri-

Waste Code: U147
Waste Description: 2,5-Furandione (Or) Maleic Anhydride

Waste Code: U148
Waste Description: 3,6-Pyridazinedione, 1,2-Dihydro- (Or) Maleic Hydrazide

Waste Code: U149

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Malononitrile (Or) Propanedinitrile

Waste Code: U150
Waste Description: L-Phenylalanine, 4-[Bis(2-Chloroethyl)Amino]- (Or) Melphalan

Waste Code: U151
Waste Description: Mercury

Waste Code: U152
Waste Description: 2-Propenenitrile, 2-Methyl- (I,T) (Or) Methacrylonitrile (I,T)

Waste Code: U153
Waste Description: Methanethiol (I,T) (Or) Thiomethanol (I,T)

Waste Code: U154
Waste Description: Methanol (I) (Or) Methyl Alcohol (I)

Waste Code: U155
Waste Description: 1,2-Ethanediamine, N,N-Dimethyl-N'-2-Pyridinyl-N'-(2-Thienylmethyl)- (Or) Methapyrilene

Waste Code: U156
Waste Description: Carbonochloridic Acid, Methyl Ester, (I,T) (Or) Methyl Chlorocarbonate (I,T)

Waste Code: U157
Waste Description: 3-Methylcholanthrene (Or) Benz[J]Aceanthrylene, 1,2-Dihydro-3-Methyl-

Waste Code: U158
Waste Description: 4,4'-Methylenebis(2-Chloroaniline) (Or) Benzenamine, 4,4'-Methylenebis[2-Chloro-

Waste Code: U159
Waste Description: 2-Butanone (I,T) (Or) Methyl Ethyl Ketone (Mek) (I,T)

Waste Code: U160
Waste Description: 2-Butanone, Peroxide (R,T) (Or) Methyl Ethyl Ketone Peroxide (R,T)

Waste Code: U161
Waste Description: 4-Methyl-2-Pentanone (I) (Or) Methyl Isobutyl Ketone (I) (Or) Pentanol, 4-Methyl-

Waste Code: U162
Waste Description: 2-Propenoic Acid, 2-Methyl-, Methyl Ester (I,T) (Or) Methyl Methacrylate (I,T)

Waste Code: U163
Waste Description: Guanidine, N-Methyl-N'-Nitro-N-Nitroso- (Or) Mnng

Waste Code: U164
Waste Description: 4(1h)-Pyrimidinone, 2,3-Dihydro-6-Methyl-2-Thioxo- (Or) Methylthiouracil

Waste Code: U165
Waste Description: Naphthalene

Waste Code: U166

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: 1,4-Naphthalenedione (Or) 1,4-Naphthoquinone

Waste Code: U167
Waste Description: 1-Napthalenamine (Or) Alpha-Naphthylamine

Waste Code: U168
Waste Description: 2-Napthalenamine (Or) Beta-Naphthylamine

Waste Code: U169
Waste Description: Benzene, Nitro- (Or) Nitrobenzene (I,T)

Waste Code: U170
Waste Description: P-Nitrophenol (I,T) (Or) Phenol, 4-Nitro-

Waste Code: U171
Waste Description: 2-Nitropropane (I,T) (Or) Propane, 2-Nitro- (I,T)

Waste Code: U172
Waste Description: 1-Butanamine, N-Butyl-N-Nitroso- (Or) N-Nitrosodi-N-Butylamine

Waste Code: U173
Waste Description: Ethanol, 2,2'-(Nitrosoimino)Bis- (Or) N-Nitrosodiethanolamine

Waste Code: U174
Waste Description: Ethanamine, N-Ethyl-N-Nitroso- (Or) N-Nitrosodiethylamine

Waste Code: U176
Waste Description: N-Nitroso-N-Ethylurea (Or) Urea, N-Ethyl-N-Nitroso-

Waste Code: U177
Waste Description: N-Nitroso-N-Methylurea (Or) Urea, N-Methyl-N-Nitroso-

Waste Code: U178
Waste Description: Carbamic Acid, Methylnitroso-, Ethyl Ester (Or) N-Nitroso-N-Methylurethane

Waste Code: U179
Waste Description: N-Nitrosopiperidine (Or) Piperidine, 1-Nitroso-

Waste Code: U180
Waste Description: N-Nitrosopyrrolidine (Or) Pyrrolidine, 1-Nitroso-

Waste Code: U181
Waste Description: 5-Nitro-O-Toluidine (Or) Benzenamine, 2-Methyl-5-Nitro

Waste Code: U182
Waste Description: 1,3,5-Trioxane, 2,4,6-Trimethyl- (Or) Paraldehyde

Waste Code: U183
Waste Description: Benzene, Pentachloro- (Or) Pentachlorobenzene

Waste Code: U184
Waste Description: Ethane, Pentachloro- (Or) Pentachloroethane

Waste Code: U185
Waste Description: Benzene, Pentachloronitro- (Or) Pentachloronitrobenzene (Pcnb)

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code: U186
Waste Description: 1,3-Pentadiene (I) (Or) 1-Methylbutadiene (I)

Waste Code: U187
Waste Description: Acetamide, N-(4-Ethoxyphenyl)- (Or) Phenacetin

Waste Code: U188
Waste Description: Phenol

Waste Code: U189
Waste Description: Phosphorus Sulfide (R) (Or) Sulfur Phosphide (R)

Waste Code: U190
Waste Description: 1,3-Isobenzofurandione (Or) Phthalic Anhydride

Waste Code: U191
Waste Description: 2-Picoline (Or) Pyridine, 2-Methyl-

Waste Code: U193
Waste Description: 1,2-Oxathiolane, 2,2-Dioxide (Or) 1,3-Propane Sultone

Waste Code: U194
Waste Description: 1-Propanamine (I,T) (Or) N-Propylamine (I,T)

Waste Code: U196
Waste Description: Pyridine

Waste Code: U197
Waste Description: 2,5-Cyclohexadiene-1,4-Dione (Or) P-Benzoquinone

Waste Code: U200
Waste Description: Reserpine (Or) Yohimban-16-Carboxylic Acid, 11,17-Dimethoxy-18-[(3,4,5-Trimethoxybenzoyl)Oxy]-, Methyl Ester, (3beta, 16beta, 17alpha, 18beta, 20alpha)-

Waste Code: U201
Waste Description: 1,3-Benzenediol (Or) Resorcinol

Waste Code: U202
Waste Description: 1,2-Benzisothiazol-3(2h)-One, 1,1-Dioxide, & Salts (Or) Saccharin, & Salts

Waste Code: U203
Waste Description: 1,3-Benzodioxole, 5-(2-Propenyl)- (Or) Safrole

Waste Code: U204
Waste Description: Selenious Acid (Or) Selenium Dioxide

Waste Code: U205
Waste Description: Selenium Sulfide (Or) Selenium Sulfide Ses2 (R,T)

Waste Code: U206
Waste Description: D-Glucose, 2-Deoxy-2-[[(Methylnitrosoamino)-Carbonyl]Amino]- (Or) Glucopyranose, 2-Deoxy-2-(3-Methyl-3-Nitrosoureido)-,D- (Or) Streptozotocin

Waste Code: U207

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: 1,2,4,5-Tetrachlorobenzene (Or) Benzene, 1,2,4,5-Tetrachloro-

Waste Code: U208
Waste Description: 1,1,1,2-Tetrachloroethane (Or) Ethane, 1,1,1,2-Tetrachloro-

Waste Code: U209
Waste Description: 1,1,2,2-Tetrachloroethane (Or) Ethane, 1,1,2,2-Tetrachloro-

Waste Code: U210
Waste Description: Ethene, Tetrachloro- (Or) Tetrachloroethylene

Waste Code: U211
Waste Description: Carbon Tetrachloride (Or) Methane, Tetrachloro-

Waste Code: U213
Waste Description: Furan, Tetrahydro-(I) (Or) Tetrahydrofuran (I)

Waste Code: U214
Waste Description: Acetic Acid, Thallium(1+) Salt (Or) Thallium(I) Acetate

Waste Code: U215
Waste Description: Carbonic Acid, Dithallium(1+) Salt (Or) Thallium(I) Carbonate

Waste Code: U216
Waste Description: Thallium Chloride Tlcl (Or) Thallium(I) Chloride

Waste Code: U217
Waste Description: Nitric Acid, Thallium(1+) Salt (Or) Thallium(I) Nitrate

Waste Code: U218
Waste Description: Ethanethioamide (Or) Thioacetamide

Waste Code: U219
Waste Description: Thiourea

Waste Code: U220
Waste Description: Benzene, Methyl- (Or) Toluene

Waste Code: U221
Waste Description: Benzenediamine, Ar-Methyl- (Or) Toluenediamine

Waste Code: U222
Waste Description: Benzenamine, 2-Methyl-, Hydrochloride (Or) O-Toluidine Hydrochloride

Waste Code: U223
Waste Description: Benzene, 1,3-Diisocyanatomethyl- (R,T) (Or) Toluene Diisocyanate (R,T)

Waste Code: U225
Waste Description: Bromoform (Or) Methane, Tribromo-

Waste Code: U226
Waste Description: Ethane, 1,1,1-Trichloro- (Or) Methyl Chloroform

Waste Code: U227
Waste Description: 1,1,2-Trichloroethane (Or) Ethane, 1,1,2-Trichloro-

Waste Code: U228

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Description: Ethene, Trichloro- (Or) Trichloroethylene

Waste Code: U234
Waste Description: 1,3,5-Trinitrobenzene (R,T) (Or) Benzene, 1,3,5-Trinitro-

Waste Code: U235
Waste Description: 1-Propanol, 2,3-Dibromo-, Phosphate (3:1) (Or) Tris(2,3,-Dibromopropyl) Phosphate

Waste Code: U236
Waste Description: 2,7-Naphthalenedisulfonic Acid,3,3'-[(3,3'-Dimethyl[1,1'-Biphenyl]-4,4'-Diyl)Bis(Azo)Bis[5-Amino -4-Hydroxy]-, Tetrasodium Salt (Or) Trypan Blue

Waste Code: U237
Waste Description: 2,4-(1h,3h)-Pyrimidinedione, 5-[Bis(2-Chloroethyl)Amino]- (Or) Uracil Mustard

Waste Code: U238
Waste Description: Carbamic Acid, Ethyl Ester (Or) Ethyl Carbamate (Urethane)

Waste Code: U239
Waste Description: Benzene, Dimethyl- (I,T) (Or) Xylene (I)

Waste Code: U243
Waste Description: 1-Propene, 1,1,2,3,3,3-Hexachloro- (Or) Hexachloropropene

Waste Code: U246
Waste Description: Cyanogen Bromide (Cn)Br

Waste Code: U248
Waste Description: 2h-1-Benzopyran-2-One, 4-Hydroxy-3-(3-Oxo-1-Phenyl-Butyl)-, & Salts, When Present At Concentrations Of 0.3% Or Less (Or) Warfarin, & Salts, When Present At Concentrations Of 0.3% Or Less

Waste Code: U249
Waste Description: Zinc Phosphide Zn3p2, When Present At Concentrations Of 10% Or Less

Waste Code: U271
Waste Description: Benomyl (Or) Carbamic Acid, [1-[(Butylamino)Carbonyl]-1h-Benzimidazol-2-Yl]-, Methyl Ester

Waste Code: U278
Waste Description: Bendiocarb (Or) 1,3-Benzodioxol-4-Ol, 2,2-Dimethyl-, Methyl Carbamate

Waste Code: U279
Waste Description: U279

Waste Code: U280
Waste Description: Barban (Or) Carbamic Acid, (3-Chlorophenyl)-, 4-Chloro-2-Butynyl Ester

Waste Code: U328
Waste Description: Benzenamine, 2-Methyl- (Or) O-Toluidine

Waste Code: U353
Waste Description: Benzenamine, 4-Methyl- (Or) P-Toluidine

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Waste Code: U359
Waste Description: Ethanol, 2-Ethoxy- (Or) Ethylene Glycol Monoethyl Ether

Waste Code: U364
Waste Description: Bendiocarb Phenol (Or) 1,3-Benzodioxol-4-Ol, 2,2-Dimethyl-

Waste Code: U367
Waste Description: 7-Benzofuranol, 2,3-Dihydro-2,2-Dimethyl- (Or) Carbofuran Phenol

Waste Code: U372
Waste Description: Carbamic Acid, 1h-Benzimidazol-2-Yl, Methyl Ester (Or) Carbendazim

Waste Code: U373
Waste Description: Carbamic Acid, Phenyl-, 1-Methylethyl Ester (Or) Propham

Waste Code: U387
Waste Description: Carbamothioic Acid, Dipropyl-, S-(Phenylmethyl) Ester (Or) Prosulfocarb

Waste Code: U389
Waste Description: Carbamothioic Acid, Bis(1-Methylethyl)-, S-(2,3,3-Trichloro-2-Propenyl) Ester (Or) Triallate

Waste Code: U394
Waste Description: A2213 (Or) Ethanimidothioic Acid, 2-(Dimethylamino)-N-Hydroxy-2-Oxo-, Methyl Ester

Waste Code: U395
Waste Description: Diethylene Glycol, Dicarbamate (Or) Ethanol, 2,2'-Oxybis-, Dicarbamate

Waste Code: U404
Waste Description: U404

Waste Code: U409
Waste Description: Carbamic Acid, [1,2-Phenylenebis (Iminocarbonothioyl)]Bis-, Dimethyl Ester (Or) Thiophanate-Methyl

Waste Code: U410
Waste Description: Ethanimidothioic Acid, N,N'-[Thiobis[(Methylimino)Carbonyloxy]]Bis-, Dimethyl Ester (Or) Thiodicarb

Waste Code: U411
Waste Description: U411

Handler - Owner Operator:
Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 6211 ANN ARBOR RD
Owner/Operator City,State,Zip: DUNDEE, MI 48131-9527
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC
Legal Status: Private
Date Became Current: 19960101
Date Ended Current: Not reported
Owner/Operator Address: 14738 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 6211 ANN ARBOR RD
Owner/Operator City,State,Zip: DUNDEE, MI 48131-9527
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC
Legal Status: Private
Date Became Current: 19860101
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 28202 HWY N
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: EBV EXPLOSIVES ENVIRONMENTAL
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: PO BOX 1386
Owner/Operator City,State,Zip: JOPLIN, MO 64802
Owner/Operator Telephone: 417-624-0212
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLNAM INC
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR PO BOX 122
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 313-529-2411
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC
Legal Status: Private
Date Became Current: 20011217
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 734-529-2411
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 6211 ANN ARBOR RD
Owner/Operator City,State,Zip: DUNDEE, MI 48131-9527
Owner/Operator Telephone: 573-242-3571
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC
Legal Status: Private
Date Became Current: 20011217
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 734-529-2411
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: SAFETY-KLEEN SYSTEMS INC
Legal Status: Private
Date Became Current: 19860101
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: ENERGIS LLC
Legal Status: Private
Date Became Current: 20030629
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC
Legal Status: Private
Date Became Current: 19960101
Date Ended Current: Not reported
Owner/Operator Address: 14744 HWY 79 N
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC/GEOCYCLE LLC
Legal Status: Private
Date Became Current: 20070917
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC
Legal Status: Private
Date Became Current: 20030628
Date Ended Current: Not reported
Owner/Operator Address: 14744 N HWY 79
Owner/Operator City,State,Zip: CLARKSVILLE, MO 63336
Owner/Operator Telephone: 573-242-3585
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: INDUSTRIAL SERVICE CORP
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: PO BOX 3249
Owner/Operator City,State,Zip: SHAWNEE, KS 66203
Owner/Operator Telephone: 913-631-3300
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLCIM US INC
Legal Status: Private
Date Became Current: 20011217
Date Ended Current: Not reported
Owner/Operator Address: 6211 N ANN ARBOR
Owner/Operator City,State,Zip: DUNDEE, MI 48131
Owner/Operator Telephone: 734-529-2411
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLNAM/SAFETY-KLEEN
Legal Status: Private
Date Became Current: Not reported
Date Ended Current: Not reported
Owner/Operator Address: HWY 79 N

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	573-242-3571
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: GEOCYCLE LLC	
Legal Status:	Private
Date Became Current:	20070917
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE	
Legal Status:	Private
Date Became Current:	20030628
Date Ended Current:	Not reported
Owner/Operator Address:	28202 HWY N
Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: EBV EXPLOSIVES ENVIRONMENTAL CO	
Legal Status:	Private
Date Became Current:	20030519
Date Ended Current:	Not reported
Owner/Operator Address:	PO BOX 1386
Owner/Operator City,State,Zip:	JOPLIN, MO 64802
Owner/Operator Telephone:	417-624-0212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: HOLCIM US INC GEOCYCLE LLC	
Legal Status:	Private
Date Became Current:	20070917
Date Ended Current:	Not reported
Owner/Operator Address:	6211 ANN ARBOR RD
Owner/Operator City,State,Zip:	DUNDEE, MI 48131-9527
Owner/Operator Telephone:	573-242-3571
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLNAM INC	
Legal Status:	Private

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	6211 N ANN ARBOR PO BOX 122
Owner/Operator City,State,Zip:	DUNDEE, MI 48131
Owner/Operator Telephone:	313-529-2411
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLCIM US INC/ENERGIS LLC	
Legal Status:	Private
Date Became Current:	19960101
Date Ended Current:	Not reported
Owner/Operator Address:	14738 N HWY 79
Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	573-242-3571
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: SAFETY-KLEEN SYSTEMS INC	
Legal Status:	Private
Date Became Current:	20020328
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE	
Legal Status:	Private
Date Became Current:	20030628
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE	
Legal Status:	Private
Date Became Current:	20030628
Date Ended Current:	Not reported
Owner/Operator Address:	6211 N ANN ARBOR
Owner/Operator City,State,Zip:	DUNDEE, MI 48131
Owner/Operator Telephone:	573-242-3571
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLCIM (US) INC	
Legal Status:	Private
Date Became Current:	19960101
Date Ended Current:	Not reported
Owner/Operator Address:	P O BOX 67
Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLCIM (US) INC	
Legal Status:	Private
Date Became Current:	19860101
Date Ended Current:	Not reported
Owner/Operator Address:	14744 HWY 79 N
Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	573-242-3571
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: HOLCIM (US) INC / GEOCYCLE	
Legal Status:	Private
Date Became Current:	20030628
Date Ended Current:	Not reported
Owner/Operator Address:	28202 HWY N
Owner/Operator City,State,Zip:	CLARKSVILLE, MO 63336
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name: HOLNAM INC	
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	6211 N ANN ARBOR PO BOX 122
Owner/Operator City,State,Zip:	DUNDEE, MI 48131
Owner/Operator Telephone:	313-529-2411
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: ENERGIS LLC	
Legal Status:	Private
Date Became Current:	20030629
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19931223
Handler Name: HOLCIM US INC SAFETY KLEEN SYSTEMS INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20070925
Handler Name: HOLCIM (US) INC / GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20100303
Handler Name: HOLCIM (US) INC/GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20160308
Handler Name: HOLCIM (US) INC/GEOCYCLE LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20180416

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Handler Name: HOLCIM (US) INC/GEOCYCLE LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20200121
Handler Name: HOLCIM (US) INC/GEOCYCLE LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 20220419
Handler Name: HOLCIM (US) INC/GEOCYCLE LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

Receive Date: 19920309
Handler Name: HOLCIM US INC SAFETY KLEEN SYSTEMS INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19790101
Handler Name: HOLCIM US INC SAFETY KLEEN SYSTEMS INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20050601
Handler Name: HOLCIM (US) INC - ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20050601
Handler Name: HOLCIM (US) INC - ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20050601
Handler Name: HOLCIM (US) INC - ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20131226
Handler Name: HOLCIM US INC GEOCYCLE LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: Yes
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Electronic Manifest Broker: Not reported

Receive Date: 19980706
Handler Name: HOLCIM US INC SAFETY KLEEN SYSTEMS INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20011217
Handler Name: HOLCIM US INC SAFETY KLEEN SYSTEMS INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20030908
Handler Name: ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20061002
Handler Name: HOLCIM US INC/ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20070904
Handler Name: GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20071029
Handler Name: HOLCIM US INC GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20121107
Handler Name: HOLCIM US INC GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: Yes
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19900330
Handler Name: SAFETY-KLEEN, INC.
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19920224
Handler Name: HOLNAM INC./SAFETY-KLEEN
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19940228
Handler Name: HOLNAM INCORPORATED SAFETY-KLEEN
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19960228
Handler Name: HOLNAM INC/SAFETY-KLEEN
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19980227
Handler Name: HOLNAM INC/SAFETY KLEEN INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20001012
Handler Name: HOLNAM INC./SAFETY-KLEEN SYSTEMS, INC.
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Receive Date: 20020324
Handler Name: HOLCIM (US) INC/SAFETY-KLEEN SYSTEMS INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20040227
Handler Name: HOLCIM (US) INC - ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20060223
Handler Name: HOLCIM US INC/ENERGIS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20080228
Handler Name: HOLCIM US INC GEOCYCLE LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 32731
NAICS Description: CEMENT MANUFACTURING

NAICS Code: 561499

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

NAICS Description: ALL OTHER BUSINESS SUPPORT SERVICES

NAICS Code: 562211
NAICS Description: HAZARDOUS WASTE TREATMENT AND DISPOSAL

Has the Facility Received Notices of Violations:

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19951108
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	20021120
Actual Return to Compliance Date:	20021215
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19920626
Actual Return to Compliance Date:	19921008
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19920626
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R7ENE
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19890507
Enforcement Identifier:	002
Date of Enforcement Action:	19890412
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Closure/Post-Closure
Date Violation was Determined:	19870211
Actual Return to Compliance Date:	19881024
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Manifest
Date Violation was Determined:	19920116
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920126
Enforcement Identifier:	000
Date of Enforcement Action:	19920116
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R7DLG
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Manifest/Records/Reporting
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19941006
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19941008
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MORH
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General Facility Standards
Date Violation was Determined: 19940923
Actual Return to Compliance Date: 19950112
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19941209
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MORH
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19971121
Actual Return to Compliance Date:	19971221
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	19980301
Enforcement Identifier:	000
Date of Enforcement Action:	19980130
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19950712
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined:	19920116
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920126
Enforcement Identifier:	000
Date of Enforcement Action:	19920116
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R7DLG
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Manifest
Date Violation was Determined:	19930915
Actual Return to Compliance Date:	19931216
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19931027
Enforcement Identifier:	000
Date of Enforcement Action:	19930927
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19941006
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19941008
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 19950412
Actual Return to Compliance Date: 19951108
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19950612
Enforcement Identifier: 000
Date of Enforcement Action: 19950521
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOJI
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined: 19940923
Actual Return to Compliance Date: 19950112
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19940923
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19950712
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19930915
Actual Return to Compliance Date:	19931216
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19931027
Enforcement Identifier:	000
Date of Enforcement Action:	19930927
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Manifest/Records/Reporting
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920831
Enforcement Identifier:	000
Date of Enforcement Action:	19920821
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920831
Enforcement Identifier:	000
Date of Enforcement Action:	19920821
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	20000120
Actual Return to Compliance Date:	20000223
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	20000229
Enforcement Identifier:	000
Date of Enforcement Action:	20000204
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORAC
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	003
Date of Enforcement Action:	19881013
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19920116
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920126
Enforcement Identifier:	000
Date of Enforcement Action:	19920116
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R7DLG
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19900814
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOSW
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - General
Date Violation was Determined: 19920821
Actual Return to Compliance Date: 19931018
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19920821
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19930915
Actual Return to Compliance Date:	19931216
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19931027
Enforcement Identifier:	000
Date of Enforcement Action:	19930927
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - General
Date Violation was Determined: 19920116
Actual Return to Compliance Date: 19940809
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: 19920126
Enforcement Identifier: 000
Date of Enforcement Action: 19920116
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R7DLG
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19890507
Enforcement Identifier:	002
Date of Enforcement Action:	19890412
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940324
Actual Return to Compliance Date:	19940520
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19940424
Enforcement Identifier:	000
Date of Enforcement Action:	19940404
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19920901
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920831
Enforcement Identifier:	000
Date of Enforcement Action:	19920821
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - General
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19930730
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	309055
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19950412
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19941006
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19941008
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	003
Date of Enforcement Action:	19881013
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Tank System Standards
Date Violation was Determined: 19920821
Actual Return to Compliance Date: 19931018
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19930730
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: R7
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person: R7SRM
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	309055
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940809
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	100874
Paid Amount:	Not reported
Final Count:	1
Final Amount:	100874

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	003
Date of Enforcement Action:	19881013
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined:	19971121
Actual Return to Compliance Date:	19971221
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	19980301
Enforcement Identifier:	000
Date of Enforcement Action:	19980130
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD IS-Financial Requirements
Date Violation was Determined:	19900814
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined:	19920116
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19920126
Enforcement Identifier:	000
Date of Enforcement Action:	19920116
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	R7DLG
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 19900814
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Tank System Standards
Date Violation was Determined: 19930915
Actual Return to Compliance Date: 19931216
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19931027
Enforcement Identifier: 000
Date of Enforcement Action: 19930927
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOSW
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19941209
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950113
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOSW
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940324
Actual Return to Compliance Date:	19940520
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19940424
Enforcement Identifier:	000
Date of Enforcement Action:	19940404
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19950712
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19910206
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	008
Date of Enforcement Action:	19910206
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	003
Date of Enforcement Action:	19881013
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MORH
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - General
Date Violation was Determined: 19881013
Actual Return to Compliance Date: 19890628
Return to Compliance Qualifier: Unverifiable
Violation Responsible Agency: EPA
Scheduled Compliance Date: 19890507
Enforcement Identifier: 002
Date of Enforcement Action: 19890412
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 19920821
Actual Return to Compliance Date: 19931018
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19920821
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD IS-Tank System Standards
Date Violation was Determined:	19900814
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19920626
Actual Return to Compliance Date:	19921008
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19930730
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	309055
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19951102
Actual Return to Compliance Date:	19960105
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19951229
Enforcement Identifier:	000
Date of Enforcement Action:	19951127
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19881013
Actual Return to Compliance Date:	19890628
Return to Compliance Qualifier:	Unverifiable
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	19890507
Enforcement Identifier:	002
Date of Enforcement Action:	19890412
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - General
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940809
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	100874
Paid Amount:	Not reported
Final Count:	1
Final Amount:	100874
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19941209
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950113
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General Facility Standards
Date Violation was Determined:	19950412
Actual Return to Compliance Date:	19950712
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19950612
Enforcement Identifier:	000
Date of Enforcement Action:	19950521
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOJI
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - Pre-transport
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19930730
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	309055
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19990623
Actual Return to Compliance Date:	19990723
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	19990816
Enforcement Identifier:	000
Date of Enforcement Action:	19990714
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORAC
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19920929
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19920929
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	R7ENE
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Preparedness and Prevention
Date Violation was Determined: 19921113
Actual Return to Compliance Date: 19921113
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19930730
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: R7

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	INITIAL 3008(A) COMPLIANCE
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	309055
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: LDR - General
Date Violation was Determined: 19910206
Actual Return to Compliance Date: 19910925
Return to Compliance Qualifier: Unverifiable
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 008
Date of Enforcement Action: 19910206
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - Contingency Plan and Emergency Procedures
Date Violation was Determined:	19940324
Actual Return to Compliance Date:	19940520
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19940424
Enforcement Identifier:	000
Date of Enforcement Action:	19940404
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOSW
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MORH
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - Tank System Standards
Date Violation was Determined: 19940923
Actual Return to Compliance Date: 19950112
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19940923
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MORH
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19870211
Actual Return to Compliance Date:	19871120
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	001
Date of Enforcement Action:	19870211
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: Generators - General
Date Violation was Determined: 19891114
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - General
Date Violation was Determined: 19920821
Actual Return to Compliance Date: 19931018
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: 19920831
Enforcement Identifier: 000
Date of Enforcement Action: 19920821
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	Generators - General
Date Violation was Determined:	19891114
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19920821
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Preparedness and Prevention
Date Violation was Determined: 19921113
Actual Return to Compliance Date: 19921113
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19940809
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: R7
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person: R7SRM
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	100874
Paid Amount:	Not reported
Final Count:	1
Final Amount:	100874
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	TSD - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19951116
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19941209
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General
Date Violation was Determined: 20021120
Actual Return to Compliance Date: 20021215
Return to Compliance Qualifier: Documented
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number:Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: Generators - Pre-transport
Date Violation was Determined: 19950412
Actual Return to Compliance Date: 19950712
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: 19950612
Enforcement Identifier: 000
Date of Enforcement Action: 19950521
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MOJI
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	LDR - General
Date Violation was Determined:	19910206
Actual Return to Compliance Date:	19940809
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	008
Date of Enforcement Action:	19910206
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD IS-General Facility Standards
Date Violation was Determined:	19900814
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19930318
Actual Return to Compliance Date:	19930422
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	19930425
Enforcement Identifier:	000
Date of Enforcement Action:	19930326
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: MOSW
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD IS-Container Use and Management
Date Violation was Determined: 19900814
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: EPA
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: EPA
Violation Short Description: TSD - Tank System Standards
Date Violation was Determined: 19920116
Actual Return to Compliance Date: 19940809
Return to Compliance Qualifier: Observed
Violation Responsible Agency: EPA
Scheduled Compliance Date: 19920126
Enforcement Identifier: 000
Date of Enforcement Action: 19920116
Enforcement Responsible Agency: EPA
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: No
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: WRITTEN INFORMAL
Enforcement Responsible Person: R7DLG
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: Yes
Agency Which Determined Violation: State
Violation Short Description: TSD - General Facility Standards
Date Violation was Determined: 19940923
Actual Return to Compliance Date: 19950112
Return to Compliance Qualifier: Observed
Violation Responsible Agency: State
Scheduled Compliance Date: Not reported
Enforcement Identifier: 000
Date of Enforcement Action: 19941209
Enforcement Responsible Agency: State
Enforcement Docket Number: Not reported
Enforcement Attorney: MO

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Generators - General
Date Violation was Determined:	19940923
Actual Return to Compliance Date:	19950112
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940923
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	MO
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	MORH
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - General
Date Violation was Determined:	19920626
Actual Return to Compliance Date:	19921008
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940809
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	100874
Paid Amount:	Not reported
Final Count:	1
Final Amount:	100874

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	EPA
Violation Short Description:	TSD - Tank System Standards
Date Violation was Determined:	19920821
Actual Return to Compliance Date:	19931018
Return to Compliance Qualifier:	Observed
Violation Responsible Agency:	EPA
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	000
Date of Enforcement Action:	19940809
Enforcement Responsible Agency:	EPA
Enforcement Docket Number:	Not reported
Enforcement Attorney:	R7
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement Responsible Person:	R7SRM
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	100874
Paid Amount:	Not reported
Final Count:	1
Final Amount:	100874
Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported
Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19961204
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOLL
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951108
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19970325
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOAK
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Former Citation:	Not reported
Evaluation Date:	20021120
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	20021215
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20080814
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920626
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19921008
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20090506
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19980722
Evaluation Responsible Agency:	State
Found Violation:	No

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19980305
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20020523
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20060201
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930318
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	19890507
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19870211
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RMV
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19881024
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19941006
Scheduled Compliance Date:	19941008
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19960626
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOLJL
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19981103
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20040728
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19971121
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19971221
Scheduled Compliance Date:	19980301
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20000830
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950712
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19871120
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20060412
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19930915
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931216
Scheduled Compliance Date:	19931027
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20060830
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOBM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19941006
Scheduled Compliance Date:	19941008
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951108
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20060510
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	JBH
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20030211
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950712
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19930915
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931216
Scheduled Compliance Date:	19931027
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19960924
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	19920831
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	19920831
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20000120
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	20000223
Scheduled Compliance Date:	20000229
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20050728
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	JBH

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20040519
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20051006
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19930318
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930915
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931216
Scheduled Compliance Date:	19931027
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20050405
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20120516
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20080515
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20221123
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MO BD
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	19890507
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	20171025
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MOMTB
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19921113
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	NO LONGER A SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940324
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940520
Scheduled Compliance Date:	19940424
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19920901
Scheduled Compliance Date:	19920831
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20130517
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20040311
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20100413
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MO-BB
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20040407
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	JBH
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950412
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19941006
Scheduled Compliance Date:	19941008
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20070910
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	JBH
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20100824
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19930318
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19971121
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19971221
Scheduled Compliance Date:	19980301
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930915
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931216
Scheduled Compliance Date:	19931027
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20000629
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	19950113
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19930318
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20061116
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940324
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940520
Scheduled Compliance Date:	19940424
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070222
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE ASSISTANCE VISIT
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20090128
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	EPA-Initiated Oversight/Observation/Training Actions
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950712
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19910206
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20050112
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19880519
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19921008
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	NO LONGER A SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20080424
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20081112
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19890628
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20110323
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20130321
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MODLW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20010215
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSJW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20020320
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19990916
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOREC

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20021120
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20030909
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920626
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	19890507
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20010307
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20100121
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20161110
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MODLW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920626
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19921008
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19951102
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19960105
Scheduled Compliance Date:	19951229
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19881013
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19890628
Scheduled Compliance Date:	19890507
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19921113
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20090813
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	19950113
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930318
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19950410
Evaluation Responsible Agency:	EPA-Initiated Oversight/Observation/Training Actions
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20070828
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950712
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20070523
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19990623
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19990723
Scheduled Compliance Date:	19990816
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	NON-FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19920929
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20030506
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19921113
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19921113
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20011204
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20020808
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20050707
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19910206
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19910925
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19960626
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7EGB
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20001212
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940324
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940520
Scheduled Compliance Date:	19940424
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19910925
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19870211
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RMV
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19871120
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19891114
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	19920831
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19891114
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20090319
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19921113
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19921113
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19951116
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20151114
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MODLW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20031203
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20021120
Evaluation Responsible Agency:	State

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Found Violation:	Yes
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	20021215
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19950412
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOJI
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950712
Scheduled Compliance Date:	19950612
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20071024
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20010911
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	20010607
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20150820
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FOCUSED COMPLIANCE INSPECTION
Evaluation Responsible Person Identifier:	MODLW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19910206
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7MGR
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20100311
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	PER
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Date:	20000223
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORAC
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19930318
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOSW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19930422
Scheduled Compliance Date:	19930425
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19900814
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19920116
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19940809
Scheduled Compliance Date:	19920126
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19931018
Evaluation Responsible Agency:	EPA
Found Violation:	No
Evaluation Type Description:	NO LONGER A SIGNIFICANT NON-COMPLIER
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19940923
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MORH
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19950112
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920626
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7ENE
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19921008
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20041005
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	MOCNW
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	19920821
Evaluation Responsible Agency:	EPA
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	R7RFW
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	19931018
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20120403
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	FINANCIAL RECORD REVIEW
Evaluation Responsible Person Identifier:	MOTAD
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	20080207
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	BM
Evaluation Responsible Sub-Organization:	ENF
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

RAATS:

Entry No:	1
Facility ID:	MOD029729688
Type:	Not reported
Docket No:	93-H-0021
Region:	07
Issue Date:	07/30/1993
Final Date:	Not reported
Status:	Complaint Issued
Additional:	Not reported
Action ID:	000003632
Action:	3008 (A)
Violation No:	Not reported
Viol No Cited:	265.13(A)(1)
Total No Cited:	Not reported
Reg Type:	CFR
Prop. Penalty:	290,625.00
Final Penalty:	Not reported
Total Prop. Penalty:	309,055.00
Comments:	IN VIOLATION OF BIF

Entry No:	1
Facility ID:	MOD029729688
Type:	Not reported
Docket No:	93-H-0021
Region:	07
Issue Date:	07/30/1993
Final Date:	Not reported
Status:	Complaint Issued
Additional:	Not reported
Action ID:	000003632
Action:	3008 (A)
Violation No:	Not reported
Viol No Cited:	266.103(A)(4)(II)
Total No Cited:	Not reported
Reg Type:	CFR
Prop. Penalty:	Not reported
Final Penalty:	Not reported
Total Prop. Penalty:	309,055.00
Comments:	IN VIOLATION OF BIF

Entry No:	1
Facility ID:	MOD029729688
Type:	Not reported
Docket No:	93-H-0021
Region:	07
Issue Date:	07/30/1993
Final Date:	Not reported
Status:	Complaint Issued
Additional:	Not reported
Action ID:	000003632
Action:	3008 (A)
Violation No:	Not reported
Viol No Cited:	265.13(B)
Total No Cited:	Not reported
Reg Type:	CFR
Prop. Penalty:	17,500.00

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Final Penalty: Not reported
Total Prop. Penalty: 309,055.00
Comments: IN VIOLATION OF BIF

Entry No: 1
Facility ID: MOD029729688
Type: Not reported
Docket No: 93-H-0021
Region: 07
Issue Date: 07/30/1993
Final Date: Not reported
Status: Complaint Issued
Additional: Not reported
Action ID: 000003632
Action: 3008 (A)
Violation No: Not reported
Viol No Cited: 265.31
Total No Cited: Not reported
Reg Type: CFR
Prop. Penalty: 330.00
Final Penalty: Not reported
Total Prop. Penalty: 309,055.00
Comments: IN VIOLATION OF BIF

Entry No: 1
Facility ID: MOD029729688
Type: Not reported
Docket No: 93-H-0021
Region: 07
Issue Date: 07/30/1993
Final Date: Not reported
Status: Complaint Issued
Additional: Not reported
Action ID: 000003632
Action: 3008 (A)
Violation No: Not reported
Viol No Cited: 265.193
Total No Cited: Not reported
Reg Type: CFR
Prop. Penalty: 300.00
Final Penalty: Not reported
Total Prop. Penalty: 309,055.00
Comments: IN VIOLATION OF BIF

Entry No: 1
Facility ID: MOD029729688
Type: Not reported
Docket No: 93-H-0021
Region: 07
Issue Date: 07/30/1993
Final Date: Not reported
Status: Complaint Issued
Additional: Not reported
Action ID: 000003632
Action: 3008 (A)
Violation No: Not reported
Viol No Cited: 262.34(C)

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Total No Cited: Not reported
Reg Type: CFR
Prop. Penalty: 300.00
Final Penalty: Not reported
Total Prop. Penalty: 309,055.00
Comments: IN VIOLATION OF BIF

Entry No: 1
Facility ID: MOD029729688
Type: Not reported
Docket No: 93-H-0021
Region: 07
Issue Date: 07/30/1993
Final Date: Not reported
Status: Complaint Issued
Additional: Not reported
Action ID: 000003632
Action: 3008 (A)
Violation No: Not reported
Viol No Cited: 262.11
Total No Cited: Not reported
Reg Type: CFR
Prop. Penalty: Not reported
Final Penalty: Not reported
Total Prop. Penalty: 309,055.00
Comments: IN VIOLATION OF BIF

WI MANIFEST:
Name: SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address: 14744 HWY 79 N
City,State,Zip: CLARKSVILLE, MO 63336
Year: 2009
EPA ID: MOD029729688
FID: Not reported
ACT Code: 209
ACT Status: A
ACT Code 1: 209
ACT Name: HW Handler (Out-of-State) - TSD/Generator
Contact Title: Not reported
Contact Name: HW CONTACT
Contact Address: 14744 HWY 79 N
Contact City/State/Zip: CLARKSVILLE, MO 63336
Contact Telephone: 5732423585
Contact EMail Address: Not reported

Shipped:
Year: 2009
Manifest Doc Id: 000212709VES
Copy Type: TSDCOPY
Gen EPA ID: MOD029729688
Gen Date: 04/09/2009
GEN Copy Revd Date: Not reported
TSD Date: 04/20/2009
TSD EPA ID: WID003967148
TSD Copy Revd Date: 05/01/2009

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Name:	SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address:	14744 HWY 79 N
City,State,Zip:	CLARKSVILLE, MO 63336
Year:	2008
EPA ID:	MOD029729688
FID:	Not reported
ACT Code:	209
ACT Status:	A
ACT Code 1:	209
ACT Name:	HW Handler (Out-of-State) - TSD/Generator
Contact Title:	Not reported
Contact Name:	HW CONTACT
Contact Address:	14744 HWY 79 N
Contact City/State/Zip:	CLARKSVILLE, MO 63336
Contact Telephone:	5732423585
Contact EMail Address:	Not reported

Transport:

Year:	2008
Manifest Doc ID:	100042972CTN
Transporter EPA ID:	MOD029729688
Transport Order Num:	2
Transport Date:	10/28/2008

Waste:

Year:	2008
Manifest DOC ID:	100042972CTN
Waste Page No:	1
Waste Line No:	1
Waste Code:	F003
Waste Amount:	165
Unit of Measure:	G
Waste Lbs:	1376.1

Name:	SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address:	14744 HWY 79 N
City,State,Zip:	CLARKSVILLE, MO 63336
Year:	2007
EPA ID:	MOD029729688
FID:	0
ACT Code:	209
ACT Status:	A
ACT Code 1:	209
ACT Name:	HW Handler (Out-of-State) - TSD/Generator
Contact Title:	Not reported
Contact Name:	HW CONTACT
Contact Address:	14744 HWY 79 N
Contact City/State/Zip:	CLARKSVILLE, MO 63336
Contact Telephone:	5732423585
Contact EMail Address:	Not reported

Name:	SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address:	14744 HWY 79 N
City,State,Zip:	CLARKSVILLE, MO 63336

HOLNAM INC SAFETY KLEEN CORP (Continued) **1000185891**

Year:	2006
EPA ID:	MOD029729688
FID:	0
ACT Code:	209
ACT Status:	A
ACT Code 1:	209
ACT Name:	HW TSD (Out-of-State)
Contact Title:	Not reported
Contact Name:	HW CONTACT
Contact Address:	14744 HWY 79 N
Contact City/State/Zip:	CLARKSVILLE, MO 63336
Contact Telephone:	5732423585
Contact EMail Address:	Not reported

Name:	SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address:	14744 HWY 79 N
City,State,Zip:	CLARKSVILLE, MO 63336
Year:	2005
EPA ID:	MOD029729688
FID:	0
ACT Code:	209
ACT Status:	A
ACT Code 1:	209
ACT Name:	HW TSD (Out-of-State)
Contact Title:	Not reported
Contact Name:	HW CONTACT
Contact Address:	14744 HWY 79 N
Contact City/State/Zip:	CLARKSVILLE, MO 63336
Contact Telephone:	5732423585
Contact EMail Address:	Not reported

Name:	SAFETY-KLEEN SYSTEMS INC - HOLNAM INC
Address:	14744 HWY 79 N
City,State,Zip:	CLARKSVILLE, MO 63336
Year:	2004
EPA ID:	MOD029729688
FID:	0
ACT Code:	209
ACT Status:	A
ACT Code 1:	209
ACT Name:	HW TSD (Out-of-State)
Contact Title:	Not reported
Contact Name:	HW CONTACT
Contact Address:	14744 HWY 79 N
Contact City/State/Zip:	CLARKSVILLE, MO 63336
Contact Telephone:	5732423585
Contact EMail Address:	Not reported

Count: 6 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CLARKSVILLE	S125896156		CLARKSVILLE ROAD AND COHEN ROAD		IL SPILLS
CLARKSVILLE	S125837837		BETWEEN 6101 CLARKSVILLE RD AND THE INTERSECTIONS OF CLEONE RD AND CLARKSVILLE RD.		IL SPILLS
CLARKSVILLE	1027675186	CLARKSVILLE FLOOD PROTECTION SYSTEM	CITY OF CLARKSVILLE RIVERFRONT	63336	FINDS
CLARKSVILLE	1014752575	CLARKSVILLE WTP	CLARKSVILLE	63336	FINDS
CLARKSVILLE	1027633793	CLARKSVILLE FLOOD PROTECTION SYSTEM	CITY OF CLARKSVILLE RIVERFRONT	63336	ECHO
CLARKSVILLE	S129411993	CLARKSVILLE FLOOD PROTECTION SYSTEM	CITY OF CLARKSVILLE RIVERFRONT	63336	MO NPDES

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/25/2023
Date Data Arrived at EDR: 09/26/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 09/26/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/22/2024
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/22/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/07/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 64

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/02/2023
Next Scheduled EDR Contact: 02/19/2024
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/21/2023
Date Data Arrived at EDR: 08/21/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/17/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/21/2023
Date Data Arrived at EDR: 08/21/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/17/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SSU: State Sites Unit Listing

The State Response Action Program database identifies the status of all sites under the responsibility of the Illinois EPA's State Sites Unit.

Date of Government Version: 03/23/2022
Date Data Arrived at EDR: 03/23/2022
Date Made Active in Reports: 06/17/2022
Number of Days to Update: 86

Source: Illinois Environmental Protection Agency
Telephone: 217-524-4826
Last EDR Contact: 10/16/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: Available Disposal for Solid Waste in Illinois - Solid Waste Landfills Subject to State Surcharge

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 10/19/2022
Date Made Active in Reports: 01/05/2023
Number of Days to Update: 78

Source: Illinois Environmental Protection Agency
Telephone: 217-785-8604
Last EDR Contact: 10/17/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Annually

CCDD: Clean Construction or Demolition Debris

Construction and demolition (C and D) debris is nonhazardous, uncontaminated material resulting from construction, remodeling, repair, or demolition of utilities, structures, and roads.

Date of Government Version: 09/11/2020
Date Data Arrived at EDR: 10/28/2020
Date Made Active in Reports: 12/09/2020
Number of Days to Update: 42

Source: Illinois EPA
Telephone: 217-524-3300
Last EDR Contact: 10/02/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

LF WMRC: Waste Management & Research Center Landfill Database

The Waste Management & Research Center Landfill Database includes records from the Department of Public Health, Department of Mines & Minerals, Illinois Environmental Protection Agency, State Geological Survey, Northeastern Illinois Planning Commission and Pollution Control Board.

Date of Government Version: 12/31/2001
Date Data Arrived at EDR: 10/06/2006
Date Made Active in Reports: 11/06/2006
Number of Days to Update: 31

Source: Department of Natural Resources
Telephone: 217-333-8940
Last EDR Contact: 09/18/2009
Next Scheduled EDR Contact: 12/28/2009
Data Release Frequency: No Update Planned

LF SPECIAL WASTE: Special Waste Site List

These landfills, as of January 1, 1990, accept non-hazardous special waste pursuant to the Illinois EPA Non-Hazardous Special Waste Definition. List A includes landfills that may receive any non-hazardous waste, Non-Regional Pollution Control Facilities are so noted. List B includes landfills designed to receive specific non-hazardous wastes. List B landfills are designated as a Regional Pollution Control Facility by RPCF, or Non-Regional Pollution Control Facility by Non-RPCF.

Date of Government Version: 01/01/1990
Date Data Arrived at EDR: 06/17/2009
Date Made Active in Reports: 07/15/2009
Number of Days to Update: 28

Source: Illinois EPA
Telephone: 217-782-9288
Last EDR Contact: 06/10/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IL NIPC: Solid Waste Landfill Inventory

Solid Waste Landfill Inventory. NIPC is an inventory of active and inactive solid waste disposal sites, based on state, local government and historical archive data. Included are numerous sites which previously had never been identified largely because there was no obligation to register such sites prior to 1971.

Date of Government Version: 08/01/1988
Date Data Arrived at EDR: 04/07/2022
Date Made Active in Reports: 07/01/2022
Number of Days to Update: 85

Source: Northeastern Illinois Planning Commission
Telephone: 312-454-0400
Last EDR Contact: 04/07/2022
Next Scheduled EDR Contact: 07/18/2022
Data Release Frequency: No Update Planned

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 07/17/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/03/2023
Number of Days to Update: 77

Source: Illinois Environmental Protection Agency
Telephone: 217-524-3300
Last EDR Contact: 10/17/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Semi-Annually

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

LUST TRUST: Underground Storage Tank Fund Payment Priority List
In case sufficient funds are not available in the Underground Storage Tank Fund, requests for payment are entered on the Payment Priority List by "queue date" order. As required by the Environmental Protection Act, the queue date is the date that a complete request for partial or final payment was received by the Agency. The queue date is "officially" confirmed at the end of the payment review process when a Final Decision Letter is sent to the site owner.

Date of Government Version: 06/06/2016
Date Data Arrived at EDR: 07/27/2016
Date Made Active in Reports: 10/18/2016
Number of Days to Update: 83

Source: Illinois EPA
Telephone: 217-782-6762
Last EDR Contact: 10/10/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 05/30/2023
Number of Days to Update: 82

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/10/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

UST: Underground Storage Tank Facility List

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 07/17/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/03/2023
Number of Days to Update: 77

Source: Illinois State Fire Marshal
Telephone: 217-785-0969
Last EDR Contact: 10/17/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Quarterly

AST: Above Ground Storage Tanks

Listing of all aboveground tanks inspected by Office of State Fire Marshal.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 08/14/2023
Date Made Active in Reports: 10/31/2023
Number of Days to Update: 78

Source: State Fire Marshal
Telephone: 217-785-1011
Last EDR Contact: 11/08/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/19/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/20/2023
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 66

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/11/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Sites with Engineering Controls

Sites using of engineered barriers (e.g., asphalt or concrete paving).

Date of Government Version: 09/25/2023
Date Data Arrived at EDR: 09/26/2023
Date Made Active in Reports: 12/14/2023
Number of Days to Update: 79

Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 09/26/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

Inst Control: Institutional Controls
Legal or administrative restrictions on land use and/or other activities (e.g., groundwater use restrictions) which effectively limit exposure to contamination may be employed as alternatives to removal or treatment of contamination.

Date of Government Version: 09/25/2023
Date Data Arrived at EDR: 09/26/2023
Date Made Active in Reports: 12/14/2023
Number of Days to Update: 79
Source: Illinois Environmental Protection Agency
Telephone: 217-782-6761
Last EDR Contact: 09/26/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

Lists of state and tribal voluntary cleanup sites

SRP: Site Remediation Program Database
The database identifies the status of all voluntary remediation projects administered through the pre-notice site cleanup program (1989 to 1995) and the site remediation program (1996 to the present).

Date of Government Version: 09/25/2023
Date Data Arrived at EDR: 09/26/2023
Date Made Active in Reports: 12/14/2023
Number of Days to Update: 79
Source: Illinois Environmental Protection Agency
Telephone: 217-785-9407
Last EDR Contact: 09/26/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Semi-Annually

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/12/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Municipal Brownfields Redevelopment Grant Program Project Descriptions
The Illinois Municipal Brownfields Redevelopment Grant Program (MBRGP) offers grants worth a maximum of $240,000 each to municipalities to assist in site investigation activities, development of cleanup objectives, and performance of cleanup activities. Brownfields are abandoned or underused industrial and/or commercial properties that are contaminated (or thought to be contaminated) and have an active potential for redevelopment.

Date of Government Version: 02/11/2010
Date Data Arrived at EDR: 07/31/2014
Date Made Active in Reports: 09/08/2014
Number of Days to Update: 39
Source: Illinois Environmental Protection Agency
Telephone: 217-785-3486
Last EDR Contact: 10/19/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

BROWNFIELDS: Redevelopment Assessment Database
The Office of Site Evaluations Redevelopment Assessment database identifies the status of all properties within the State in which the Illinois EPA's Office of Site Evaluation has conducted a municipal Brownfield Redevelopment Assessment.

Date of Government Version: 07/17/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/03/2023
Number of Days to Update: 77

Source: Illinois Environmental Protection Agency
Telephone: 217-524-1658
Last EDR Contact: 10/17/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 08/15/2023
Date Data Arrived at EDR: 08/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 93

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/14/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/23/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/10/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 10/28/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 08/21/2023
Date Data Arrived at EDR: 08/21/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 78

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/17/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: No Update Planned

CDL: Meth Drug Lab Site Listing

A listing of clandestine/meth drug lab locations.

Date of Government Version: 07/01/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 77

Source: Department of Public Health
Telephone: 217-782-5750
Last EDR Contact: 09/27/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/21/2023
Date Data Arrived at EDR: 08/21/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 78

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/17/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/01/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 11/14/2023
Number of Days to Update: 55

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

IEMA SPILLS: Illinois Emergency Management Agency Spills
A listing of hazardous materials incidents reported to the Illinois Emergency Management Agency.

Date of Government Version: 07/24/2023
Date Data Arrived at EDR: 07/25/2023
Date Made Active in Reports: 10/13/2023
Number of Days to Update: 80

Source: Illinois Emergency Management Agency
Telephone: 217-524-0770
Last EDR Contact: 10/24/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Quarterly

SPILLS: State spills
A listing of incidents reported to the Office of Emergency Response.

Date of Government Version: 07/06/2023
Date Data Arrived at EDR: 07/07/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 75

Source: Illinois EPA
Telephone: 217-782-3637
Last EDR Contact: 09/27/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 07/18/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/15/2013
Number of Days to Update: 71

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/04/2023
Date Data Arrived at EDR: 12/06/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/07/2023
Date Data Arrived at EDR: 08/15/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 56

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/10/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/09/2023
Next Scheduled EDR Contact: 01/22/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/04/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/08/2023
Next Scheduled EDR Contact: 02/19/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/18/2023
Date Data Arrived at EDR: 09/20/2023
Date Made Active in Reports: 12/12/2023
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/13/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 10/31/2023
Next Scheduled EDR Contact: 02/12/2024
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/03/2023
Next Scheduled EDR Contact: 02/12/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/14/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 08/18/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 81

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/13/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/17/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 84

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/20/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 03/11/2024
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/09/2023
Date Data Arrived at EDR: 06/29/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 09/26/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 02/12/2024
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/06/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/27/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/20/2023
Date Data Arrived at EDR: 09/01/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 19
Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 10/10/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 04/14/2023
Date Made Active in Reports: 07/10/2023
Number of Days to Update: 87
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 11/27/2023
Next Scheduled EDR Contact: 03/11/2024
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 11/27/2023
Next Scheduled EDR Contact: 03/11/2024
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/03/2023
Next Scheduled EDR Contact: 02/12/2024
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/22/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/04/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2023
Date Data Arrived at EDR: 07/19/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 83

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/06/2023
Next Scheduled EDR Contact: 04/01/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/02/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 10/25/2023
Next Scheduled EDR Contact: 02/12/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/09/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 12/04/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2023
Date Data Arrived at EDR: 08/22/2023
Date Made Active in Reports: 11/07/2023
Number of Days to Update: 77

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/17/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 82

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 10/04/2023
Next Scheduled EDR Contact: 02/19/2024
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 01/07/2022
Date Data Arrived at EDR: 02/24/2023
Date Made Active in Reports: 05/17/2023
Number of Days to Update: 82

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/20/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/20/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 11/28/2023
Date Data Arrived at EDR: 11/29/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 12

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 11/28/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Quarterly

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 11/20/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/03/2023
Date Data Arrived at EDR: 11/08/2023
Date Made Active in Reports: 11/20/2023
Number of Days to Update: 12

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 11/08/2023
Next Scheduled EDR Contact: 03/11/2024
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/15/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/24/2023
Date Data Arrived at EDR: 06/29/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 89

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 09/13/2023
Next Scheduled EDR Contact: 01/22/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/14/2023
Date Data Arrived at EDR: 08/15/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 65

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/10/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 10/23/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 09/23/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 10/02/2023
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS ECHO FIRE TRAINING: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PFAS PART 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/06/2023
Date Made Active in Reports: 09/25/2023
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/28/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: No Update Planned

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 09/28/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Varies

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 07/16/2023
Date Data Arrived at EDR: 07/18/2023
Date Made Active in Reports: 08/28/2023
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 10/03/2023
Next Scheduled EDR Contact: 01/29/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PFAS: PFAS Sampling Listing

The Illinois Environmental Protection Agency (Illinois EPA) has conducted statewide investigations into the prevalence and occurrence of Per- and Polyfluoroalkyl Substances (PFAS) contamination.

Date of Government Version: 06/28/2023
Date Data Arrived at EDR: 07/07/2023
Date Made Active in Reports: 07/20/2023
Number of Days to Update: 13

Source: Illinois Environmental Protection Agency
Telephone: 217-524-3038
Last EDR Contact: 12/05/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

AIRS: Air Inventory Listing

A listing of air permits and emissions information.

Date of Government Version: 07/05/2023
Date Data Arrived at EDR: 07/06/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 76

Source: Illinois EPA
Telephone: 217-557-0314
Last EDR Contact: 09/21/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Varies

ASBESTOS: Asbestos Notification Tracker Information

A listing of asbestos abatement & demolition project site locations in the state.

Date of Government Version: 06/16/2023
Date Data Arrived at EDR: 07/05/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 77

Source: Illinois EPA
Telephone: 217-558-5101
Last EDR Contact: 09/21/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Varies

BOL: Bureau of Land Inventory Database

Bureau of Land inventory for facility information. Data results are cross-linked with all on-line database system applications from IEPA - Bureau of Land as well as USEPA FRS database.

Date of Government Version: 12/02/2021
Date Data Arrived at EDR: 12/14/2021
Date Made Active in Reports: 03/01/2022
Number of Days to Update: 77

Source: Illinois Environmental Protection Agency
Telephone: 217-785-9407
Last EDR Contact: 11/15/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Varies

COAL ASH: Coal Ash Site Listing

A listing of coal ash site lcoations.

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 03/09/2012
Date Made Active in Reports: 04/10/2012
Number of Days to Update: 32

Source: Illinois EPA
Telephone: 217-782-1654
Last EDR Contact: 11/15/2023
Next Scheduled EDR Contact: 03/04/2024
Data Release Frequency: Annually

DRYCLEANERS: Illinois Licensed Drycleaners

Any retail drycleaning facility in Illinois must apply for a license through the Illinois Drycleaner Environmental Response Trust Fund. Drycleaner Environmental Response Trust Fund of Illinois.

Date of Government Version: 08/03/2023
Date Data Arrived at EDR: 08/15/2023
Date Made Active in Reports: 10/31/2023
Number of Days to Update: 77

Source: Drycleaner Environmental Response Trust Fund of Illinois
Telephone: 800-765-4041
Last EDR Contact: 11/10/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Varies

Financial Assurance: Financial Assurance Information Listing

Information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/22/2023
Date Data Arrived at EDR: 08/24/2023
Date Made Active in Reports: 09/20/2023
Number of Days to Update: 27

Source: Illinois Environmental Protection Agency
Telephone: 217-782-9887
Last EDR Contact: 11/08/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: No Update Planned

HWAR: Hazard Waste Annual Report

Each year, Illinois hazardous-waste generators tell the Illinois EPA the amounts and kinds of hazardous waste they produced during the previous year. Generators indicate by code the types of wastes produced and the steps they took to manage these wastes. If some or all of these wastes were sent to commercial treatment, storage, and disposal facilities (TSDFs), that information and the identity of each receiving facility also are submitted. Illinois TSDFs likewise report the types and quantities of wastes received from in-state and out-of-state generators; they also report the procedures they used to manage these wastes.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 08/02/2021
Number of Days to Update: 83

Source: Illinois EPA
Telephone: 217-524-3300
Last EDR Contact: 09/27/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Annually

IMPDMENT: Surface Impoundment Inventory

Statewide inventory of industrial, municipal, mining, oil & gas , and large agricultural impoundment. This study was conducted by the Illinois EPA to assess potentail for contamination of shallow aquifers. This was a one-time study. Although many of the impoundments may no longer be present, the sites may be contaminated.

Date of Government Version: 12/31/1980
Date Data Arrived at EDR: 03/08/2002
Date Made Active in Reports: 06/03/2002
Number of Days to Update: 87

Source: Illinois Waste Management & Research Center
Telephone: 217-333-8940
Last EDR Contact: 05/12/2022
Next Scheduled EDR Contact: 08/22/2022
Data Release Frequency: No Update Planned

NPDES: A Listing of Active Permits

A listing of facilities currently active in the state. The types of permits are public, private, federal and state.

Date of Government Version: 04/16/2014
Date Data Arrived at EDR: 04/18/2014
Date Made Active in Reports: 05/20/2014
Number of Days to Update: 32

Source: Illinois EPA
Telephone: 217-782-0610
Last EDR Contact: 09/21/2023
Next Scheduled EDR Contact: 01/08/2024
Data Release Frequency: Varies

PIMW: Potentially Infectious Medical Waste

Potentially Infectious Medical Waste (PIMW) is waste generated in connection with the diagnosis, treatment (i.e., provision of medical services), or immunization of human beings or animals; research pertaining to the provision of medical services; or the provision or testing of biologicals.

Date of Government Version: 09/11/2023
Date Data Arrived at EDR: 09/14/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 81

Source: Illinois EPA
Telephone: 217-524-3289
Last EDR Contact: 12/07/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

TIER 2: Tier 2 Information Listing

A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 05/09/2023
Date Made Active in Reports: 08/02/2023
Number of Days to Update: 85

Source: Illinois Emergency Management Agency
Telephone: 217-785-9860
Last EDR Contact: 11/02/2023
Next Scheduled EDR Contact: 02/19/2024
Data Release Frequency: Annually

UIC: Underground Injection Wells

Injection wells are used for disposal of fluids by "injection" into the subsurface. The construction of injection wells range from very technical designs with twenty-four hour monitoring to simply a hole dug in the ground to control runoff. As a result of this diversity, the UIC Program divides injection wells into five different classes.

Date of Government Version: 01/03/2023
Date Data Arrived at EDR: 09/21/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 81

Source: Illinois EPA
Telephone: 217-782-9878
Last EDR Contact: 11/08/2023
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Semi-Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Illinois.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Illinois Environmental Protection Agency in Illinois.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/10/2014
Number of Days to Update: 193

Source: Illinois Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Illinois Environmental Protection Agency in Illinois.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: Illinois Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

COOK COUNTY:

CHICAGO ASBESTOS: CDPH Asbestos and Demolition Notification Listing

Notices of Intent (NOI) for demolition and asbestos abatement per Chapter 11-4 Article XVIII of the Municipal Code (see American Legal Publishing Corporation) submitted to the Department of Environment (DOE) for work started January, 1993 to December 31, 2011 or submitted to the Department of Public Health (CDPH) for work beginning on or after January 1, 2012. On January 1, 2012, the DOE was disbanded and all its inspection, permitting, and enforcement authorities were transferred to the CDPH.

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/12/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 83

Source: Chicago Department of Public Health
Telephone: 312-747-9884
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

CHICAGO COMPLAINTS: CDPH Environmental Complaints Listing

Environmental complaints received by the Department of Environment (DOE) from January 1993 to December 31, 2011 and by the Department of Public Health (CDPH) since January 1, 2012. On January 1, 2012, the DOE was disbanded and all its inspection, permitting, and enforcement authorities were transferred to the CDPH.

Date of Government Version: 08/23/2023
Date Data Arrived at EDR: 08/31/2023
Date Made Active in Reports: 09/21/2023
Number of Days to Update: 21

Source: Chicago Department of Public Health
Telephone: 312-747-9884
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

CHICAGO ENF: CDPH Environmental Enforcement Listing

Municipal and State code violation notices issued by the Department of Environment (DOE) from January, 1993 to December 31, 2012 and by the Department of Public Health (CDPH) Permitting and Inspections unit since January 1, 2012. On January 1, 2012, the DOE was disbanded and all its inspection, permitting, and enforcement authorities were transferred to the CDPH..

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/12/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 83

Source: Chicago Department of Public Health
Telephone: 312-747-9884
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

CHICAGO INSPECT: CDPH Environmental Inspections Listing

Inspections conducted by the Department of Environment (DOE) from April, 1997 to December 31, 2011 and by the Department of Public Health (CDPH) since January 1, 2012. On January 1, 2012, the Department of Environment was disbanded and all its inspection, permitting, and enforcement authorities were transferred to the CDPH.

Date of Government Version: 08/23/2023
Date Data Arrived at EDR: 09/12/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 83

Source: Chicago Department of Public Health
Telephone: 312-747-9884
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

CHICAGO PERMITS: CDPH Environmental Permits Listing

Permits issued by the Department of Environment (DOE) from January 1993 to December 31, 2011 and by the Department of Public Health (CDPH) since January 1, 2012. This dataset also includes tank permits issued by CDPH on behalf of the Office of the Illinois State Fire Marshall (OSFM). On January 1, 2012, the DOE was disbanded and all its inspection, permitting, and enforcement authorities were transferred to the CDPH.

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/12/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 83

Source: Chicago Department of Public Health
Telephone: 312-747-9884
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Varies

CHICAGO TANKS: CDPH Storage Tanks Listing

This dataset contains Aboveground Storage Tank (AST) and Underground Storage Tank (UST) information from the Department of Public Healtha??s (CDPH) Tank Asset Database. The Tank Asset Database contains tank information from CDPH AST and UST permit applications as well as UST records imported from the historic Department of Environment (DOE) database. This dataset also includes AST records from the historic DOE and pre-1992 UST records from the Building Department.

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/12/2023
Date Made Active in Reports: 12/04/2023
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 312-747-2374
Last EDR Contact: 12/11/2023
Next Scheduled EDR Contact: 03/25/2024
Data Release Frequency: Quarterly

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/07/2023
Date Data Arrived at EDR: 08/08/2023
Date Made Active in Reports: 10/24/2023
Number of Days to Update: 77

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/07/2023
Next Scheduled EDR Contact: 02/19/2024
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/28/2023
Next Scheduled EDR Contact: 01/15/2024
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/30/2023
Next Scheduled EDR Contact: 02/05/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/05/2023
Next Scheduled EDR Contact: 01/22/2024
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/09/2022
Next Scheduled EDR Contact: 02/26/2024
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 11/29/2023
Next Scheduled EDR Contact: 03/18/2024
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Homes & Centers Listing
Source: Department of Children & Family Services
Telephone: 312-814-4150

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Illinois State Geological Survey
Telephone: 217-333-4747

STREET AND ADDRESS INFORMATION

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Clarksville and Carroll Islands

Clarksville and Carroll Islands

Nebo, IL 62355

Inquiry Number: 7523573.7

December 20, 2023

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Pool 25 - Clarksville and Carroll Islands – Resiliency - NESP Program

ECB 2018-14 Analysis of Potential Vulnerabilities

This assessment is performed to highlight existing and future challenges facing the study area due to changing conditions and is conducted in accordance with United States Army Corps of Engineers' (USACE) Engineering Construction Bulletin (ECB) 2018-14, revised 19 August 2022. In accordance with ECB 2018-14, this evaluation identifies potential vulnerabilities for the Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project. The project area is located between Mississippi River miles 266 and 274 on the left descending bank in the northernmost portion of L&D 25's pool (Pool 25) near Clarksville, Illinois. This assessment highlights risks driven by existing and future trends in weather variability for the study area. Study background information can be found in the main report, and more general background information on these risks can be found in ECB 2018-14.

Study Background

The Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project objectives include restoring backwater channel connectivity, increasing flow diversity and bathymetric depths, and improving backwater channel habitats. These objectives will benefit native riverine fish and wildlife including freshwater mussels.

The river ecosystem within Pool 25 has been significantly affected by impoundment of the pool and the permanently higher water tables maintained by L&D 25. Geomorphic features, such as sandbar accretion and backwater deposition, are forming in the project area as sediment from the river deposits; however, pool impoundment, high water levels, and flow diversity prevent the exposure of these evolving features. Side channels and backwaters are important aquatic habitat for many native species including Upper Mississippi River (UMR) riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded backwater channel conditions (e.g., increased siltation, sediment homogenization). Sediment deposition, and high turbidity degrade the backwaters adjacent to these channels. Restoring side channels and backwater areas to promote freshwater mussel habitats and riverine fisheries has been identified as a resource need within the Lower Impounded Reach of the Mississippi River.

Ecosystem restoration is the focus of this analysis because the proposed project seeks to restore diverse habitats within Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project. Future hydrological and meteorological conditions may impact the establishment and design of project features. As indicated by the U.S Geological Survey (USGS) in their 2022 report, *Ecological Status and Trends of the Upper Mississippi and Illinois Rivers*, hydrologic indicator variables most relevant to the ecological health of a watershed are defined as annual discharge (maximum, mean, and minimum), duration of high discharges (exceeding the 20% annual exceedance probability (AEP) discharge), and monthly mean discharge. Thus, to analyze the effects of changing weather conditions on ecosystem restoration features for this study, the annual average streamflow records are evaluated since they are representative of flows impacting project features throughout the year.

Literature Review

The *Fifth National Climate Assessment* (NCA5) and the USACE *Civil Works Technical Report CWTS-2015-13,* as well as state and watershed specific resources published by the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI), and the Illinois Department of Natural Resources (IDNR) are the basis for this literature review. The focus of

these references is on summarizing trends in historic, observed temperature, precipitation, and streamflow records, as well providing an indication of future, changed hydrology based on the outputs from Coupled Model Intercomparison Project Phase 5 (CMIP5) meteorological models. For this assessment, background on observed and projected temperature and precipitation is provided as context for the impact that they have on observed and projected streamflow.

The NCA5 considers hydrological and meteorological research at both a national and regional scale (USGCRP, 2023). *Civil Works Technical Report CWTS-2015-13* was published as part of a series of regional summary reports covering peer-reviewed literature. The 2015 USACE Technical Reports cover 2-digit, United States Geological Survey (USGS), hydrologic unit code (HUC) watersheds in the United States (U.S). Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project is located in 2-digit HUC 07, the Upper Mississippi Region (USACE, 2015) and in the NCA5 Midwest climate region.

In many areas, temperature, precipitation, and streamflow have been measured since the late 1800s and provide insight into how the hydrology in the study area has changed over the past century. CMIP5 are used in combination with different representative concentration pathways (RCPs) reflecting projected radiative forcings up to year 2100 to model future changing conditions. Radiative forcings encompass the change in net radiative flux due to external drivers of long term weather variability, such as, for example changes in carbon dioxide or land use/land cover. Projected temperature and precipitation results can be transformed to regional and local scales (a process called downscaling) for use as inputs in precipitation-runoff models (Graham, Andreasson, and Carlsson, 2007). Uncertainty is inherent to projections of temperature and precipitation due to the CMIP5, RCPs, downscaling methods, and many assumptions needed to create projections (USGCRP, 2017). When applied, precipitation-runoff models introduce an additional layer of uncertainty. However, these methods represent the best available science to predict future hydrologic variables (e.g. precipitation, temperature, streamflow). Many researchers use multiple CMIP5s and RCPs in their studies to understand how various model assumptions impact results (Gleckler et al., 2008).

Temperature. Based on observed temperature records, the annual, average air temperature between 1986 and 2016 for the Midwest has increased by 1.26°F from the 1901-1960 annual average temperature (USGCRP, 2017). Increasing temperatures can accelerate snowmelt and lengthen the frost-free season (Carelton and Hsiang, 2019; Liu, Goodrick, and Stanturf, 2013; Woodward, Perkins, and Brown, 2010). Many studies indicate a change in the seasonality in the region, marked by increasing winter temperatures and early spring melt (Schwartz, Ault, and Betancourt, 2013; Wang et al., 2009; Wolter et al., 2015; Westby, Lee, and Black, 2013). GCM based, projections of temperature for the Midwest show a statistically significant increase in both annual, average temperature and the number extreme heat days over the next century (Vavrus and Behnke, 2014).

Illinois's location in the interior of North America and the lack of mountains to the north and south expose the state to incursions of bitterly cold air masses from the Arctic in the winter and warm, humid air masses from the Gulf of Mexico in the summer. Annual average temperature varies widely across the state, with a range of about 10°F from north to south. In northeastern Illinois, Lake Michigan moderates the temperature, causing cooler summers and warmer winters. Topography and urbanization also have local impacts on hydrological and meteorological conditions.

Temperatures in Illinois have risen about 1.5°F since the beginning of the 20th century. Temperatures in the 2000s have been higher than in any other historical period, with the exception of comparable temperatures during the early 1930s Dust Bowl era. Warming has been concentrated in winter and

spring, while summers have not warmed substantially, a feature characteristic of much of the Midwest. The lack of summer warming is reflected in a below average number of very hot days since the mid-1950s and no overall trend in very warm nights since the beginning of the 20th century. The winter warming trend is reflected in a below average number of very cold nights since 1990.

Precipitation. Average, annual precipitation in the Midwest has increased by 5% to 15% from the first half of the last century (1901–1960) as compared to present day (1986–2015). The amount of rain falling in extreme rain events (1% AEP storm events), has increased by 42% from 1958 to 2016 (USGCRP, 2018). According to the NCA4, GCM based projections indicate that winter and spring precipitation in the Midwest could increase by up to 30% by the end of the century. Precipitation increases of 10-15% are projected in winter and spring for 2-digit HUC 07 from 2070–2099 relative to 1986–2015. However, in the summer and fall, projected precipitation amounts are not expected to change significantly. A northward shift in the rain–snow transition zone in the central and eastern United States is projected by end of the 21st century causing large areas that are currently snow dominated in the cold season to be rainfall dominated (USGCRP, 2017; Ning and Bradley, 2015).

Statewide annual precipitation has ranged from a low of 25.5 inches in 1901 to a high of 51.2 inches in 1993. The driest multiyear periods occurred in the first half of the 20th century, and the wettest have been observed since the 1970s. The driest consecutive 5-year interval was 1952–1956, and the wettest was 2007–2011. Annual precipitation varies widely across the state, ranging from more than 50 inches in the south to less than 35 inches in the north. For annual snowfall, the pattern is reversed, with the northeastern part of the state averaging more than 40 inches compared to less than 10 inches in the southernmost section. Due to its proximity to Lake Michigan, the Chicago metropolitan area occasionally receives heavy winter precipitation from lake-effect snows.

Agriculture is an important sector of Illinois's economy and is particularly vulnerable to extreme weather conditions. On average, spring and summer precipitation has been above average since the mid-1990s. While precipitation during these critical growth seasons is important for adequate soil moisture, it is also vital for proper planting and root development. Poor root development in important state crops, such as corn and soybeans, can lead to reduced plant absorption of nutrients and water from the soil, increased soil erosion, and loss of nutrients from the fields into rivers and streams. Both flooding and droughts have resulted in billions of dollars in losses in recent years. In 2012, a large drought across the Midwest had severe impacts on Illinois. Rainfall totals for May, June, and July were several inches below average, resulting in the third-driest May–July period (after 1936 and 1988) in 126 years of record keeping. By early August, much of the state was in extreme drought. The drought caused major damage to crops, particularly in the southern third of the state.

Illinois has experienced a dramatic increase in the number of 2-inch extreme precipitation events, which can cause severe flooding. In the summer of 1993, persistent heavy rainfall over the upper Midwest caused severe flooding along the Mississippi River. The 1993 flood was one of the greatest natural disasters in U.S. history, causing billions of dollars in damages to homes, businesses, agriculture, and infrastructure. More recently, during April 16–19, 2013, heavy rainfall from a slow-moving storm system caused severe flooding across parts of northern and central Illinois, with some areas receiving up to 10 inches of rain. This event, which contributed to the second-wettest January–June on record in the state, caused planting delays and diminished revenue for many farmers. Illinois has also struggled with urban flooding caused by heavy rains falling on impervious surfaces (e.g., roads, sidewalks, and driveways) and inadequate infrastructure. A recent report found that more than 90% of urban flooding damage claims from 2007 to 2014 were outside the mapped floodplain.

Streamflow. Observed streamflow trends are strongly influenced by precipitation, temperature, and other factors such as land use and land cover in a region, groundwater dynamics, drainage patterns, channel geomorphology, and regulation. In the Upper Mississippi Region (2-digit HUC 07), multiple studies have identified increasing trends in the observed, annual, average streamflow (Novotny and Stefan, 2007; Mauget, 2004; Small, Islam, and Vogel, 2006) and in the observed, annual, mean/median baseflow (Juckem et al., 2008; Xu et al., 2013). Seasonally, studies have reported increasing annual, minimum, 7-day, low flows in the fall (Small, Islam, and Vogel, 2006) and annual, average, 7-day, low flows in the fall and winter (Novotny and Stefan, 2007). Some studies have found that annual peaks are increasing in the spring and summer (Novotny and Stefan, 2007).

The 2020, USACE *Mississippi River Geomorphology and Potamology* (MRG&P) *Study* also indicates that annual water yield, annual maximum daily water yield, and annual maximum 7-day water yield are increasing throughout the Upper Mississippi River Basin (USACE, 2020). Water yield represents discharge per unit of watershed area. For the 2020 USGS study, water yield was normalized by total annual precipitation to differentiate between the influence of altered precipitation versus other drivers of change in hydrologic response. Evaluations of precipitation-normalized water yield indicate that changes to water management and land use/cover in the Upper Mississippi River Basin are exacerbating increases in water yield (Simon et al., 2020). There is little to no consensus in the literature regarding changes in projected streamflow in the Upper Mississippi Region.

Ecosystem Health. Based on a 2022 report generated by the USGS, the following variables are critical to ecosystem health and have changed overtime: annual discharge (maximum, mean, and minimum), duration of high discharges (exceeding the 20% AEP discharge), and monthly mean discharge. Results from the 2022 USGS report indicate that mean and minimum annual discharges are increasing at the USGS gages at Winona, Minnesota (05378500) and Keokuk, Iowa (05474500). The duration of high discharges has also increased from 1940 to 2019 for all gages analyzed. Significant increases in annual maximum discharges were detected for the Keokuk, Iowa (05474500) and Valley City, Illinois (05586100) USGS gages. Based on an analysis of monthly, mean discharges, large increases in May mean discharges were identified for all three Mississippi River gages analyzed. There is some evidence that the maximum in monthly, mean discharge for a given year has shifted from occurring in April to either May or June.

Water quality analysis presented in the 2022 USGS report indicates that total suspended sediment (TSS) concentrations associated with mean discharges have decreased long-term in many reaches and tributaries of the Upper Mississippi River. The most significant changes have been observed in L&D pools 4 and 8. Phosphorus loads in all the L&D pools analyzed (pools 4, 8, 13, and 26) on the Upper Mississippi River have also decreased long-term. Although there are no long-term, significant trends in dissolved oxygen (DO) for the portions of the Upper Mississippi River assessed, low DO in backwater areas has been observed more frequently in the summer than in winter.

The concentration of submersed aquatic vegetation (SAV) is considered the primary indicator of aquatic vegetative health in the Upper Mississippi River. High prevalence of SAV (generally >50-percent) indicates quality habitat for waterfowl. Aquatic vegetation analysis identified trends in SAV in L&D pools 4, 8, and 13. The prevalence of SAV in L&D pools 4 and 8 increased by 30% from 2002 to 2010. Since 2010, SAV concentrations at these two locations have plateaued. The prevalence of SAV in L&D 13 ‘s pool increased from 1998 to 2008. Since 2009, SAV concentrations have been decreasing in L&D 13’s pool. Additionally, since 2000, increases in aquatic plant species diversity have been observed in L&D pools 4 and 8. In the L&D 8 and 13’s pools, a positive trend in emergent vegetation has been recorded. Emergent vegetation provides habitat for aquatic species. No trends in aquatic vegetation were found within the lower portion of the Upper Mississippi River (L&D Pool 26).

Illinois experiences storms during all seasons. During February 1–3, 2011, one of the most powerful winter storms in history hit Illinois. Antioch, which normally averages only one snowfall greater than 6 inches per year, received the greatest accumulation of 27 inches. Chicago O'Hare International Airport recorded wind gusts of more than 60 mph and 20.2 inches of snow, the third-largest snowfall accumulation for the city in 120 years of record keeping. More than 9.8 million Illinois residents were in areas that received 12 or more inches of snow. Severe thunderstorms occur frequently during late spring and early summer. These storms can occasionally cause tornadoes, which sometimes cause major damage and loss of life. On August 10, 2020, a powerful derecho traveled through Illinois, producing widespread damaging winds. There were 15 tornadoes across northeastern Illinois, with several affecting the Chicago metropolitan area.

Under a higher emissions pathway, historically unprecedented warming is projected during this century (Figure 1). Even under a lower emissions pathway, annual average temperatures are projected to most likely exceed historical record levels by the middle of the century. However, a large range of temperature increases is projected under both pathways, and under the lower pathway, a few projections are only slightly warmer than historical records. During July 12–16, 1995, Chicago experienced a severe heat wave—the worst weather-related disaster in the city's history. Over a 5-day period, more than 700 people died. In addition to daytime highs of 90°F or higher (including 2 days of 100°F or higher), nighttime temperatures dropped only into the 80s (°F). Furthermore, the heat index, which considers both temperature and humidity, reached values of 105ºF or more for 42 hours during the event. Values of 105ºF or higher are considered dangerous by the National Weather Service. An analysis shows that the number of hours above critical thresholds of the heat index were the highest on record (Figure 7). If temperatures continue rising, future heat waves are likely to be more intense. High temperatures combined with high humidity pose risks to human health, particularly for residents of Chicago and other urban areas. By contrast, the intensity of cold waves is projected to decrease.

Summary. Within the literature reviewed, there is evidence that temperature, precipitation, and streamflow have increased over the observed period of record within the Upper Mississippi Watershed. Trends in water quality within the Upper Mississippi Watershed indicate decreases in total phosphorus and total suspended solids. Aquatic vegetation analysis indicates increases in SAV in L&D pools 4, 8, and 13 in early 2000s through 2010. SAV concentrations have plateaued through 2019. Projections of future hydrological and meteorological conditions show strong consensus on increases in future temperature, and moderate consensus on increases in future precipitation. There is little to no consensus related to trends in future streamflow. Figure 1 from the 2015 USACE *Civil Works Technical Report CWTS-2015-13* provides a visual summary of the trends in observed and projected hydrometeorological variables for 2-digit HUC 07, the Upper Mississippi Region.

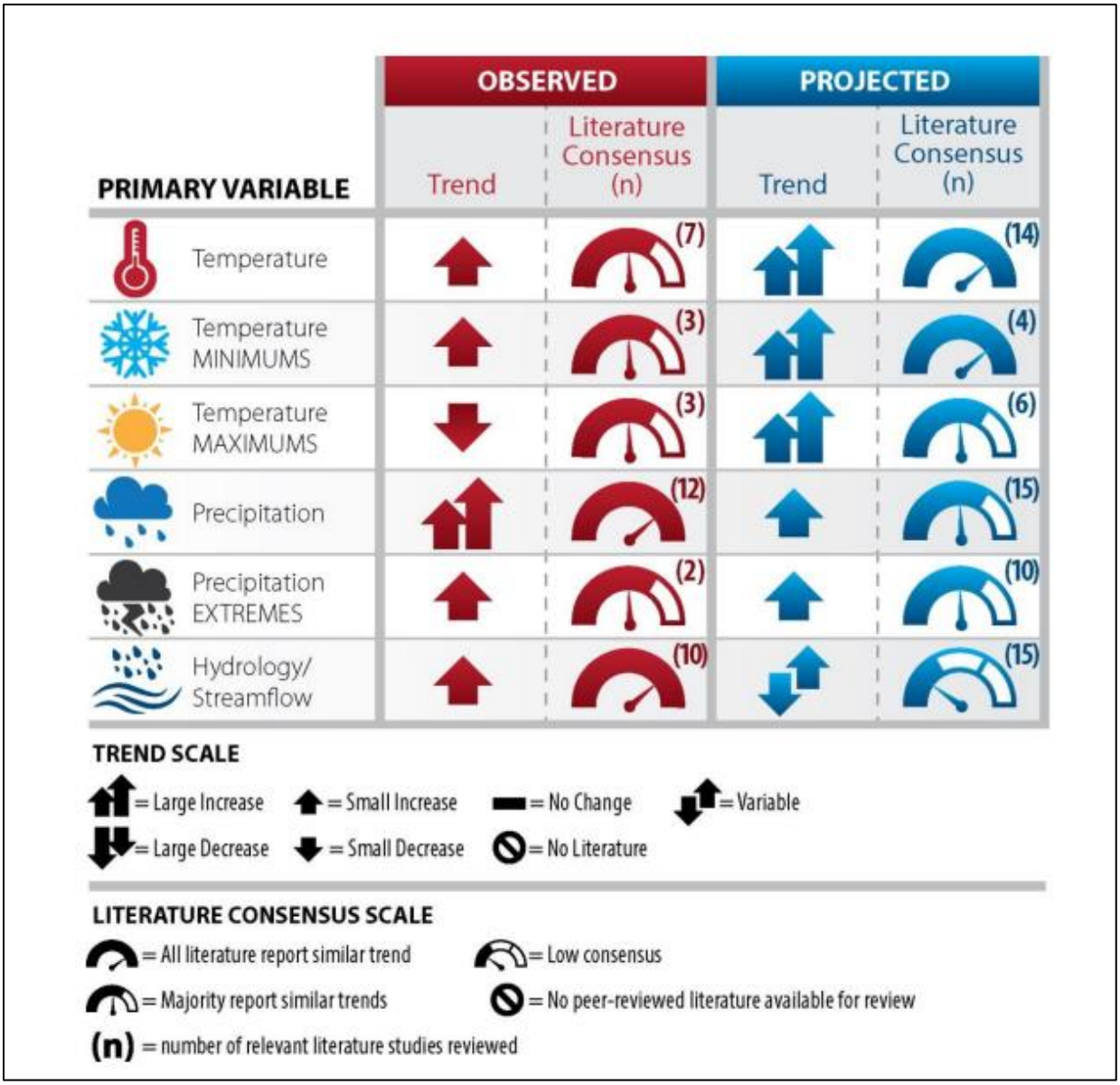


Figure 1. Summary matrix of UMR (HUC 07) observed and projected trends (USACE, 2015)

Nonstationarity Detection and Trend Analysis

The assumption that hydrologic timeseries are stationary (their statistical characteristics are unchanging) in time underlies many traditional hydrologic analyses. Statistical tests can be used to test this assumption using the techniques outlined in USACE Engineering Technical Letter (ETL) 1100-2-3, *Guidance for Detection of Nonstationarities* (2017). The USACE Time Series Toolbox (TST) tool is a web-based tool that performs the statistical tests described in the guidance. Average, annual streamflow is analyzed for Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project because project features are vulnerable to damage from flows during the first few years of establishing habitat. In the long-term, project feature elevations need to be designed so that they can withstand future conditions. More frequent siltation of project features can have adverse effects on overwintering habitats.

Observed, average, annual discharge for the L&D 24 tailwater (TW) is aggregated from the mean daily flow values computed by USACE from observed, mean daily, stage measurements. Because the streamflow record analyzed has been generated based on a flow-stage rating curve, the quality of the data was verified using observed, USACE streamflow records recorded at locations upstream and downstream between L&D 24 tailwater and L&D 25 upper pool. If unverified, changes in the flow-stage rating curve applied can introduce a source of nonstationarity and/or uncertainty into the streamflow record. This should be taken into consideration when interpreting the results of trend and nonstationarity analysis. Based on this evaluation no discrepancies were found the L&D 24 tailwater streamflow record.

The USACE L&D 24 gage captures 140,700 square miles of drainage area and is influenced by regulation from the L&D 25 on the Mississippi River. The L&Ds were constructed and placed into operation in 1940. The general objective of the L&Ds 24 and 25 is to maintain the authorized, nine-foot, navigation channel. The L&Ds maintain the minimum storage of water required for navigation at all times and any additional water volume is outflowed. Consequently, operation of the L&Ds does not have a significant impact on annual, average streamflow. The TST tool is applied to detect nonstationarities and trends for the period of record from 1960 to 2023.

As shown in *Figure* 2, the average flow record observed at L&D 24 has little evidence of a nonstationarity. A strong nonstationarity is one that demonstrates a degree of consensus, robustness and a significant increase or decrease in the sample mean and/or variance. While a small change in distribution, mean, and variance can be observed in the data the data does not change significantly. There was no potential breakpoint identified and the p-values do not meet significance requirements for consideration. Linear and monotonic trends are evaluated using the t-test, Mann-Kendall and Spearman Rank Order tests. The significance of trends is evaluated using a 0.05 level of significance threshold (p-value<0.05 is considered statistically significant). Trend analysis indicates a statistically significant, positive trend for the 1960-2020 period of by the t-Test (p-value= 0.082396), Mann-Kendall test(p-value=0.1247), and Spearman Rank-Order (p-value=0.10953) test, see trendline in Figure 3. There is no statistically significant trend in the data recorded between 1960-2023.

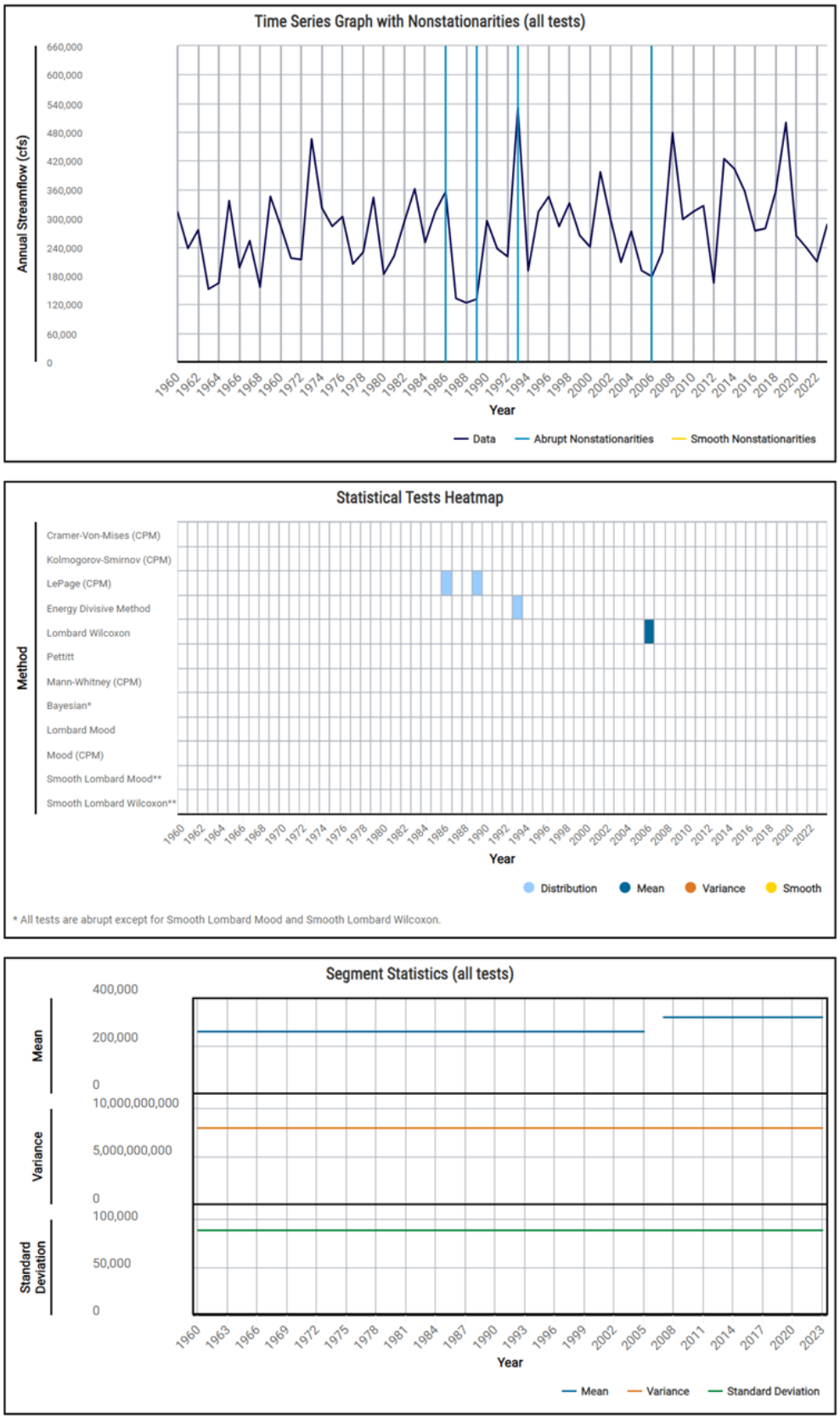


Figure 2. Time Series Toolbox Output for Annual Average Streamflow for L&D 24.

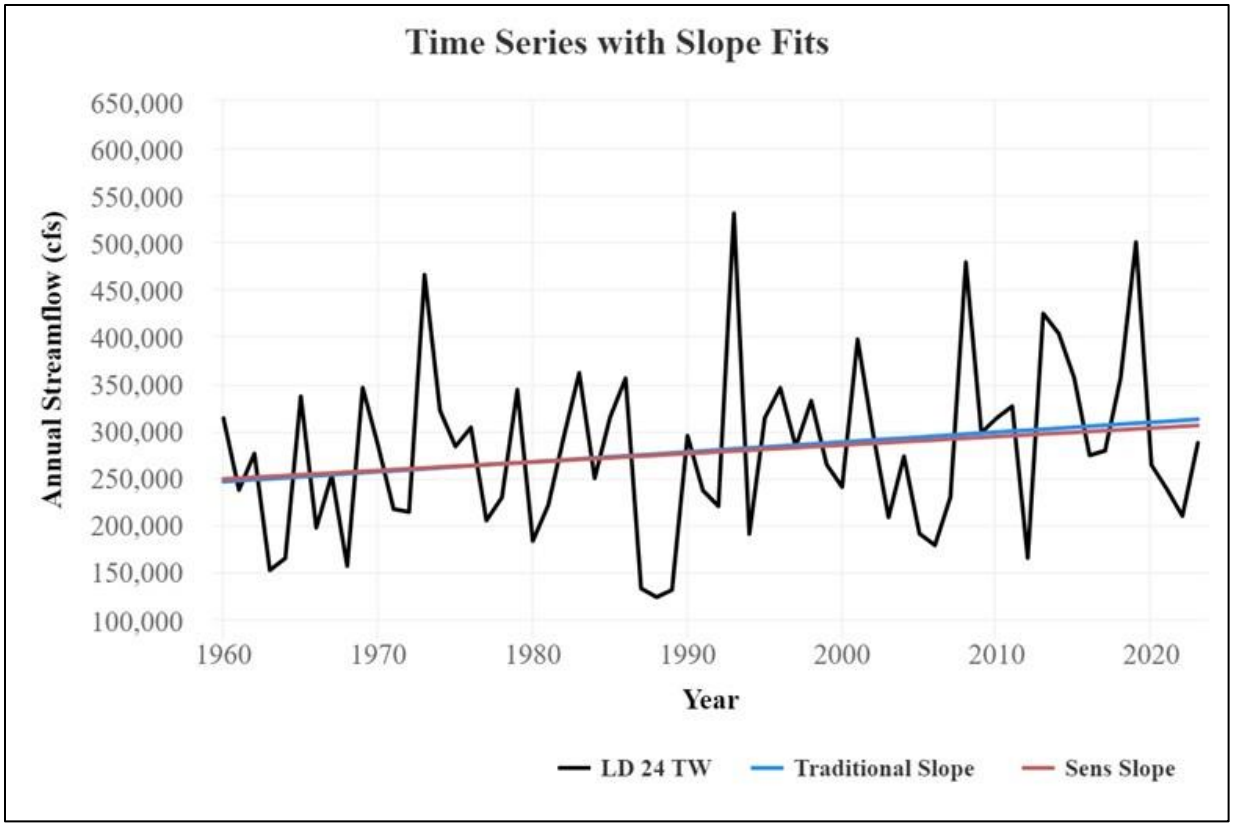


Figure 3. Trend Analysis for Annual Average Streamflow for L&D 24.

Climate Hydrology Assessment Tool (CHAT)

The USACE Climate Hydrology Assessment Tool (CHAT) displays various simulated, historic, and future streamflow, temperature, and precipitation outputs derived from 32 CMIP5. The CHAT uses Coupled Model Intercomparison Project Phase 5 (CMIP5) GCM meteorological data outputs that have been statistically downscaled using the Localized Constructed Analogs (LOCA) method. CMIP5 rely on scenarios representing different pathways to a given atmospheric concentration of greenhouse gas emissions (GHG) referred to as representative concentration pathways (RCPs). RCPs describe the change in radiative forcing at the end of this century, as compared with pre-industrial conditions. Projected hydroclimate data in the CHAT for 2006 to 2099 are produced using two future scenarios: RCP 4.5 (where greenhouse gas emissions stabilize by the end of the century) and RCP 8.5 (where greenhouse gas emissions continue to increase throughout the century). Simulated output representing the historic period of 1951 to 2005 is generated using a reconstitution of historic GHG emissions.

To analyze runoff, LOCA-downscaled GCM outputs are used to force an unregulated, Variable Infiltration Capacity (VIC) hydrologic model. Areal runoff from VIC is then routed through a stream network using MizuRoute. Outputs represent the daily in-channel, routed streamflow for each stream segment – valid at the stream segment endpoint. Since the runoff is routed, the streamflow value associated with each stream segment is a representation of the cumulative flow, including all upstream runoff, as well as the local runoff contributions to that specific segment. Within the CHAT, streamflow output can be selected by stream segment and precipitation/temperature output can be selected for a given 8-digit HUC watershed.

Clarksville and Carroll Islands are in 4-digit HUC 0711 (Upper Mississippi- Salt). The 8-digit HUC of interest specific to the study area is the Sny watershed (HUC 07110004). Mississippi River stream segment 07000599 runs parallel to the Clarksville and Carroll Islands study area. Figure 4 and Figure 5 show the range of the modeled, annual-mean streamflow and annual-maximum temperature output presented for the historic period (1951-2005) and the future period (2006-2099). The annual-mean streamflow is analyzed for this assessment to investigate if and how potential, future streamflow conditions will change. Maximum-annual temperature is analyzed for this assessment as a proxy for water temperature. Warmer water holds less dissolved oxygen (DO) which affects the survival of aquatic life (USGS 2018). The range of data is indicative of the uncertainty associated with projected streamflow and temperature.

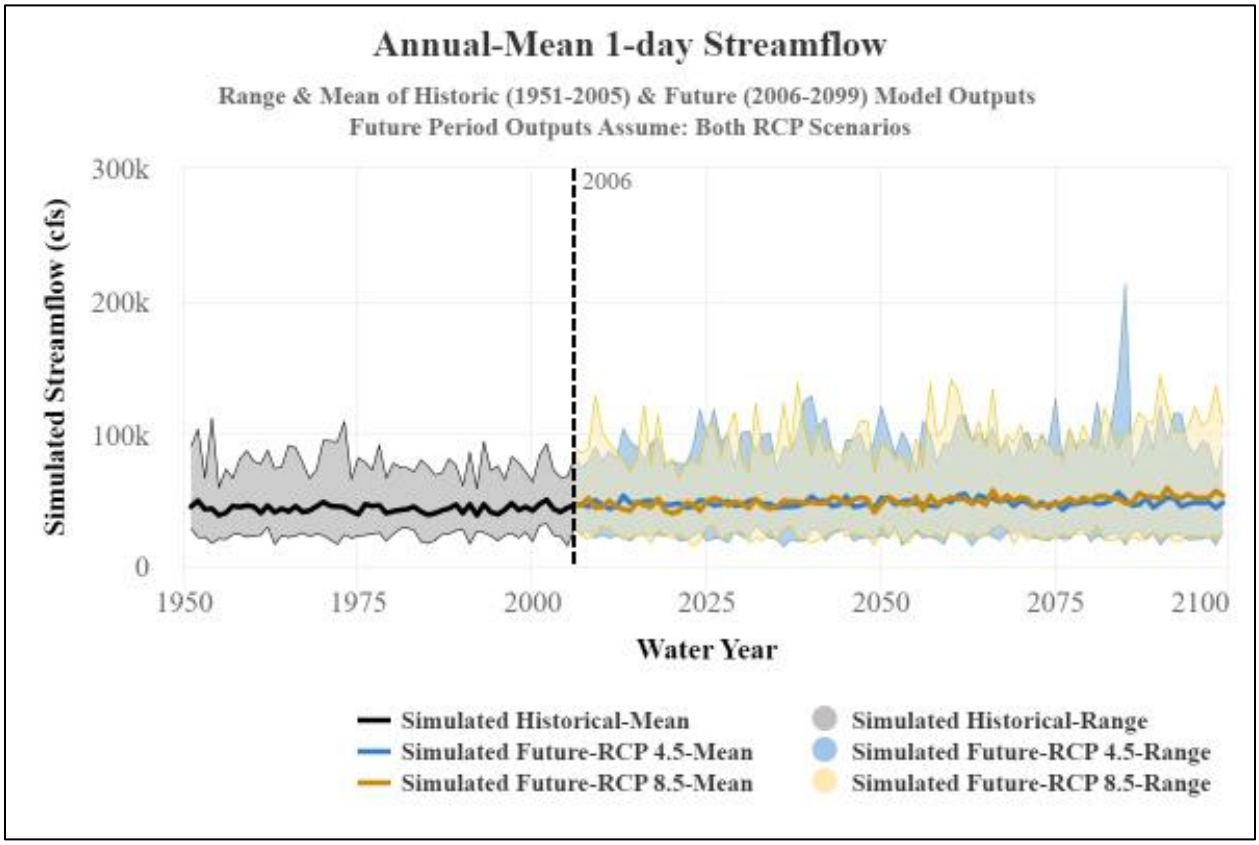


Figure 4. Range of Annual-Mean Streamflow Model Output for the Sny watershed (HUC07110004) Stream Segment: 07000599

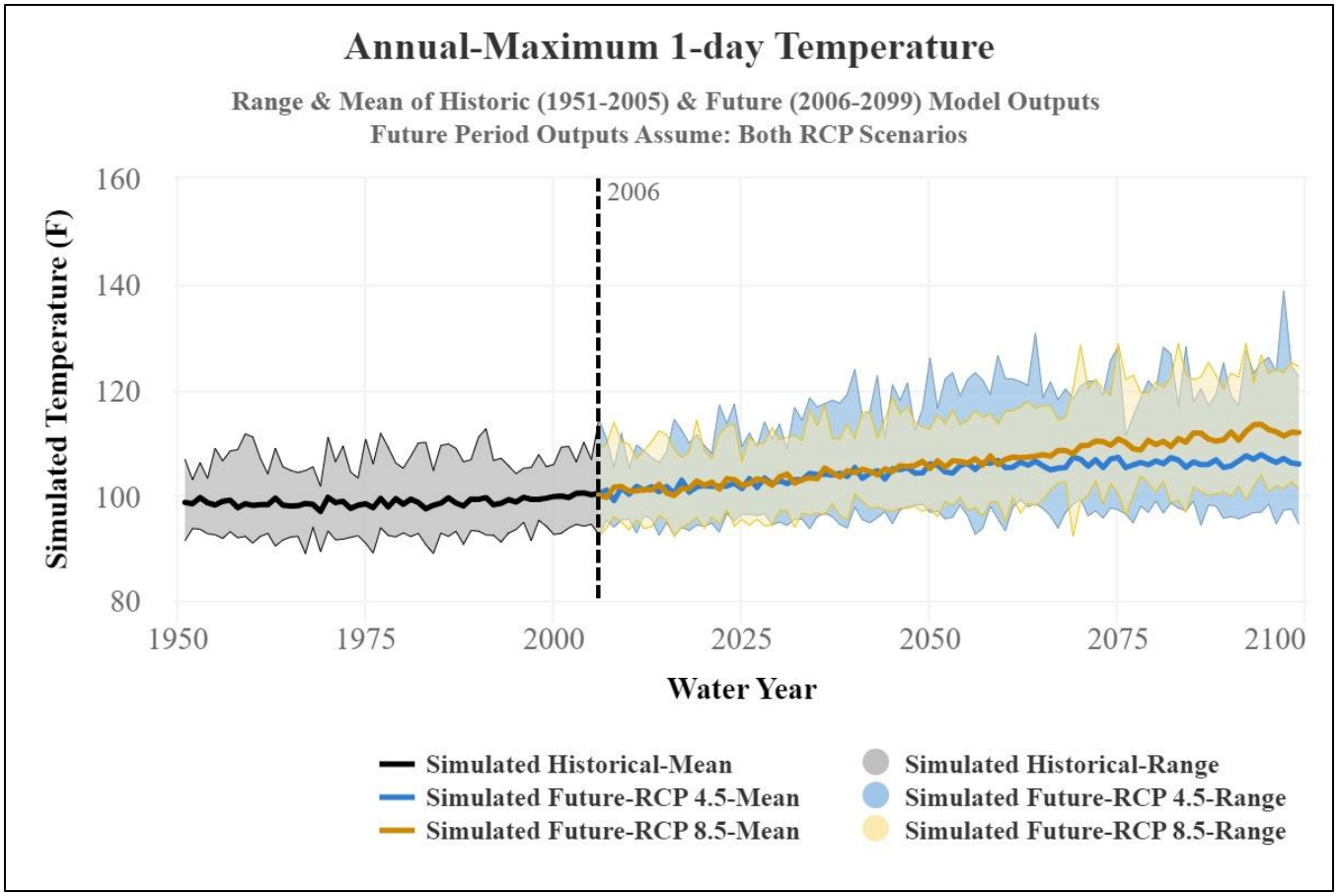


Figure 5. Range of Annual Maximum Temperature Model Output for the Sny watershed (HUC07110004) Stream Segment: 07000599)

For the Sny watershed (HUC07110004) trends are evaluated using the t-Test, Mann-Kendall and Spearman Rank-Order tests. All three statistical tests are applied using a 0.05 level of significance (p-values<0.05 are considered statistically significant). As displayed in Figure 6, the directionally and magnitude of change in statistically significant trends in annual-mean streamflow are evaluated using the slope of the fitted linear regression relationship. The results of the three statistical tests and the slopes associated with identified, statistically significant trends are presented in Table 1. The mean of the 32 projections of simulated, annual-mean streamflow for the future period (2006-2099) shows a statistically significant, positive trend for the Sny watershed (HUC07110004) Stream Segment-007000599 when RCP 8.5 is assumed. The trendline has a slope of 79.661 cfs a year, which equates to a 3,903 cfs change in the average of the 32 projections of annual- mean streamflow over a 50-year period. When the CHAT is used to evaluate the change in Epoch-Mean of simulated annual-mean streamflow it is found that the median change from the base Epoch (1950-2005) to the mid-century epoch (2035-2064) is 11.235%. By the end-century epoch (2070-2099) the change relative to the base period is 15.81%. There is no statistically significant trend in simulated, historic flows (1951-2005) or annual-mean streamflow for the future period (2006-2099) when RCP 4.5 is assumed.

Table 1. Trend Analysis of Average Model Output: Annual – Mean Streamflow Sny watershed (HUC07110004) Stream Segment: 07000599

Trend Analysis	Historic (1951-2005)	Future (2006-2099)		Historic (1951-2005)			Future (2006-2099)					
		RCP 4.5	RCP 8.5				RCP 4.5			RCP 8.5		
	p-values			Statistically Significant? (<0.05)	Slope (cfs/year)	Direction	Statistically Significant? (<0.05)	Slope (cfs/year)	Direction	Statistically Significant? (<0.05)	Slope (cfs/year)	Direction
t-Test	0.853	0.182	$8.6x10^{-10}$	No	-4.5885	↓	No	13.698	↑	Yes	79.661	↑
Mann-Kendall	0.919	0.174	$<2.2x10^{-16}$	No			No			Yes		
Spearman Rank Order	0.810	0.159	$3.79x10^{-10}$	No			No			Yes		

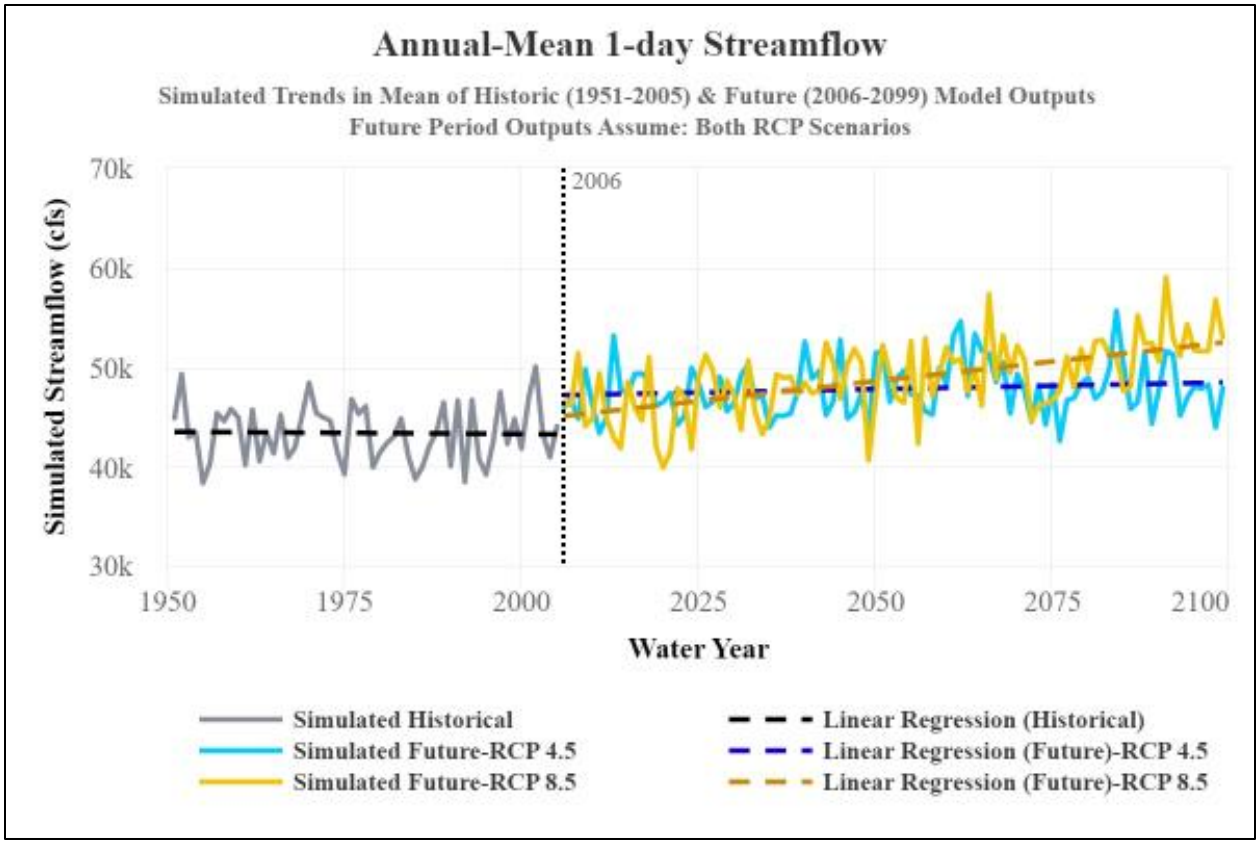


Figure 6. Trend Analysis of Average Model Output: Annual-Mean Monthly Streamflow Sny watershed (HUC07110004) Stream Segment: 07000599

For the mean of the 32 projections (per RCP) of annual-maximum temperatures, the results of the three statistical tests and the slopes associated with statistically significant trends are presented in Table 2 and Figure 7. The mean of the simulated, annual-maximum temperature projections (future period: 2006-2099) shows a statistically significant, positive trend for the Sny watershed under both the moderate (RCP 4.5) and higher (RCP 8.5) radiative forcings. Both outputs project a significant magnitude of change in temperature over the next fifty years. The CHAT computes a trendline slope of 0.0699 °F per year for the lower radiative forcing, which would be a 3.42 °F increase in maximum temperature over a 50-year period. The CHAT computes a trendline slope of 0.1357 °F per year for the RCP 8.5 radiative forcing, which would be a 6.65 °F increase in maximum temperature over a 50-year period. There is also a statistically significant increasing trend in simulated, historic temperatures between 1951 and 2005 (slope of 0.0248 °F per year). When the CHAT is used to evaluate the change in Epoch-Mean of simulated annual-maximum temperature it is found that the median change from the base Epoch (1950-2005) to the mid-century epoch (2035-2064) is 5.25 °F for RCP 4.5 and 6.51 °F for RCP 8.5. By the end-century epoch (2070-2099) the change relative to the base period is 6.13 °F for RCP 4.5 and 11.10 °F for RCP 8.5.

Table 2. Trend Analysis of Average Model Output: Annual Maximum Temperature for Sny watershed (HUC07110004) Stream Segment: 07000599

Trend Analysis	Historic (1951-2005)	Future (2006-2099)		Historic (1951-2005)			Future (2006-2099)					
		RCP 4.5	RCP 8.5				RCP 4.5			RCP 8.5		
	p-values			Statistically Significant? (<0.05)	Slope (°F/year)	Direction	Statistically Significant? (<0.05)	Slope (°F/year)	Direction	Statistically Significant? (<0.05)	Slope (°F/year)	Direction
t-Test	6.05×10^{-5}	2.2×10^{-16}	2.2×10^{-16}	Yes	0.0248	↑	Yes	0.0699	↑	Yes	0.1357	↑
Mann-Kendall	0.00026	2.2×10^{-16}	2.2×10^{-16}	Yes			Yes			Yes		
Spearman Rank Order	0.000169	2.2×10^{-16}	2.2×10^{-16}	Yes			Yes			Yes		

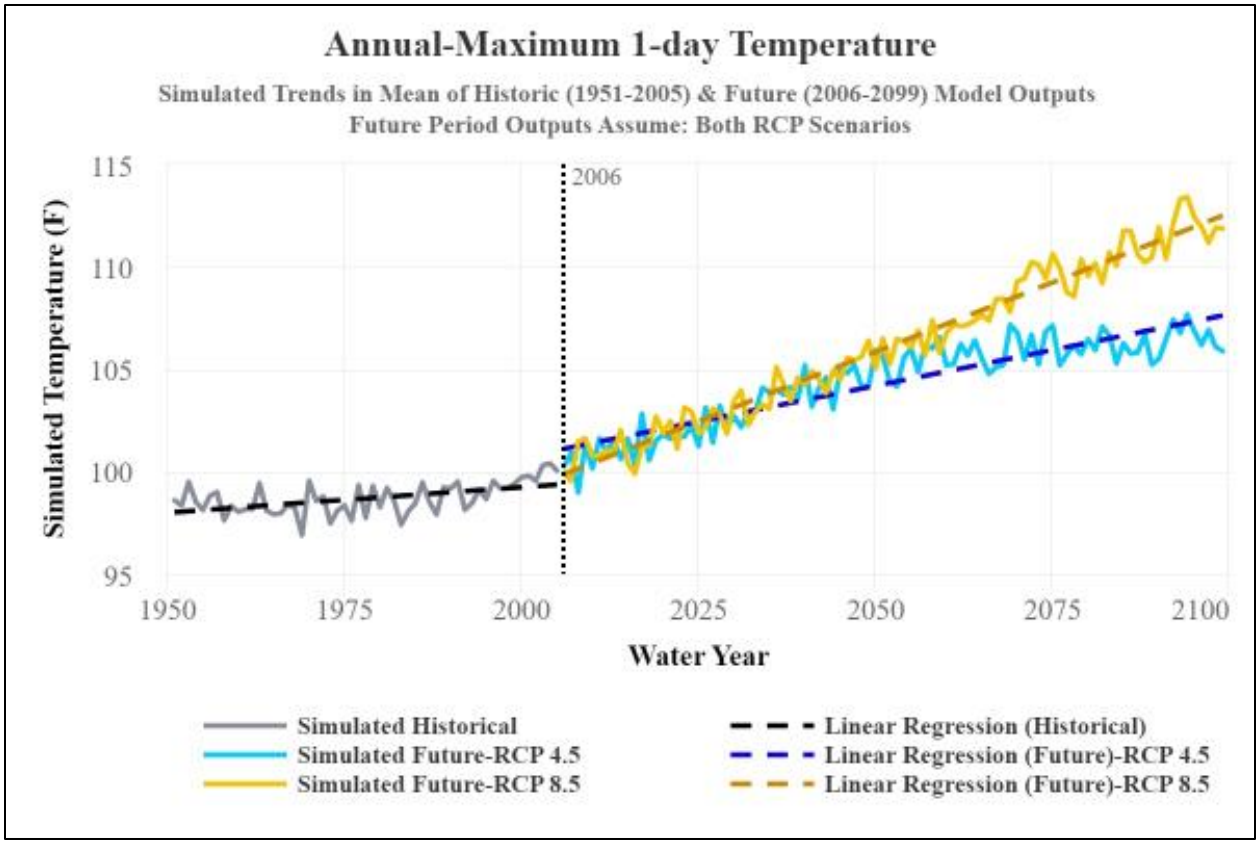


Figure 7. Historic and Projected trends in historic and projected mean annual maximum temperatures for the Sny watershed (HUC07110004) Stream Segment: 07000599

The CHAT provides streamflow and temperature outputs analyzed comparatively by describing simulated changes in monthly streamflow and temperature between different epochs (time periods). Monthly streamflow and temperature output is analyzed by determining the mean of the monthly value for the variable of interest for each GCM for three epochs: 1950-2005 (baseline), 2035-2064 (mid-century), and 2075-2099 (end of century). The difference between GCM/Month/Epoch means are determined for both the baseline vs. mid-century and baseline vs. end of century epochs and results are presented as boxplots. These boxplots provide insight into both the range of results and the seasonality of changes in streamflow and temperature overtime.

For stream segment 07000599 in the Sny watershed (HUC07110004), changes in epoch-mean of simulated monthly mean streamflow are presented in Figure 8. For the stream segment of the Mississippi River analyzed, it appears that for both the mid-century and end-century epochs November through May mean flows are increasing with those flows derived using RCP 8.5 than those derived by assuming RCP 4.5. Greater increases are observed during December through May for the end of the century epoch. August and September flows appear to be decreasing regardless of what RCP is assumed for both epochs and RCPs analyzed.

For the Sny watershed, simulated maximum temperatures for both the mid-century epoch (2035-2064) and the end-century epoch (2070-2099) are increasing relative to historic temperature simulations (1950-2005) for all months and both RCPs. For the mid-century comparisons, 3.9° F increases or greater in temperature are projected under RCP 8.5. Larger changes in temperature are projected by the end of century. As compared to the temperature changes projected by mid-century, for the 2070-2099 epoch, there are larger differences in results where RCP 8.5 was assumed versus RCP 4.5. When RCP 8.5 is assumed, over 10° F of warming is projected from June through October. All RCP 8.5 comparisons show greater than 5° F of warming. When RCP 4.5 is assumed, between 5° F to 10° F of warming is projected for all months except March, April, May, and November. Increases in maximum air temperature, particularly in the summer (June-August), are likely to increase water surface temperatures. This has the potential to adversely impact water quality by decreasing DO in backwater areas within the study area.

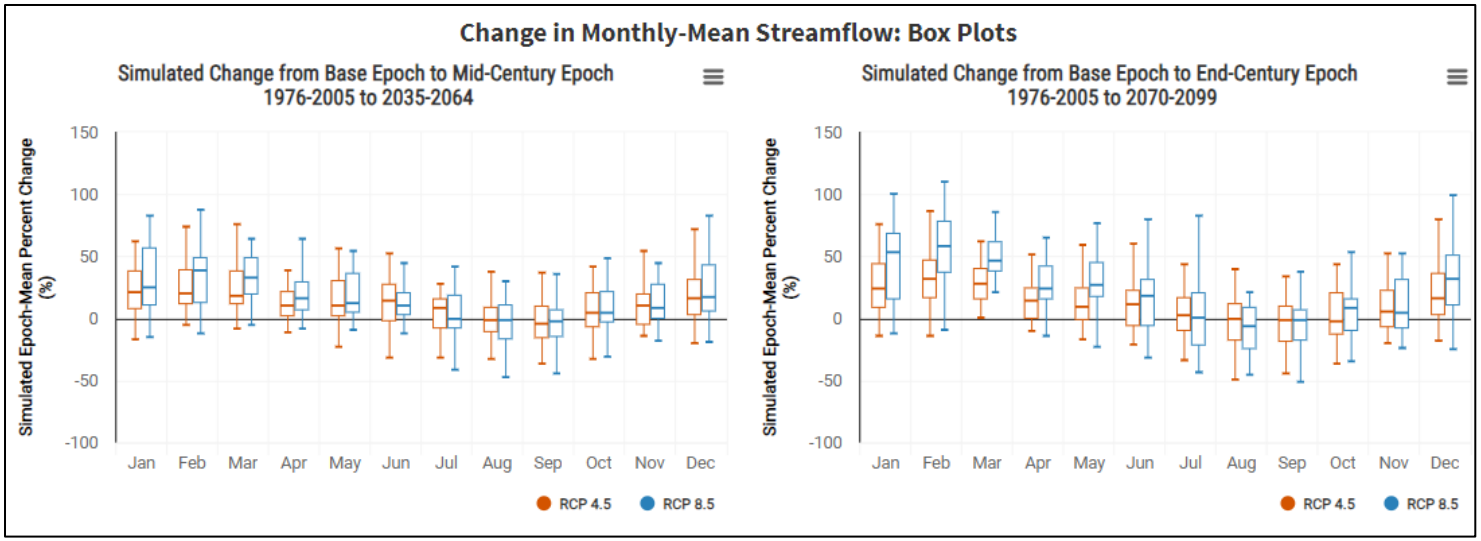


Figure 8. Change in Epoch-Mean of Simulated Monthly Mean Streamflow - Sny watershed (HUC07110004) Stream Segment: 07000599

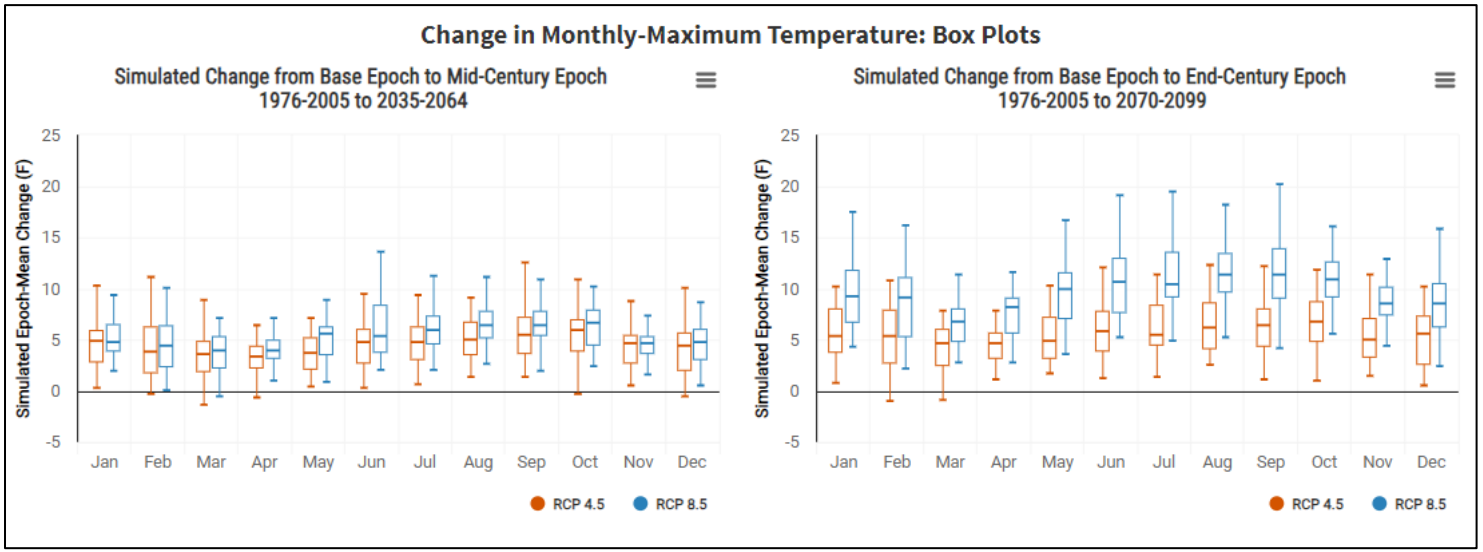


Figure 9. Change in Epoch-Mean of Simulated Monthly Maximum Temperature- Sny watershed (HUC07110004) Stream Segment: 07000599

Vulnerability Assessment

The USACE Vulnerability Assessment (VA) Tool facilitates a screening level, comparative evaluation of projects' exposure to long term weather variability for a selected USACE business line in a given 4-digit HUC watershed relative to the other 4-digit HUC watersheds within the continental United States (CONUS). A series of indicator variables are computed and aggregated into a vulnerability score using the weighted-order, weighted-average (WOWA) approach. The tool uses the CMIP5 GCM based Bias Corrected, Spatially Disaggregated (BCSD) VIC dataset (2014) to define projected, hydrologic, and meteorologic inputs to the tool's WOWA scores.

The WOWA scores and indicator variable values are available for two subsets of simulations (wet- top 50% by cumulative runoff projections and dry- bottom 50% by cumulative runoff projections). Data are available for three epochs. The epochs include a historic period (Base epoch) and two 30-year, future epochs (centered on 2050 and 2085). The Base epoch is not based on projections and so it is not split into a wet and dry subset. Watersheds with WOWA scores specific to a given business line, that fall within the top 20% of WOWA scores for watersheds in the CONUS are identified as being vulnerable to impacts from long term weather variability. The projected datasets incorporated into VA scores contain considerable uncertainty. Some of this uncertainty is reflected by the differences in results for each of the subset-epoch combinations.

The tool is applied using the default, National Standards Settings and for the ecosystem restoration business line. Indicators used to compute the Ecosystem Restoration WOWA score include: change in sediment load due to change in future precipitation, cumulative monthly runoff variation relative to mean annual runoff, runoff elasticity (ratio of streamflow runoff change to precipitation change), macroinvertebrate index of biotic condition, local mean annual runoff, low flow reduction, percent of freshwater plant communities at risk, and two indicators of flood magnification (indicator of how much high flows are projected to change over time).

As shown in Figure 10, compared to the other 4-digit HUC watersheds in the CONUS, the Upper Mississippi-Salt (HUC 0711) watershed does not have a vulnerability score in the top 20% for the ecosystem restoration business line. This is a comparative evaluation and thus does not imply that the watershed is not vulnerable to future long term weather variability. Results indicate that for the select metrics incorporated into the tool, this watershed may be less exposed to potential long term weather variability relative to other watersheds in the CONUS. This is true for both the wet and dry subsets and both the 2050 and 2085 epochs.

As can be seen in Figure 10 and Table 3, the dominant indicator variable contributing to the Ecosystem Restoration business line VA score for the Upper Mississippi-Salt (HUC 0711) watershed is (8) At Risk Freshwater Plants for all epoch and subset combinations. The WOWA score changes by more than 1% between the 2050 and 2085 epochs for both the wet and dry subsets. The percentage by which the indicator variable contributes to the VA score does not significantly change overtime. Because this indicator variable is not dependent on computed, GCM based changes in future hydrology (temperature, precipitation, streamflow) this indicator variable value is constant overtime.

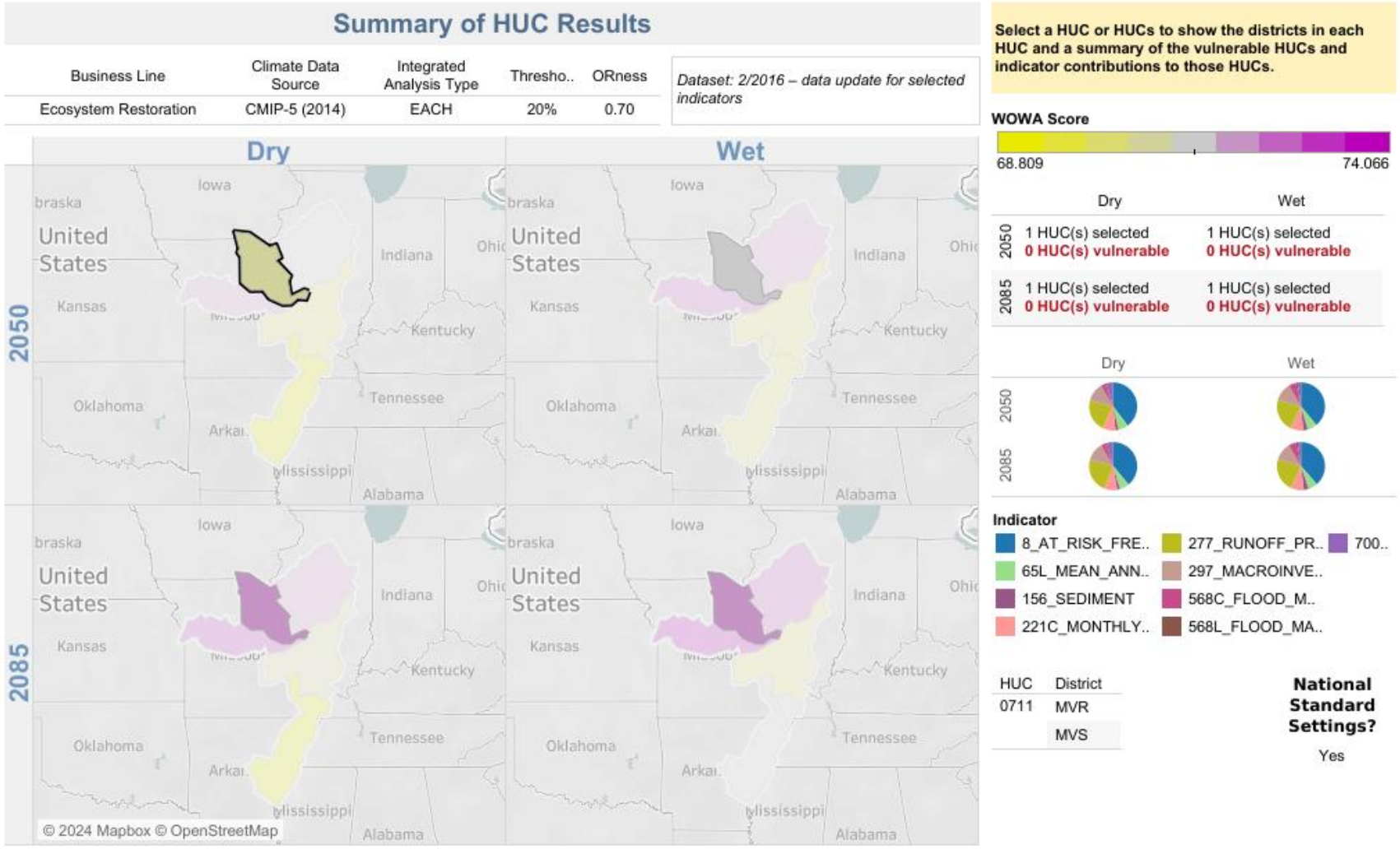


Figure 10. Output of the Vulnerability Assessment tool - Upper Mississippi-Salt watershed

Table 3. VA Tool Output- HUC 0706 Upper Mississippi-Maquoketa-Plum Watershed- Ecosystem Restoration

Subset	Epoch	VA Score	% Change in VA Score (2050 to 2085)	Dominant Indicator	Dominant Indicator % Change (2050 to 2085): Contribution to Overall WOWA Score	Dominant Indicator % Change (2050 to 2085): Indicator Value
WET	2050	71.261	+1.11%	8- At Risk Freshwater Plants	0.00%(constant)	56.524 (constant)
DRY	2085	72.053	+1.11%	8- At Risk Freshwater Plants	0.00% (constant)	56.524 (constant)
DRY	2050	70.646	+2.10%	8- At Risk Freshwater Plants	0.00%(constant)	56.524 (constant)
DRY	2085	72.130	+2.10%	8- At Risk Freshwater Plants	0.00% (constant)	56.524 (constant)

Conclusion

The purpose of the Clarksville-Carroll Islands Channel Restoration Ecosystem Restoration Project is to restore side channel connectivity, diversity, quality, and flow to benefit native riverine fish and wildlife; and improve side channel habitat, including substrate stability, to benefit native freshwater mussels and create aquatic habitat.

Proposed project features include the following to improve side channel habitat:

- Dredging a pilot channel and connections,
- Modifying and restoring an existing river training structure into a side channel enhancement dike,
- Constructing new river training structures utilizing hard points to direct flow,
- Mussel habitat enhancement with rock-gravel substrate, and
- Nature-based features utilizing woody bundles.

Output based on both historic, observed hydrometeorological data and projected, changed hydrometeorological data was reviewed to support qualitative statements about how to incorporate resilience over the Upper Pool 25 project's lifecycle.

Increases in precipitation are projected for Illinois, most likely during the winter and spring (Figure 8). The frequency and intensity of extreme precipitation events are also projected to increase, potentially increasing the frequency and intensity of floods. Springtime flooding in particular could pose a threat to Illinois's important agricultural economy by delaying planting and reducing yields.

The intensity of future droughts is projected to increase even if precipitation increases. Rising temperatures will increase evaporation rates and the rate of soil moisture loss. Thus, future summer droughts, a natural part of Illinois's hydrological and meteorological conditions, are likely to be more intense.

Based on the weight of evidence presented in this assessment, long term weather variability impacts are anticipated to affect the study area's hydrology over the project's 50-year life cycle. Available literature suggests warmer and wetter hydrological and meteorological conditions in the future. There are statistically significant increasing trends in both the observed and projected flow data analyzed specific to this study area. As flow increases, floodplain forest habitat may be inundated more often. There is also evidence that temperatures are increasing in the study area which may negatively affect water quality and aquatic habitat.

Table 4 indicates potential residual risks for this project, along with a qualitative rating of how likely those residual risks are to materialize and undermine project features resulting in harm to the study area.

Within the Upper Mississippi River Region, long term weather variability poses a potential risk to ecosystems due to the likelihood of the region experiencing shifts in the flow regime and increases in temperature in the future. Projects, like the Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project will serve to offset some of this risk by improving water quality and diversifying habitat. The standard practices used to design and construct USACE, ecosystem restoration projects include a degree of resilience because features are typically designed to accommodate a wide range of flow conditions. Thus, it is unlikely that long term weather variability induced increases in flow will undermine project features. It is likely that increasing temperatures will place added stress on the ecosystem in the future. Ecosystem restoration standard design practices have been generated based on lessons learned from successful projects constructed between 1981 and 2015. The majority of these standards are listed in the 2012 *Upper Mississippi River Restoration (UMRR) Design Handbook* (USACE 2012).

Even though USACE ecosystem restoration projects can already be considered inherently resilient, it would be worthwhile to consult with experts in floodplain habitat creation and maintenance to see if there are any additional opportunities to incorporate additional innovative, resilient features into the final design without incurring a significant change in cost. Added resilience should be targeted at ensuring project features can withstand higher flows (and higher water surface elevations) and greater periods of inundation. Additionally, opportunities to reduce potential future long term weather variability driven water quality impacts from rising water temperatures should be identified. A potential mechanism by which to accomplish this is to explore the development of an adaptive management plan, whereby if conditions are observed to be changing in the future, certain project features can be designed and/or flagged to accommodate the flexibility to be modified in response to changing future conditions.

Table 4. Residual Risk

Project Feature	Trigger	Hazard	Harm	Qualitative Likelihood[1]	Justification of Likelihood Rating
Side Channel Habitat - Dredging	Increased discharge and decreased WSEL	Future flood volumes may be greater than at present.	Increased sedimentation reduces amount of available backwater habitat	Unlikely	Proposed design will ensure necessary depth for overwintering habitat.
River Training Structure - Hard Points, SCEDs	Increased discharge and WSEL	Future flood velocities and elevations may be higher.	Flow may overtop rock hard points, SCED more frequently causing erosion of the backwater channels.	Unlikely	Riprap is sized and graded to ensure a robust design and reduce project feature damage. Orientation of hard points and SCED are designed to withstand high flows to minimize wave impacts.
Mussel Habitat Enhancement - Rock-Gravel Substrate	Increased discharge and WSEL	Future flood volumes may be greater than at present.	Higher flows may cause erosion within the backwater channels. Additional placement of substrate may cause higher WSELs and slower flow velocities.	Unlikely	Proposed design would ensure quality habitat for mussels and fisheries.
Nature-Based Features - Woody Bundles	Increased discharge and WSEL	Future flood volumes may be greater than at present.	May build with too much debris closing off part of the backwater channel	Unlikely	Proposed design would ensure quality habitat for fisheries.

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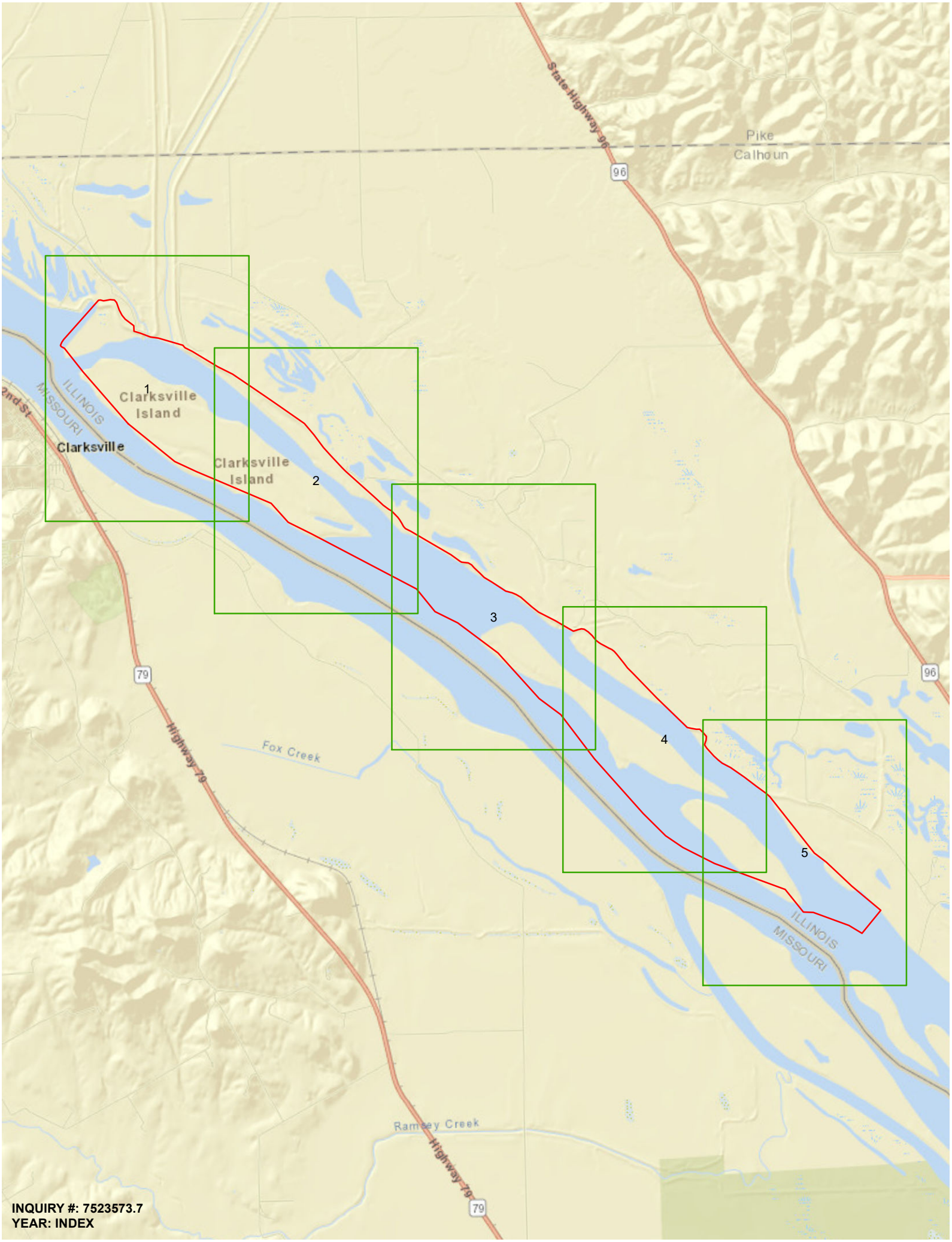
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Clarksville and Carroll Islands

Nebo, IL 62355

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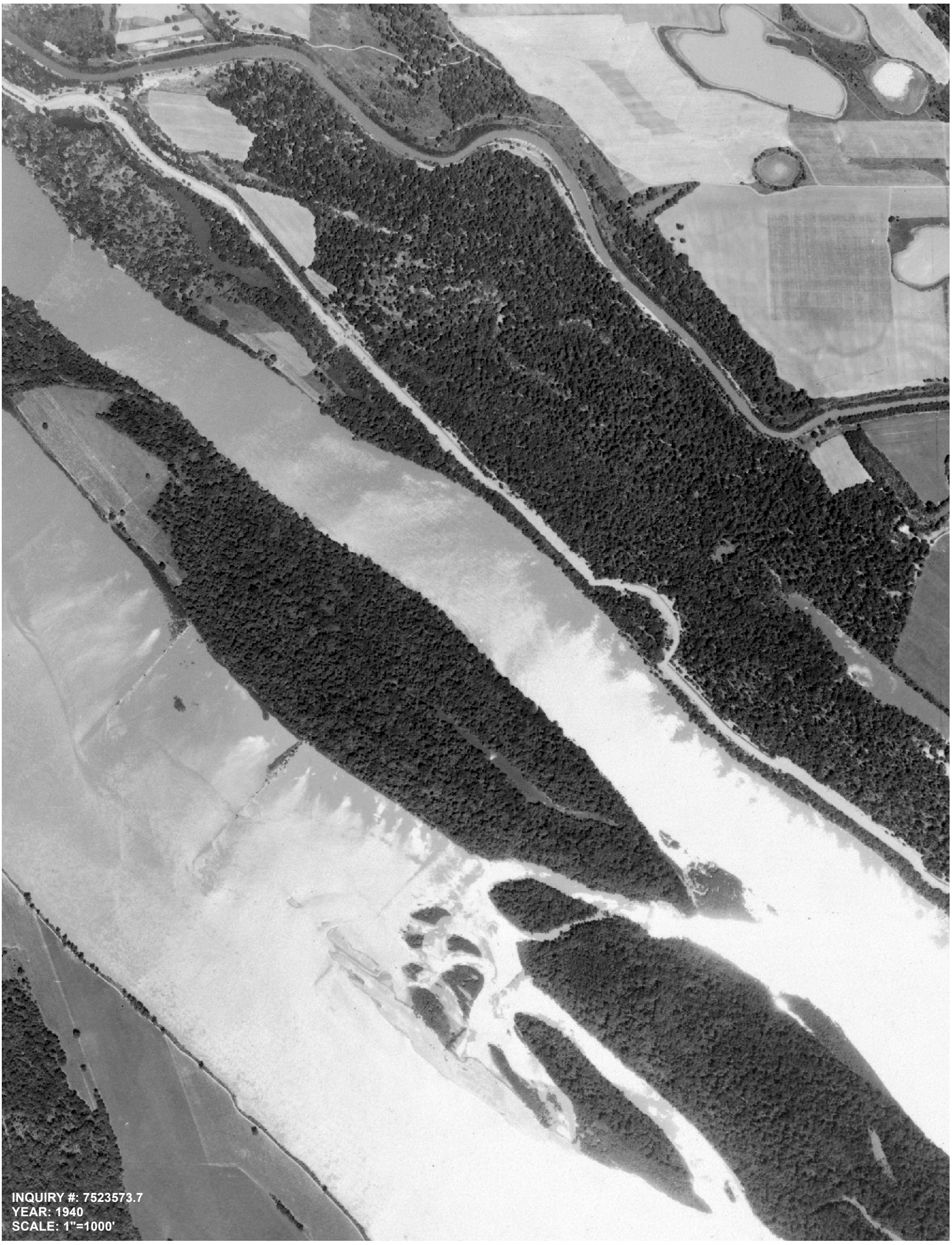


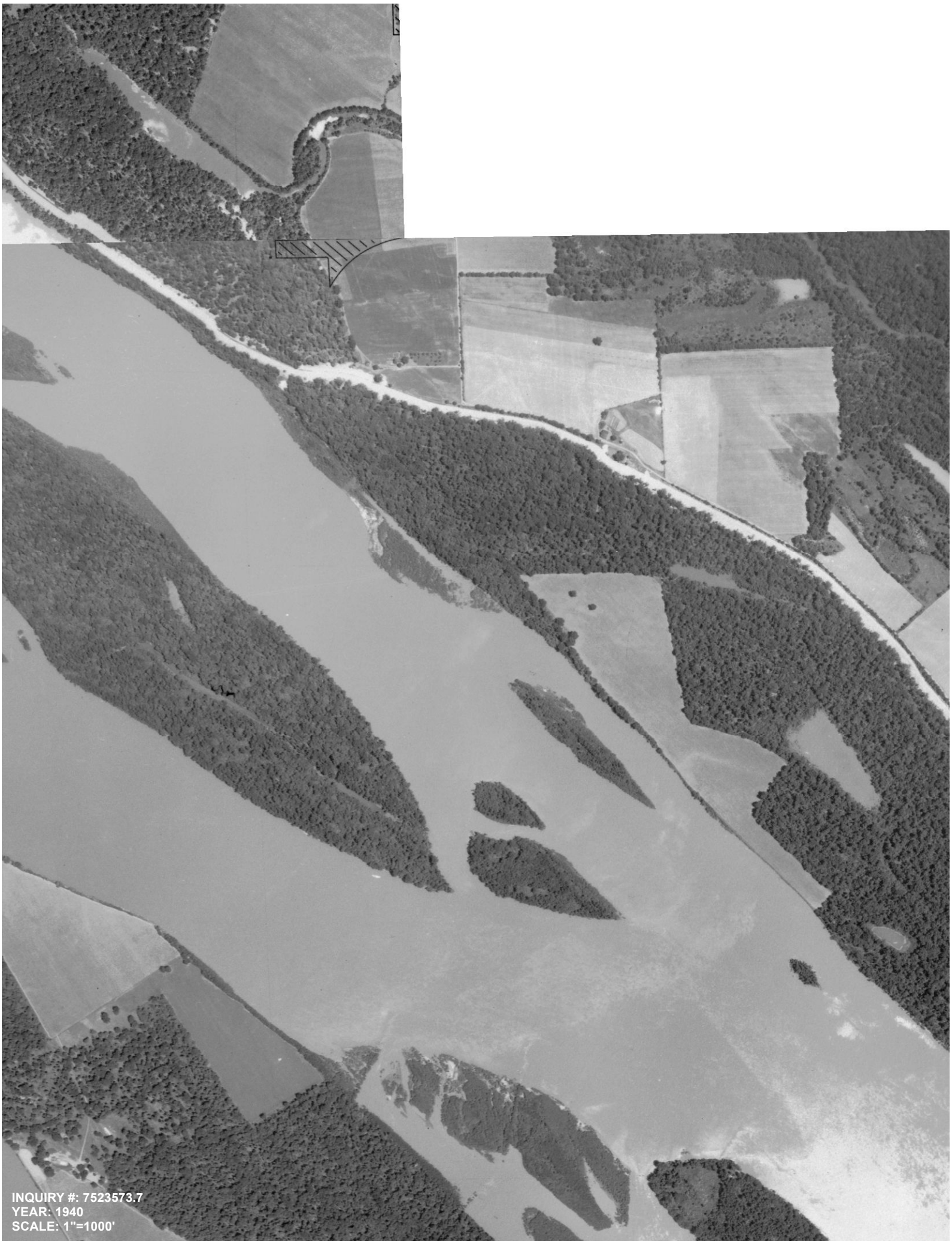
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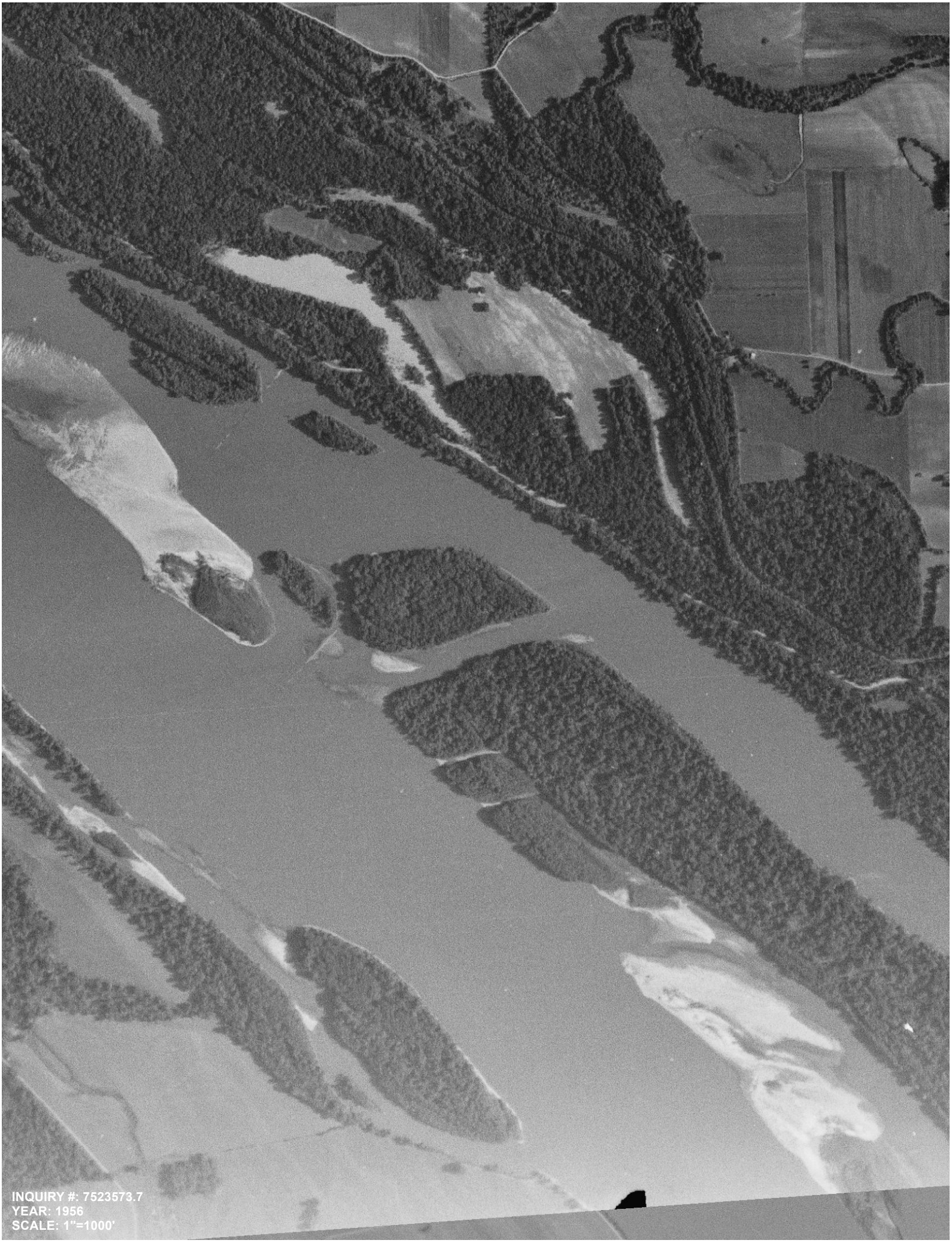

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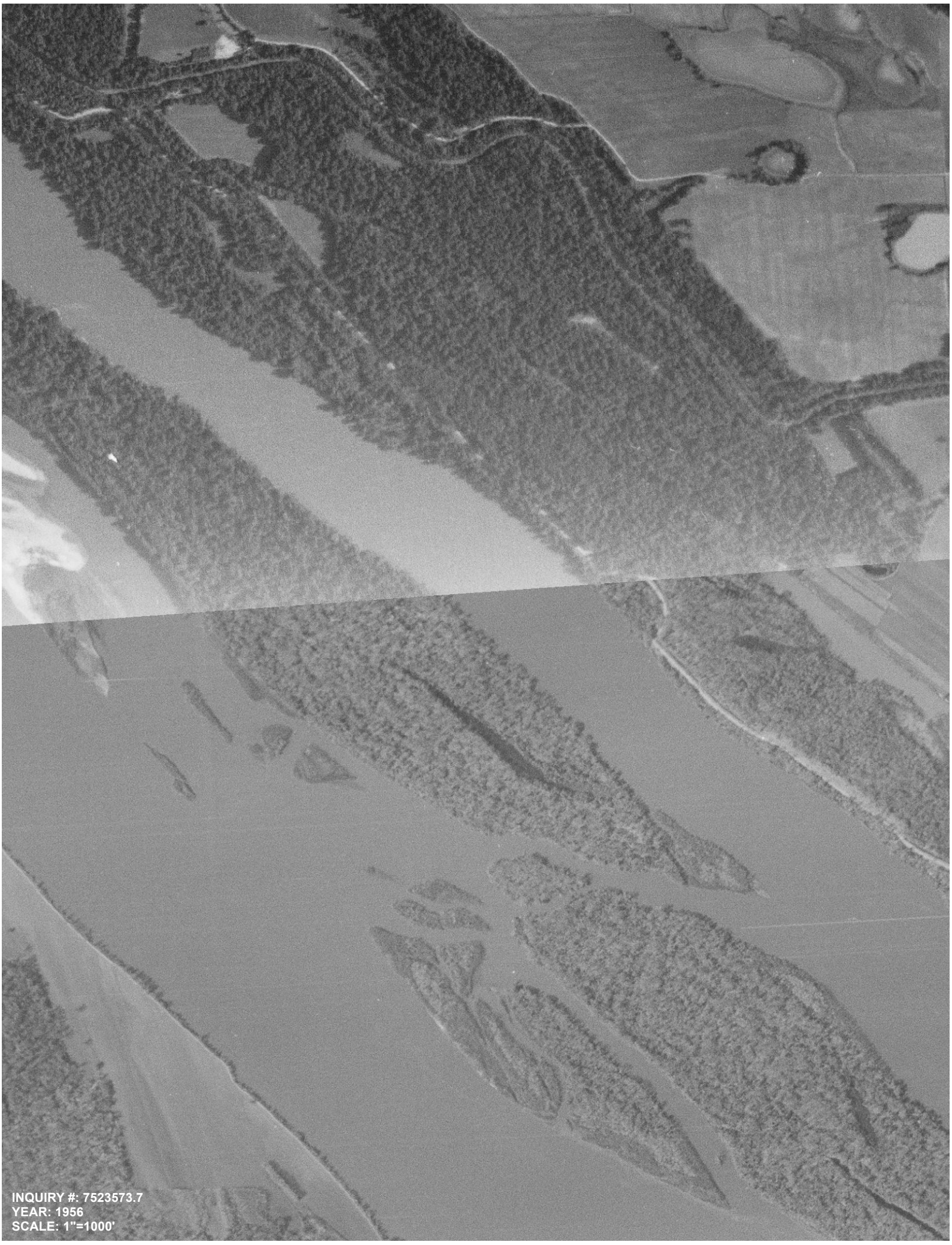
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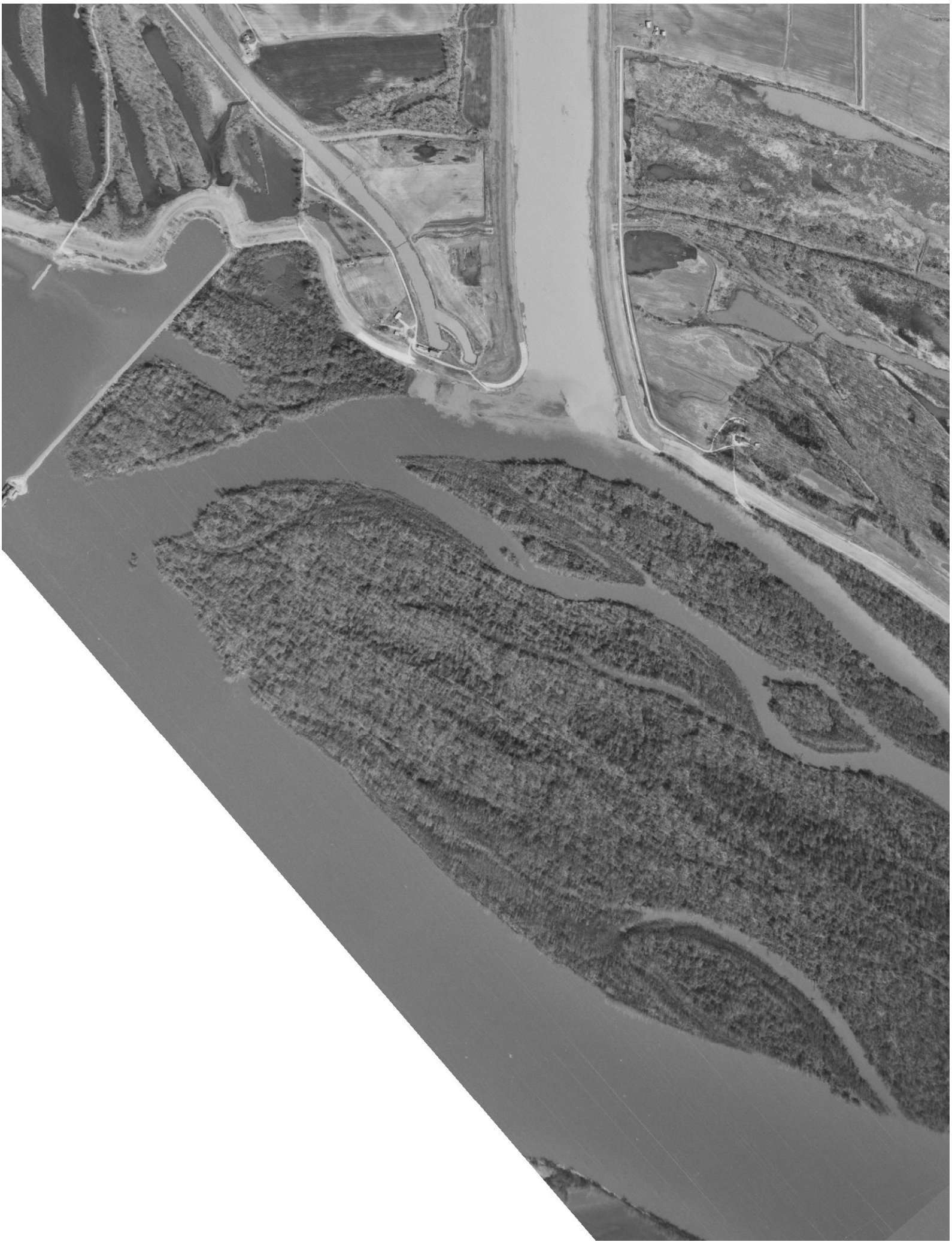


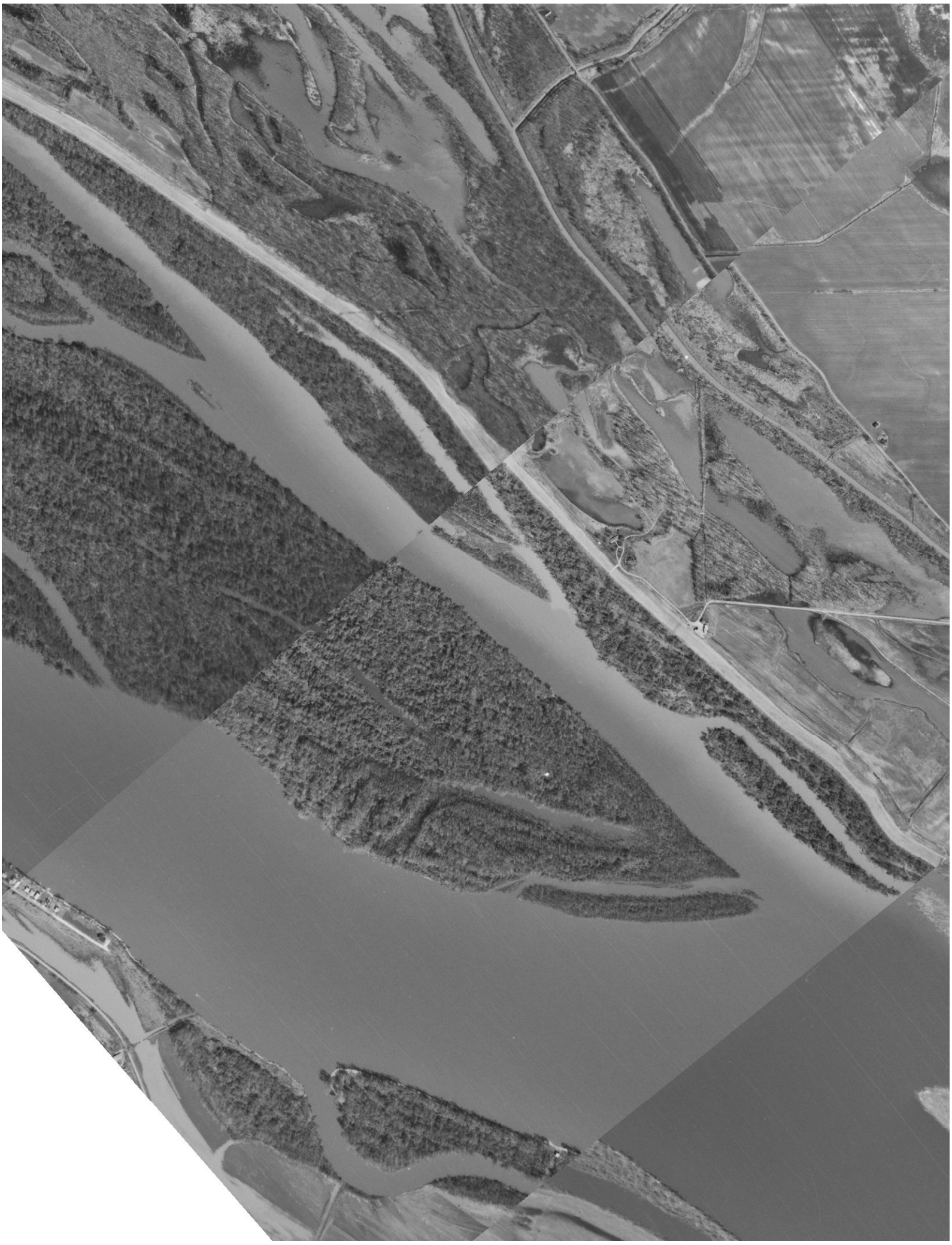
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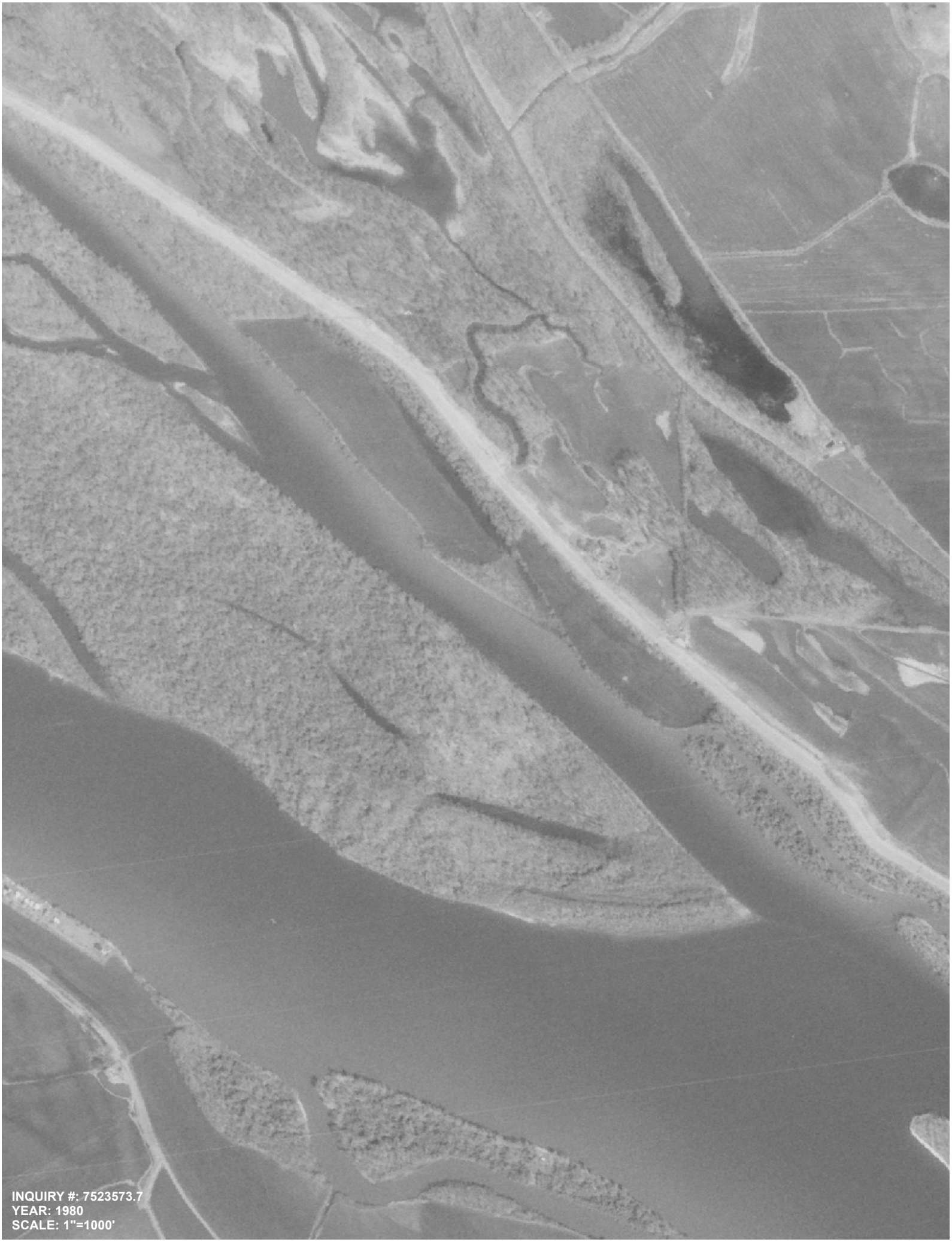

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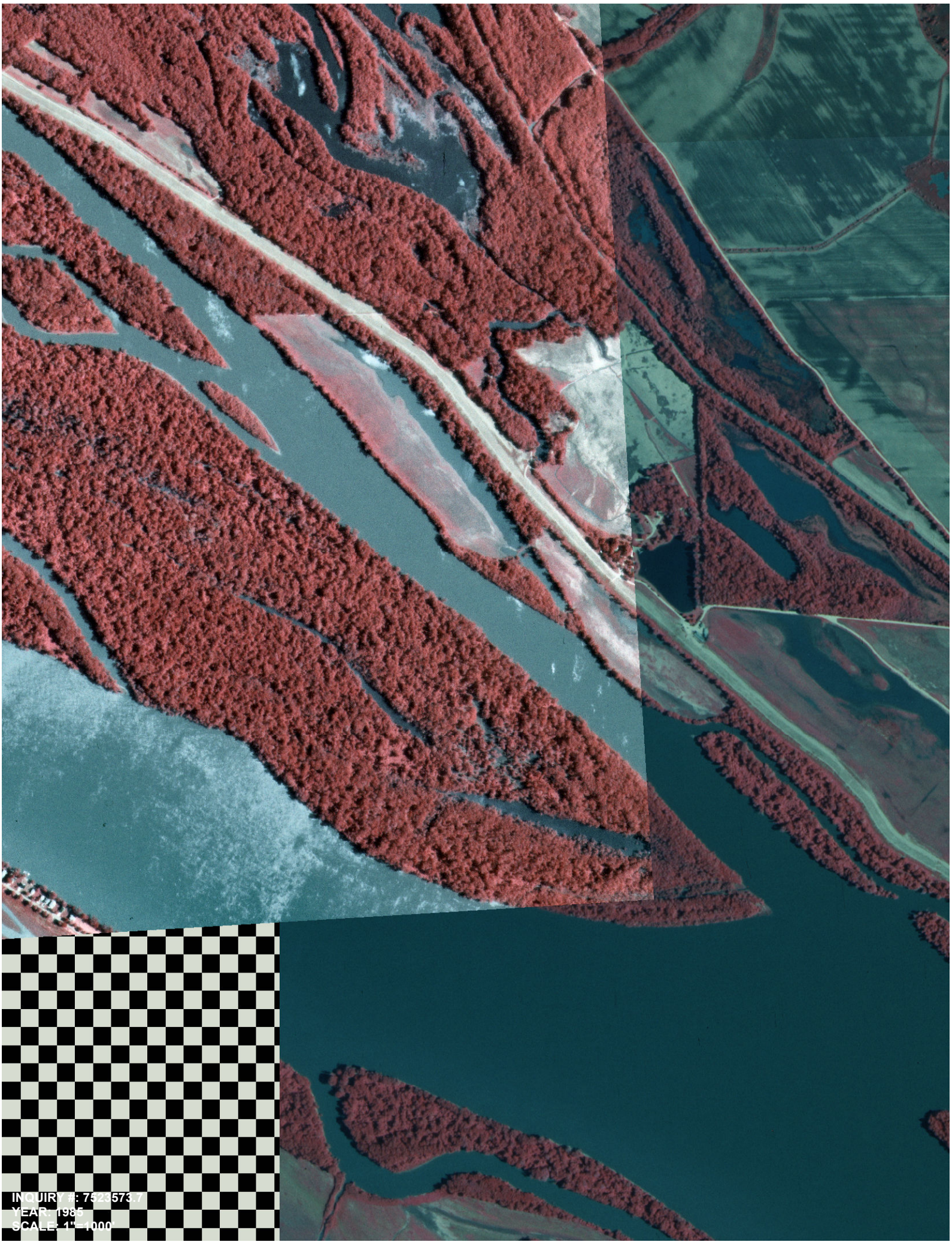

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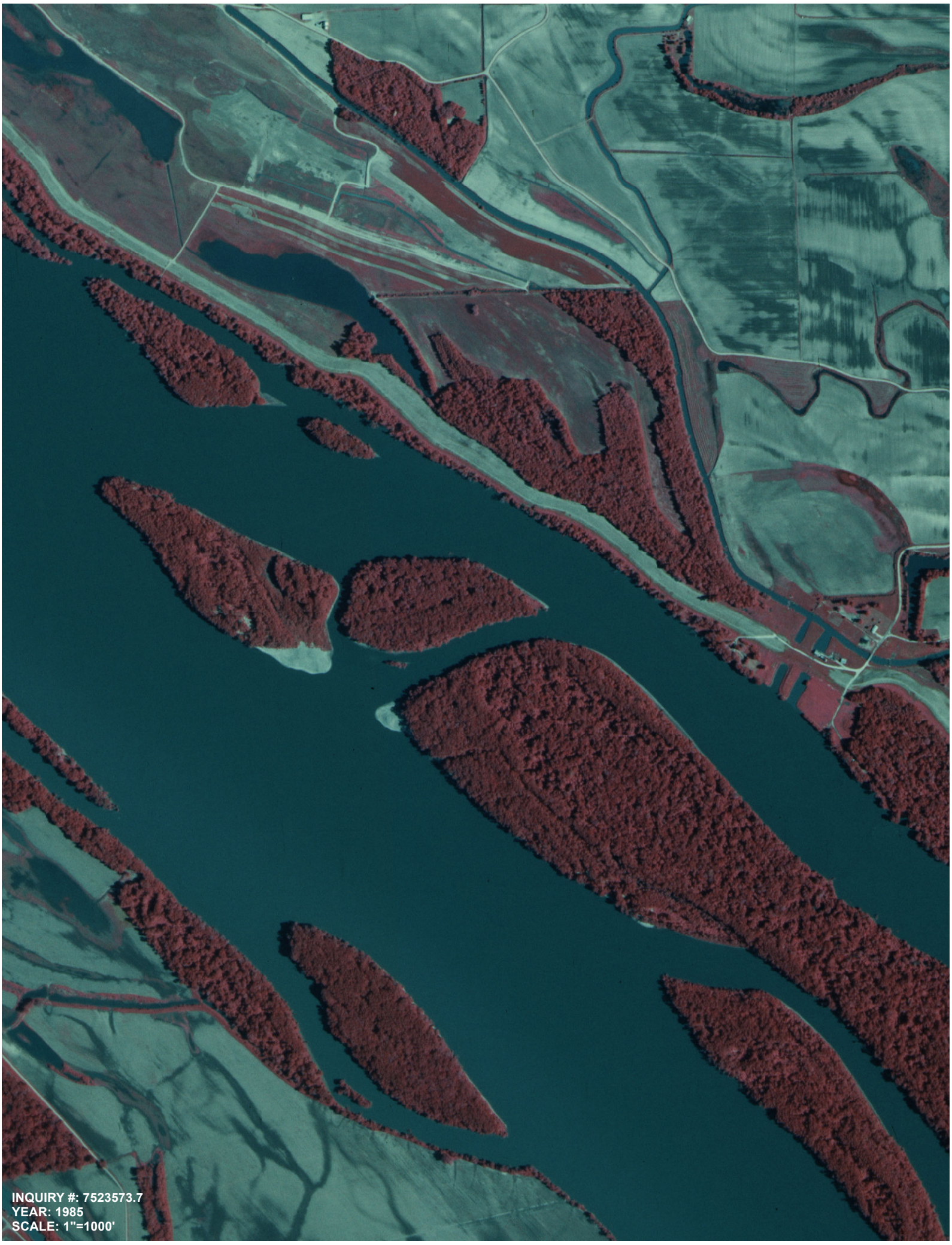

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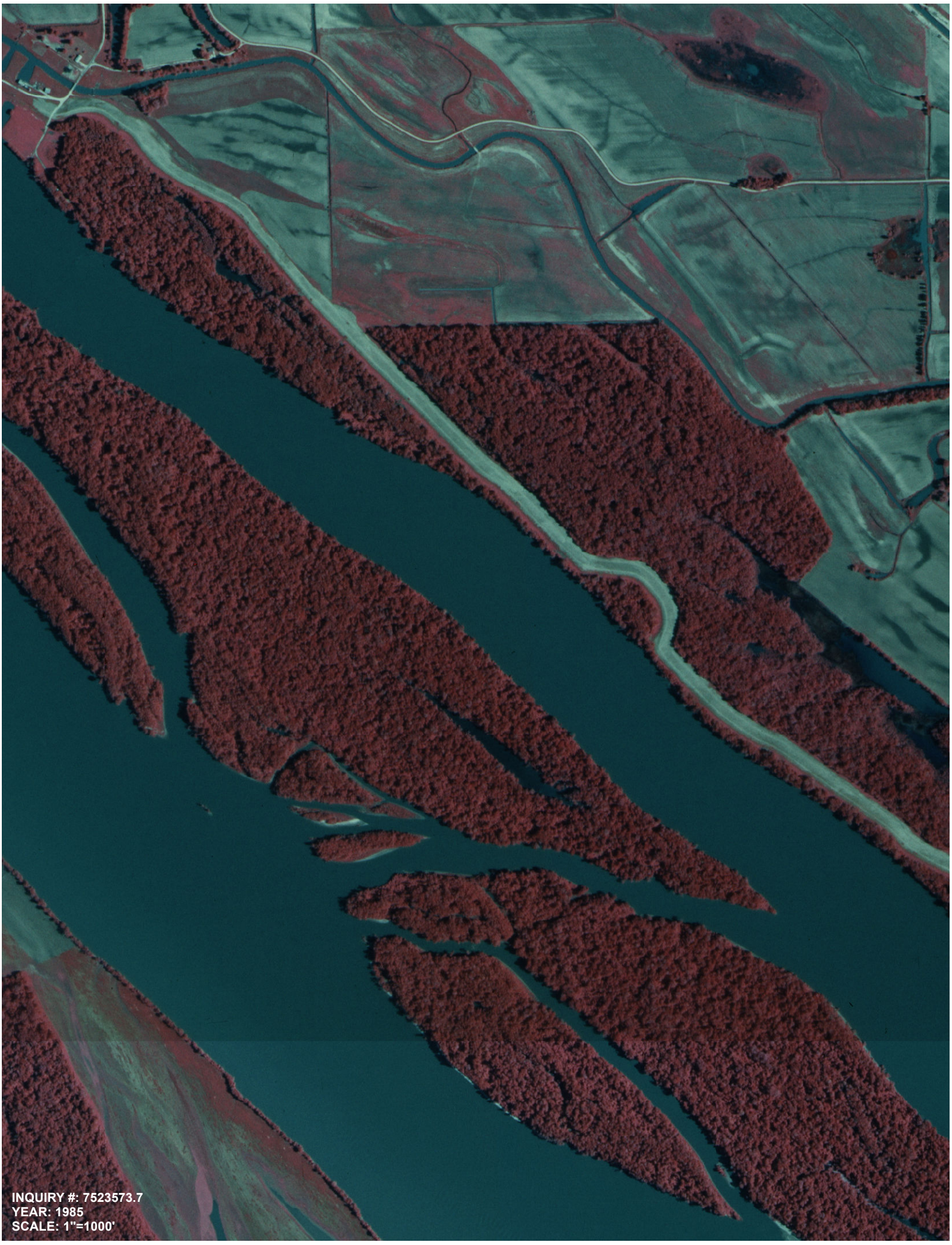


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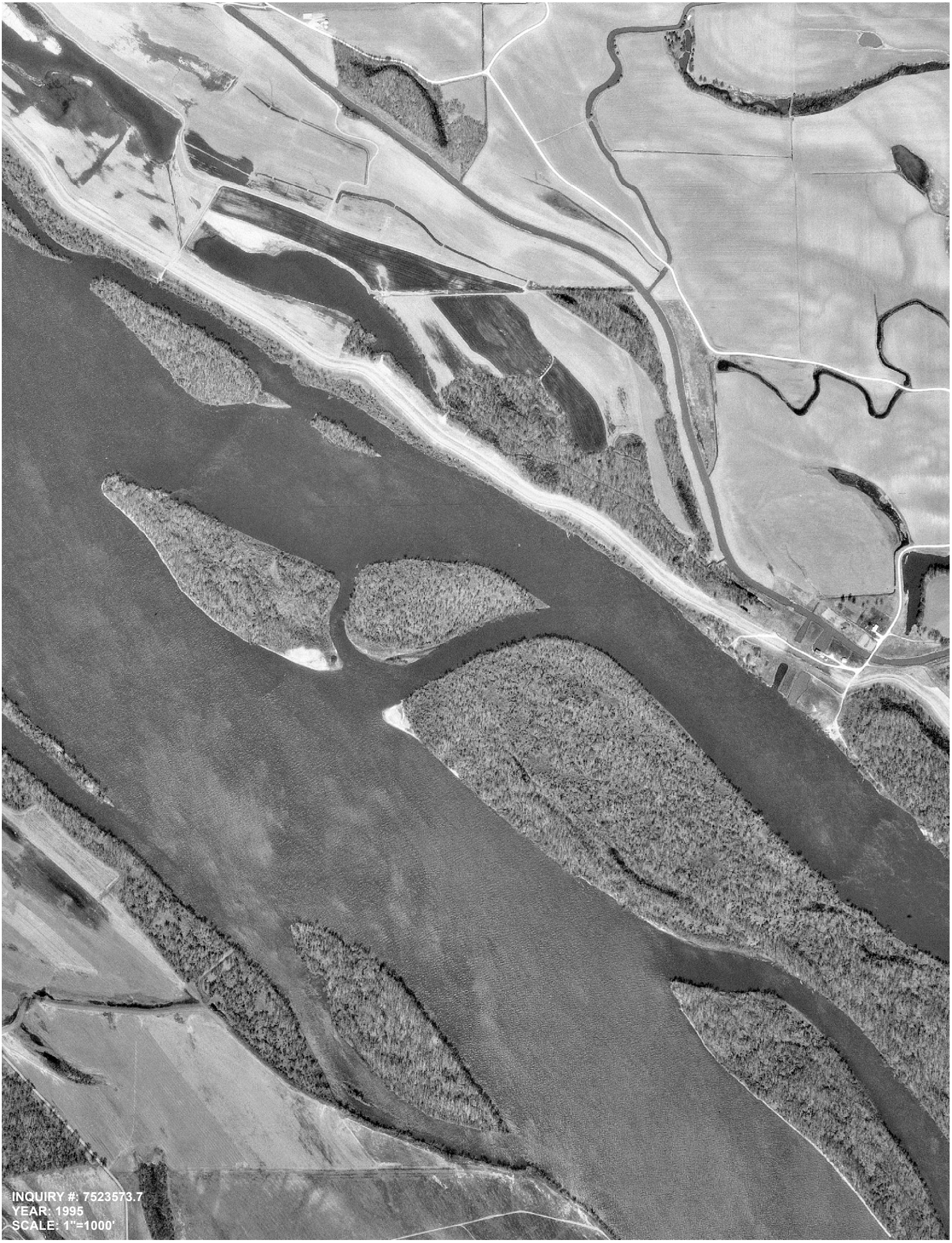

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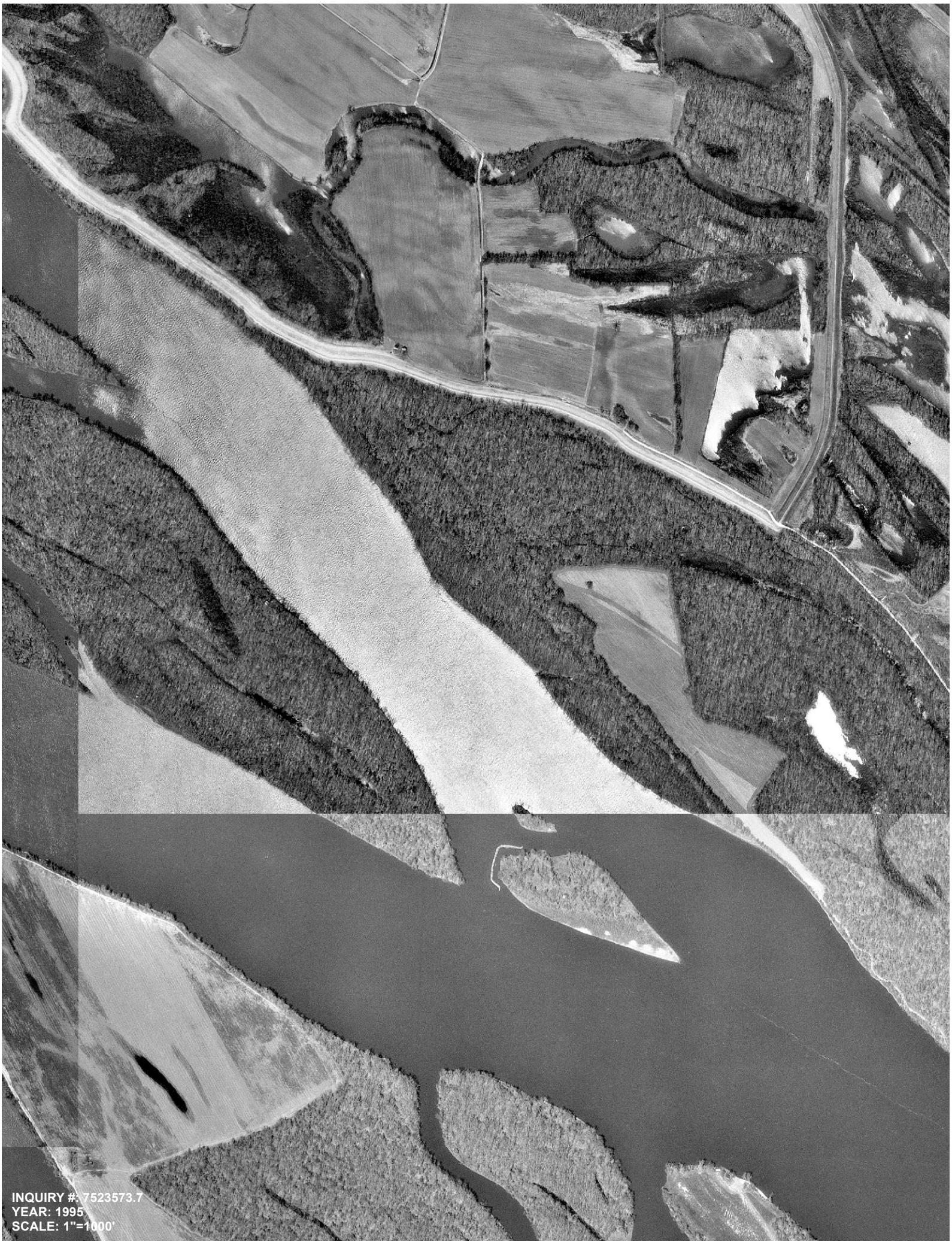

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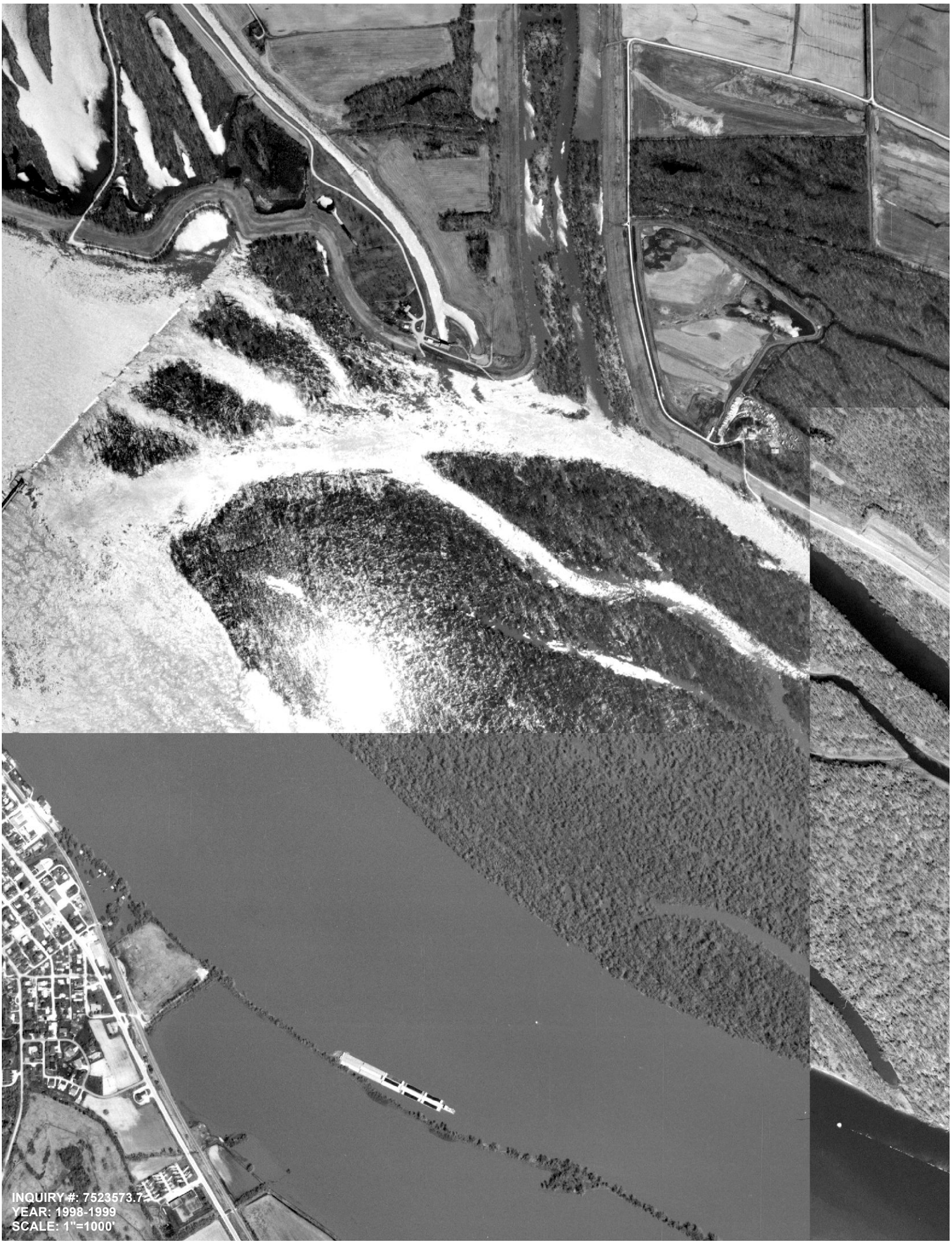


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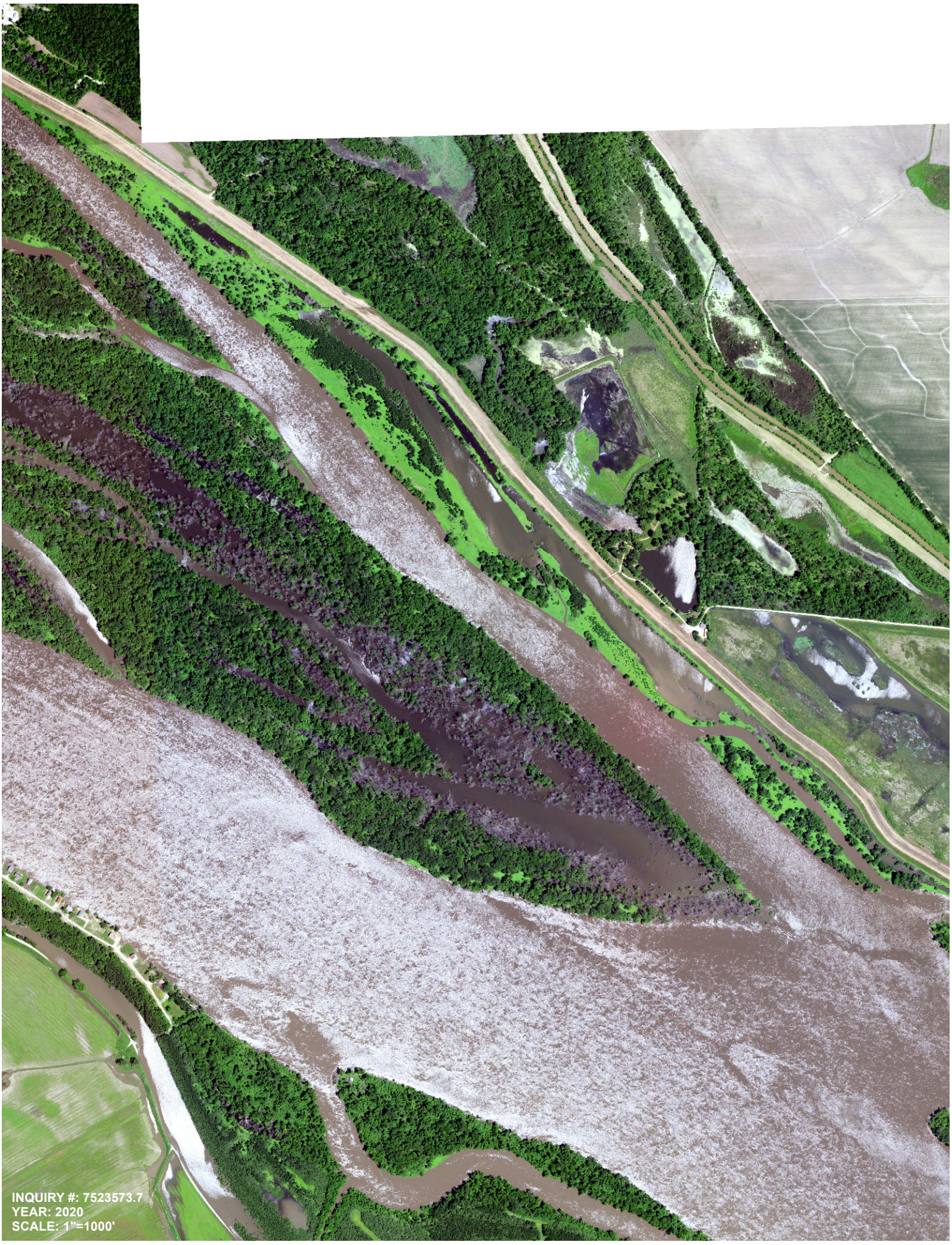

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Clarksville and Carroll Islands

Clarksville and Carroll Islands

Nebo, IL 62355

Inquiry Number: 7523573.8

December 19, 2023

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12/19/23

Site Name:	Client Name:
Clarksville and Carroll Islands	U.S. Army Corps of Engineers
Clarksville and Carroll Islands	U.S. Army Corps of Engineers
Nebo, IL 62355	Saint Louis, MO 63103
EDR Inquiry # 7523573.8	Contact: Kaleb Rakers

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by U.S. Army Corps of Engineers were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: NA

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Longitude:	-90.841934 -90° 50' 31" West
UTM Zone:	Zone 15 North
UTM X Meters:	685957.35
UTM Y Meters:	4357752.79
Elevation:	438.92' above sea level

Maps Provided:

2021	1985
2018, 2017	1984
2017	1978
2015, 2014	1942
2014	1934
2012	1930
1996	
1986	

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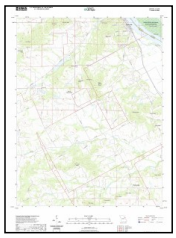
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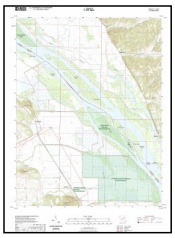
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2021 Source Sheets



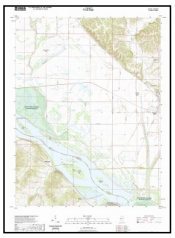
Clarksville
2021
7.5-minute, 24000



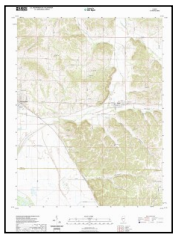
Annada
2021
7.5-minute, 24000



Pleasant Dale Valley
2021
7.5-minute, 24000

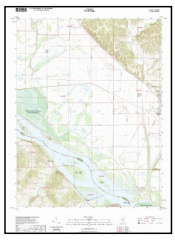


Pleasant Hill West
2021
7.5-minute, 24000



Pleasant Hill East
2021
7.5-minute, 24000

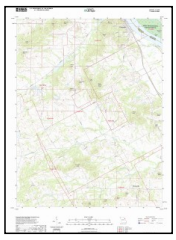
2018, 2017 Source Sheets



Pleasant Hill West
2018
7.5-minute, 24000



Pleasant Hill East
2018
7.5-minute, 24000



Clarksville
2017
7.5-minute, 24000



Annada
2017
7.5-minute, 24000



Pleasant Dale Valley
2018
7.5-minute, 24000

2015, 2014 Source Sheets



Pleasant Dale Valley
2015
7.5-minute, 24000



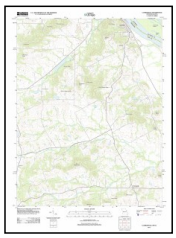
Annada
2014
7.5-minute, 24000



Pleasant Hill West
2015
7.5-minute, 24000



Pleasant Hill East
2015
7.5-minute, 24000



Clarksville
2014
7.5-minute, 24000

2012 Source Sheets



Pleasant Hill West
2012
7.5-minute, 24000



Pleasant Hill East
2012
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1996 Source Sheets



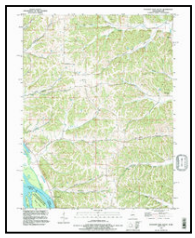
Pleasant Hill West
1996
7.5-minute, 24000
Aerial Photo Revised 1993



Clarksville
1996
7.5-minute, 24000
Aerial Photo Revised 1972



Annada
1996
7.5-minute, 24000
Aerial Photo Revised 1974



Pleasant Dale Valley
1996
7.5-minute, 24000
Aerial Photo Revised 1993

1986 Source Sheets



Jerseyville
1986
30-minute, 100000
Aerial Photo Revised 1982

1985 Source Sheets



Jerseyville
1985
30-minute, 100000
Aerial Photo Revised 1982

1984 Source Sheets



Clarksville
1984
7.5-minute, 24000
Aerial Photo Revised 1982

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1978 Source Sheets



Pleasant Hill East
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Annada
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Pleasant Hill West
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Clarksville
1978
7.5-minute, 24000
Aerial Photo Revised 1974



Pleasant Dale Valley
1978
7.5-minute, 24000
Aerial Photo Revised 1972

1942 Source Sheets



Nebo
1942
15-minute, 62500

1934 Source Sheets



Nebo
1934
15-minute, 48000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1930 Source Sheets



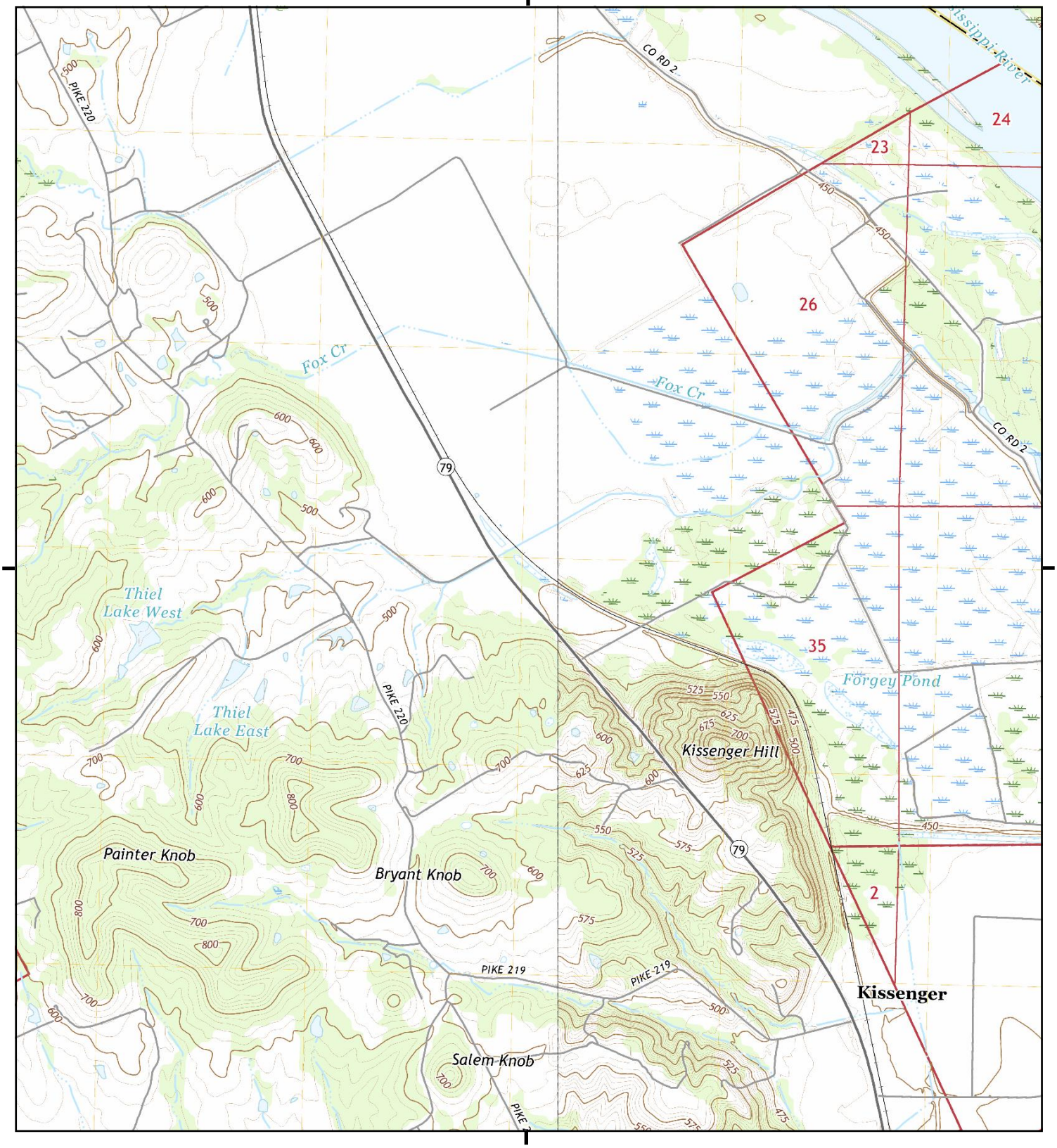
Pearl
1930
15-minute, 62500



Nebo
1930
15-minute, 62500

Historical Topo Map

2021



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

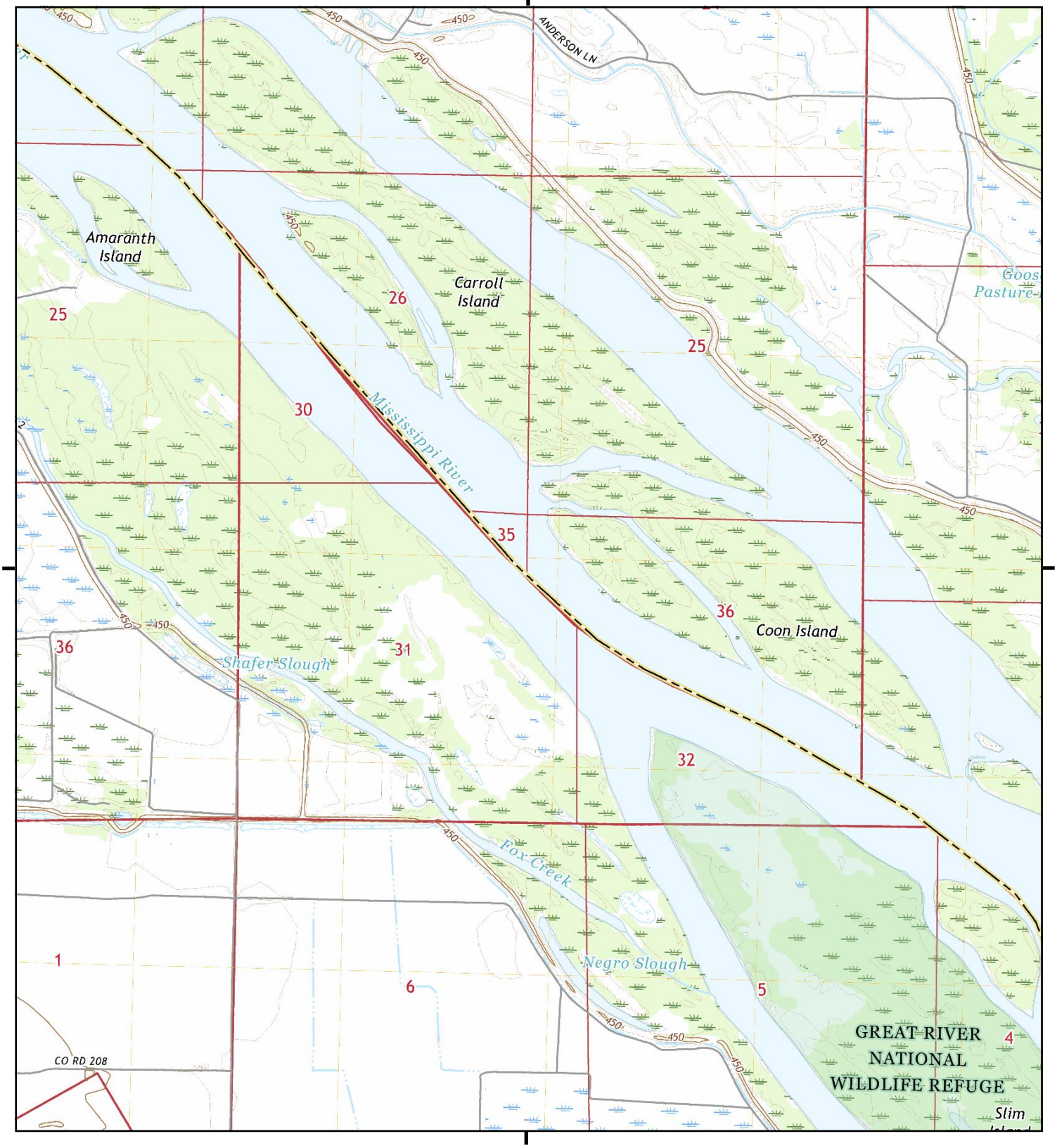
TP, Clarksville, 2021, 7.5-minute
E, Annada, 2021, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2021



This report includes information from the following map sheet(s).

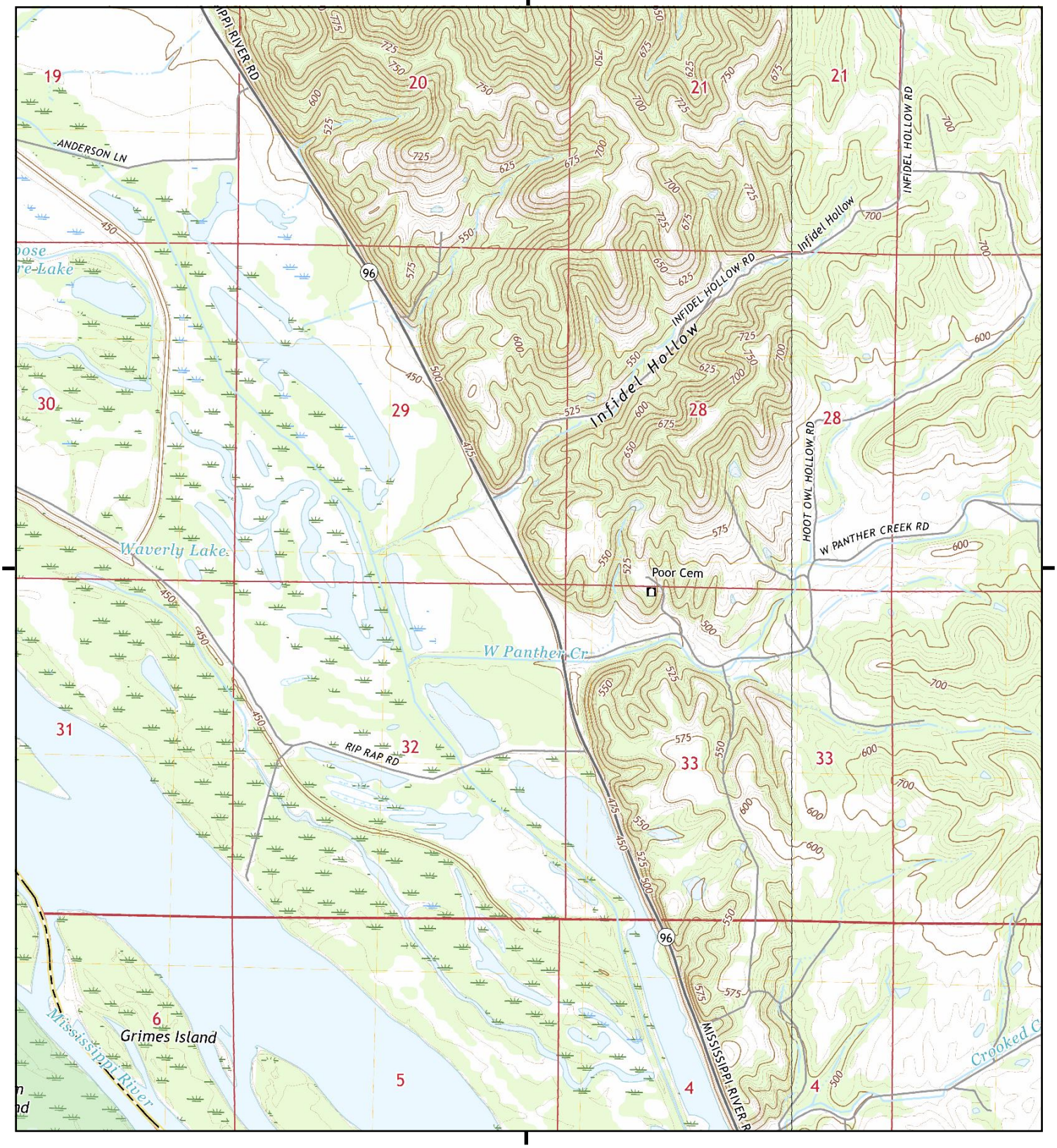
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 2021, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

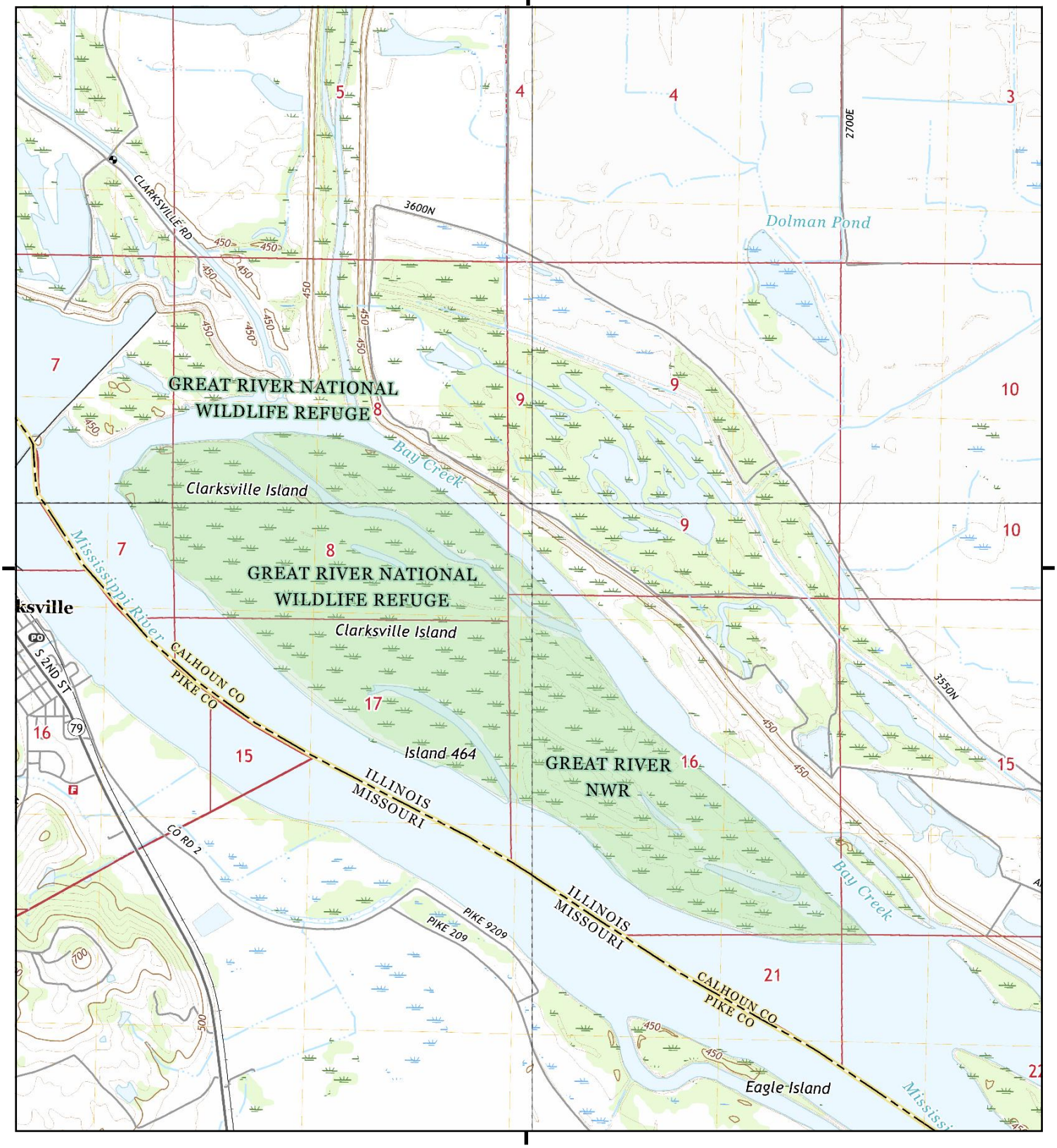
TP, Annada, 2021, 7.5-minute
E, Pleasant Dale Valley, 2021, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2021



This report includes information from the following map sheet(s).

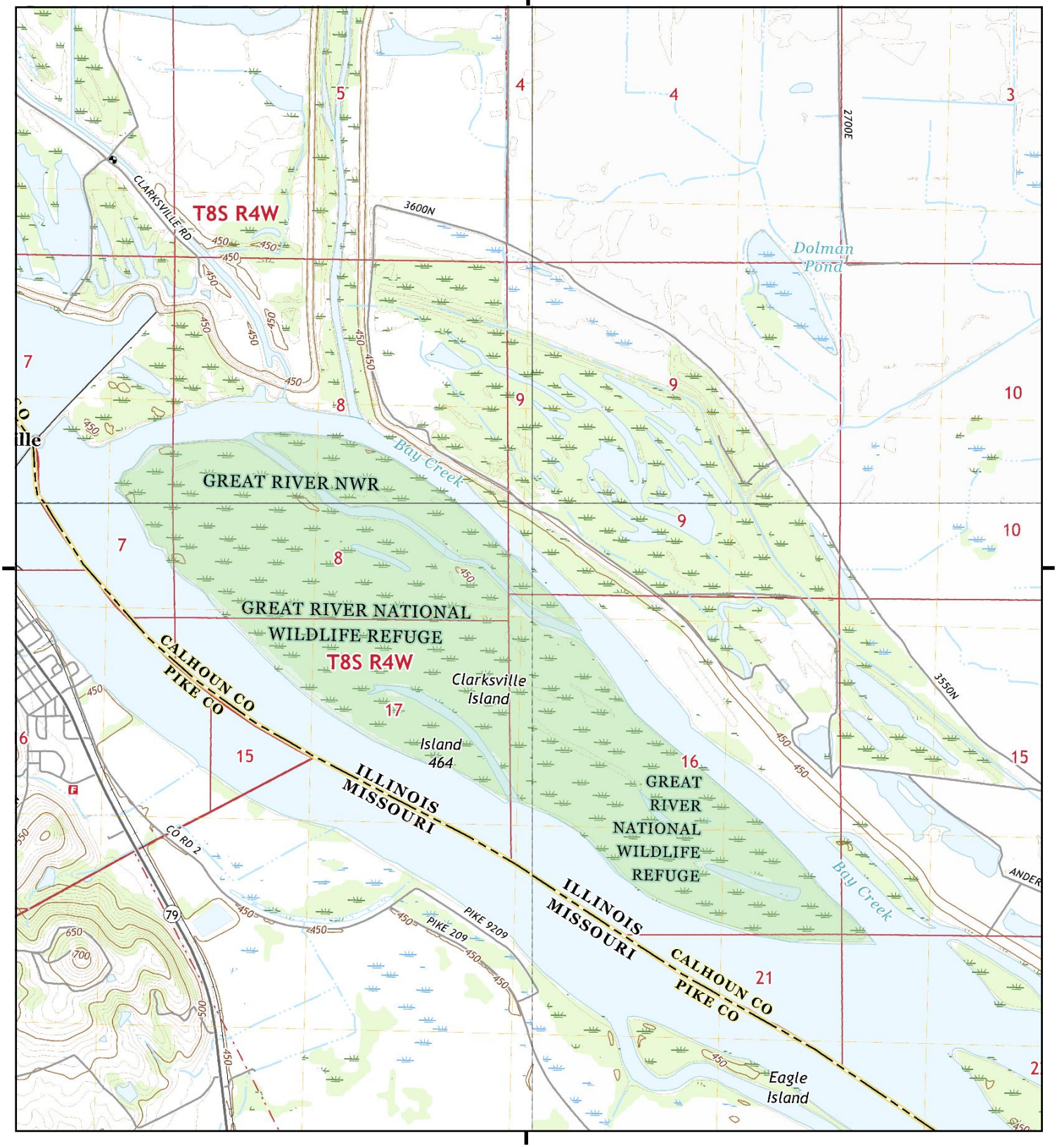
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 2021, 7.5-minute
N, Pleasant Hill East, 2021, 7.5-minute
SE, Annada, 2021, 7.5-minute
NW, Pleasant Hill West, 2021, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

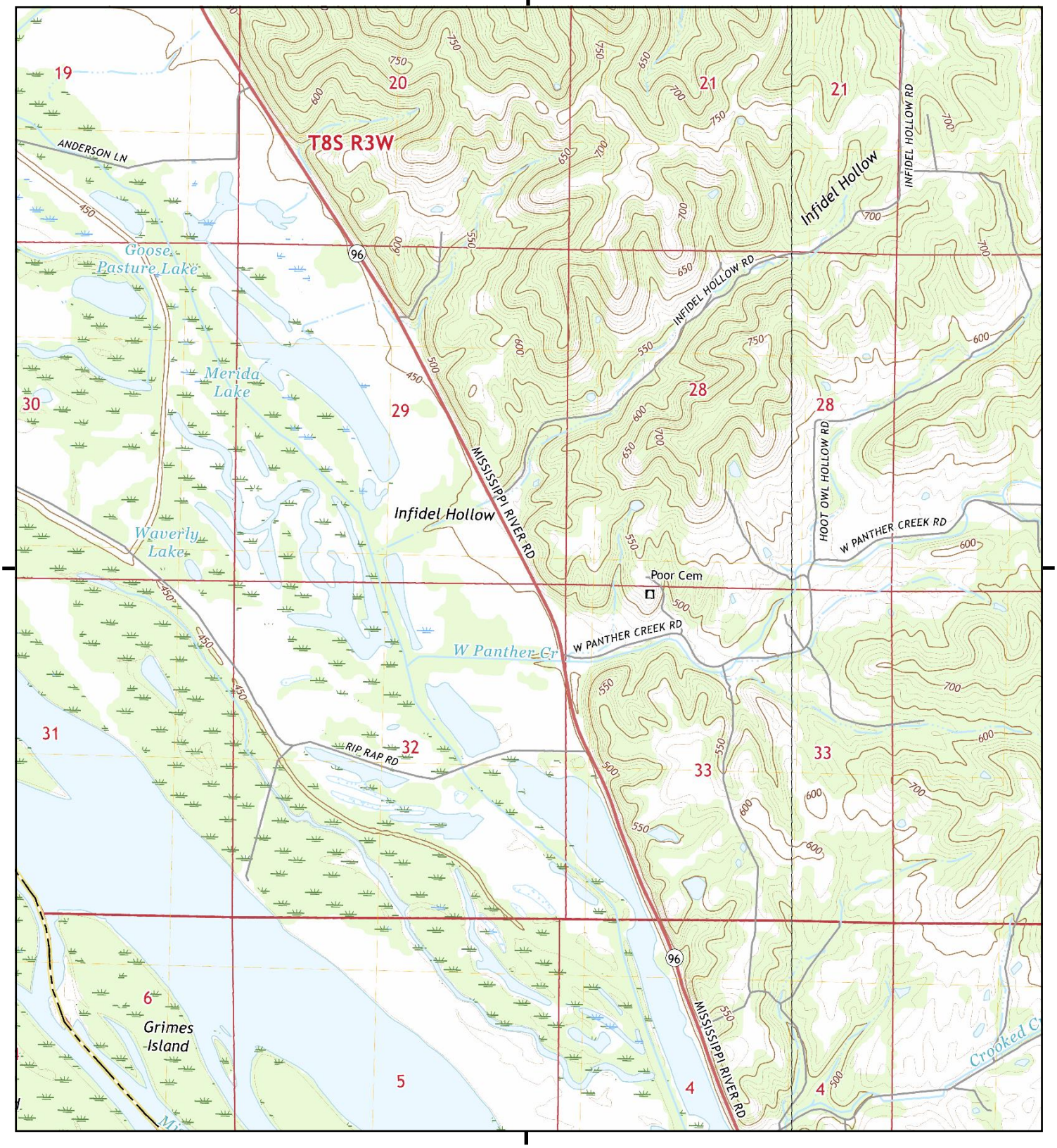
TP, Clarksville, 2017, 7.5-minute
NE, Pleasant Hill East, 2018, 7.5-minute
S, Annada, 2017, 7.5-minute
NW, Pleasant Hill West, 2018, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2018, 2017



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

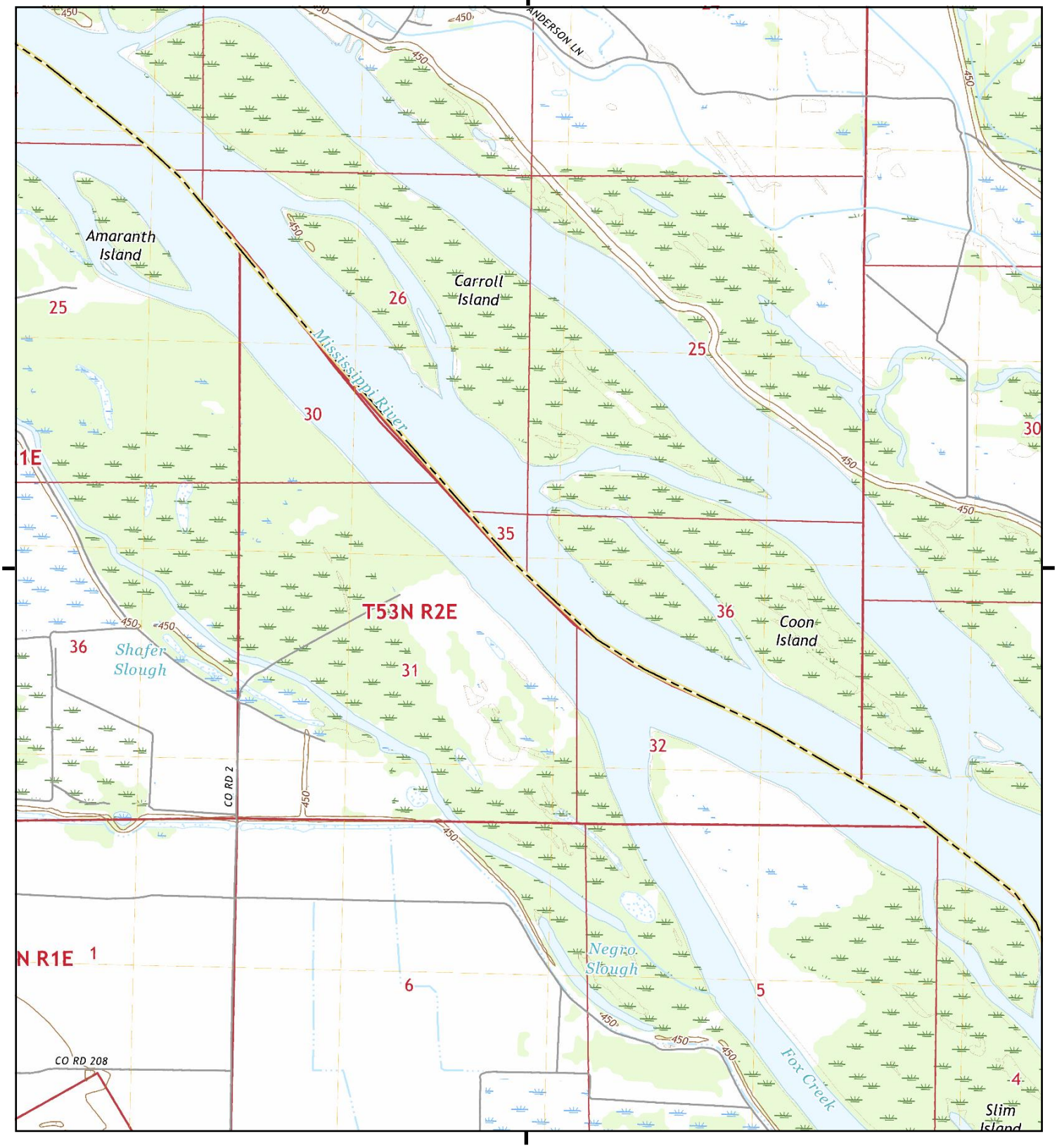
TP, Annada, 2017, 7.5-minute
E, Pleasant Dale Valley, 2018, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2017



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

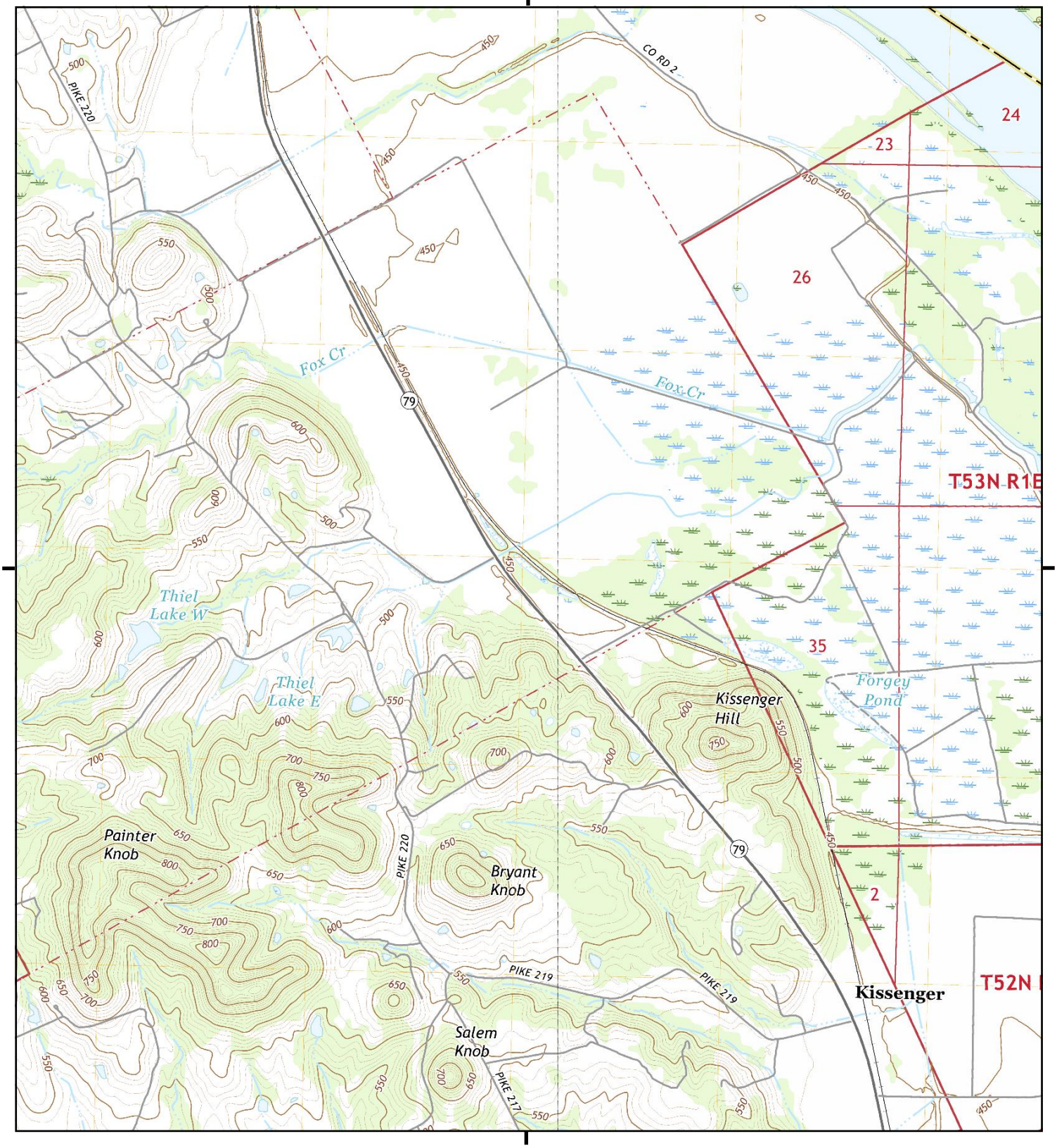
TP, Annada, 2017, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2017



This report includes information from the following map sheet(s).

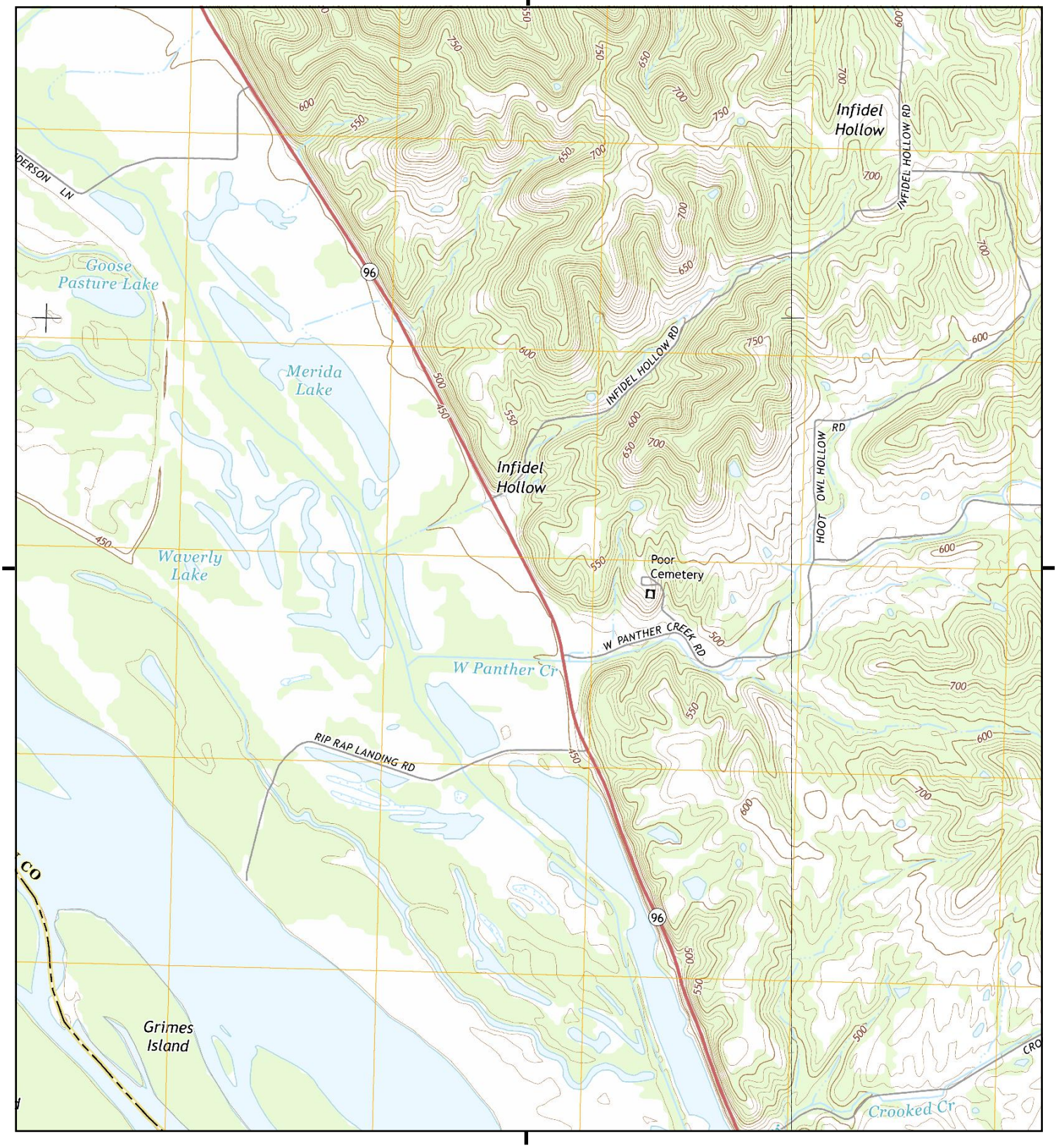
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 2017, 7.5-minute
E, Annada, 2017, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

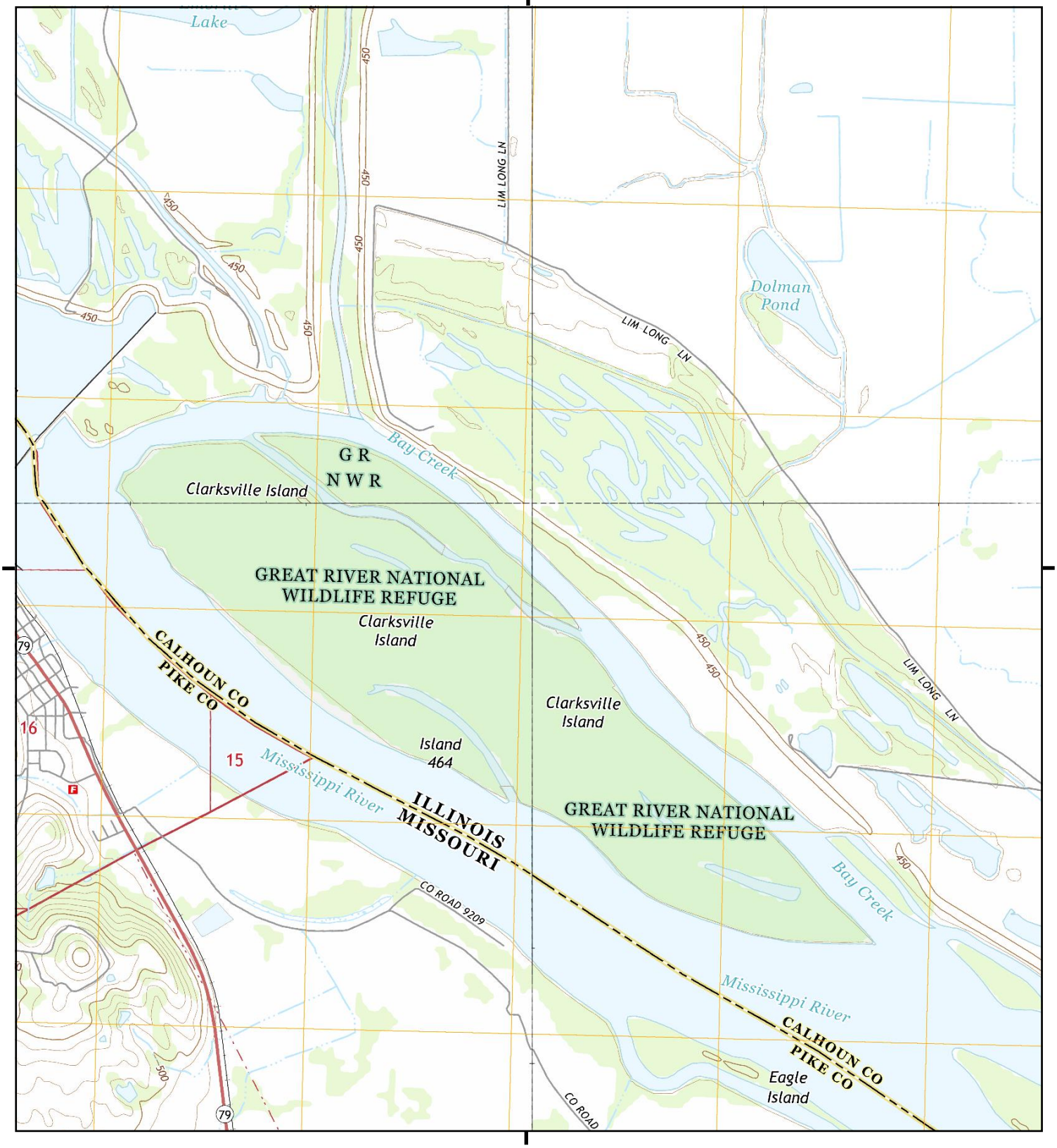
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 2014, 7.5-minute
E, Pleasant Dale Valley, 2015, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

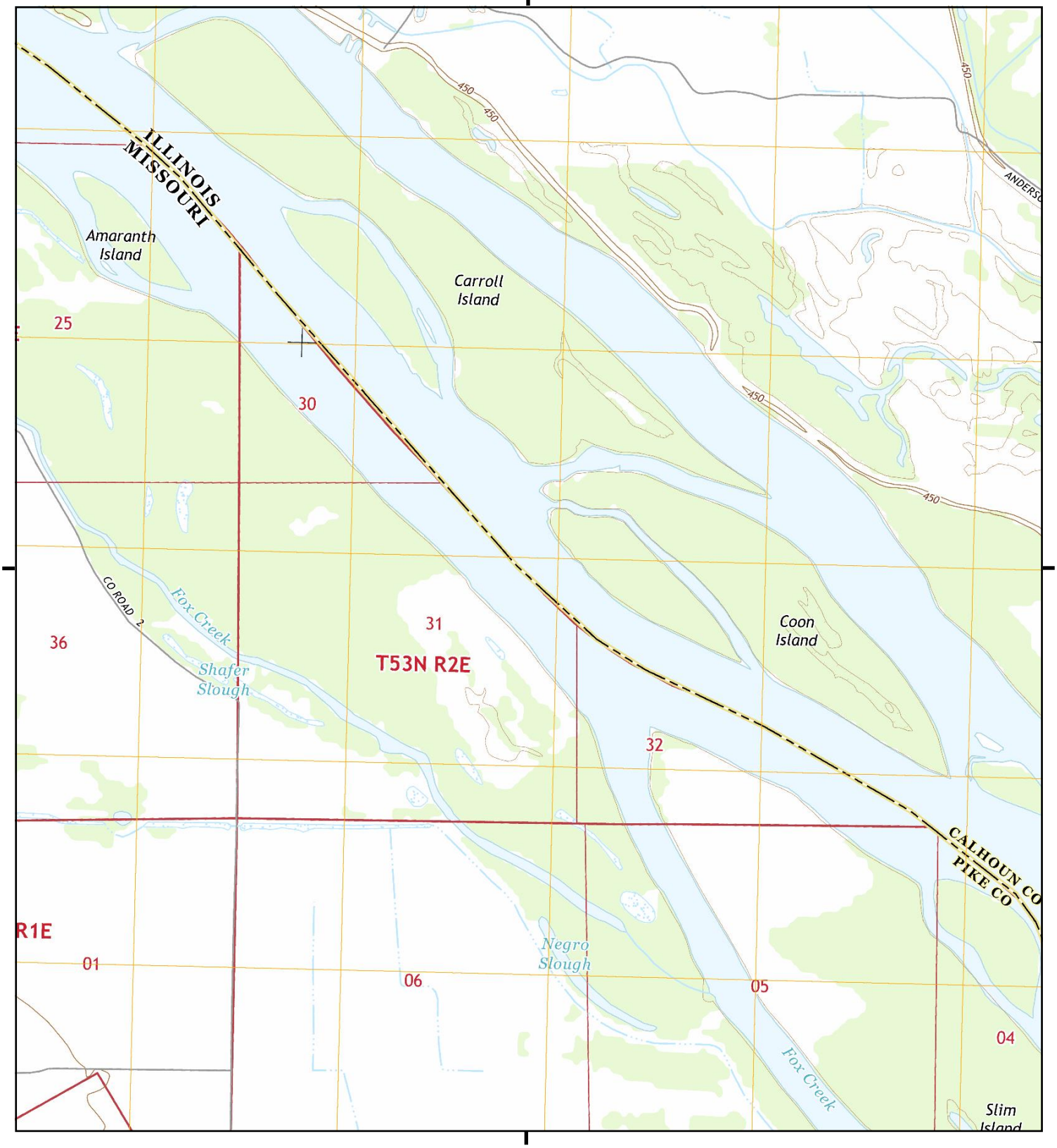
TP, Clarksville, 2014, 7.5-minute
NE, Pleasant Hill East, 2015, 7.5-minute
S, Annada, 2014, 7.5-minute
NW, Pleasant Hill West, 2015, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2014



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

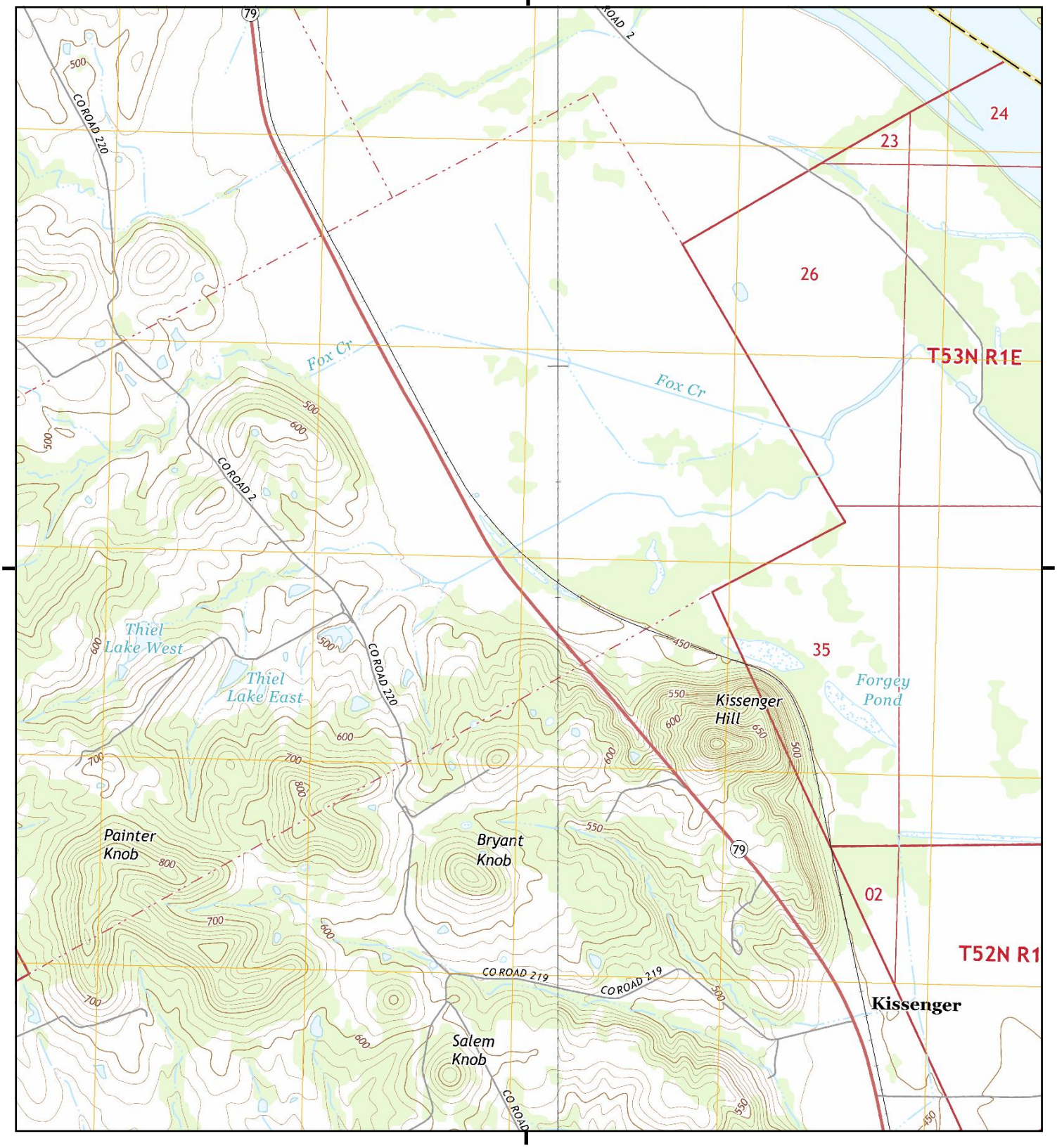
TP, Annada, 2014, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

Historical Topo Map

2014



This report includes information from the following map sheet(s).

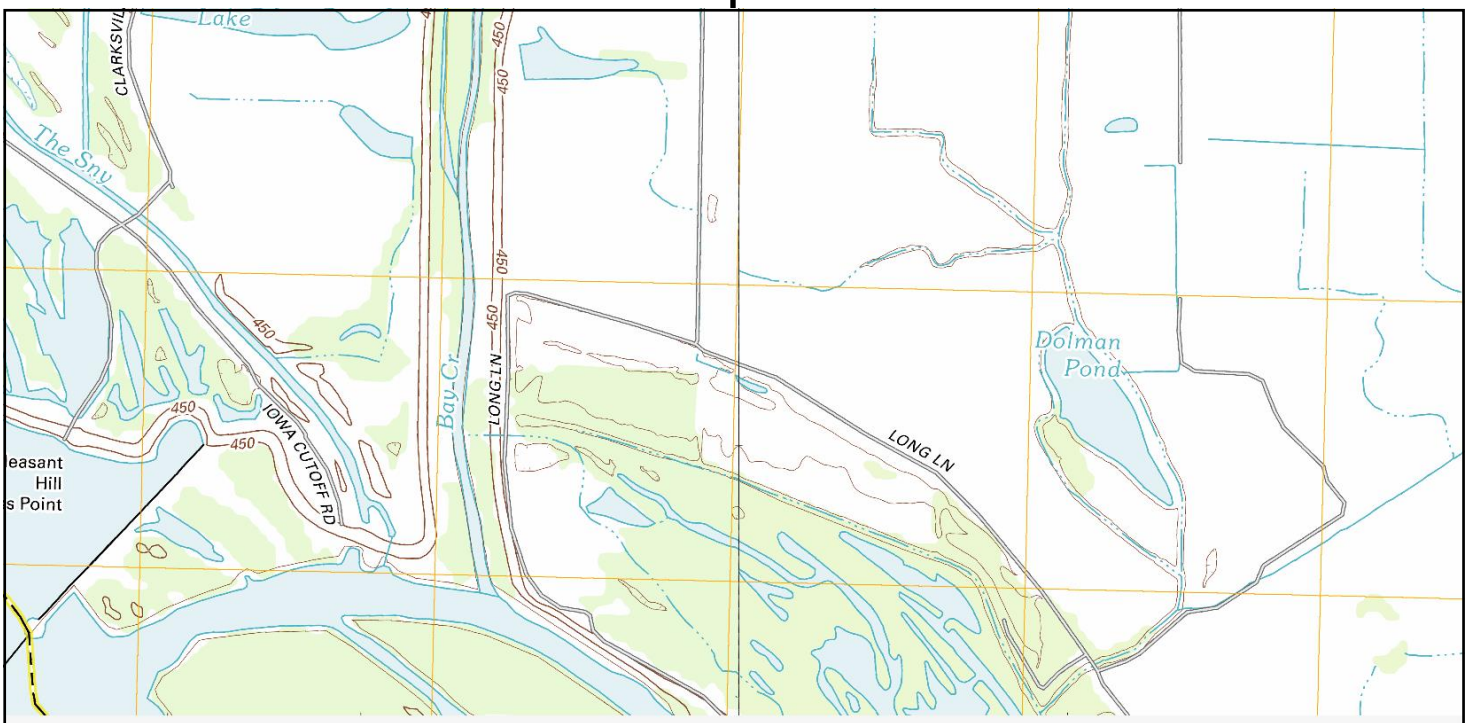
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 2014, 7.5-minute
E, Annada, 2014, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



UNMAPPED

This report includes information from the following map sheet(s).

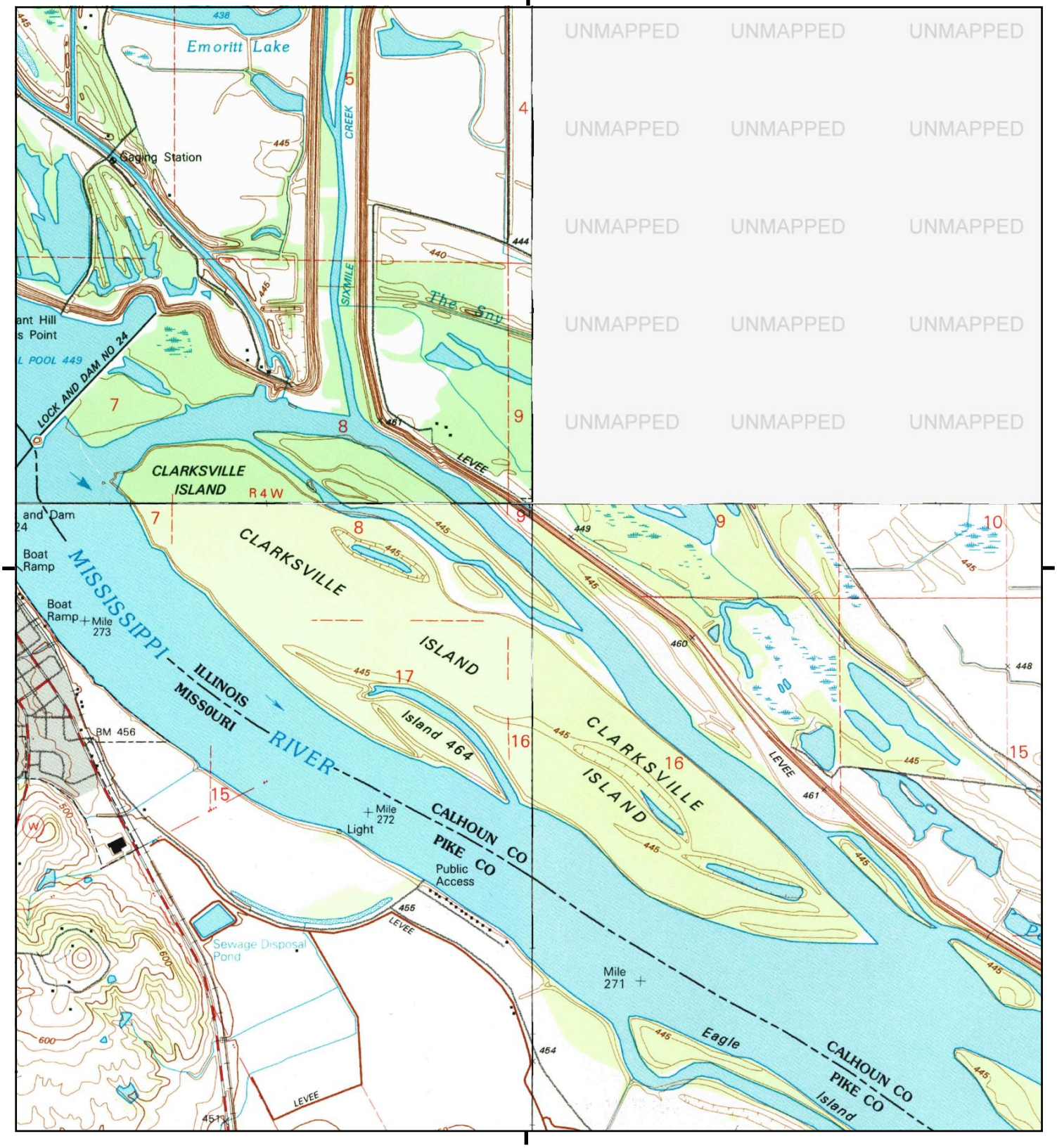
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

NE, Pleasant Hill East, 2012, 7.5-minute
NW, Pleasant Hill West, 2012, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

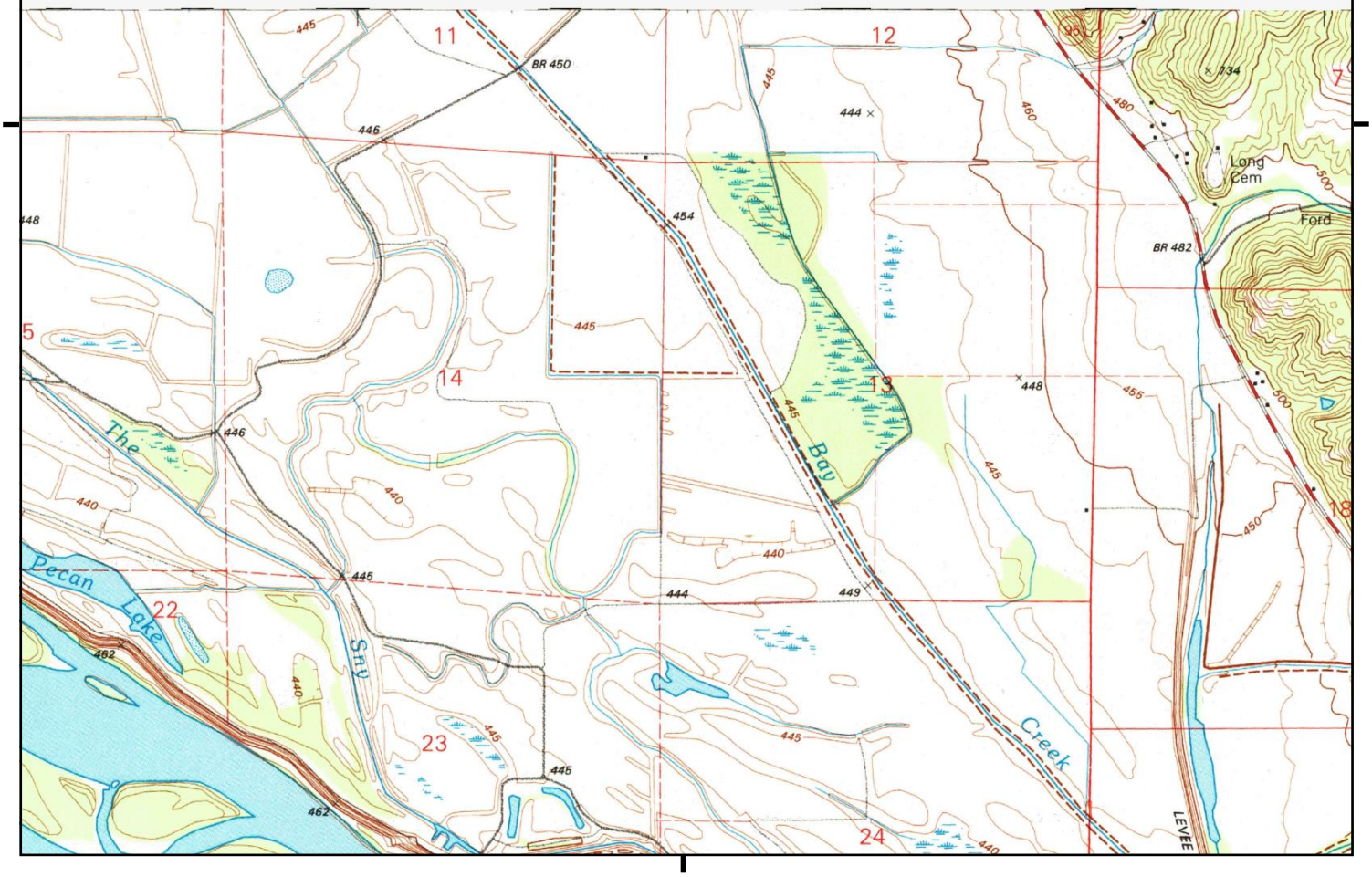
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 1996, 7.5-minute
SE, Annada, 1996, 7.5-minute
NW, Pleasant Hill West, 1996, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

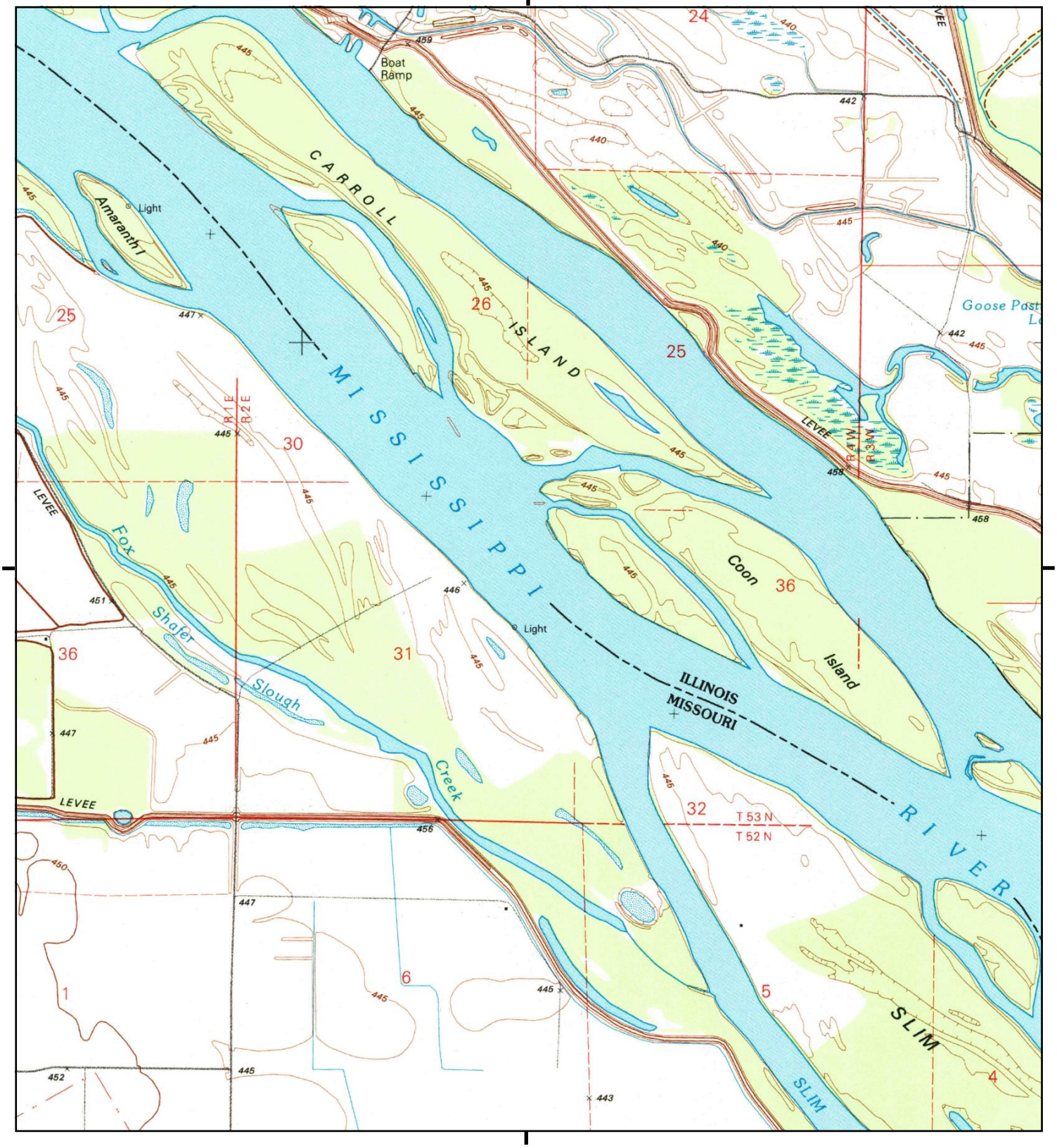
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 1996, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

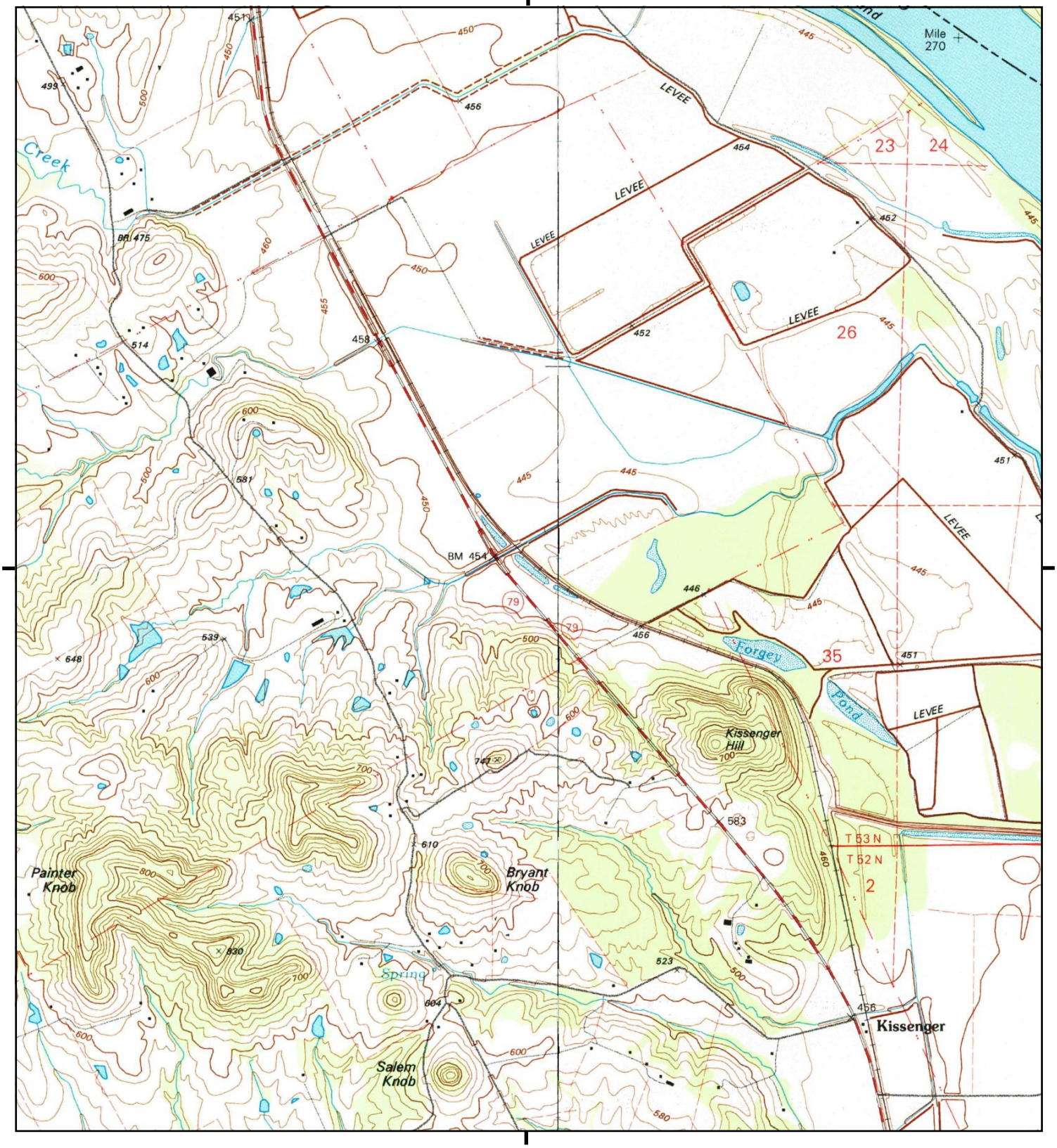
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 1996, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

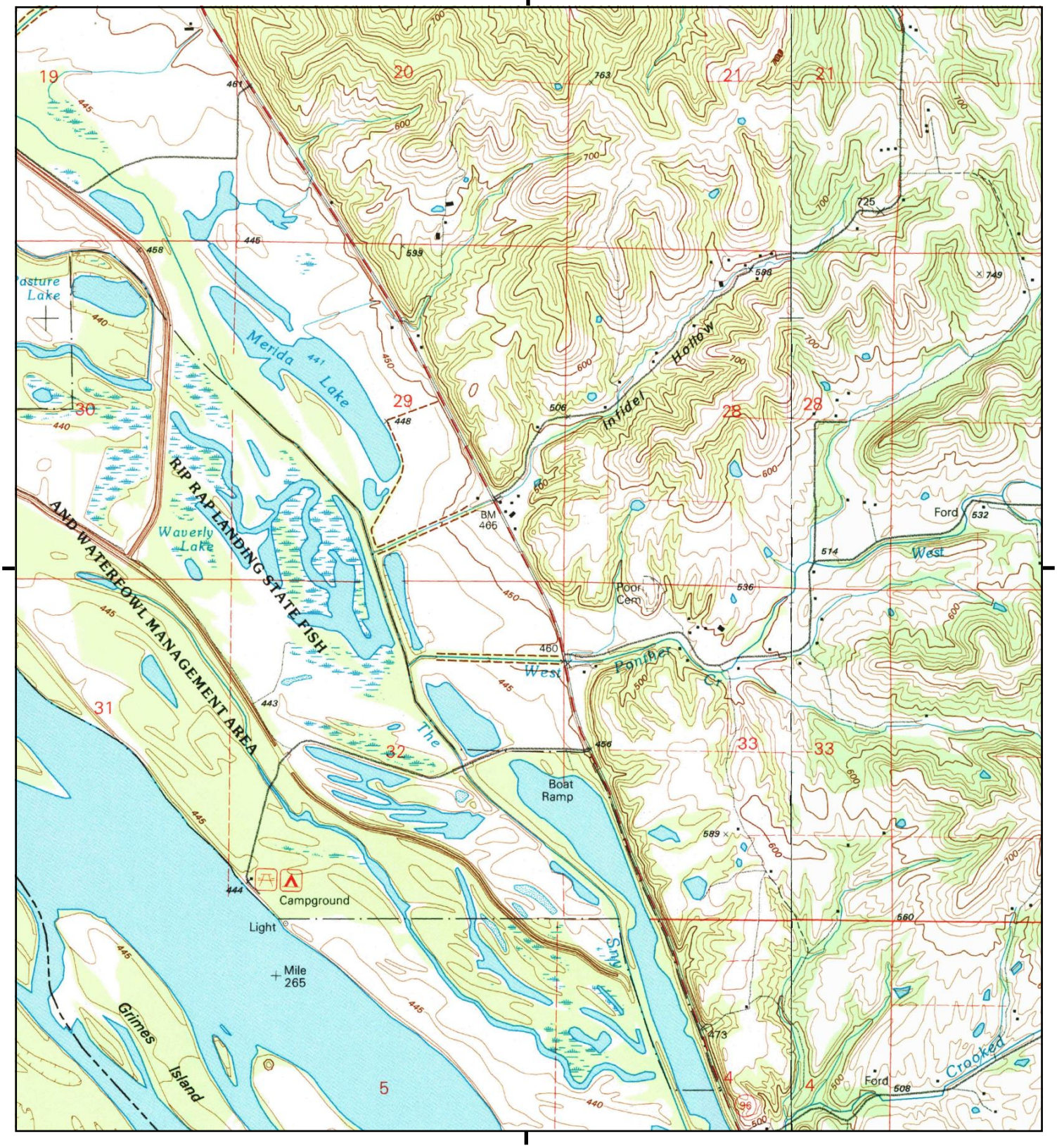
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 1996, 7.5-minute
E, Annada, 1996, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

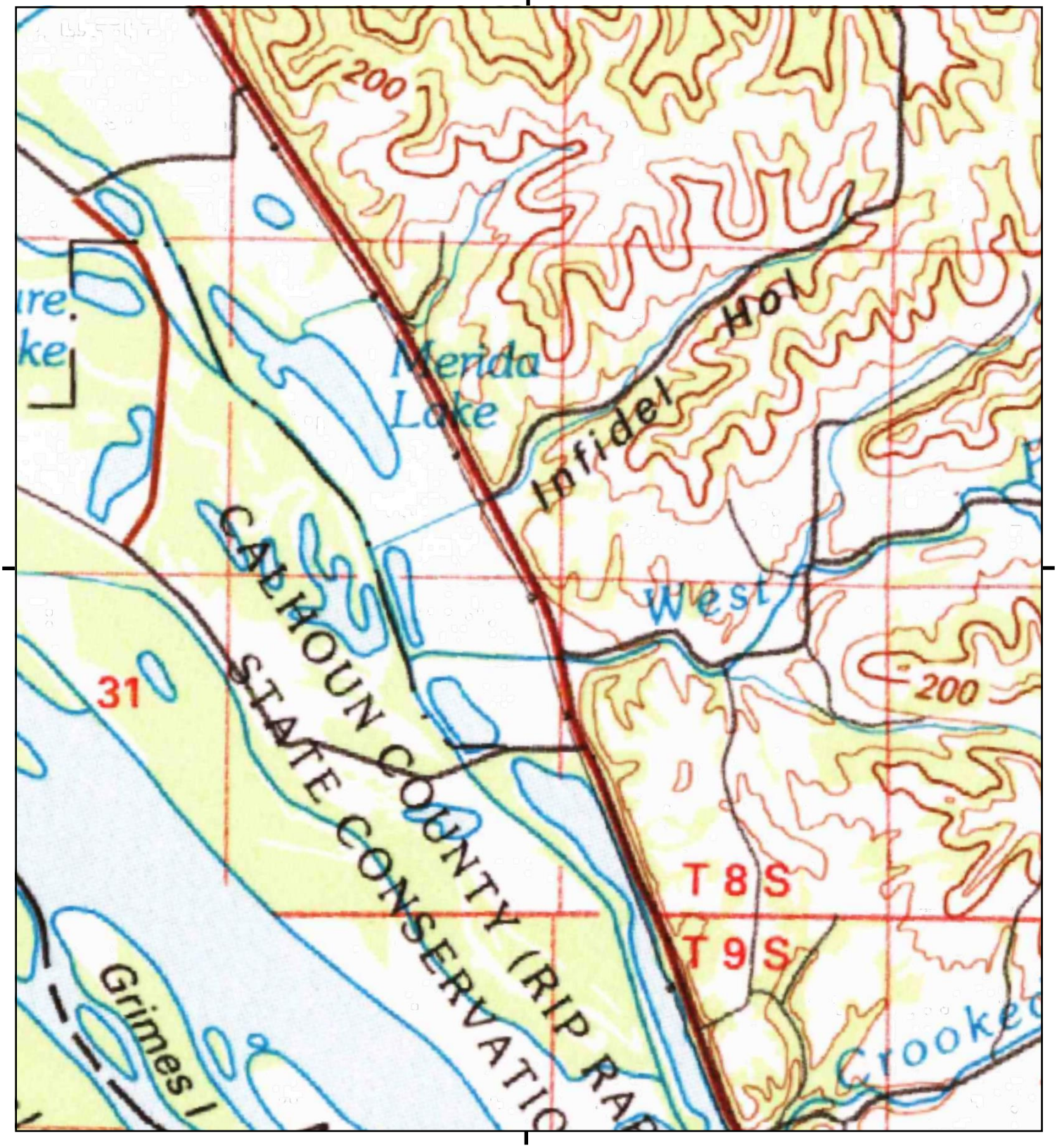
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 1996, 7.5-minute
E, Pleasant Dale Valley, 1996, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

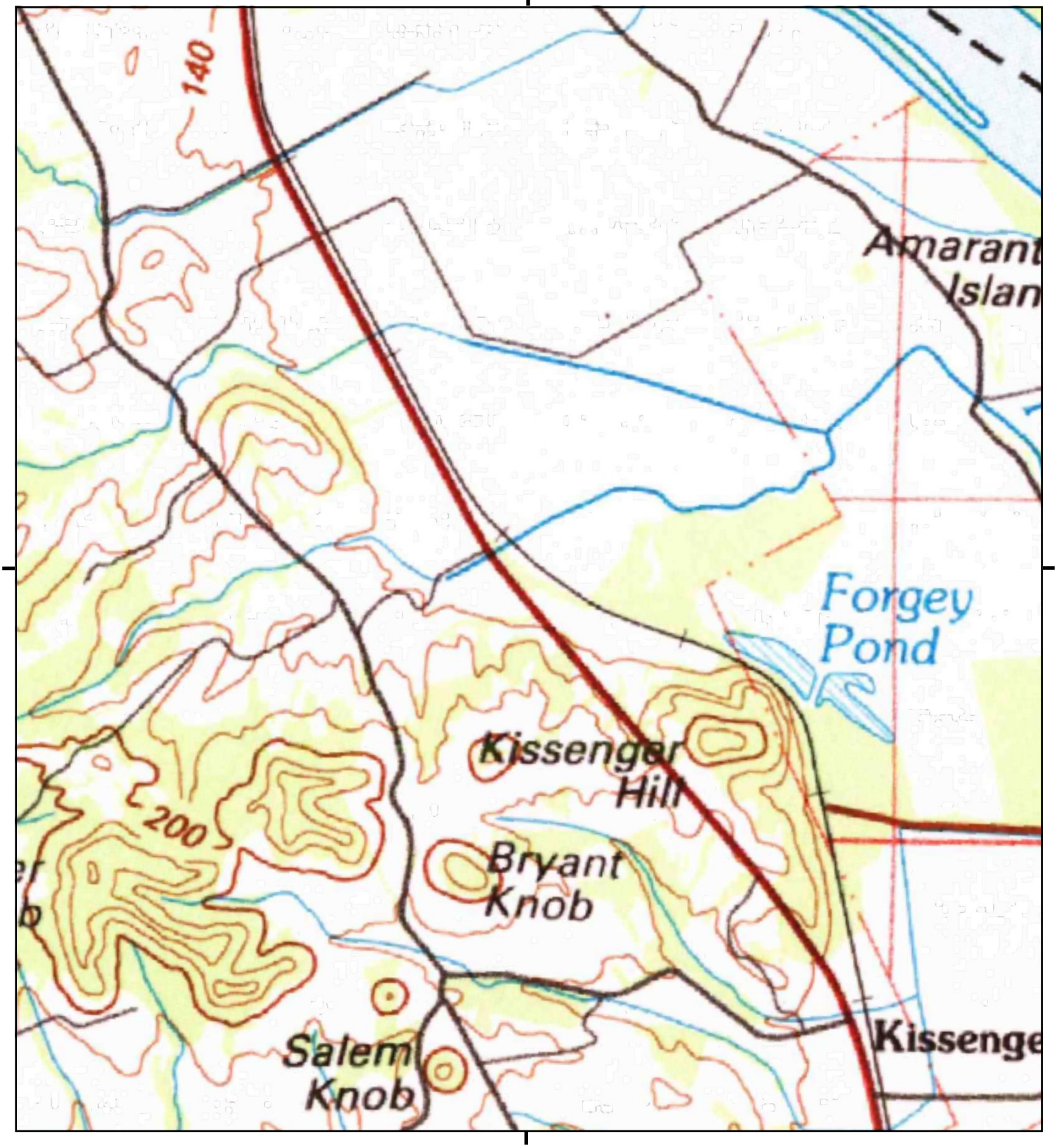
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1986, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

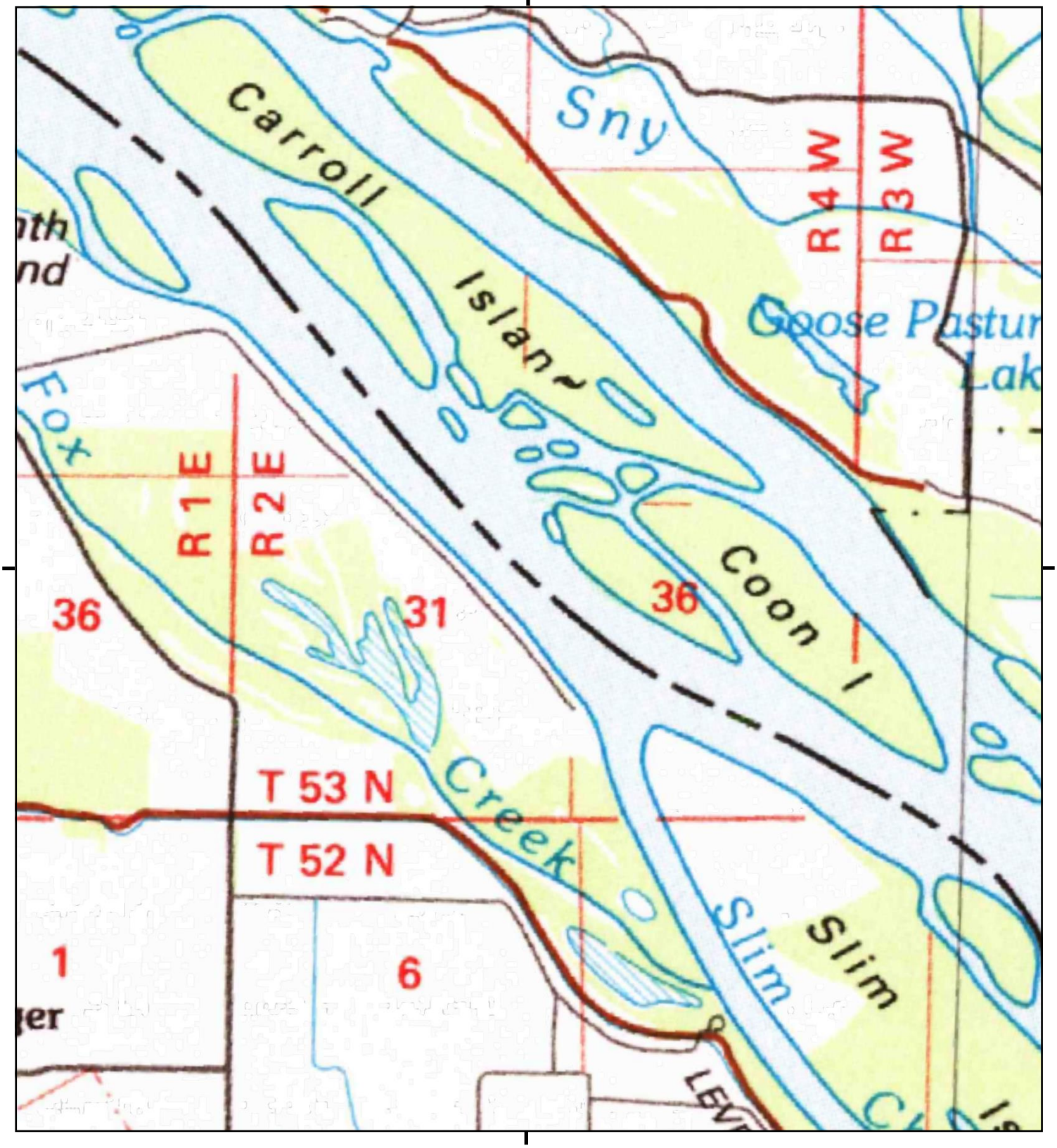
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1986, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

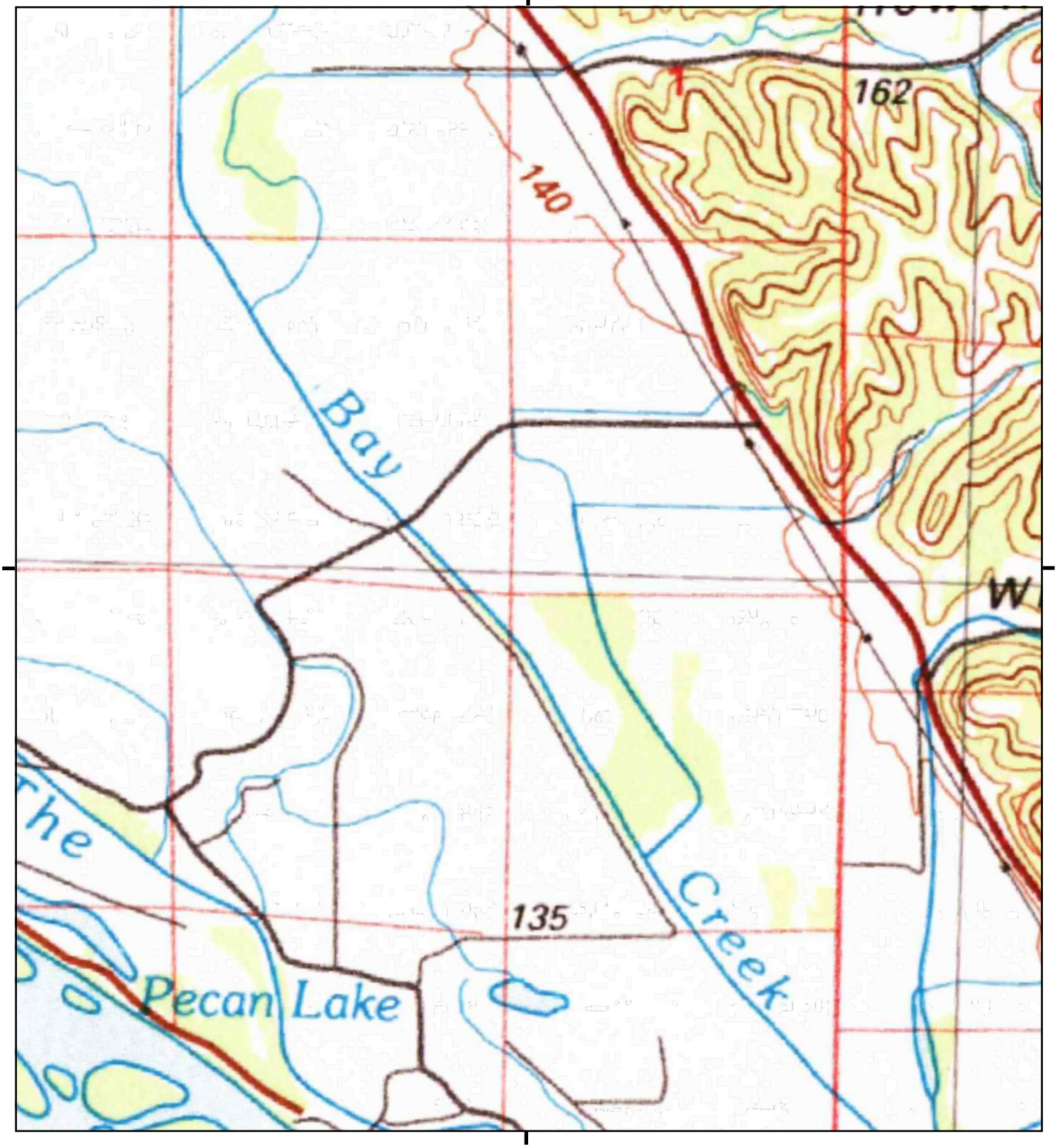
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1986, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

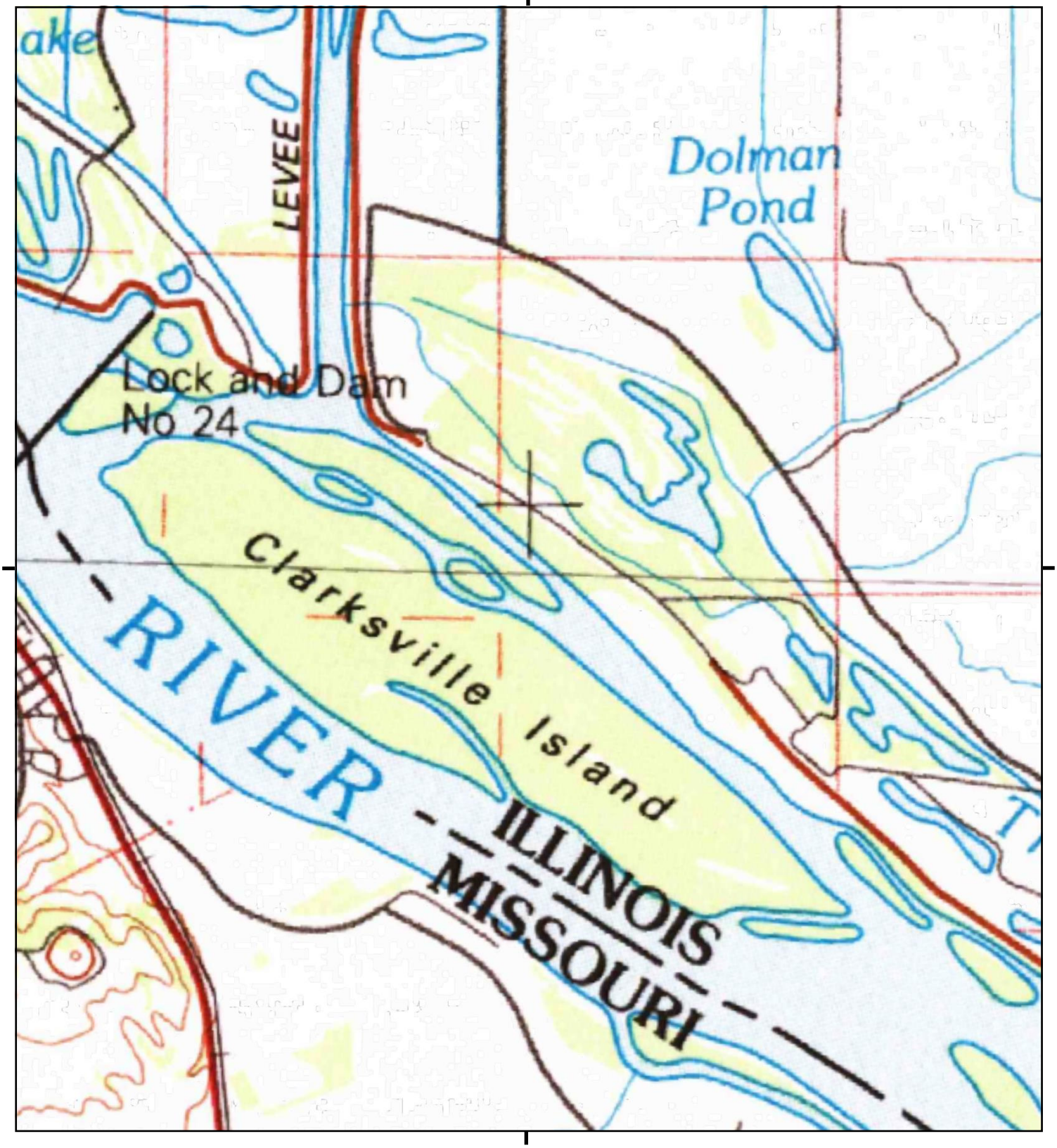
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1986, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

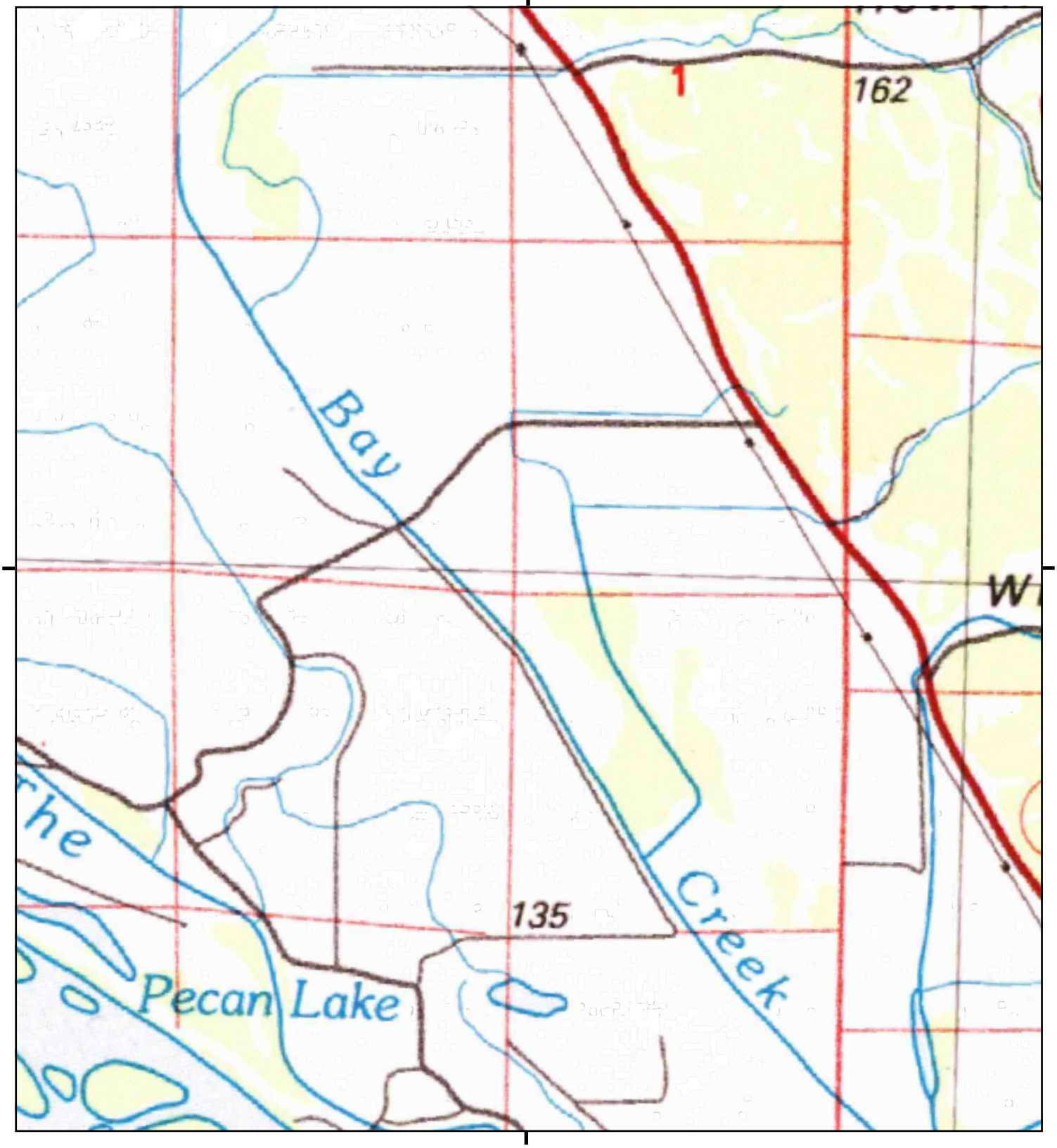
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1986, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

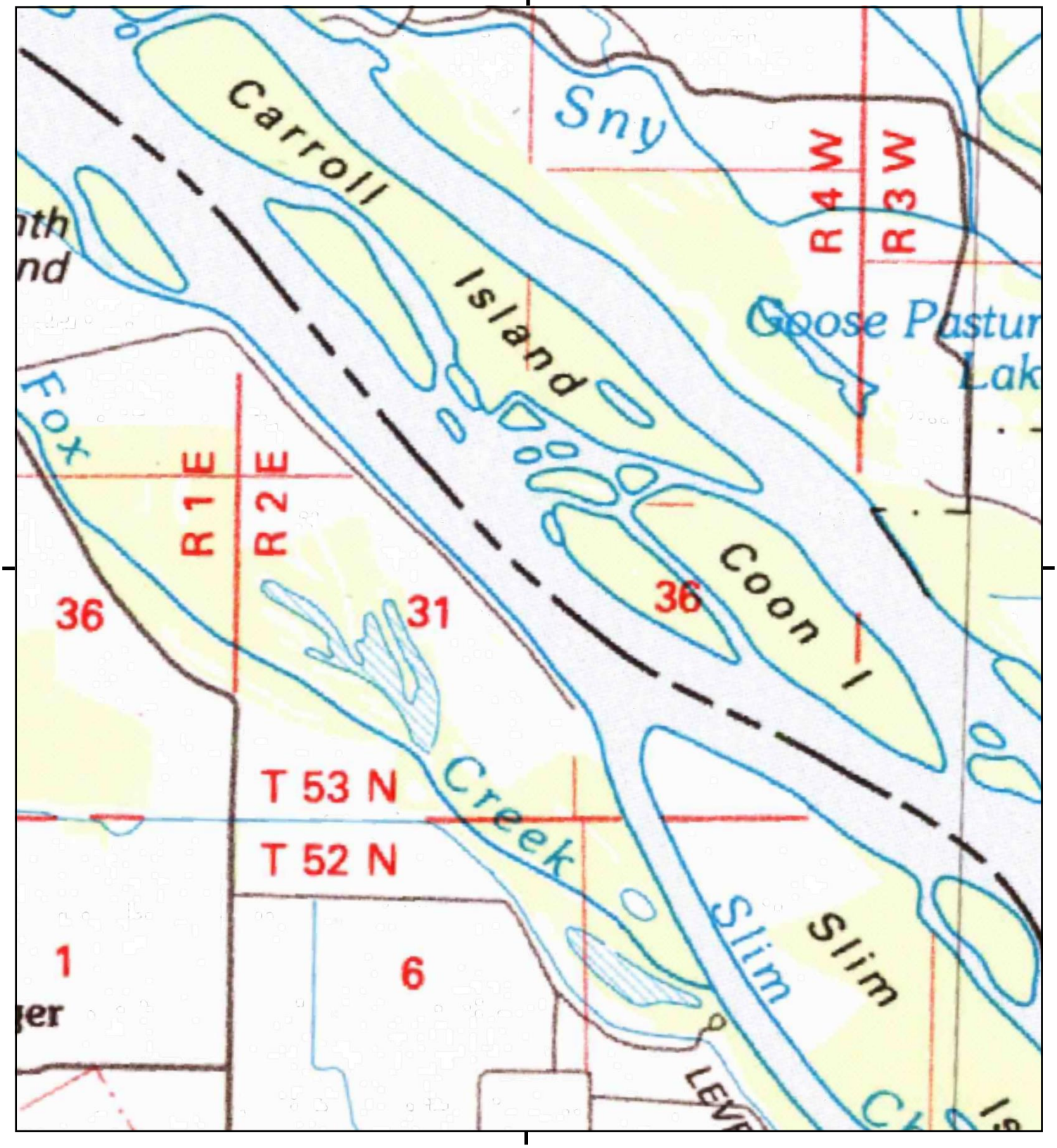
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1985, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

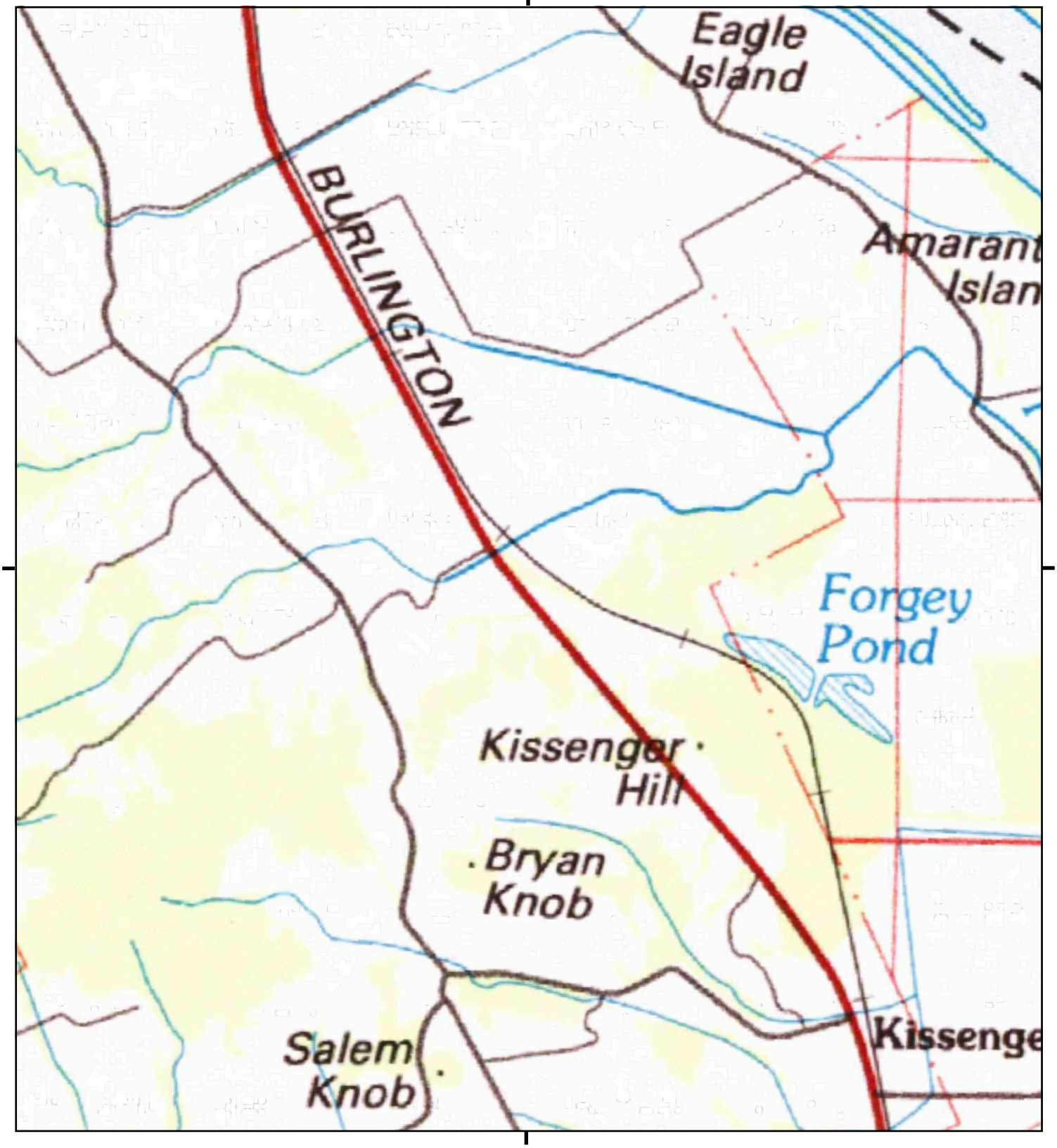
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1985, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

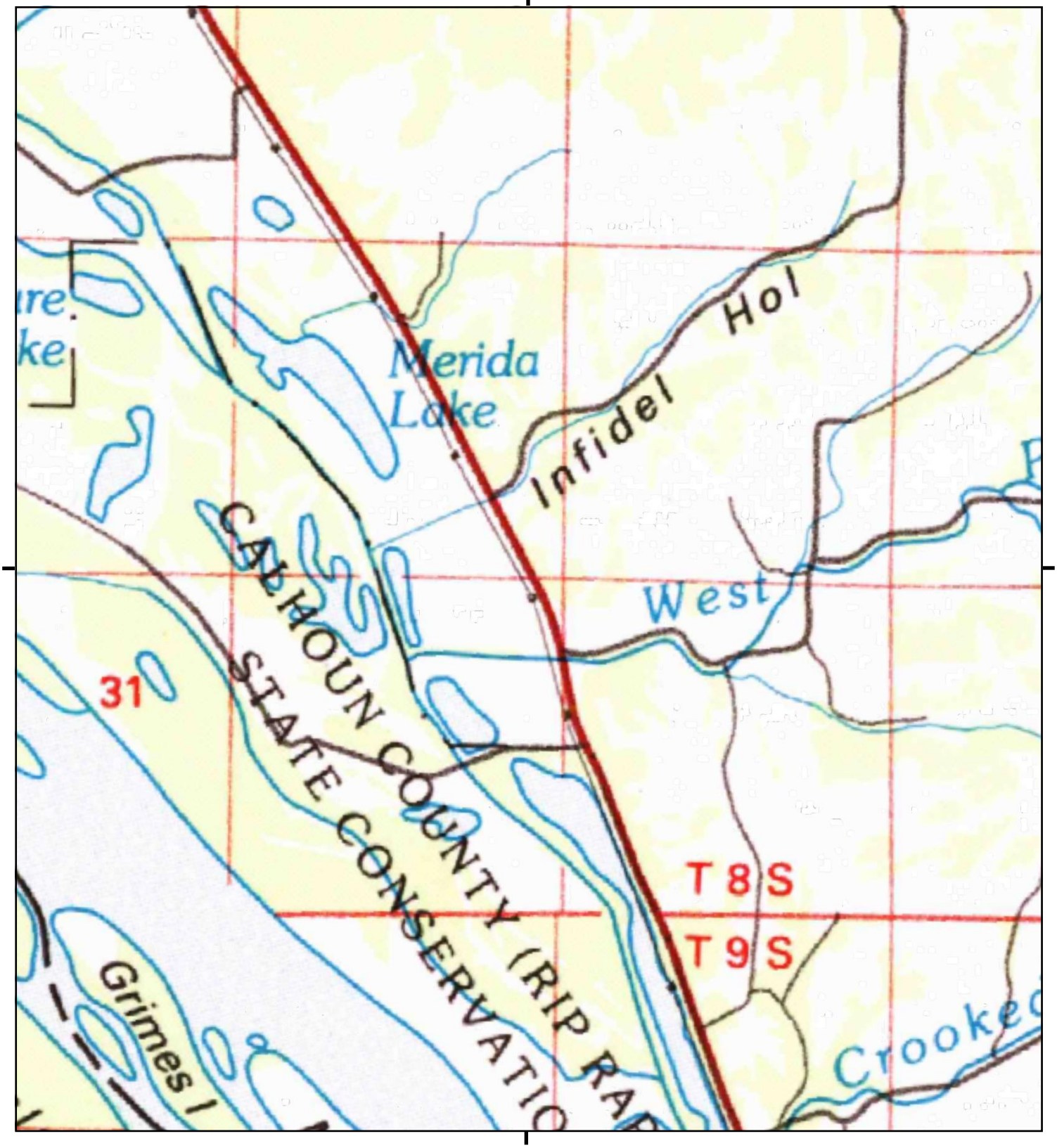
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1985, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

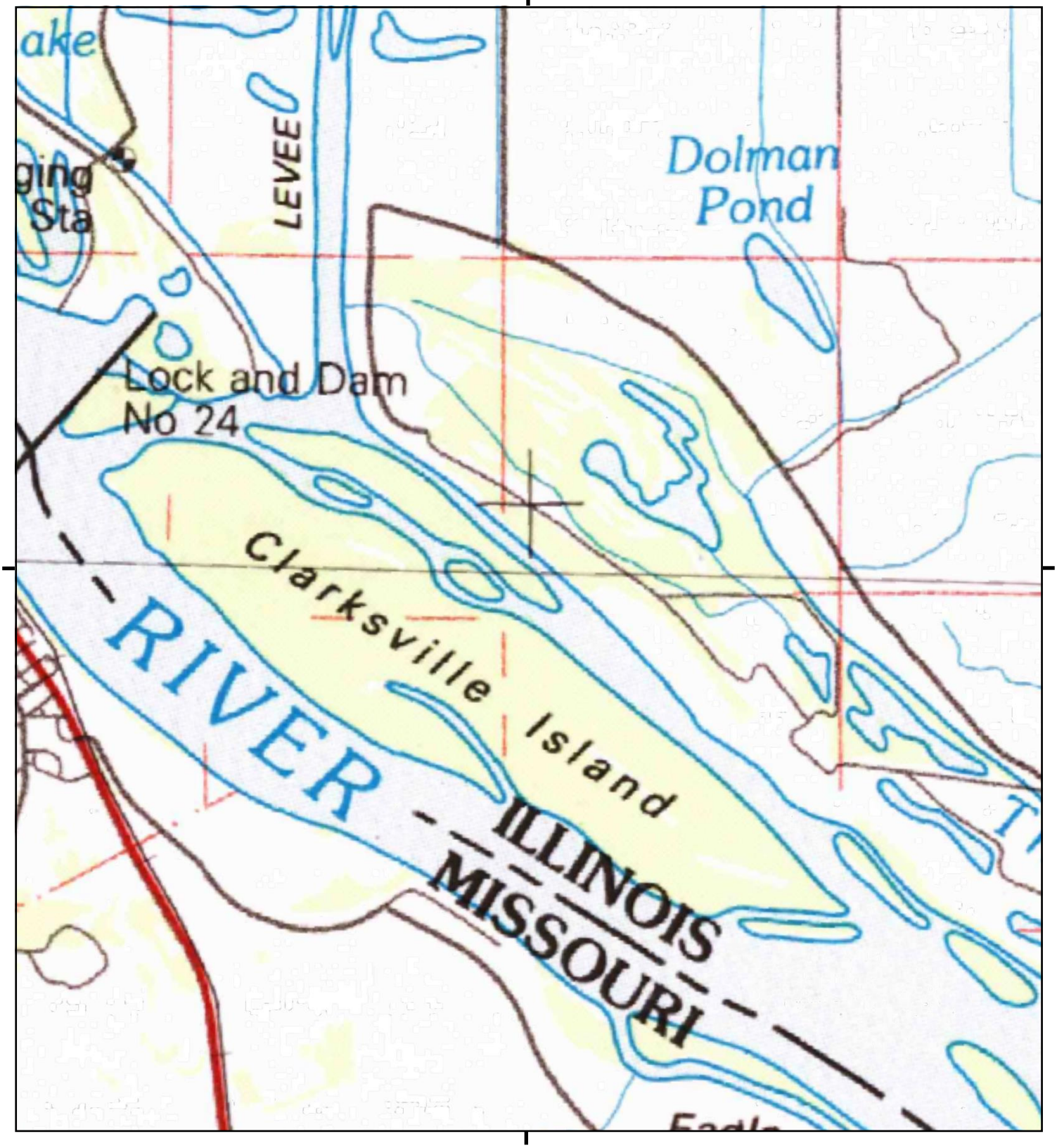
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Jerseyville, 1985, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

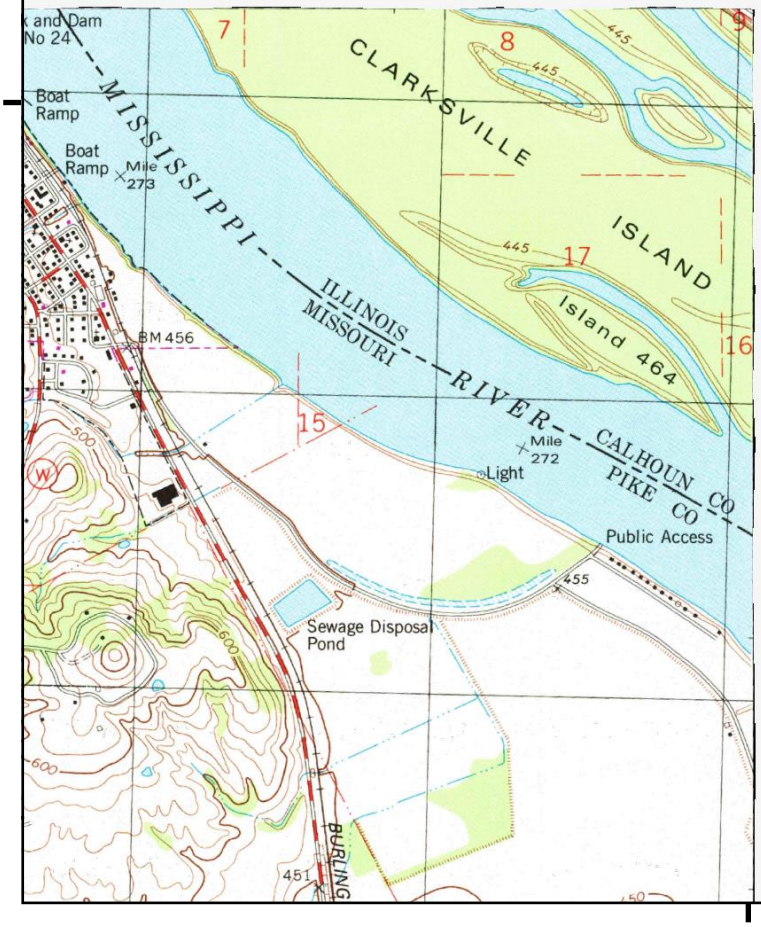
NW N NE
W E
SW S SE

TP, Jerseyville, 1985, 30-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

UNMAPPED



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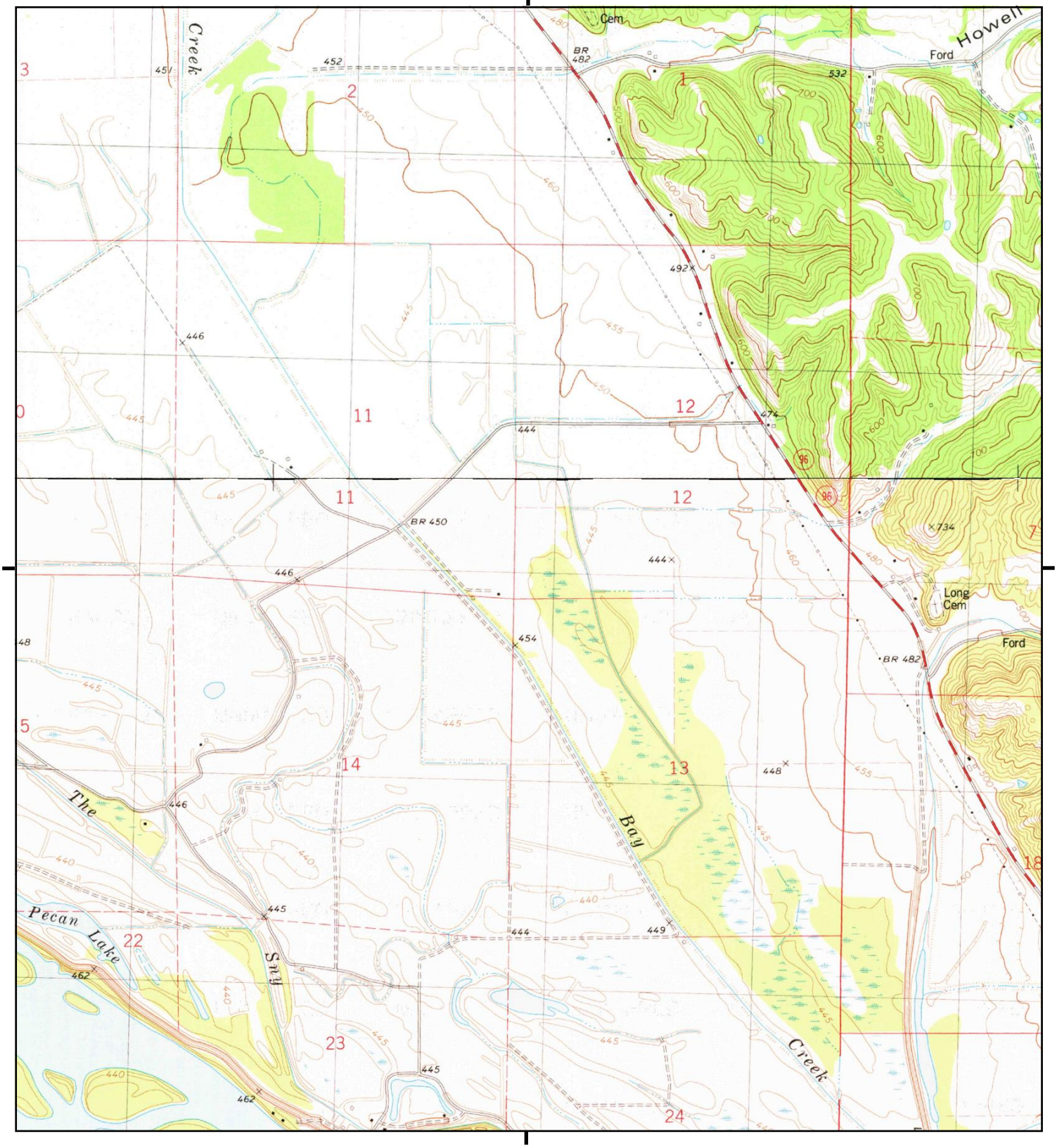
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 1984, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

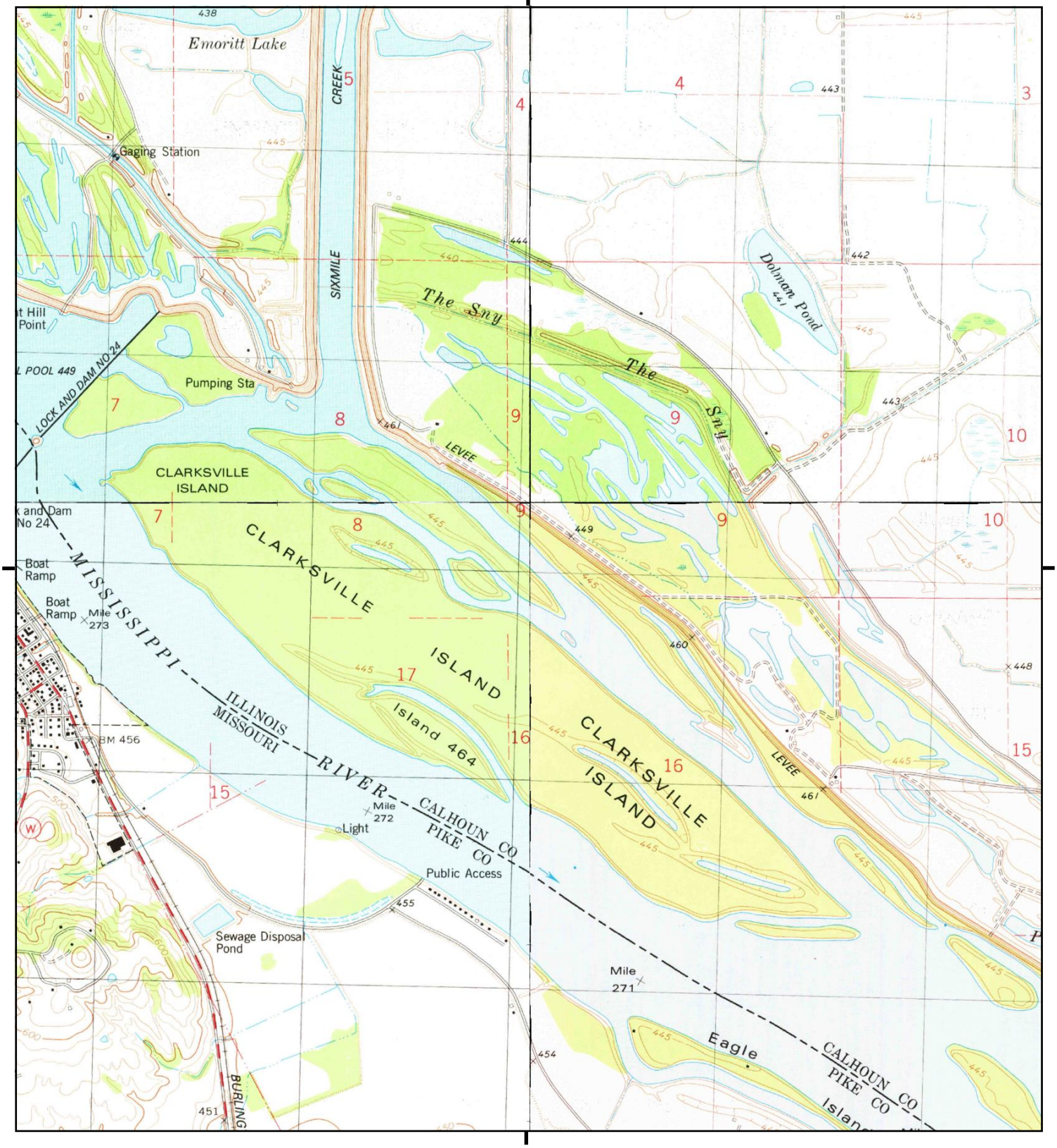
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 1978, 7.5-minute
N, Pleasant Hill East, 1978, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

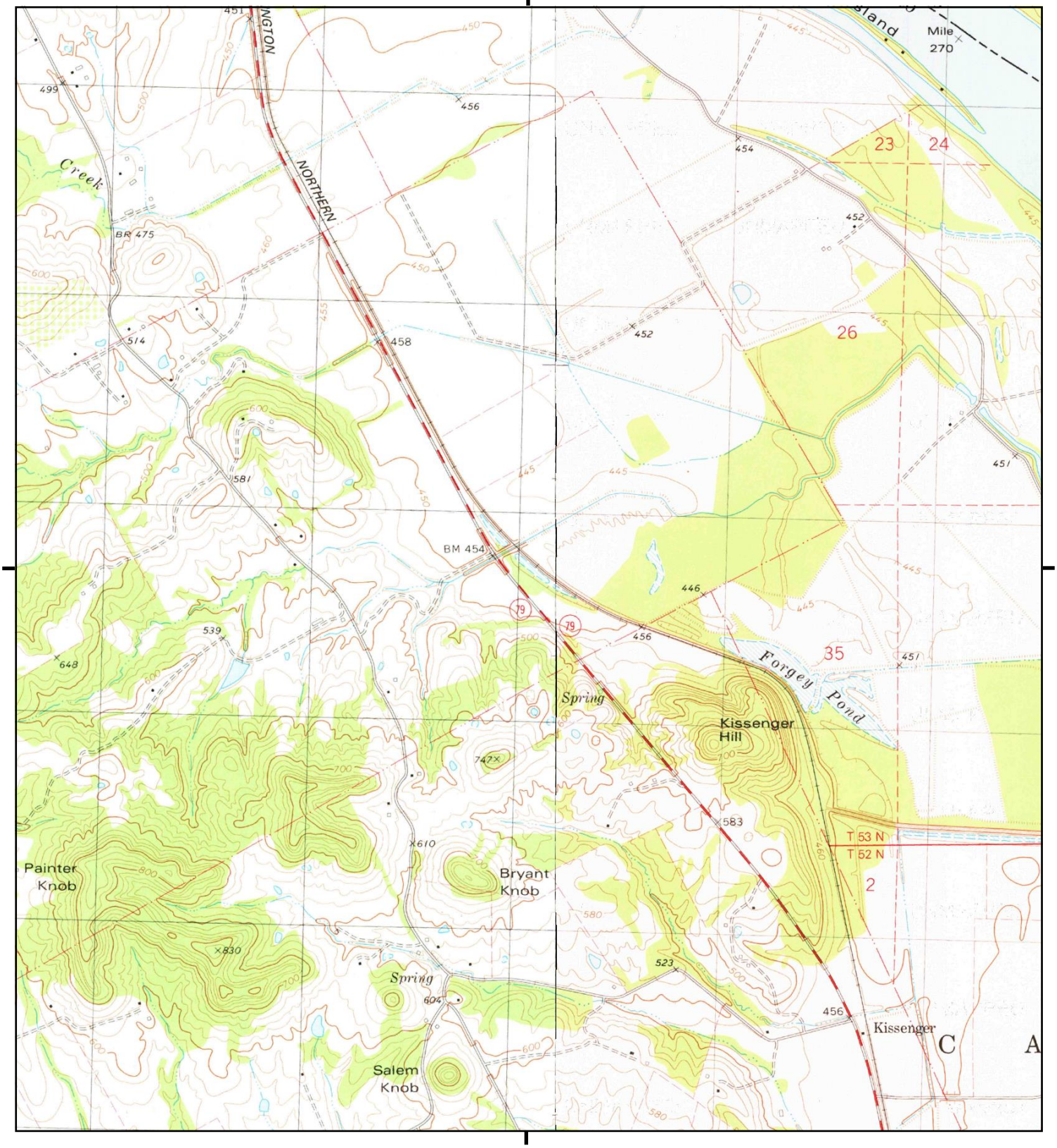
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 1978, 7.5-minute
NE, Pleasant Hill East, 1978, 7.5-minute
S, Annada, 1978, 7.5-minute
NW, Pleasant Hill West, 1978, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

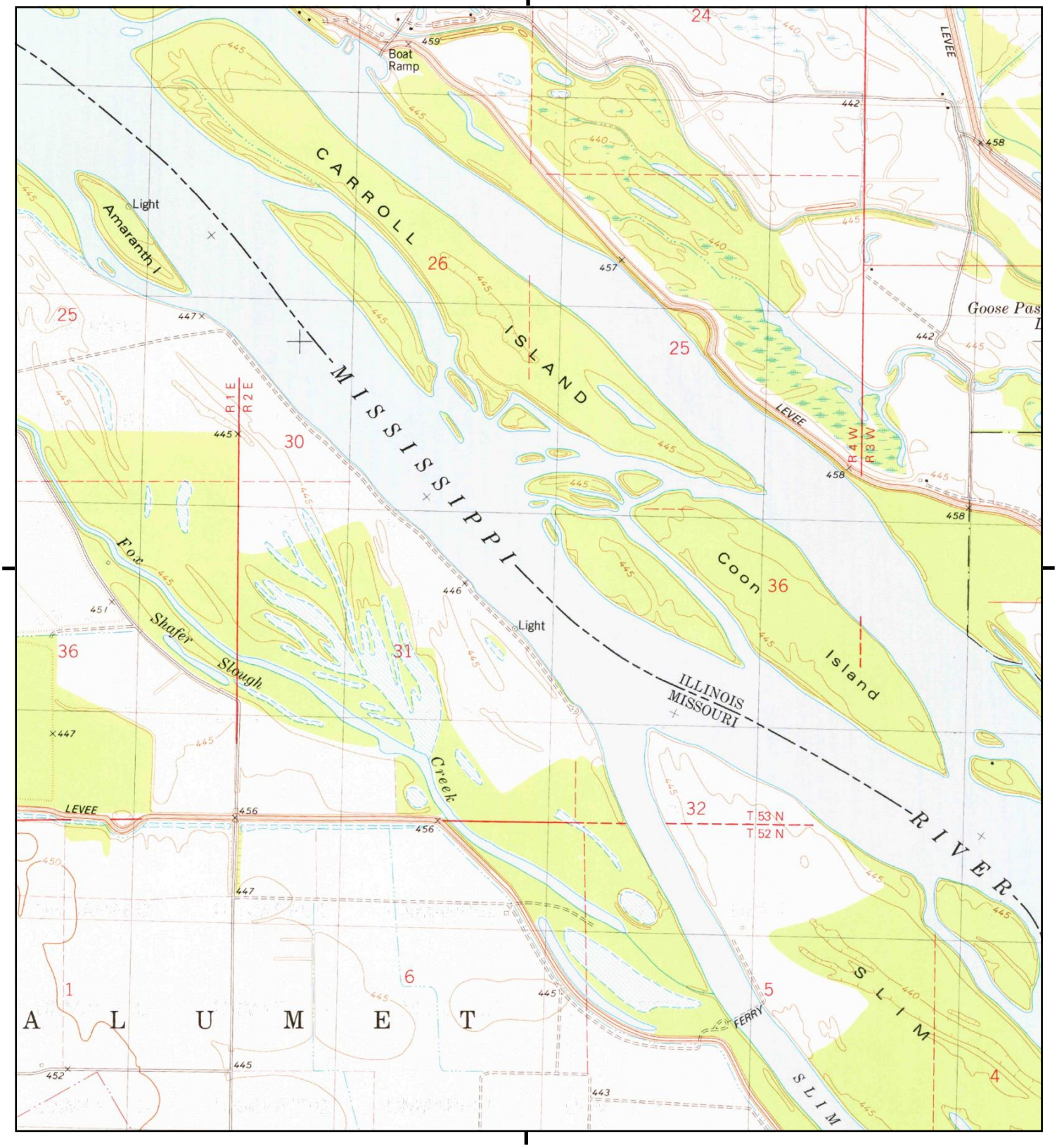
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Clarksville, 1978, 7.5-minute
E, Annada, 1978, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

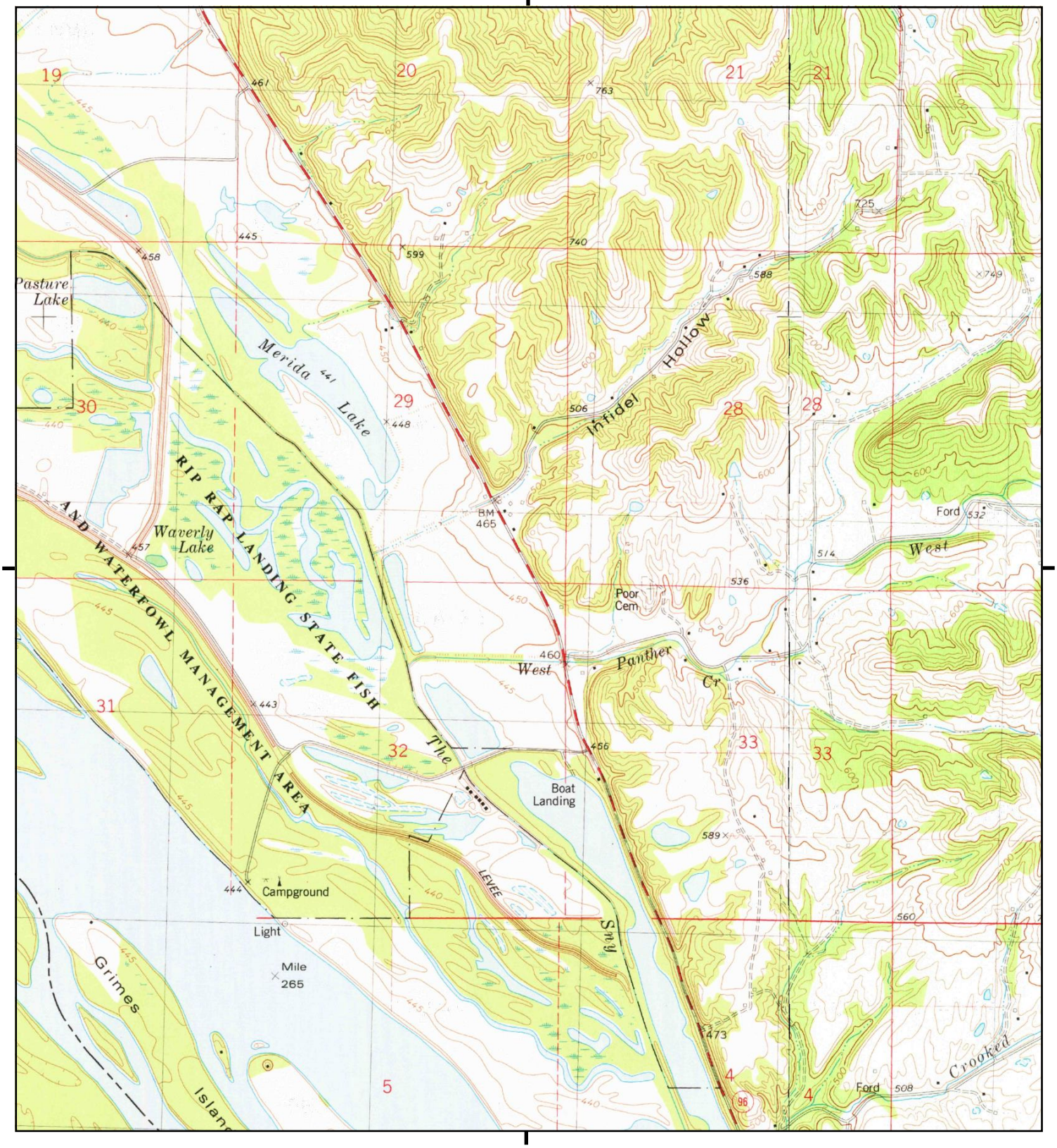
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NW N NE
W E
SW S SE

TP, Annada, 1978, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

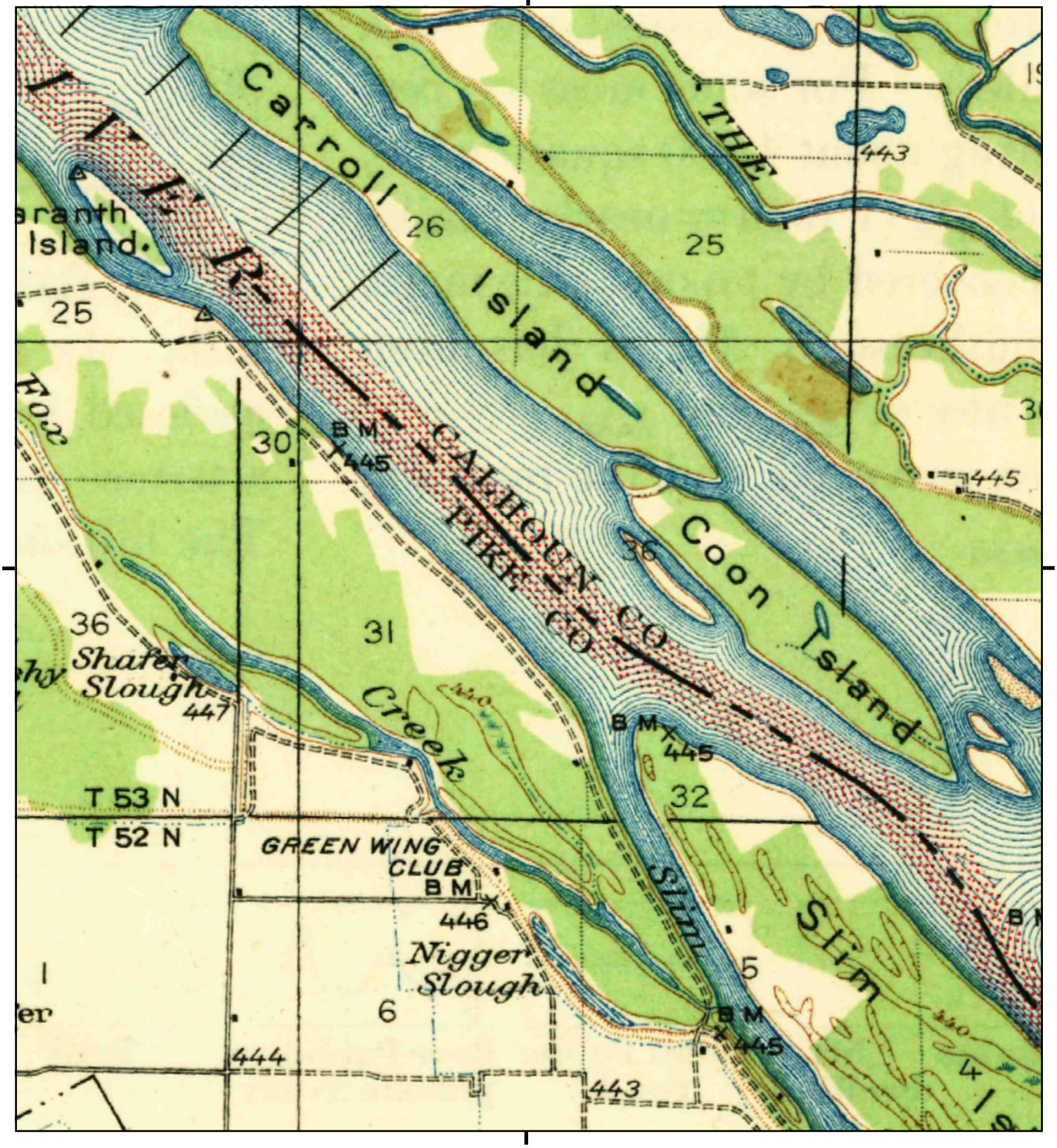
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Annada, 1978, 7.5-minute
E, Pleasant Dale Valley, 1978, 7.5-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

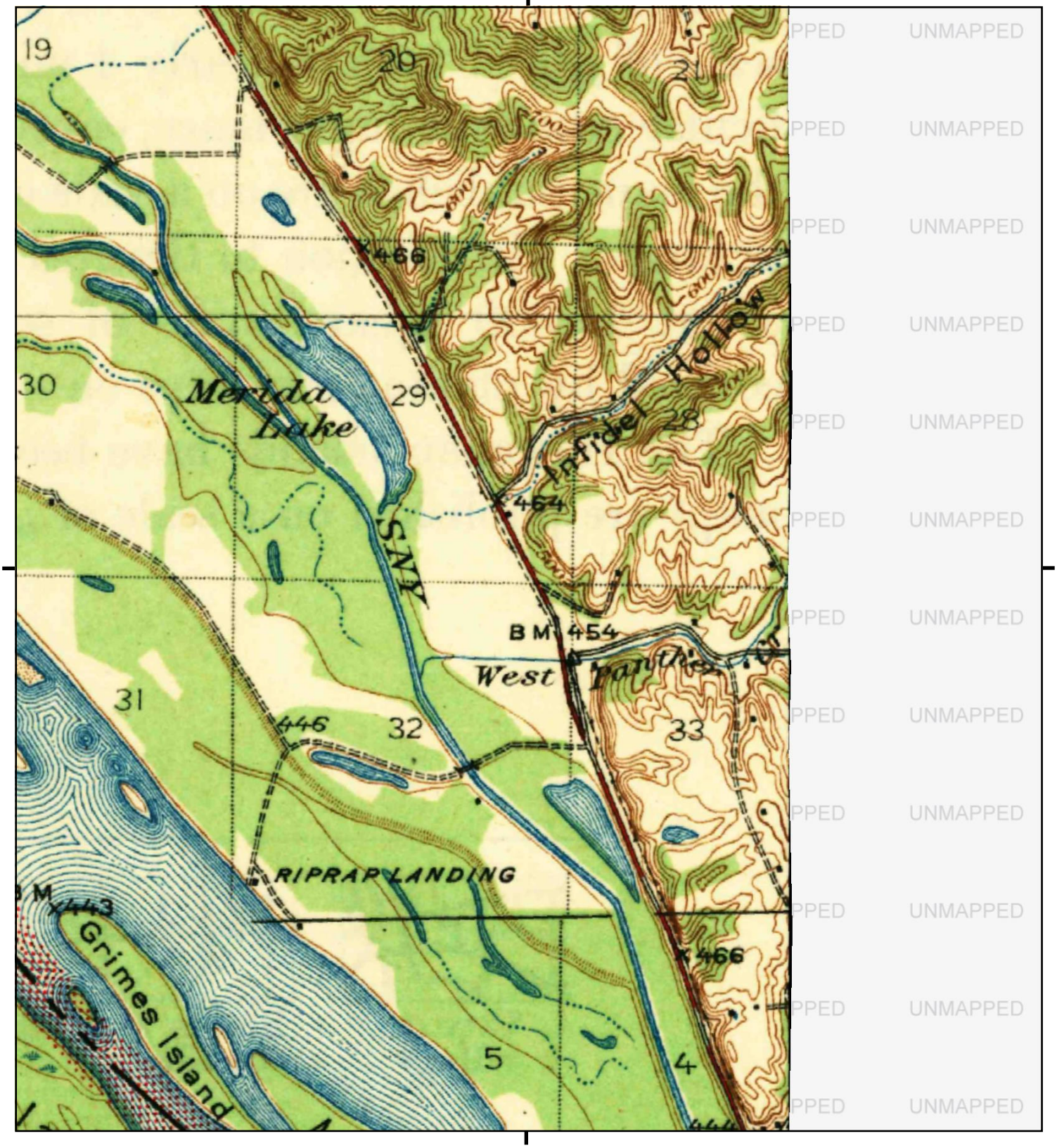
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1942, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

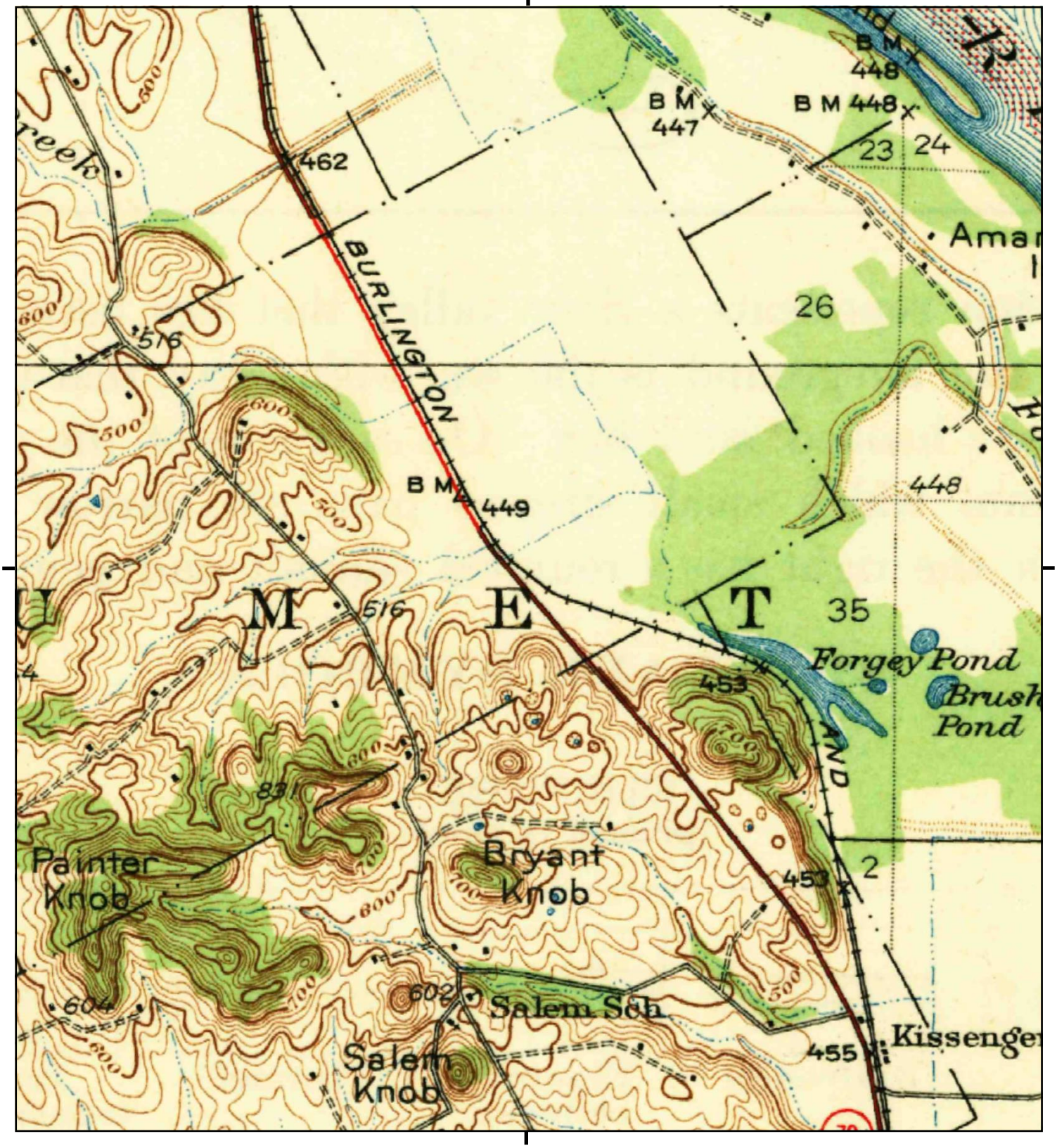
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1942, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

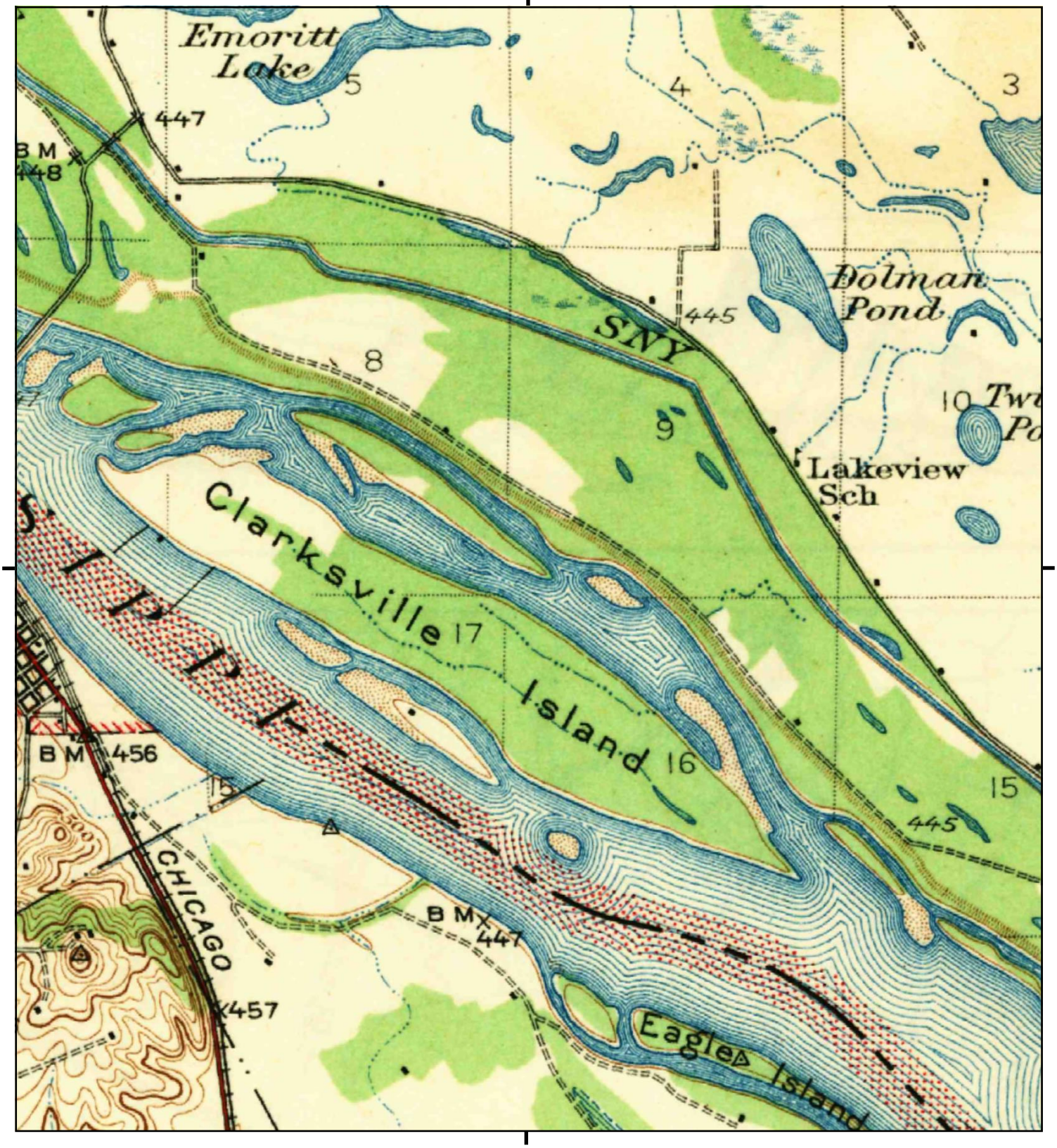
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1942, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

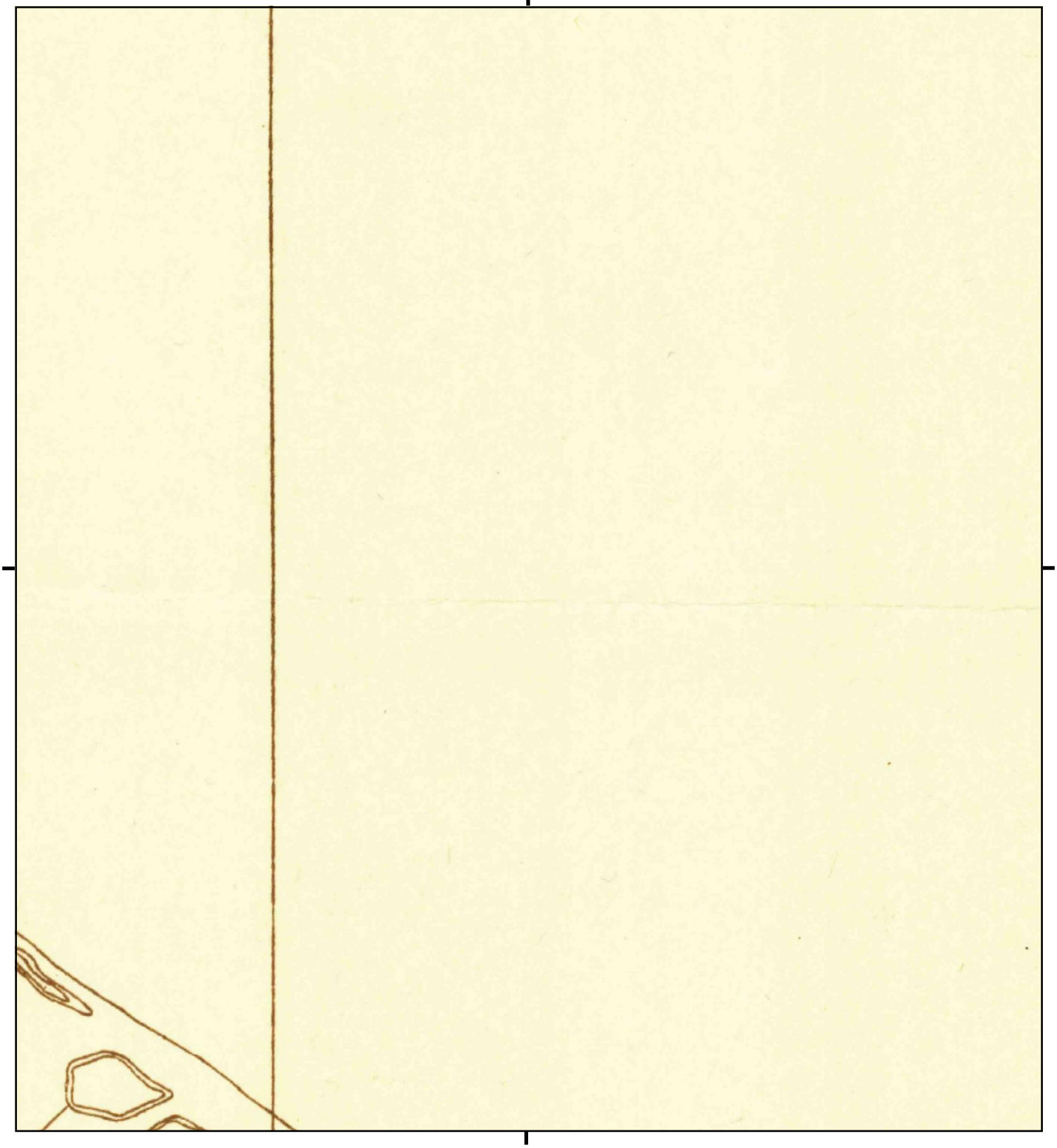
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1942, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

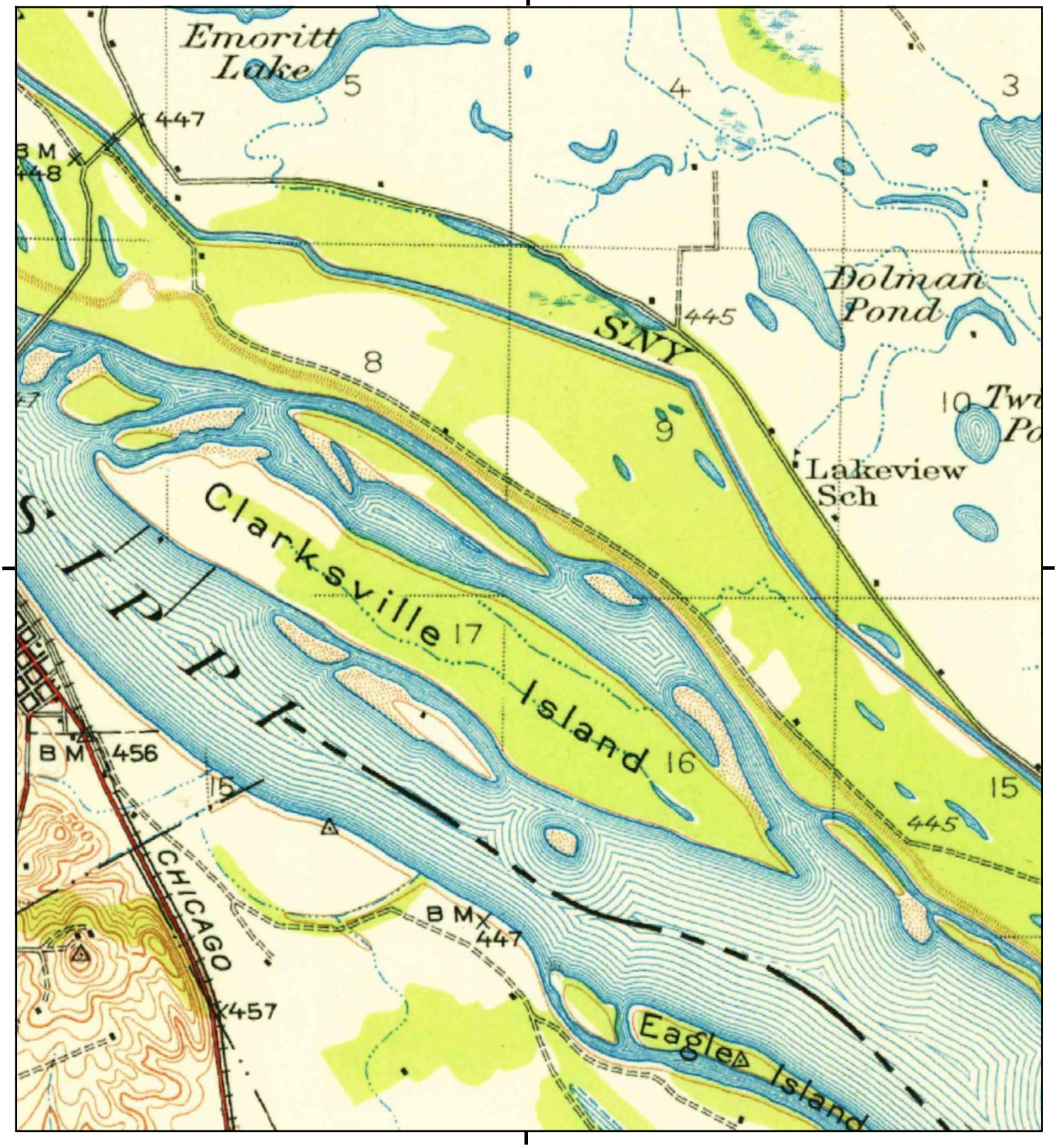
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1934, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

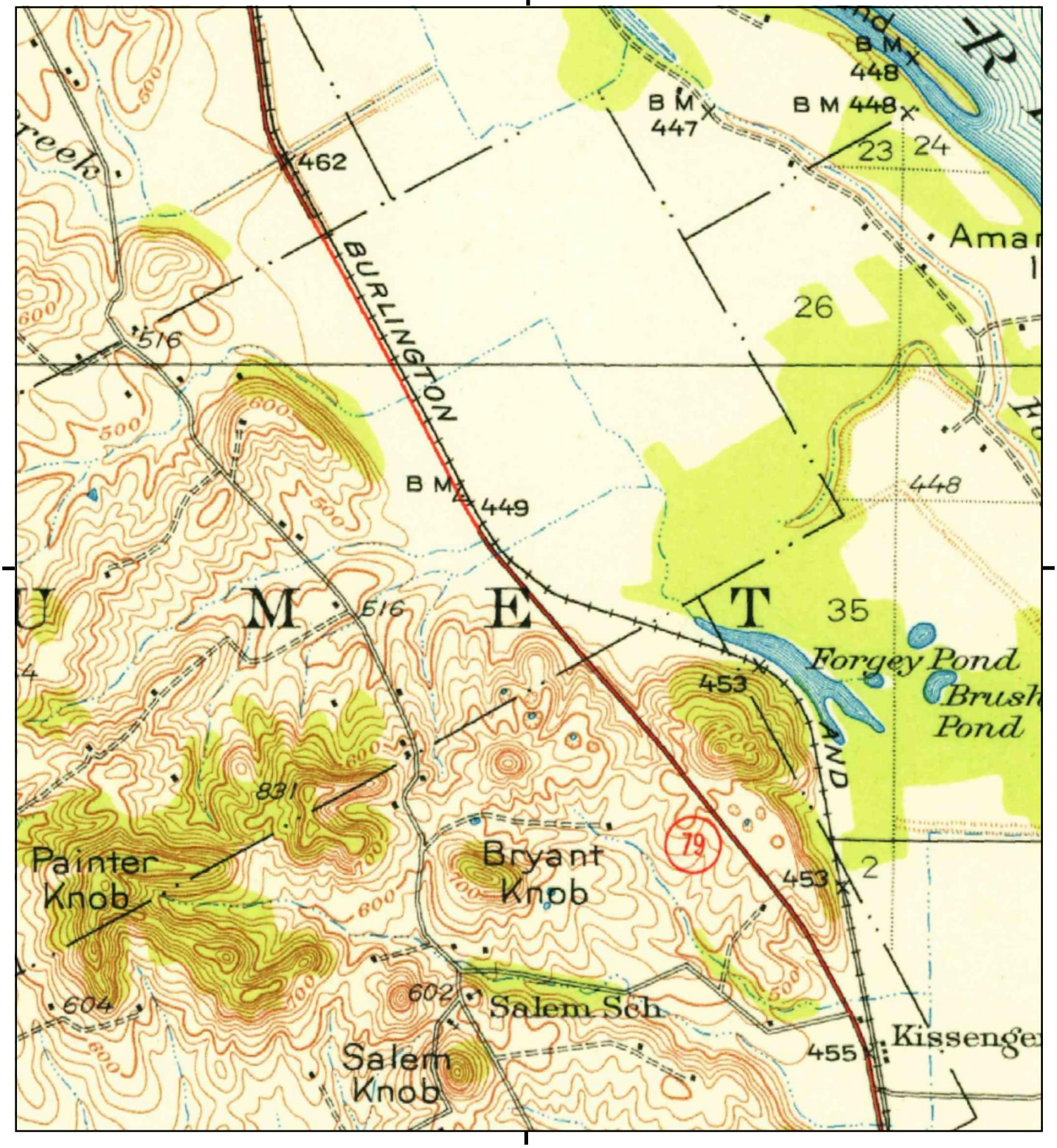
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1934, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

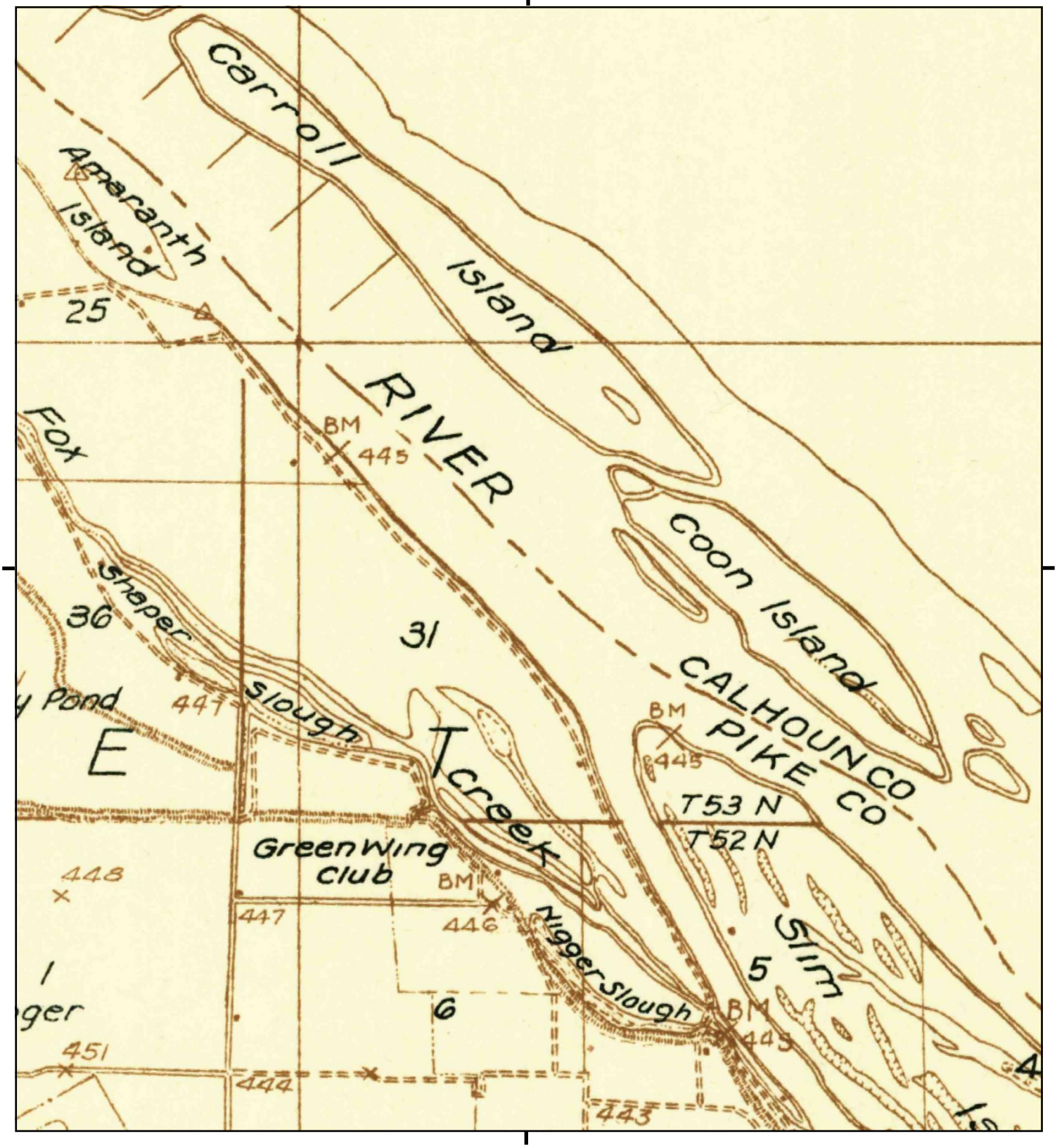
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1934, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

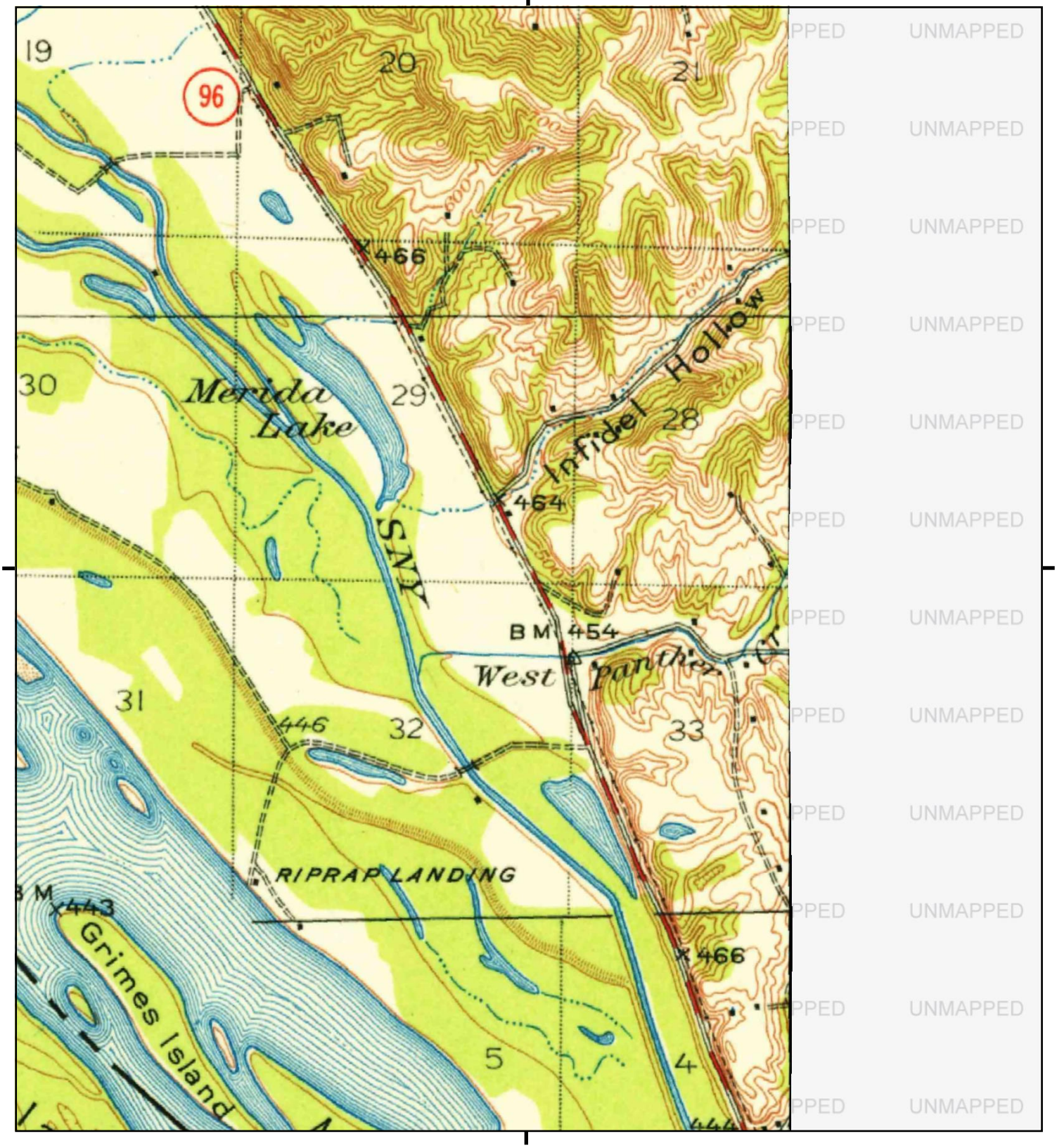
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1934, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

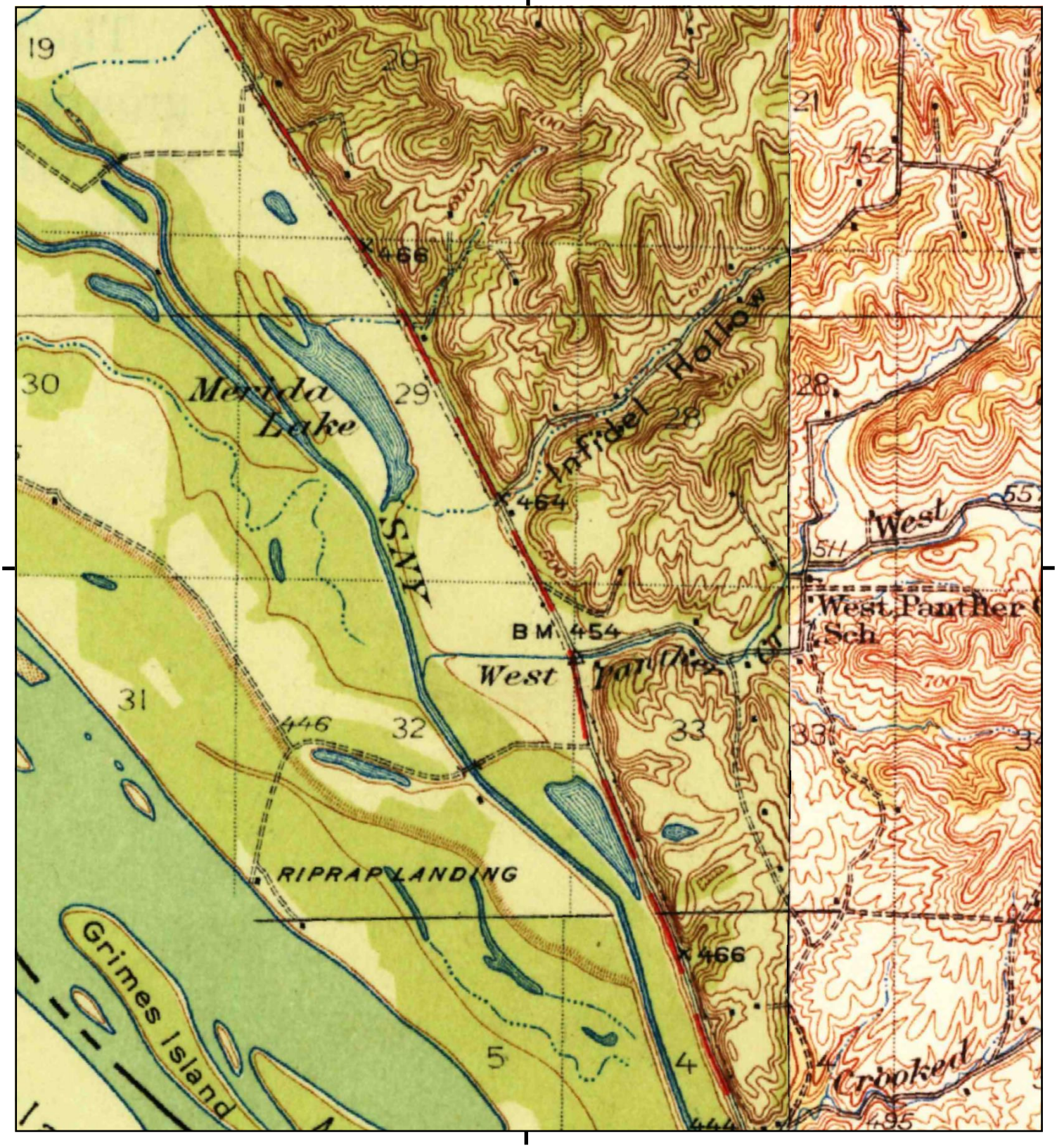
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1934, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

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This report includes information from the following map sheet(s).

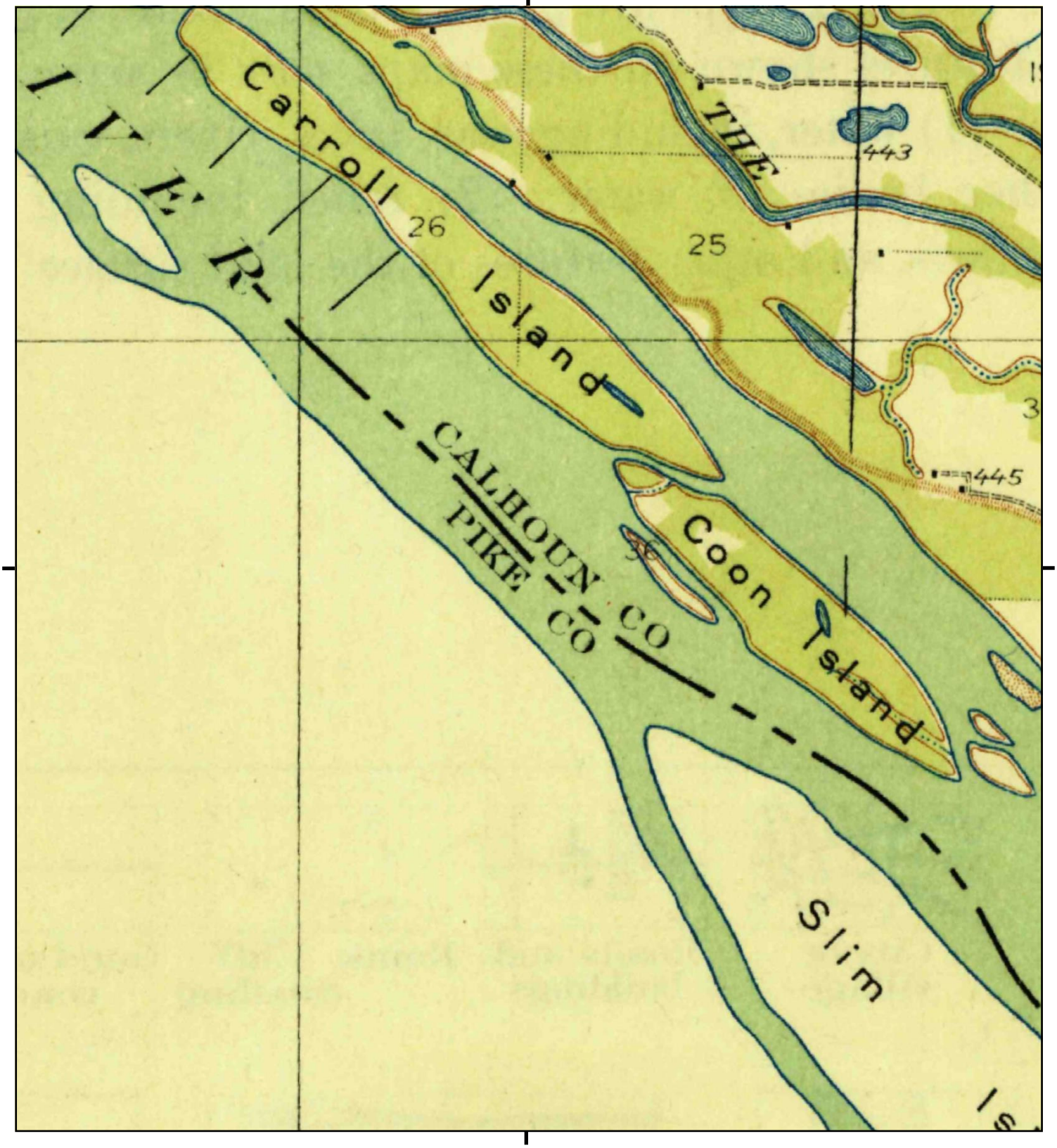
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1930, 15-minute
NE, Pearl, 1930, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N



This report includes information from the following map sheet(s).

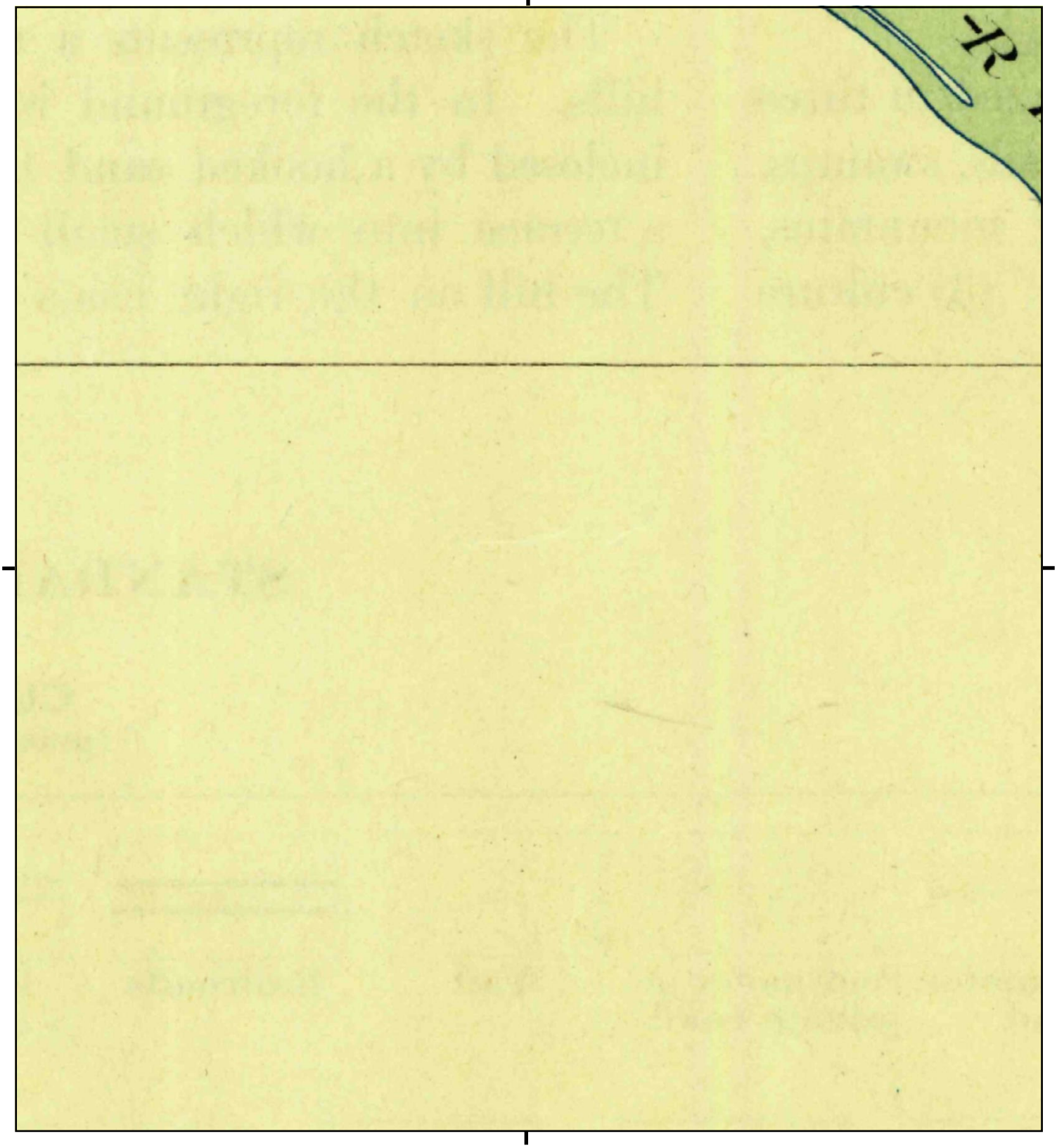
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1930, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

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This report includes information from the following map sheet(s).

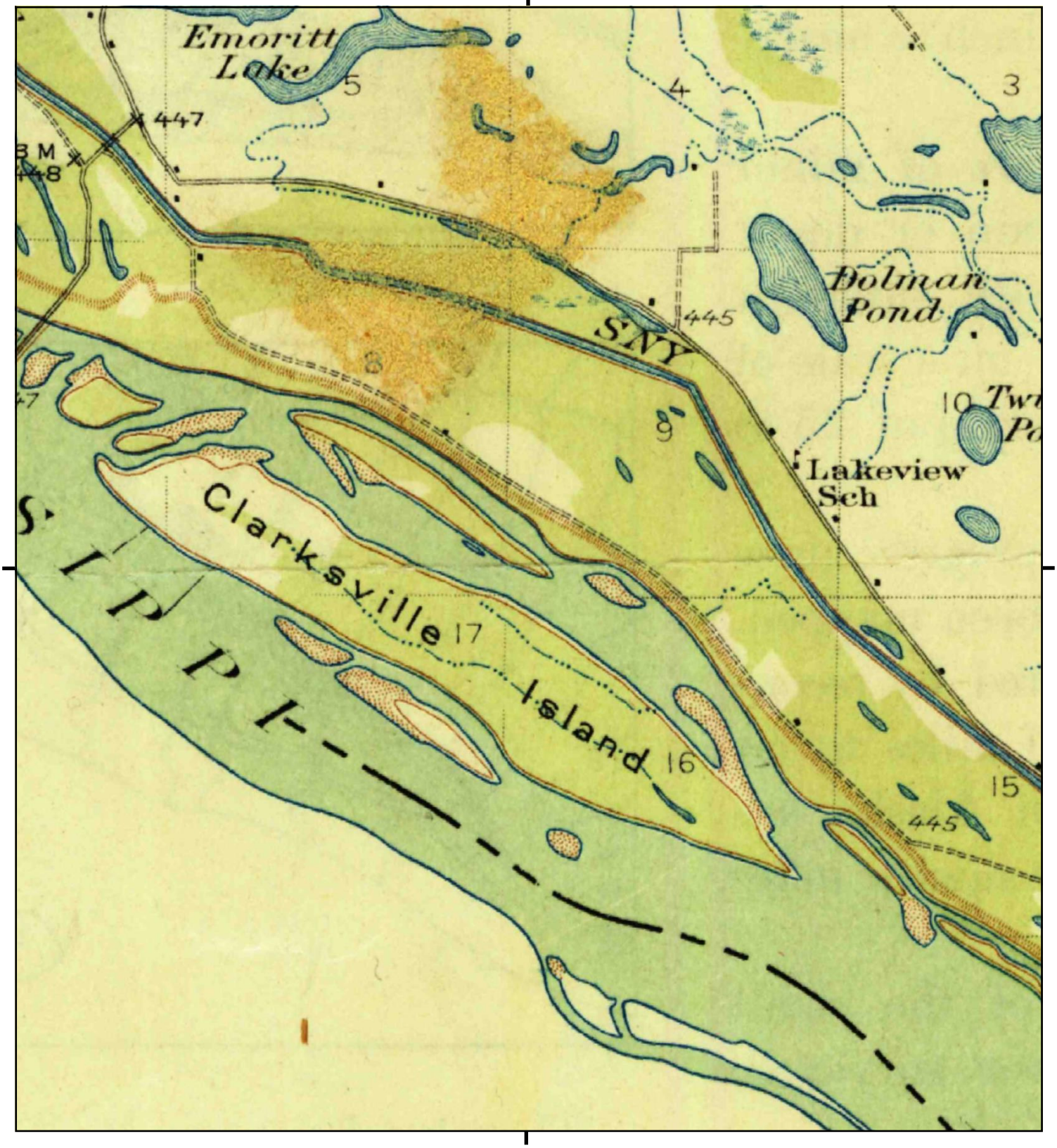
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1930, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

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This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Nebo, 1930, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

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This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

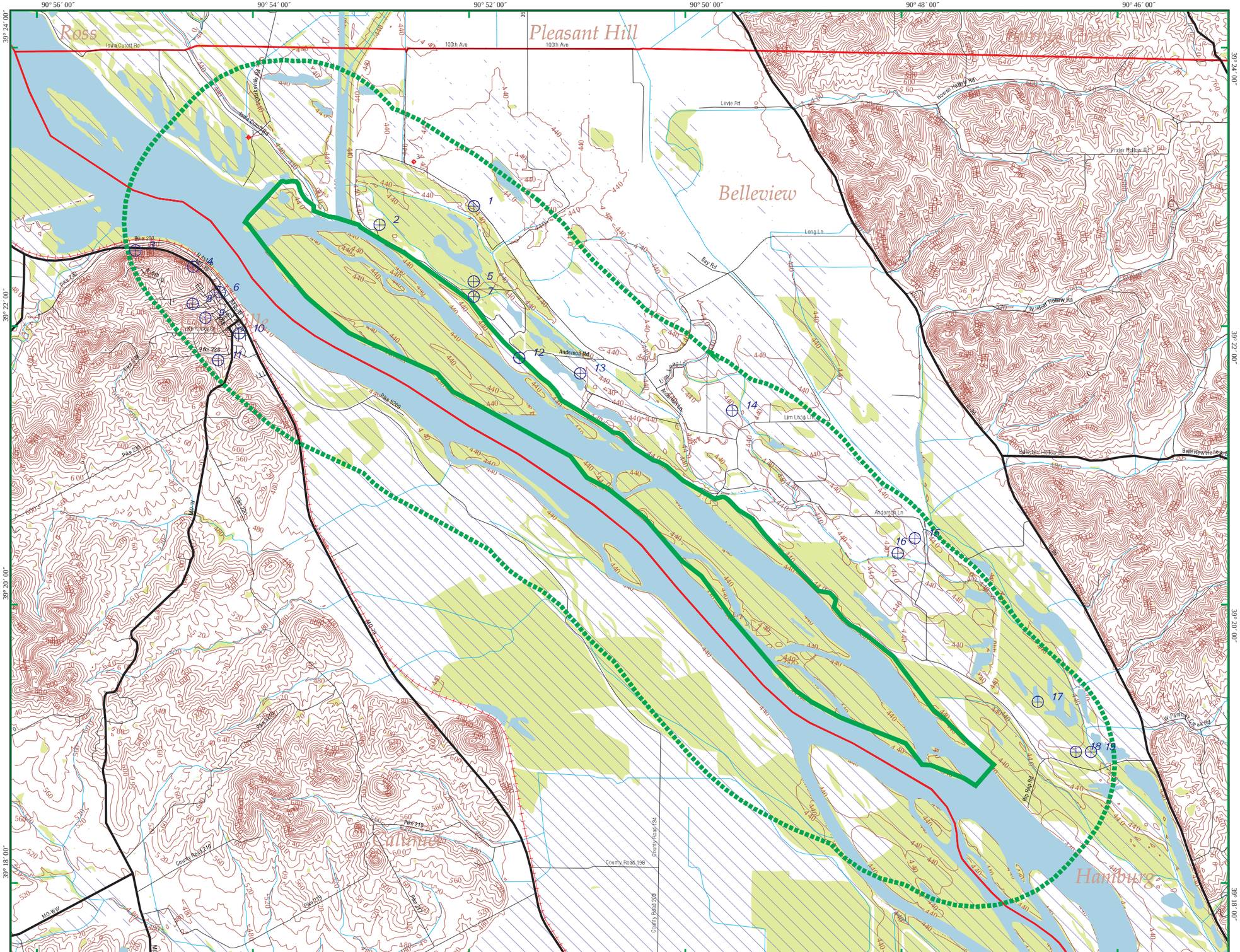
TP, Nebo, 1930, 15-minute

SITE NAME: Clarksville and Carroll Islands
ADDRESS: Clarksville and Carroll Islands
Nebo, IL 62355
CLIENT: U.S. Army Corps of Engineers

N

EDR DataMap®
Well Search

Clarksville and Carroll Islands



- Listed Water Wells
- Oil & Gas Wells
- Study Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Fault Lines
- Water
- Superfund Sites
- 100-Yr Flood Zones
- Wetlands



Nebo, IL

0 1/2 1

Scale in Miles

EDR Environmental Data Resources, Inc

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7523573.5w - 19 Dec 23

Clarksville and Carroll Islands
Nebo, IL 62355

Inquiry Number: 7523573.5w
December 19, 2023

EDR DataMap™ Well Search Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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GEOCHECK VERSION 2.1
SUMMARY

FEDERAL DATABASE WELL INFORMATION

MAP ID	WELL ID
8	USGS40000699370
9	USGS40000699367
10	USGS40000699361
11	USGS40000699358

STATE WATER WELL INFORMATION

MAP ID	WELL ID
1	ILSG40000013458
2	ILSG40000013676
2	ILEPANC70002831
3	MOLOG3000040958
4	MOLOG3000040955
5	ILSG40000013523
7	ILSG40000013524
10	MOLOG3000040943
10	MO7000000003441
10	MOLOG3000040937
10	MO7000000001701
10	MOLOG3000040933
10	MOLOG3000040931
10	MO7000000005252
11	MOLOG3000040929
11	MO7000000003442
11	MO7000000003443
11	MOLOG3000040928
12	ILSG40000013536
13	ILSG40000013687
14	ILSG40000013681
15	ILSG40000013683
16	ILSG40000013677
17	ILSG40000013417
18	ILSG40000013457
19	ILSG40000013456

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID
1	ILOG30000004370
2	ILOG30000004371
3	ILOG30000004380

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 6
PWS ID: MO2242104
PWS Name: SILO PARK CAMPING & PICNIC
ROUTE 1, HWY 79
CLARKSVILLE, MO 63336
PWS currently has or had major violation(s) or enforcement: NO

GEOCHECK VERSION 2.1
SUMMARY

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 10
PWS ID: MO2010169
PWS Name: CLARKSVILLE
UTILITY OFFICE
111 HOWARD
CLARKSVILLE, MO 63336
PWS currently has or had major violation(s) or enforcement: YES

Map ID: 10
PWS ID: MO2010169
PWS Name: CLARKSVILLE
UTILITY OFFICE
111 HOWARD
CLARKSVILLE, MO 63336
PWS currently has or had major violation(s) or enforcement: YES

Map ID: 10
PWS ID: MO2010169
PWS Name: CLARKSVILLE
UTILITY OFFICE
111 HOWARD
CLARKSVILLE, MO 63336
PWS currently has or had major violation(s) or enforcement: YES

Map ID: 11
PWS ID: MO2010169
PWS Name: CLARKSVILLE
UTILITY OFFICE
111 HOWARD
CLARKSVILLE, MO 63336
PWS currently has or had major violation(s) or enforcement: YES

USGS TOPOGRAPHIC MAP(S)

39090-C7 ANNADA, MO IL
39090-C8 CLARKSVILLE, MO IL
39090-D7 PLEASANT HILL EAST, IL
39090-D8 PLEASANT HILL WEST, IL MO

AREA RADON INFORMATION

Federal EPA Radon Zone for PIKE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for PIKE COUNTY, MO

Number of sites tested: 6

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.567 pCi/L	83%	17%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.567 pCi/L	100%	0%	0%

GEOCHECK VERSION 2.1
SUMMARY

AREA RADON INFORMATION

Federal EPA Radon Zone for CALHOUN County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for CALHOUN COUNTY, IL

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.600 pCi/L	50%	50%	0%

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Well Information:

Map ID:	8		
Organization ID:	USGS-MO		
Organization Name:	USGS Missouri Water Science Center		
Monitor Location:	T53N R01E 16BDA1	Type:	Well
Description:	Not Reported	HUC:	07110004
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	Champlainian Series	Aquifer Type:	Confined single aquifer
Construction Date:	1930	Well Depth:	600
Well Depth Units:	ft	Well Hole Depth:	600
Well Hole Depth Units:	ft		

Map ID:	9		
Organization ID:	USGS-MO		
Organization Name:	USGS Missouri Water Science Center		
Monitor Location:	T53N R01E 16BAB1	Type:	Well
Description:	Not Reported	HUC:	07110004
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	St Peter Sandstone	Aquifer Type:	Confined multiple aquifer
Construction Date:	19340801	Well Depth:	455
Well Depth Units:	ft	Well Hole Depth:	455
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1934-08-01
Feet below surface:	40	Feet to sea level:	Not Reported
Note:	Not Reported		

Map ID:	10		
Organization ID:	USGS-MO		
Organization Name:	USGS Missouri Water Science Center		
Monitor Location:	T53N R01E 16ACC1	Type:	Well
Description:	Not Reported	HUC:	07110004
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	St Peter Sandstone	Aquifer Type:	Not Reported
Construction Date:	19580531	Well Depth:	740
Well Depth Units:	ft	Well Hole Depth:	740
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1979-06-12

Feet below surface:	128.80	Feet to sea level:	Not Reported
Note:	The site had been pumped recently.		
Level reading date:	1958-05-31	Feet below surface:	265
Feet to sea level:	Not Reported	Note:	Not Reported

Map ID:	11		
Organization ID:	USGS-MO		
Organization Name:	USGS Missouri Water Science Center		
Monitor Location:	Clarksville	Type:	Well
Description:	DNR Observation Well	HUC:	07110009
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	Champlainian Series	Aquifer Type:	Unconfined single aquifer
Construction Date:	196606	Well Depth:	650
Well Depth Units:	ft	Well Hole Depth:	650
Well Hole Depth Units:	ft		

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

State Well Information:

Map ID: 1

WELLS SGS:

Database:	Water Well Records	API #:	120132010300
IL SWSP #:	7298	Status:	Water Well
Date Drilled:	19780508050000	Farm Name:	1
Well Name:	1	Driller:	Pohlman, Herman J.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	72	Lithologic Formation:	sand
Top of Formation (ft):	32	Bottom of Formation (ft):	72
Pump Flow (gpm):	350		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132010300		

Map ID: 2

WELLS SGS:

Database:	Water Well Records	API #:	120132036500
IL SWSP #:	7297	Status:	Water Well
Date Drilled:	19790902050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Not Reported
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	72	Lithologic Formation:	sand gravel
Top of Formation (ft):	0	Bottom of Formation (ft):	0
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132036500		

Map ID: 2

WELLS EPA:

Well ID:	01300011	Facility Name:	ALTON WOODRIVER SPORTSMANS CLB
Facility #:	IL3003319	Well Status:	Active
Well Type:	NonCommunity	Primary Use Name:	SUMMER CAMP
Population Count:	25	Update Time Stamp:	21-SEP-06
IEPA Facility #:	Not Reported	Water Supply Name:	Not Reported
Min Setback Zone (ft):	Not Reported	Well Depth:	Not Reported
Ambient Sampling Netwk Stat:	Not Reported	EPA Facility Status:	Not Reported
SDWIS Well ID:	Not Reported	SDWIS Facility #:	Not Reported
API #:	Not Reported		

Map ID: 3

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0026385	Owner:	Taylor, Floyd S.
Well Type:	Private Well	Stratigraphy Log:	Yes
Driller Log:	No	Other Log:	No
Samples Retained:	No	Elevation (ft):	530
Total Depth (ft):	405	Depth to Bedrock (ft):	55
SWL After Casing Set:	20	SWL Before Casing Set:	-9999
SWL After Casing Grouting (ft):	510	SWL Before Casing Grouting (ft):	-9999
Water Noted by Driller (ft):	Not Reported	Draw Down (ft):	-9999
Well Yield (gpm):	20		
Surface Formation:	(NO SAMPLES or NOT LOGGED)		
First Bedrock Form:	MAQUOKETA SHALE	Alternate ID 1:	None

Alternate ID 3:	None	SDWIS ID:	-99999
WIMS ID:	None	Oil and Gas ID:	None
Other Database ID:	None	Mineral Bore Hole ID:	None
Additional Databases Linked:	Not Reported	Drill Date:	196801
Driller:	St. Charles Drilling Co		
Logger:	Wells, J.	Log Date:	197009
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Near Clarksville; Yields - 0.5 Gpm @ 220', 2.5 @ 375', 17 @ 400'		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0026385.pdf		

Map ID: 4

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0010299		
Owner:	Pinnacle Hill (Stop T)		
Well Type:	Outcrop Description		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	606	Total Depth (ft):	20
Depth to Bedrock (ft):	0	SWL After Casing Set:	-9999
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	-9999
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	-9999
Surface Formation:	BOWLING GREEN DOLOMITE		
First Bedrock Form:	BOWLING GREEN DOLOMITE		
Alternate ID 1:	None	Alternate ID 3:	None
SDWIS ID:	-99999	WIMS ID:	None
Oil and Gas ID:	None	Other Database ID:	None
Mineral Bore Hole ID:	None	Additional Databases Linked:	Not Reported
Drill Date:	194809	Driller:	Mcneal
Logger:	McNeal	Log Date:	19480925
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Stop 30, Kgs 15Th Ann Field Conf.		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0010299.pdf		

Map ID: 5

WELLS SGS:

Database:	Water Well Records	API #:	120132017100
IL SWSP #:	0	Status:	Water Well
Date Drilled:	19790901050000	Farm Name:	1
Well Name:	1	Driller:	Pohlman, Herman J.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	72	Lithologic Formation:	Not Reported
Top of Formation (ft):	0	Bottom of Formation (ft):	0
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132017100		

Map ID: 7

WELLS SGS:

Database:	Water Well Records	API #:	120132017200
IL SWSP #:	7300	Status:	Water Well

Date Drilled:	19800614050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	McKinney, Ted
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	107	Lithologic Formation:	Not Reported
Top of Formation (ft):	0	Bottom of Formation (ft):	0
Pump Flow (gpm):	2500		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132017200		

Map ID: 10

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0002306		
Owner:	City Of Clarksville Well #1		
Well Type:	Public Well - Community		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	455	Total Depth (ft):	500
Depth to Bedrock (ft):	15	SWL After Casing Set:	-9999
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	-9999
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	35
Surface Formation:	HOLOCENE ALLUVIUM		
First Bedrock Form:	MAQUOKETA SHALE	Alternate ID 1:	None
Alternate ID 3:	None	SDWIS ID:	13689
WIMS ID:	00469618	Oil and Gas ID:	None
Other Database ID:	None	Mineral Bore Hole ID:	None
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	193007	Driller:	Wise, Charles S.
Logger:	McQueen	Log Date:	Not Reported
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Not Reported		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0002306.pdf		

Map ID: 10

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	104117	LOGMAIN ID:	0002306
Well Certification #:	00469618	PWSS Name:	Clarksville
PWSS ID:	2010169	IPWS ID:	MO2010169
Well #:	1		
Local Name:	Between 2nd & 3rd, Kentucky & Tennesse.		
Well ID:	13689	Facility Type:	City
Federal Water System Type:	Community	Status:	Plugged
Drill Date:	1979	Abandoned:	2013
Plugged:	2013	Material Type:	Consolidated
Formation at Casing Depth:	Cincinnatian	Formation at Total Depth:	St. Peter
Total Depth:	543	Ground Elevation:	455
Top Seal Type:	Pump Base	Bottom Seal Type:	None
Casing Depth:	70	Casing Diameter:	0
Casing Type:	Steel	Casing Elevation:	460
Casing Height:	0	Outer Well Casing Depth:	0
Outer Casing Diameter:	0	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	94
Max Yield (gal/min):	60	Dynamic Head of Pump:	0
Drawdown:	160	Year of Pump Test:	0
Pump Type:	Submersible	Pump Manufacturer:	Fairbanks Morse
Pump Depth:	441	Pump Capacity:	74

Has Pump Meter:	Y	Has Stand-by Power:	Y
VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	Y	Filtration Used:	Y
GWUDISW:	N	Meets Construction Requirements:	Y
Surface Drainage:	Satisfactory	Water System Entry Point ID:	N
SWIP Wellhead Status:	Not Verified		

Map ID: 10

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0025069	Owner:	City Of Clarksville
Well Type:	Public Well - Community		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	451	Total Depth (ft):	590
Depth to Bedrock (ft):	999999	SWL After Casing Set:	-9999
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	-9999
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	-9999
Surface Formation:	(NO SAMPLES or NOT LOGGED)		
First Bedrock Form:	ST. PETER SANDSTONE		
Alternate ID 1:	None	Alternate ID 3:	None
SDWIS ID:	-99999	WIMS ID:	None
Oil and Gas ID:	None	Other Database ID:	None
Mineral Bore Hole ID:	None		
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	196706	Driller:	Not Reported
Logger:	Wells, J.	Log Date:	Not Reported
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Old Well Deepened 555-590’		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0025069.pdf		

Map ID: 10

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	100069	LOGMAIN ID:	0013052
Well Certification #:	00300820	PWSS Name:	Clarksville
PWSS ID:	2010169	IPWS ID:	MO2010169
Well #:	2	Local Name:	At Water Plant
Well ID:	10056	Facility Type:	City
Federal Water System Type:	Community	Status:	Inactive
Drill Date:	1954	Abandoned:	2003
Plugged:	0	Material Type:	Consolidated
Formation at Casing Depth:	Kimmswick	Formation at Total Depth:	St. Peter
Total Depth:	450	Ground Elevation:	460
Top Seal Type:	Pump Base	Bottom Seal Type:	None
Casing Depth:	137	Casing Diameter:	8
Casing Type:	Steel	Casing Elevation:	465
Casing Height:	0	Outer Well Casing Depth:	21
Outer Casing Diameter:	14	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	0
Max Yield (gal/min):	74	Dynamic Head of Pump:	0
Drawdown:	150	Year of Pump Test:	0
Pump Type:	Submersible	Pump Manufacturer:	Fairbanks Morse
Pump Depth:	350	Pump Capacity:	74
Has Pump Meter:	Y	Has Stand-by Power:	Y

VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	Y	Filtration Used:	Y
GWUDISW:	N	Meets Construction Requirements:	Y
Surface Drainage:	Satisfactory	Water System Entry Point ID:	Y
SWIP Wellhead Status:	Not Verified		

Map ID: 10

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0013052		
Owner:	City Of Clarksville Well #2		
Well Type:	Public Well - Community		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	465	Total Depth (ft):	450
Depth to Bedrock (ft):	30	SWL After Casing Set:	15
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	450
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	120	Well Yield (gpm):	35
Surface Formation:	(NO SAMPLES or NOT LOGGED)		
First Bedrock Form:	MAQUOKETA SHALE	Alternate ID 1:	None
Alternate ID 3:	None	SDWIS ID:	10056
WIMS ID:	00300820	Oil and Gas ID:	None
Other Database ID:	None	Mineral Bore Hole ID:	None
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	195410	Driller:	Weber Fogg Company
Logger:	Knight, R.D.	Log Date:	Not Reported
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Not Reported		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0013052.pdf		

Map ID: 10

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0028955		
Owner:	City Of Clarksville Well #5		
Well Type:	Public Well - Community		
Stratigraphy Log:	No	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	440	Total Depth (ft):	575
Depth to Bedrock (ft):	0	SWL After Casing Set:	75
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	365
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	-9999
Surface Formation:	MAQUOKETA SHALE	First Bedrock Form:	MAQUOKETA SHALE
Alternate ID 1:	None	Alternate ID 3:	None
SDWIS ID:	16924	WIMS ID:	00310931
Oil and Gas ID:	None	Other Database ID:	2003-02
Mineral Bore Hole ID:	None		
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	200301	Driller:	Flynn Drilling
Logger:	Keller, A.	Log Date:	200405
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		

Remarks:	Not Reported
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/RF0028955.pdf

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Map ID: 10

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	105189	LOGMAIN ID:	0028955
Well Certification #:	00310931	PWSS Name:	Clarksville
PWSS ID:	2010169	IPWS ID:	MO2010169
Well #:	5	Local Name:	Well #5
Well ID:	16924	Facility Type:	City
Federal Water System Type:	Community	Status:	Active
Drill Date:	2003	Abandoned:	0
Plugged:	0	Material Type:	Consolidated
Formation at Casing Depth:	Decorah/Plattin	Formation at Total Depth:	St. Peter
Total Depth:	575	Ground Elevation:	440
Top Seal Type:	Cement Grout	Bottom Seal Type:	Cement Grout
Casing Depth:	294	Casing Diameter:	8
Casing Type:	Steel	Casing Elevation:	0
Casing Height:	0	Outer Well Casing Depth:	0
Outer Casing Diameter:	0	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	75
Max Yield (gal/min):	150	Dynamic Head of Pump:	0
Drawdown:	0	Year of Pump Test:	0
Pump Type:	Submersible	Pump Manufacturer:	Not Reported
Pump Depth:	525	Pump Capacity:	105
Has Pump Meter:	Not Reported	Has Stand-by Power:	Not Reported
VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	Not Reported	Filtration Used:	Not Reported
GWUDISW:	Not Reported	Meets Construction Requirements:	Not Reported
Surface Drainage:	Not Reported	Water System Entry Point ID:	Not Reported
SWIP Wellhead Status:	Not Verified		

Map ID: 11

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0028629		
Owner:	City Of Clarksville Well #4		
Well Type:	Public Well - Community		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	483	Total Depth (ft):	560
Depth to Bedrock (ft):	10	SWL After Casing Set:	82
SWL Before Casing Set:	75	SWL After Casing Grouting (ft):	401
SWL Before Casing Grouting (ft):	408	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	-9999
Surface Formation:	SOIL-RESIDUUM	First Bedrock Form:	MAQUOKETA SHALE
Alternate ID 1:	None	Alternate ID 3:	None
SDWIS ID:	13690	WIMS ID:	None
Oil and Gas ID:	None	Other Database ID:	None
Mineral Bore Hole ID:	None		
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	19850603	Driller:	Flynn Drlg
Logger:	Bohm, Rex	Log Date:	19851011
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Not Reported		

URL: https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0028629.pdf

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Map ID: 11
Database: Missouri Public Drinking Water Wells

DGLS ID:	104118	LOGMAIN ID:	0028629
Well Certification #:	Not Reported	PWSS Name:	Clarksville
PWSS ID:	2010169	IPWS ID:	MO2010169
Well #:	4	Local Name:	Well #4
Well ID:	13690	Facility Type:	City
Federal Water System Type:	Community	Status:	Active
Drill Date:	1985	Abandoned:	0
Plugged:	0	Material Type:	Consolidated
Formation at Casing Depth:	Decorah/Plattin	Formation at Total Depth:	Everton
Total Depth:	560	Ground Elevation:	490
Top Seal Type:	Cement Grout	Bottom Seal Type:	Cement Grout
Casing Depth:	280	Casing Diameter:	8
Casing Type:	Steel	Casing Elevation:	0
Casing Height:	0	Outer Well Casing Depth:	0
Outer Casing Diameter:	0	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	88
Max Yield (gal/min):	80	Dynamic Head of Pump:	0
Drawdown:	195	Year of Pump Test:	0
Pump Type:	Submersible	Pump Manufacturer:	Not Reported
Pump Depth:	420	Pump Capacity:	80
Has Pump Meter:	Y	Has Stand-by Power:	Y
VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	Y	Filtration Used:	Y
GWUDISW:	N	Meets Construction Requirements:	Y
Surface Drainage:	Not Reported	Water System Entry Point ID:	N
SWIP Wellhead Status:	Not Verified		

Map ID: 11
Database: Missouri Public Drinking Water Wells

DGLS ID:	104119	LOGMAIN ID:	0024272
Well Certification #:	Not Reported	PWSS Name:	Clarksville
PWSS ID:	2010169	IPWS ID:	MO2010169
Well #:	3	Local Name:	Well #3
Well ID:	13691	Facility Type:	City
Federal Water System Type:	Community	Status:	Observation Well
Drill Date:	1966	Abandoned:	0
Plugged:	0	Material Type:	Consolidated
Formation at Casing Depth:	Kimmswick	Formation at Total Depth:	Cotter
Total Depth:	650	Ground Elevation:	490
Top Seal Type:	Not Reported	Bottom Seal Type:	Not Reported
Casing Depth:	144	Casing Diameter:	8
Casing Type:	Steel	Casing Elevation:	0
Casing Height:	0	Outer Well Casing Depth:	0
Outer Casing Diameter:	0	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	0
Max Yield (gal/min):	0	Dynamic Head of Pump:	0
Drawdown:	0	Year of Pump Test:	0
Pump Type:	Not Reported	Pump Manufacturer:	Not Reported
Pump Depth:	0	Pump Capacity:	0
Has Pump Meter:	Y	Has Stand-by Power:	Not Reported
VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	N	Filtration Used:	N
GWUDISW:	N	Meets Construction Requirements:	Y

Surface Drainage:	Not Reported	Water System Entry Point ID:	N
SWIP Wellhead Status:	Not Verified		

Map ID: 11

WELLS LOG:

Database:	Geologic Well Log Database		
ID:	0024272		
Owner:	City Of Clarksville Well #3		
Well Type:	Public Well - Community		
Stratigraphy Log:	Yes	Driller Log:	No
Other Log:	No	Samples Retained:	Yes
Elevation (ft):	459	Total Depth (ft):	650
Depth to Bedrock (ft):	3	SWL After Casing Set:	-9999
SWL Before Casing Set:	-9999	SWL After Casing Grouting (ft):	-9999
SWL Before Casing Grouting (ft):	-9999	Water Noted by Driller (ft):	Not Reported
Draw Down (ft):	-9999	Well Yield (gpm):	-9999
Surface Formation:	SOIL-RESIDUUM	First Bedrock Form:	NOIX LIMESTONE
Alternate ID 1:	None	Alternate ID 3:	None
SDWIS ID:	13691	WIMS ID:	None
Oil and Gas ID:	None	Other Database ID:	None
Mineral Bore Hole ID:	None		
Additional Databases Linked:	PUBLIC DRINKING WATER		
Drill Date:	196606	Driller:	Flynn Drilling Co
Logger:	Robertson, C.E.	Log Date:	196606
Geological Structures:	No	Interval Core Top (ft):	0
Interval Core Bottom (ft):	0		
Remarks:	Air Rotary Samples - Poor		
URL:	https://info.mo.gov/dnr/DNR_GIS/geology/wrc/logmain/striplogs/0024272.pdf		

Map ID: 12

WELLS SGS:

Database:	Water Well Records	API #:	120132019500
IL SWSP #:	7299	Status:	Water Well
Date Drilled:	19810904050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	McKinney, Ted
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	89	Lithologic Formation:	Not Reported
Top of Formation (ft):	0	Bottom of Formation (ft):	0
Pump Flow (gpm):	1250		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132019500		

Map ID: 13

WELLS SGS:

Database:	Water Well Records	API #:	120132037600
IL SWSP #:	420981	Status:	Water Well
Date Drilled:	20051004050000	Farm Name:	1
Well Name:	1	Driller:	Sisk, Gary Drill Co.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	80	Lithologic Formation:	sand
Top of Formation (ft):	40	Bottom of Formation (ft):	80
Pump Flow (gpm):	250		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132037600		

Map ID: 14

WELLS SGS:

Database:	Water Well Records	API #:	120132037000
IL SWSP #:	339918	Status:	Water Well
Date Drilled:	20010927050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Sisk, Gary Drill Co.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	60	Lithologic Formation:	sand
Top of Formation (ft):	20	Bottom of Formation (ft):	60
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132037000		

Map ID: 15

WELLS SGS:

Database:	Water Well Records	API #:	120132037200
IL SWSP #:	360361	Status:	Water Well
Date Drilled:	20040414050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Sisk, Gary Drill Co.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	70	Lithologic Formation:	sand
Top of Formation (ft):	20	Bottom of Formation (ft):	70
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132037200		

Map ID: 16

WELLS SGS:

Database:	Water Well Records	API #:	120132036600
IL SWSP #:	342662	Status:	Water Well
Date Drilled:	20020528050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Seeland, Clarence
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	160	Lithologic Formation:	coarse sand
Top of Formation (ft):	117	Bottom of Formation (ft):	0
Pump Flow (gpm):	20		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132036600		

Map ID: 17

WELLS SGS:

Database:	Water Well Records	API #:	120132006200
IL SWSP #:	7286	Status:	Water Well
Date Drilled:	19751006050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Pohlman, Herman J.
Elevation:	440	Elevation Reference:	Ground level
Total Depth:	78	Lithologic Formation:	Not Reported
Top of Formation (ft):	0	Bottom of Formation (ft):	0
Pump Flow (gpm):	500		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132006200		

Map ID: 18

WELLS SGS:

Database:	Water Well Records	API #:	120132010200
IL SWSP #:	7287	Status:	Water Well
Date Drilled:	19781020050000	Farm Name:	3
Well Name:	3	Driller:	Pohlman, Herman J.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	74	Lithologic Formation:	sand
Top of Formation (ft):	28	Bottom of Formation (ft):	74
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132010200		

Map ID: 19

WELLS SGS:

Database:	Water Well Records	API #:	120132010100
IL SWSP #:	7284	Status:	Water Well
Date Drilled:	19781010050000	Farm Name:	Not Reported
Well Name:	Not Reported	Driller:	Pohlman, Herman J.
Elevation:	0	Elevation Reference:	Not Reported
Total Depth:	78	Lithologic Formation:	sand
Top of Formation (ft):	28	Bottom of Formation (ft):	78
Pump Flow (gpm):	0		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?watersummary&120132010100		

Map ID:	1		
API #:	120130000400	Permit ID:	1970
Permit Date:	19540717050000	Well Status:	Dry and Abandoned, No Shows, Plugged
Max Depth:	1230	Date Completed:	19541001050000
Formation:	Not Reported	Company Name:	Redman, Lowell & Burnett, Victor
Well Name:	Fienup	Well #:	1
Elevation:	460	Elevation Reference:	Not Reported
Logs:	GT, DT, SSS, CSS	ILStrat URL:	Not Reported
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?oilsummary&120130000400		

Map ID:	2		
API #:	120130000401	Permit ID:	2831
Permit Date:	19540929050000		
Well Status:	Dry & Abandoned, left open for a water well		
Max Depth:	2550	Date Completed:	19550322050000
Formation:	Mount Simon	Company Name:	Redman, Lowell & Burnett, Victor
Well Name:	Fienup	Well #:	1
Elevation:	460	Elevation Reference:	Not Reported
Logs:	DT, SSS, CLET		
ILStrat URL:	https://isgs.illinois.edu/ilstrat/index.php/Mt._Simon_Sandstone		
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?oilsummary&120130000401		

Map ID:	3		
API #:	120132018300	Permit ID:	24994
Permit Date:	19830711050000	Well Status:	Dry and Abandoned, No Shows, Plugged
Max Depth:	440	Date Completed:	19830724050000
Formation:	St Peter	Company Name:	Webster, George
Well Name:	Webster	Well #:	2
Elevation:	445	Elevation Reference:	Not Reported

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Logs:	GT
ILStrat URL:	https://isgs.illinois.edu/ilstrat/index.php/St._Peter_Sandstone
URL:	https://isgs-oas.isgs.illinois.edu/reports/rwservlet?oilsummary&120132018300

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

PWS SUMMARY:

Map ID:	6		
Epa region:	07	State:	MO
Pwsid:	MO2242104	Pwsname:	SILO PARK CAMPING & PICNIC
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29163
Status:	Closed	Retpopsrvd:	50
Pwssvcconn:	20	Psource longname:	Groundwater
Pwstype:	TNCWS	Owner:	Private
Contact:	SILO PARK CAMPING & PICNIC		
Contactorgname:	Not Reported	Contactphone:	573-242-3465
Contactaddress1:	Not Reported	Contactaddress2:	ROUTE 1, HWY 79
Contactcity:	CLARKSVILLE	Contactstate:	MO
Contactzip:	63336	Pwsactivitycode:	I
Pwsid:	MO2242104	Facid:	1T
Facname:	WELL	Factype:	Treatment_plant
Facactivitycode:	I	Trtobjective:	disinfection
Trtprocess:	hypochlorination, pre	Factypecode:	TP
PWS ID:	MO2242104	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS ID:	MO2242104
Activity status:	Active	Date system activated:	8908
Date system deactivated:	Not Reported	Retail population:	00000050
System name:	SILO PARK CAMPING & PICNIC		
System address:	Not Reported	System address:	ROUTE 1, HWY 79
System city:	CLARKSVILLE	System state:	MO
System zip:	63336		
County FIPS:	Not Reported	City served:	SILO PARK CAMP
Population served:	Under 101 Persons	Treatment:	Treated
Latitude:	392214	Longitude:	0905418

Map ID:	10		
Epa region:	07	State:	MO
Pwsid:	MO2010169	Pwsname:	CLARKSVILLE
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29163
Status:	Active	Retpopsrvd:	480
Pwssvcconn:	289	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	SMILEY, JO ANNE	Contactorgname:	SMILEY, JO ANNE
Contactphone:	573-242-3336	Contactaddress1:	111 HOWARD ST
Contactaddress2:	PO BOX 530	Contactcity:	CLARKSVILLE
Contactstate:	MO	Contactzip:	63336-0528
Pwsactivitycode:	A		
Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, post
Factypecode:	TP		
Pwsid:	MO2010169	Facid:	67028

Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	filtration, pressure sand
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	softening (hardness removal)		
Trtprocess:	ion exchange	Factypecode:	TP

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, pre
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sedimentation
Factypecode:	TP		

PWS ID:	MO2010169	PWS name:	CLARKSVILLE
Address:	111 HOWARD	Care of:	UTILITY OFFICE
City:	CLARKSVILLE	State:	MO
Zip:	63336	Owner:	CLARKSVILLE
Source code:	Ground water	Population:	480

PWS ID:	MO2010169	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS name:	CLARKSVILLE
PWS type code:	C	Retail population served:	490
Contact:	SMILEY, JO ANN	Contact address:	111 HOWARD ST
Contact address:	PO BOX 528	Contact city:	CLARKSVILLE
Contact state:	MO	Contact zip:	63336-0528
Contact telephone:	573-242-3336		

County:	PIKE	Source:	Ground water
Treatment Objective:	DISINFECTION	Process:	GASEOUS CHLORINATION, PRE
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	AERATION, SPRAY
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	SEDIMENTATION
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	RADIONUCLIDES REMOVAL	Process:	ION EXCHANGE
Population:	480		

PWS ID:	MO2010169	Activity status:	Active

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Date system activated:	2101	Date system deactivated:	Not Reported
Retail population:	00000585	System name:	CLARKSVILLE
System address:	UTILITY OFFICE	System address:	111 HOWARD
System city:	CLARKSVILLE	System state:	MO
System zip:	63336		
County FIPS:	Not Reported	City served:	CLARKSVILLE
Population served:	501 - 1,000 Persons	Treatment:	Untreated
Latitude:	392142	Longitude:	0905419
Latitude:	392157	Longitude:	0905409
Latitude:	392153	Longitude:	0905408
Latitude:	392201	Longitude:	0905407
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	42.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	19.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	53.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	8.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	57.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	9.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	22	Latitude seconds:	1.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	7.0000		
Violation id:	912603	Orig code:	S
State:	MO	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23		
Violation name:	Monitoring, Routine Major (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2002
Cmp edt:	09/30/2002		
Violation id:	913004	Orig code:	S
State:	MO	Violation Year:	2003
Contamination code:	7000	Contamination Name:	Consumer Confidence Rule
Violation code:	71	Violation name:	CCR Complete Failure to Report
Rule code:	420	Rule name:	CCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2003
Cmp edt:	Not Reported		
Violation id:	913509	Orig code:	S
State:	MO	Violation Year:	2010
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	24		
Violation name:	Monitoring, Routine Minor (TCR)		

Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	03/01/2010
Cmp edt:	03/31/2010		
Violation ID:	297	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	12/23/2002
Enforcement Detail:	St Public Notif received	Enforcement Category:	Informal
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913004	Orig Code:	S
Enforcemnt FY:	2004	Enforcement Action:	06/30/2004
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Formal NOV issued	Enforcement Category:	Informal
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00		
Enforcement action:	State Violation/Reminder Notice		
Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603

Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	12/23/2002 0:00:00	Enforcement action:	State Public Notif Received
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913004
Contaminant:	7000	Violation type:	71
Compliance start date:	7/1/2003 0:00:00	Compliance end date:	6/30/2004 0:00:00
Enforcement date:	6/30/2004 0:00:00	Enforcement action:	State Compliance Achieved
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

Map ID:	10		
Epa region:	07	State:	MO
Pwsid:	MO2010169	Pwsname:	CLARKSVILLE
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29163
Status:	Active	Retpopsrvd:	480
Pwssvcconn:	289	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	SMILEY, JO ANNE	Contactorgname:	SMILEY, JO ANNE
Contactphone:	573-242-3336	Contactaddress1:	111 HOWARD ST
Contactaddress2:	PO BOX 530	Contactcity:	CLARKSVILLE
Contactstate:	MO	Contactzip:	63336-0528
Pwsactivitycode:	A		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, post
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	filtration, pressure sand
Factypecode:	TP		

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	softening (hardness removal)		
Trtprocess:	ion exchange	Factypecode:	TP

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, pre
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sedimentation
Factypecode:	TP		

PWS ID:	MO2010169	PWS name:	CLARKSVILLE
Address:	111 HOWARD	Care of:	UTILITY OFFICE
City:	CLARKSVILLE	State:	MO
Zip:	63336	Owner:	CLARKSVILLE
Source code:	Ground water	Population:	480

PWS ID:	MO2010169	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS name:	CLARKSVILLE
PWS type code:	C	Retail population served:	490
Contact:	SMILEY, JO ANN	Contact address:	111 HOWARD ST
Contact address:	PO BOX 528	Contact city:	CLARKSVILLE
Contact state:	MO	Contact zip:	63336-0528
Contact telephone:	573-242-3336		

County:	PIKE	Source:	Ground water
Treatment Objective:	DISINFECTION	Process:	GASEOUS CHLORINATION, PRE
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	AERATION, SPRAY
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	SEDIMENTATION
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	RADIONUCLIDES REMOVAL	Process:	ION EXCHANGE
Population:	480		

PWS ID:	MO2010169	Activity status:	Active
Date system activated:	2101	Date system deactivated:	Not Reported
Retail population:	00000585	System name:	CLARKSVILLE
System address:	UTILITY OFFICE	System address:	111 HOWARD
System city:	CLARKSVILLE	System state:	MO
System zip:	63336		

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

County FIPS:	Not Reported	City served:	CLARKSVILLE
Population served:	501 - 1,000 Persons	Treatment:	Untreated
Latitude:	392142	Longitude:	0905419
Latitude:	392157	Longitude:	0905409
Latitude:	392153	Longitude:	0905408
Latitude:	392201	Longitude:	0905407

State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	42.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	19.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	53.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	8.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	57.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	9.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	22	Latitude seconds:	1.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	7.0000		

Violation id:	912603	Orig code:	S
State:	MO	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23		
Violation name:	Monitoring, Routine Major (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2002
Cmp edt:	09/30/2002		

Violation id:	913004	Orig code:	S
State:	MO	Violation Year:	2003
Contamination code:	7000	Contamination Name:	Consumer Confidence Rule
Violation code:	71	Violation name:	CCR Complete Failure to Report
Rule code:	420	Rule name:	CCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2003
Cmp edt:	Not Reported		

Violation id:	913509	Orig code:	S
State:	MO	Violation Year:	2010
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	24		
Violation name:	Monitoring, Routine Minor (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	03/01/2010
Cmp edt:	03/31/2010		

Violation ID:	297	Orig Code:	S

Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	12/23/2002
Enforcement Detail:	St Public Notif received	Enforcement Category:	Informal
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913004	Orig Code:	S
Enforcemnt FY:	2004	Enforcement Action:	06/30/2004
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Formal NOV issued	Enforcement Category:	Informal
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00		
Enforcement action:	State Violation/Reminder Notice		
Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	12/23/2002 0:00:00	Enforcement action:	State Public Notif Received
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913004
Contaminant:	7000	Violation type:	71
Compliance start date:	7/1/2003 0:00:00	Compliance end date:	6/30/2004 0:00:00
Enforcement date:	6/30/2004 0:00:00	Enforcement action:	State Compliance Achieved
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

Map ID:	10		
Epa region:	07	State:	MO
Pwsid:	MO2010169	Pwsname:	CLARKSVILLE
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29163
Status:	Active	Retpopsrvd:	480
Pwssvcconn:	289	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	SMILEY, JO ANNE	Contactorgname:	SMILEY, JO ANNE
Contactphone:	573-242-3336	Contactaddress1:	111 HOWARD ST
Contactaddress2:	PO BOX 530	Contactcity:	CLARKSVILLE
Contactstate:	MO	Contactzip:	63336-0528
Pwsactivitycode:	A		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, post
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	filtration, pressure sand
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	softening (hardness removal)		
Trtprocess:	ion exchange	Factypecode:	TP

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Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, pre
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sedimentation
Factypecode:	TP		

PWS ID:	MO2010169	PWS name:	CLARKSVILLE
Address:	111 HOWARD	Care of:	UTILITY OFFICE
City:	CLARKSVILLE	State:	MO
Zip:	63336	Owner:	CLARKSVILLE
Source code:	Ground water	Population:	480

PWS ID:	MO2010169	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS name:	CLARKSVILLE
PWS type code:	C	Retail population served:	490
Contact:	SMILEY, JO ANN	Contact address:	111 HOWARD ST
Contact address:	PO BOX 528	Contact city:	CLARKSVILLE
Contact state:	MO	Contact zip:	63336-0528
Contact telephone:	573-242-3336		

County:	PIKE	Source:	Ground water
Treatment Objective:	DISINFECTION	Process:	GASEOUS CHLORINATION, PRE
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	AERATION, SPRAY
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	SEDIMENTATION
Population:	480		

County:	PIKE	Source:	Ground water
Treatment Objective:	RADIONUCLIDES REMOVAL	Process:	ION EXCHANGE
Population:	480		

PWS ID:	MO2010169	Activity status:	Active
Date system activated:	2101	Date system deactivated:	Not Reported
Retail population:	00000585	System name:	CLARKSVILLE
System address:	UTILITY OFFICE	System address:	111 HOWARD
System city:	CLARKSVILLE	System state:	MO
System zip:	63336		

County FIPS:	Not Reported	City served:	CLARKSVILLE
Population served:	501 - 1,000 Persons	Treatment:	Untreated
Latitude:	392142	Longitude:	0905419

Latitude:	392157	Longitude:	0905409
Latitude:	392153	Longitude:	0905408
Latitude:	392201	Longitude:	0905407
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	42.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	19.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	53.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	8.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	57.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	9.0000		
State:	MO	Latitude degrees:	39
Latitude minutes:	22	Latitude seconds:	1.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	7.0000		
Violation id:	912603	Orig code:	S
State:	MO	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23		
Violation name:	Monitoring, Routine Major (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2002
Cmp edt:	09/30/2002		
Violation id:	913004	Orig code:	S
State:	MO	Violation Year:	2003
Contamination code:	7000	Contamination Name:	Consumer Confidence Rule
Violation code:	71	Violation name:	CCR Complete Failure to Report
Rule code:	420	Rule name:	CCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2003
Cmp edt:	Not Reported		
Violation id:	913509	Orig code:	S
State:	MO	Violation Year:	2010
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	24		
Violation name:	Monitoring, Routine Minor (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	03/01/2010
Cmp edt:	03/31/2010		
Violation ID:	297	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving

Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	12/23/2002
Enforcement Detail:	St Public Notif received	Enforcement Category:	Informal
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913004	Orig Code:	S
Enforcemnt FY:	2004	Enforcement Action:	06/30/2004
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Formal NOV issued	Enforcement Category:	Informal
Violation ID:	913206	Orig Code:	S
Enforcemnt FY:	2006	Enforcement Action:	08/02/2006
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Violation/Reminder Notice		
Enforcement Category:	Informal		
Violation ID:	913509	Orig Code:	S
Enforcemnt FY:	2010	Enforcement Action:	04/20/2010
Enforcement Detail:	St Public Notif requested	Enforcement Category:	Informal
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00		
Enforcement action:	State Violation/Reminder Notice		
Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	11/18/2002 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	912603
Contaminant:	COLIFORM (TCR)		
Violation type:	Monitoring, Routine Major (TCR)		
Compliance start date:	9/1/2002 0:00:00	Compliance end date:	9/30/2002 0:00:00
Enforcement date:	12/23/2002 0:00:00	Enforcement action:	State Public Notif Received
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913004
Contaminant:	7000	Violation type:	71
Compliance start date:	7/1/2003 0:00:00	Compliance end date:	6/30/2004 0:00:00
Enforcement date:	6/30/2004 0:00:00	Enforcement action:	State Compliance Achieved
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		

PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

Map ID:	11		
Epa region:	07	State:	MO
Pwsid:	MO2010169	Pwsname:	CLARKSVILLE
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29163
Status:	Active	Retpopsrvd:	480
Pwssvcconn:	289	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	SMILEY, JO ANNE	Contactorgname:	SMILEY, JO ANNE
Contactphone:	573-242-3336	Contactaddress1:	111 HOWARD ST
Contactaddress2:	PO BOX 530	Contactcity:	CLARKSVILLE
Contactstate:	MO	Contactzip:	63336-0528
Pwsactivitycode:	A		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, post
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	filtration, pressure sand
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	softening (hardness removal)		
Trtprocess:	ion exchange	Factypecode:	TP

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	not reported
Factypecode:	TP		

Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		

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Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	disinfection	Trtprocess:	gaseous chlorination, pre
Factypecode:	TP		
Pwsid:	MO2010169	Facid:	67028
Facname:	CLARKSVILLE - TREATMENT PLANT		
Factype:	Treatment_plant	Facactivitycode:	A
Trtobjective:	iron removal	Trtprocess:	sedimentation
Factypecode:	TP		
PWS ID:	MO2010169	PWS name:	CLARKSVILLE
Address:	111 HOWARD	Care of:	UTILITY OFFICE
City:	CLARKSVILLE	State:	MO
Zip:	63336	Owner:	CLARKSVILLE
Source code:	Ground water	Population:	480
PWS ID:	MO2010169	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS name:	CLARKSVILLE
PWS type code:	C	Retail population served:	490
Contact:	SMILEY, JO ANN	Contact address:	111 HOWARD ST
Contact address:	PO BOX 528	Contact city:	CLARKSVILLE
Contact state:	MO	Contact zip:	63336-0528
Contact telephone:	573-242-3336		
County:	PIKE	Source:	Ground water
Treatment Objective:	DISINFECTION	Process:	GASEOUS CHLORINATION, PRE
Population:	480		
County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	AERATION, SPRAY
Population:	480		
County:	PIKE	Source:	Ground water
Treatment Objective:	IRON REMOVAL	Process:	SEDIMENTATION
Population:	480		
County:	PIKE	Source:	Ground water
Treatment Objective:	RADIONUCLIDES REMOVAL	Process:	ION EXCHANGE
Population:	480		
PWS ID:	MO2010169	Activity status:	Active
Date system activated:	2101	Date system deactivated:	Not Reported
Retail population:	00000585	System name:	CLARKSVILLE
System address:	UTILITY OFFICE	System address:	111 HOWARD
System city:	CLARKSVILLE	System state:	MO
System zip:	63336		
County FIPS:	Not Reported	City served:	CLARKSVILLE
Population served:	501 - 1,000 Persons	Treatment:	Untreated
Latitude:	392142	Longitude:	0905419
Latitude:	392157	Longitude:	0905409
Latitude:	392153	Longitude:	0905408
Latitude:	392201	Longitude:	0905407
State:	MO	Latitude degrees:	39

Latitude minutes:	21	Latitude seconds:	42.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	19.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	53.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	8.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	21	Latitude seconds:	57.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	9.0000		

State:	MO	Latitude degrees:	39
Latitude minutes:	22	Latitude seconds:	1.0000
Longitude degrees:	90	Longitude minutes:	54
Longitude seconds:	7.0000		

Violation id:	912603	Orig code:	S
State:	MO	Violation Year:	2002
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	23		
Violation name:	Monitoring, Routine Major (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	09/01/2002
Cmp edt:	09/30/2002		

Violation id:	913004	Orig code:	S
State:	MO	Violation Year:	2003
Contamination code:	7000	Contamination Name:	Consumer Confidence Rule
Violation code:	71	Violation name:	CCR Complete Failure to Report
Rule code:	420	Rule name:	CCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	07/01/2003
Cmp edt:	Not Reported		

Violation id:	913509	Orig code:	S
State:	MO	Violation Year:	2010
Contamination code:	3100	Contamination Name:	Coliform (TCR)
Violation code:	24		
Violation name:	Monitoring, Routine Minor (TCR)		
Rule code:	110	Rule name:	TCR
Violation measur:	Not Reported	Unit of measure:	Not Reported
State mcl:	Not Reported	Cmp bdt:	03/01/2010
Cmp edt:	03/31/2010		

Violation ID:	297	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving

Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2014	Enforcement Action:	01/22/2014
Enforcement Detail:	St Compliance achieved	Enforcement Category:	Resolving

Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	12/23/2002
Enforcement Detail:	St Public Notif received	Enforcement Category:	Informal

Violation ID:	912603	Orig Code:	S
Enforcemnt FY:	2003	Enforcement Action:	11/18/2002

Enforcement Detail: St Violation/Reminder Notice
Enforcement Category: Informal

Violation ID: 912603 Orig Code: S
Enforcemnt FY: 2003 Enforcement Action: 11/18/2002
Enforcement Detail: St Public Notif requested Enforcement Category: Informal

Violation ID: 913004 Orig Code: S
Enforcemnt FY: 2004 Enforcement Action: 06/30/2004
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: 913206 Orig Code: S
Enforcemnt FY: 2006 Enforcement Action: 08/02/2006
Enforcement Detail: St Formal NOV issued Enforcement Category: Informal

Violation ID: 913206 Orig Code: S
Enforcemnt FY: 2006 Enforcement Action: 08/02/2006
Enforcement Detail: St Public Notif requested Enforcement Category: Informal

Violation ID: 913509 Orig Code: S
Enforcemnt FY: 2014 Enforcement Action: 01/22/2014
Enforcement Detail: St Compliance achieved Enforcement Category: Resolving

Violation ID: 913509 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 04/20/2010
Enforcement Detail: St Violation/Reminder Notice
Enforcement Category: Informal

Violation ID: 913509 Orig Code: S
Enforcemnt FY: 2010 Enforcement Action: 04/20/2010
Enforcement Detail: St Public Notif requested Enforcement Category: Informal

PWS name: CLARKSVILLE Population served: 490
PWS type code: C Violation ID: 912603
Contaminant: COLIFORM (TCR)
Violation type: Monitoring, Routine Major (TCR)
Compliance start date: 9/1/2002 0:00:00 Compliance end date: 9/30/2002 0:00:00
Enforcement date: 11/18/2002 0:00:00
Enforcement action: State Violation/Reminder Notice
Violation measurement: Not Reported

PWS name: CLARKSVILLE Population served: 490
PWS type code: C Violation ID: 912603
Contaminant: COLIFORM (TCR)
Violation type: Monitoring, Routine Major (TCR)
Compliance start date: 9/1/2002 0:00:00 Compliance end date: 9/30/2002 0:00:00
Enforcement date: 11/18/2002 0:00:00 Enforcement action: State Public Notif Requested
Violation measurement: Not Reported

PWS name: CLARKSVILLE Population served: 490
PWS type code: C Violation ID: 912603
Contaminant: COLIFORM (TCR)
Violation type: Monitoring, Routine Major (TCR)
Compliance start date: 9/1/2002 0:00:00 Compliance end date: 9/30/2002 0:00:00
Enforcement date: 12/23/2002 0:00:00 Enforcement action: State Public Notif Received
Violation measurement: Not Reported

PWS name: CLARKSVILLE Population served: 490
PWS type code: C Violation ID: 913004
Contaminant: 7000 Violation type: 71
Compliance start date: 7/1/2003 0:00:00 Compliance end date: 6/30/2004 0:00:00
Enforcement date: 6/30/2004 0:00:00 Enforcement action: State Compliance Achieved

Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Formal NOV Issued
Violation measurement:	Not Reported		
PWS name:	CLARKSVILLE	Population served:	490
PWS type code:	C	Violation ID:	913206
Contaminant:	Not Reported	Violation type:	7
Compliance start date:	6/1/2006 0:00:00	Compliance end date:	6/30/2006 0:00:00
Enforcement date:	8/2/2006 0:00:00	Enforcement action:	State Public Notif Requested
Violation measurement:	Not Reported		

ILLINOIS GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

State Wetlands Data: Wetland Inventory
Source: Illinois State Geological Survey
Telephone: 217-333-4747

Oil and Gas Wells Listing
Source: Illinois State Geological Survey
Telephone: 217-333-5109
Oil and gas wells location points from the Illinois State Geological Survey database.

Water Well Records
Source: Illinois Geological Survey
Telephone: 217-333-4747

Illinois Private Well Database and PICS (Public, Industrial, Commercial Survey)
Source: Illinois State Water Survey
Telephone: 217-333-9043

Water Well Location Information
Source: Illinois Environmental Protection Agency
Telephone: 217-782-0810

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Clarksville and Carroll Islands

Clarksville and Carroll Islands

Nebo, IL 62355

Inquiry Number: 7523573.9

December 20, 2023

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

12/20/23

Site Name:

Clarksville and Carroll Islands
Clarksville and Carroll Islands
Nebo, IL 62355
EDR Inquiry # 7523573.9

Client Name:

U.S. Army Corps of Engineers
U.S. Army Corps of Engineers
Saint Louis, MO 63103
Contact: Kaleb Rakers

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Certified Sanborn Results:

Certification # 9895-447C-BD78

PO # NA

Project NA

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: 9895-447C-BD78

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- ☑ Library of Congress
- ☑ University Publications of America
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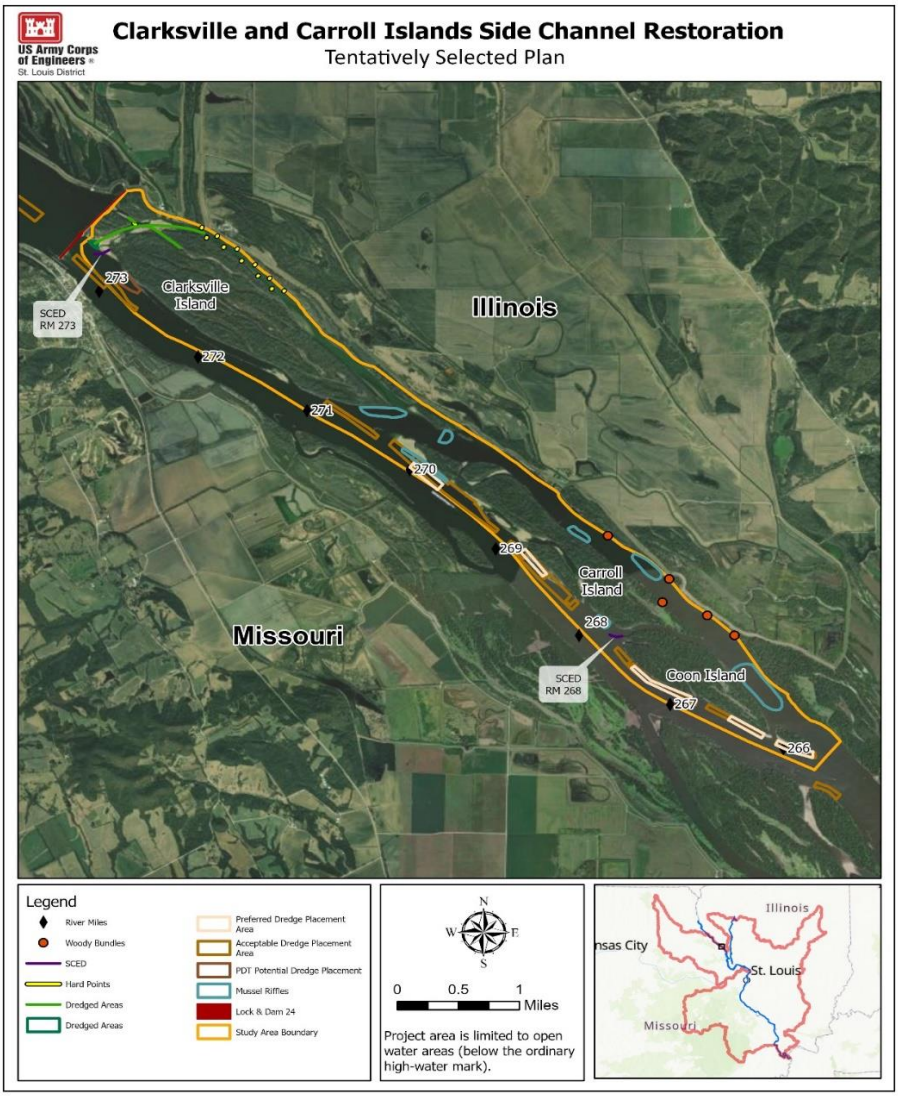
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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

POOL 25 ISLANDS – CLARKSVILLE AND CARROLL ISLANDS

POOL 25, Upper Mississippi River, Miles 273 - 266
Calhoun County, Illinois



Appendix G: Real Estate

US Army Corps of Engineers ®
St. Louis District

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1. Purpose

This Real Estate Plan (REP) has been prepared to present the real estate requirements and support the proposed U.S. Army Corps of Engineers (USACE) navigation and ecosystem sustainability program (NESP) on the Pool 25 NESP Project – Clarksville Island and Carroll Island.

The proposed project focuses on attaining and maintaining the sustainability of side channel habitat within the UMR, Pool 25, in the vicinity of Clarksville Island and Carroll Island area (RM 273-266). The need for restoration in the study area is based on the overall need to restore UMR side channels for important aquatic habitat for many native species including riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded side channel conditions. The RRAT has identified a need to restore side channels to promote freshwater mussel habitat, specifically in the Lower Impounded Reach of the Mississippi River. The District proposes to restore the functionality of the project area through construction of measures that would support quality side channel habitat for desirable animal species and emulate more natural river processes, structures, and functions for a resilient and sustainable ecosystem.

The USACE is serving as the lead federal agency.

1.1 Project Area

The Project is located on the left descending bank of the Mississippi River, immediately downstream of Lock and Dam 24, near Clarksville, Missouri, in Calhoun County, Illinois. The proposed project lies in the upper portion of Pool 25 between River Miles (RM) 273 and 266The approximately 950-acre area consists of side channels and connected backwaters in the vicinity of Clarksville, Carroll, and Coon Islands.

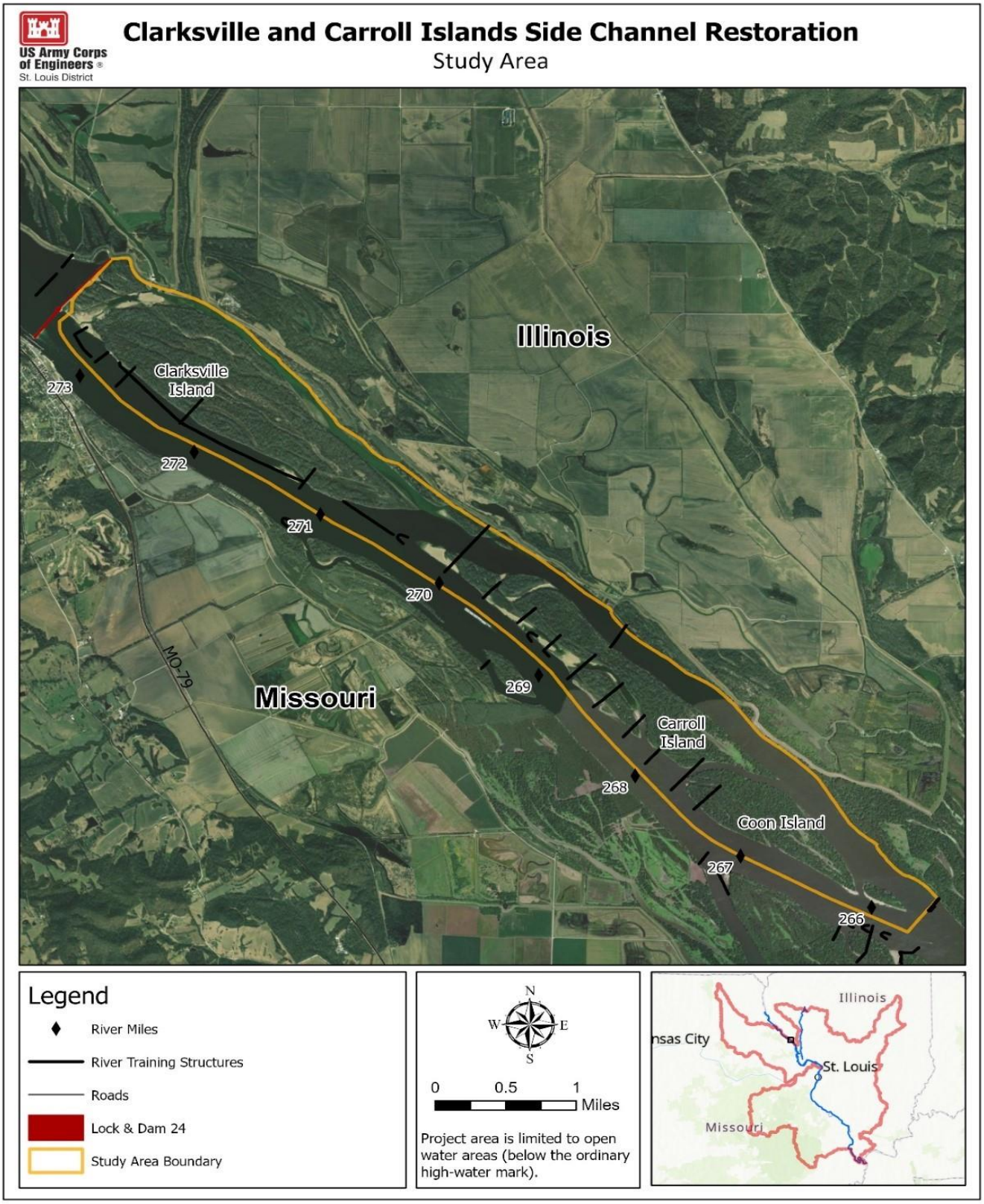


Figure 1: Project Location Map

1.2 Authority

NESP is a dual-purpose navigation and ecosystem restoration program for the Upper Mississippi River and Illinois Waterway System authorized by Title VIII (Sections 8001-8005) of the Water Resources Development Act (WRDA) of 2007 (Public Law (PL) 110-114, 33 USC 652 statutory note), substantially in accordance with the Report of the Chief of Engineers dated 15 December 2004 (Chief's Report). NESP is a regional program that includes geographic areas within the boundaries of the USACE St. Paul, Rock Island, and St. Louis Districts. The navigation portion of the NESP includes both small- and large-scale navigation improvements and mitigation. The ecosystem restoration portion of the NESP includes large projects at specific locations and a programmatic authorization for projects with a total single project cost not to exceed $25 million. Under the ecosystem restoration portion of NESP, a project will be implemented at 100 percent Federal expense if it (i) is located below the ordinary high-water mark (OHWM) or in a connected backwater; (ii) modifies the operation of structures for navigation; or (iii) is located on federally owned land. All other ecosystem restoration projects under the NESP are implemented with cost sharing of 65 percent Federal, 35 percent non-federal. (PL 110-114, Section 8004(b)(3)).

2. LANDS, EASEMENTS, AND RIGHTS-OF-WAY (LER)

The Tentatively Selected Plan (TSP) for the Clarksville & Carroll Island Complex side channel restoration NESP Project (Alternative 3 Maximum) is shown in Figure 1. The plan maximizes ecosystem restoration benefits related to side channel restoration. The plan will increase side channel connectivity and side channel sediment transport by dredging Clarksville Slough, notching of a closure structure, and modification of two SCEDs along Clarksville Island. The plan increases side channel flow diversity as compared to Alternative 2 by including all possible measures with the addition of woody bundles within Clarksville Slough. Finally, the plan includes rock-gravel substrate enhancement to maximize mussel habitat within the study area.

The plan is justified as a best buy alternative with a relatively low incremental cost. Alternative 3 is considered the National Ecosystem Restoration (NER) plan and yields overall output of 497 AAHUs. This plan is considered to be minimal risk to Navigation mission as H&H modeling did not indicate increased deposition within the navigation channel. Additionally, Alternative 3 was developed in collaboration with the RRAT to align with federal and state natural resource agency goals and objectives.

The TSP includes measures to maximize environmental benefits related to side channel connectivity, flow diversity, substrate diversity, sediment transport, and depth diversity. This plan consists of dredging with the addition of a series of hard points at the upper end of Clarksville Slough, the creation of two SCEDs by modifying two existing dikes: Dike 273.2L (SCED273) and Dike 267.7L (SCED267), and the creation of mussel riffles throughout the study area. The mussel riffles would be created by enhancing rock gravel substrate. The rock for substrate enhancement would be acquired by modifying

the existing closure structure in Clarksville Slough and dragging rock immediately downstream and for use in other areas where it is feasible to create mussel riffles. This plan includes the addition of woody bundles in the downstream end of Clarksville Slough to increase flow diversity.

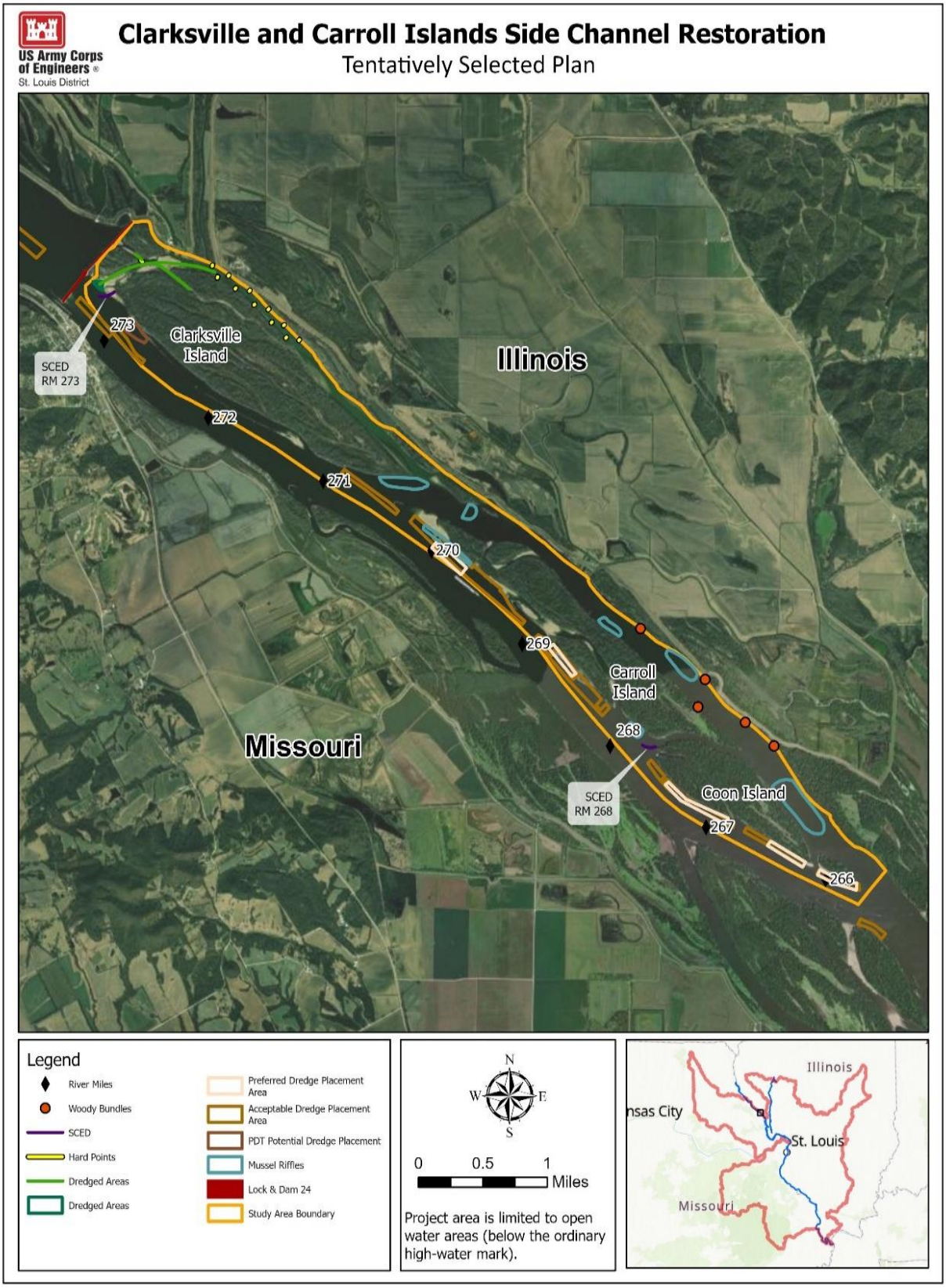


Figure 2: Lands managed by the US Army Corps of Engineers

PROPERTY ID CODE	USACE TRACT NO.	RPUID	ORG_CODE	ESTATE
CAC24-LP-6772	P-1	844862	MVS	FEE SIMPLE
CAC24-LP-6773	P-2	840712	MVS	FEE SIMPLE
CAC24-LP-6576	C-401	844353	MVS	FEE SIMPLE
CAC24-LP-6577	C-402	844354	MVS	FEE SIMPLE
CAC24-LP-6587	FM-1	837481	MVS	FEE SIMPLE
CAC24-LP-6588	FM-2	844337	MVS	FEE SIMPLE
CAC24-LP-6589	FM-3	844348	MVS	FEE SIMPLE
CAC24-LP-6774	P-3	840713	MVS	PERPETURAL ROAD EASEMENT
CAC24-LP-6775	P-3A	840714	MVS	FEE SIMPLE
CAC24-LP-6776	P-4	840715	MVS	PERPETURAL ROAD EASEMENT

Table 1: Tracts managed by the US Army Corps of Engineers

3. Sponsor-Owned LER

The Federal Sponsor for this project is the USACE Saint Louis District on lands owned by the United States of America.

4. Non-Standard Estates

No non-standard estates are required for implementation of this Project.

5. Existing Federal Projects

Navigation and Ecosystem Sustainability Program (NESP) Upper Mississippi River Lock 25 New 1200-ft Lock Chamber is located at Lock and Dam 25, in Calhoun County, Illinois and Lincoln County, Missouri at river mile (RM) 241.1 on the Upper Mississippi River near Winfield, Missouri. The project is on Federally owned lands and is authorized by the Water Resources Development Act of 2007, Title VIII Upper Mississippi River and Illinois Waterway System.

6. Federally Owned Lands

The Project features are proposed to be located on lands owned by the Unites States of America and managed by the United States Fish and Wildlife Service.

7. Navigation Servitude

This project does serve a purpose which is in the aid of navigation. The dual-purpose navigation and ecosystem sustainability program (NESP) was authorized under Section 8004(b)(2) of the Water Resources Development Act (WRDA) of 2007, by Congress, utilizing powers granted by the United State Constitution, Article 1, Section 8, for the restoration and sustainability of the river's multiple uses.

8. Mapping

A map of the site location is shown in figure 1.

9. Induced Flooding

Appendix D, section 4.2 of the Hydrologic and Hydraulic Engineering section conducted a no-rise analysis.

The criteria for no rise for this analysis was to highlight any location where a rise of 0.0049 feet or more would be investigated. Using the criteria of 0.0049 feet, all cross sections within the model fell below that. The cross sections used during calibration were used for the no rise comparison throughout the stretch. The 1% AEP event was used for this comparison. Further investigation of 'no rise' will be conducted in the design phase of this project. An additional comparison for the 2 year, 210 kcfs flow event was compared. All cross sections using the criteria fell below that.

Since all cross sections fell below the criteria, from a preliminary standpoint, the 'no-rise' check was complete. Further investigation and refinement will be completed in the design portion of this project.

10. Baseline Cost Estimate

The total estimated cost during PED and Construction is $25,000. USACE Saint Louis District Real Estate involvement during the planning and design phase and construction phase.

Account	
01: Lands and Damages	$0
Total L&D (FY25$)	$0
02: Relocations	$0
Total Relocations (FY25$)	$0
30/31: PED/Construction	FY25$
Federal Real Estate Oversight	$20,000
Estimated TC (FY25$)	
Contingency @25%	$5,000
Total (FY25$)	$25,000

11. Relocation Assistance Benefits

None of the proposed features require the Project to provide temporary or permanent relocation benefits to residential, farm or business entities.

12. Mineral Activity

There are no known mineral rights or activities affecting the study area.

13. Sponsor Assessment

This Project is 100% a Federal Project. No Sponsor is required.

14. Zoning

There is no zoning impacts or requirements for this project.

15. Schedule of Land Acquisition Milestones

The lands, easements, or rights-of-way required for this project are already owned by the United States of America and managed by the United States Corps of Engineers Saint Louis District.

16. Facility or Utility Relocations

There are no requirements for facility or utility relocations.

17. HTRW

A Phase I Environmental Site Assessment was conducted on the project area.

SUMMARY OF FINDINGS - The records review, site reconnaissance, and interviews with knowledgeable persons identified no RECs near or within the Clarksville and Carroll Islands NESP project footprint. The project area contains no major sites of interest, which pose significant environmental concerns. The environmental impact for the migration of off-site contaminants onto the project property is negligible. Therefore, a Phase II Environmental Site Assessment is not being recommended currently. A Site Health and Safety Plan, and a Quality Control Plan should be required, discussed, and implemented to prevent environmental hazards from being developed during construction. CEMVS-EC-EQ should be contacted immediately if future development of the property indicates the presence of hazardous or toxic materials.

OPINION OF THE ENVIRONMENTAL PROFESSIONAL - Based on the data and resources available for this assessment, it is the Environmental Professional's opinion that the Project Area contains no major sites of interest that would impact the project's design, cost or schedule. The environmental impact for the migration of off-site contaminants onto the Project Area is negligible. Therefore, a Phase II ESA is not recommended at this time.

18. Landowner Attitude

There is no known landowner opposition to this Project.

19. Notification to the Sponsor Regarding the Risks Associated with Land Acquisition Before Execution of the Project Partnership Agreement (PPA)

The sponsor of this project is a federal entity that doesn't require the execution of a PPA. This project will be funded, 100% from congressional appropriated dollars on lands owned by the United States of America.

20. Other Relevant Real Estate Issues

No other known relevant real estate issues exist.

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Pool 25 - Clarksville and Carroll Islands – Resiliency - NESP Program

ECB 2018-14 Analysis of Potential Vulnerabilities

This assessment is performed to highlight existing and future challenges facing the study area due to changing conditions and is conducted in accordance with United States Army Corps of Engineers' (USACE) Engineering Construction Bulletin (ECB) 2018-14, revised 19 August 2022. In accordance with ECB 2018-14, this evaluation identifies potential vulnerabilities for the Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project. The project area is located between Mississippi River miles 266 and 274 on the left descending bank in the northernmost portion of L&D 25's pool (Pool 25) near Clarksville, Illinois. This assessment highlights risks driven by existing and future trends in weather variability for the study area. Study background information can be found in the main report, and more general background information on these risks can be found in ECB 2018-14.

Study Background

The Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project objectives include restoring backwater channel connectivity, increasing flow diversity and bathymetric depths, and improving backwater channel habitats. These objectives will benefit native riverine fish and wildlife including freshwater mussels.

The river ecosystem within Pool 25 has been significantly affected by impoundment of the pool and the permanently higher water tables maintained by L&D 25. Geomorphic features, such as sandbar accretion and backwater deposition, are forming in the project area as sediment from the river deposits; however, pool impoundment, high water levels, and flow diversity prevent the exposure of these evolving features. Side channels and backwaters are important aquatic habitat for many native species including Upper Mississippi River (UMR) riverine fishes and freshwater mussels. Historically, the study area had freshwater mussel beds, but these beds have been impacted through time due to degraded backwater channel conditions (e.g., increased siltation, sediment homogenization). Sediment deposition, and high turbidity degrade the backwaters adjacent to these channels. Restoring side channels and backwater areas to promote freshwater mussel habitats and riverine fisheries has been identified as a resource need within the Lower Impounded Reach of the Mississippi River.

Ecosystem restoration is the focus of this analysis because the proposed project seeks to restore diverse habitats within Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project. Future hydrological and meteorological conditions may impact the establishment and design of project features. As indicated by the U.S Geological Survey (USGS) in their 2022 report, *Ecological Status and Trends of the Upper Mississippi and Illinois Rivers*, hydrologic indicator variables most relevant to the ecological health of a watershed are defined as annual discharge (maximum, mean, and minimum), duration of high discharges (exceeding the 20% annual exceedance probability (AEP) discharge), and monthly mean discharge. Thus, to analyze the effects of changing weather conditions on ecosystem restoration features for this study, the annual average streamflow records are evaluated since they are representative of flows impacting project features throughout the year.

Literature Review

The *Fifth National Climate Assessment* (NCA5) and the USACE *Civil Works Technical Report CWTS-2015-13,* as well as state and watershed specific resources published by the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI), and the Illinois Department of Natural Resources (IDNR) are the basis for this literature review. The focus of

these references is on summarizing trends in historic, observed temperature, precipitation, and streamflow records, as well providing an indication of future, changed hydrology based on the outputs from Coupled Model Intercomparison Project Phase 5 (CMIP5) meteorological models. For this assessment, background on observed and projected temperature and precipitation is provided as context for the impact that they have on observed and projected streamflow.

The NCA5 considers hydrological and meteorological research at both a national and regional scale (USGCRP, 2023). *Civil Works Technical Report CWTS-2015-13* was published as part of a series of regional summary reports covering peer-reviewed literature. The 2015 USACE Technical Reports cover 2-digit, United States Geological Survey (USGS), hydrologic unit code (HUC) watersheds in the United States (U.S). Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project is located in 2-digit HUC 07, the Upper Mississippi Region (USACE, 2015) and in the NCA5 Midwest climate region.

In many areas, temperature, precipitation, and streamflow have been measured since the late 1800s and provide insight into how the hydrology in the study area has changed over the past century. CMIP5 are used in combination with different representative concentration pathways (RCPs) reflecting projected radiative forcings up to year 2100 to model future changing conditions. Radiative forcings encompass the change in net radiative flux due to external drivers of long term weather variability, such as, for example changes in carbon dioxide or land use/land cover. Projected temperature and precipitation results can be transformed to regional and local scales (a process called downscaling) for use as inputs in precipitation-runoff models (Graham, Andreasson, and Carlsson, 2007). Uncertainty is inherent to projections of temperature and precipitation due to the CMIP5, RCPs, downscaling methods, and many assumptions needed to create projections (USGCRP, 2017). When applied, precipitation-runoff models introduce an additional layer of uncertainty. However, these methods represent the best available science to predict future hydrologic variables (e.g. precipitation, temperature, streamflow). Many researchers use multiple CMIP5s and RCPs in their studies to understand how various model assumptions impact results (Gleckler et al., 2008).

Temperature. Based on observed temperature records, the annual, average air temperature between 1986 and 2016 for the Midwest has increased by 1.26°F from the 1901-1960 annual average temperature (USGCRP, 2017). Increasing temperatures can accelerate snowmelt and lengthen the frost-free season (Carelton and Hsiang, 2019; Liu, Goodrick, and Stanturf, 2013; Woodward, Perkins, and Brown, 2010). Many studies indicate a change in the seasonality in the region, marked by increasing winter temperatures and early spring melt (Schwartz, Ault, and Betancourt, 2013; Wang et al., 2009; Wolter et al., 2015; Westby, Lee, and Black, 2013). GCM based, projections of temperature for the Midwest show a statistically significant increase in both annual, average temperature and the number extreme heat days over the next century (Vavrus and Behnke, 2014).

Illinois's location in the interior of North America and the lack of mountains to the north and south expose the state to incursions of bitterly cold air masses from the Arctic in the winter and warm, humid air masses from the Gulf of Mexico in the summer. Annual average temperature varies widely across the state, with a range of about 10°F from north to south. In northeastern Illinois, Lake Michigan moderates the temperature, causing cooler summers and warmer winters. Topography and urbanization also have local impacts on hydrological and meteorological conditions.

Temperatures in Illinois have risen about 1.5°F since the beginning of the 20th century. Temperatures in the 2000s have been higher than in any other historical period, with the exception of comparable temperatures during the early 1930s Dust Bowl era. Warming has been concentrated in winter and

spring, while summers have not warmed substantially, a feature characteristic of much of the Midwest. The lack of summer warming is reflected in a below average number of very hot days since the mid-1950s and no overall trend in very warm nights since the beginning of the 20th century. The winter warming trend is reflected in a below average number of very cold nights since 1990.

Precipitation. Average, annual precipitation in the Midwest has increased by 5% to 15% from the first half of the last century (1901–1960) as compared to present day (1986–2015). The amount of rain falling in extreme rain events (1% AEP storm events), has increased by 42% from 1958 to 2016 (USGCRP, 2018). According to the NCA4, GCM based projections indicate that winter and spring precipitation in the Midwest could increase by up to 30% by the end of the century. Precipitation increases of 10-15% are projected in winter and spring for 2-digit HUC 07 from 2070–2099 relative to 1986–2015. However, in the summer and fall, projected precipitation amounts are not expected to change significantly. A northward shift in the rain–snow transition zone in the central and eastern United States is projected by end of the 21st century causing large areas that are currently snow dominated in the cold season to be rainfall dominated (USGCRP, 2017; Ning and Bradley, 2015).

Statewide annual precipitation has ranged from a low of 25.5 inches in 1901 to a high of 51.2 inches in 1993. The driest multiyear periods occurred in the first half of the 20th century, and the wettest have been observed since the 1970s. The driest consecutive 5-year interval was 1952–1956, and the wettest was 2007–2011. Annual precipitation varies widely across the state, ranging from more than 50 inches in the south to less than 35 inches in the north. For annual snowfall, the pattern is reversed, with the northeastern part of the state averaging more than 40 inches compared to less than 10 inches in the southernmost section. Due to its proximity to Lake Michigan, the Chicago metropolitan area occasionally receives heavy winter precipitation from lake-effect snows.

Agriculture is an important sector of Illinois's economy and is particularly vulnerable to extreme weather conditions. On average, spring and summer precipitation has been above average since the mid-1990s. While precipitation during these critical growth seasons is important for adequate soil moisture, it is also vital for proper planting and root development. Poor root development in important state crops, such as corn and soybeans, can lead to reduced plant absorption of nutrients and water from the soil, increased soil erosion, and loss of nutrients from the fields into rivers and streams. Both flooding and droughts have resulted in billions of dollars in losses in recent years. In 2012, a large drought across the Midwest had severe impacts on Illinois. Rainfall totals for May, June, and July were several inches below average, resulting in the third-driest May–July period (after 1936 and 1988) in 126 years of record keeping. By early August, much of the state was in extreme drought. The drought caused major damage to crops, particularly in the southern third of the state.

Illinois has experienced a dramatic increase in the number of 2-inch extreme precipitation events, which can cause severe flooding. In the summer of 1993, persistent heavy rainfall over the upper Midwest caused severe flooding along the Mississippi River. The 1993 flood was one of the greatest natural disasters in U.S. history, causing billions of dollars in damages to homes, businesses, agriculture, and infrastructure. More recently, during April 16–19, 2013, heavy rainfall from a slow-moving storm system caused severe flooding across parts of northern and central Illinois, with some areas receiving up to 10 inches of rain. This event, which contributed to the second-wettest January–June on record in the state, caused planting delays and diminished revenue for many farmers. Illinois has also struggled with urban flooding caused by heavy rains falling on impervious surfaces (e.g., roads, sidewalks, and driveways) and inadequate infrastructure. A recent report found that more than 90% of urban flooding damage claims from 2007 to 2014 were outside the mapped floodplain.

Streamflow. Observed streamflow trends are strongly influenced by precipitation, temperature, and other factors such as land use and land cover in a region, groundwater dynamics, drainage patterns, channel geomorphology, and regulation. In the Upper Mississippi Region (2-digit HUC 07), multiple studies have identified increasing trends in the observed, annual, average streamflow (Novotny and Stefan, 2007; Mauget, 2004; Small, Islam, and Vogel, 2006) and in the observed, annual, mean/median baseflow (Juckem et al., 2008; Xu et al., 2013). Seasonally, studies have reported increasing annual, minimum, 7-day, low flows in the fall (Small, Islam, and Vogel, 2006) and annual, average, 7-day, low flows in the fall and winter (Novotny and Stefan, 2007). Some studies have found that annual peaks are increasing in the spring and summer (Novotny and Stefan, 2007).

The 2020, USACE *Mississippi River Geomorphology and Potamology* (MRG&P) *Study* also indicates that annual water yield, annual maximum daily water yield, and annual maximum 7-day water yield are increasing throughout the Upper Mississippi River Basin (USACE, 2020). Water yield represents discharge per unit of watershed area. For the 2020 USGS study, water yield was normalized by total annual precipitation to differentiate between the influence of altered precipitation versus other drivers of change in hydrologic response. Evaluations of precipitation-normalized water yield indicate that changes to water management and land use/cover in the Upper Mississippi River Basin are exacerbating increases in water yield (Simon et al., 2020). There is little to no consensus in the literature regarding changes in projected streamflow in the Upper Mississippi Region.

Ecosystem Health. Based on a 2022 report generated by the USGS, the following variables are critical to ecosystem health and have changed overtime: annual discharge (maximum, mean, and minimum), duration of high discharges (exceeding the 20% AEP discharge), and monthly mean discharge. Results from the 2022 USGS report indicate that mean and minimum annual discharges are increasing at the USGS gages at Winona, Minnesota (05378500) and Keokuk, Iowa (05474500). The duration of high discharges has also increased from 1940 to 2019 for all gages analyzed. Significant increases in annual maximum discharges were detected for the Keokuk, Iowa (05474500) and Valley City, Illinois (05586100) USGS gages. Based on an analysis of monthly, mean discharges, large increases in May mean discharges were identified for all three Mississippi River gages analyzed. There is some evidence that the maximum in monthly, mean discharge for a given year has shifted from occurring in April to either May or June.

Water quality analysis presented in the 2022 USGS report indicates that total suspended sediment (TSS) concentrations associated with mean discharges have decreased long-term in many reaches and tributaries of the Upper Mississippi River. The most significant changes have been observed in L&D pools 4 and 8. Phosphorus loads in all the L&D pools analyzed (pools 4, 8, 13, and 26) on the Upper Mississippi River have also decreased long-term. Although there are no long-term, significant trends in dissolved oxygen (DO) for the portions of the Upper Mississippi River assessed, low DO in backwater areas has been observed more frequently in the summer than in winter.

The concentration of submersed aquatic vegetation (SAV) is considered the primary indicator of aquatic vegetative health in the Upper Mississippi River. High prevalence of SAV (generally >50-percent) indicates quality habitat for waterfowl. Aquatic vegetation analysis identified trends in SAV in L&D pools 4, 8, and 13. The prevalence of SAV in L&D pools 4 and 8 increased by 30% from 2002 to 2010. Since 2010, SAV concentrations at these two locations have plateaued. The prevalence of SAV in L&D 13 ‘s pool increased from 1998 to 2008. Since 2009, SAV concentrations have been decreasing in L&D 13’s pool. Additionally, since 2000, increases in aquatic plant species diversity have been observed in L&D pools 4 and 8. In the L&D 8 and 13’s pools, a positive trend in emergent vegetation has been recorded. Emergent vegetation provides habitat for aquatic species. No trends in aquatic vegetation were found within the lower portion of the Upper Mississippi River (L&D Pool 26).

Illinois experiences storms during all seasons. During February 1–3, 2011, one of the most powerful winter storms in history hit Illinois. Antioch, which normally averages only one snowfall greater than 6 inches per year, received the greatest accumulation of 27 inches. Chicago O'Hare International Airport recorded wind gusts of more than 60 mph and 20.2 inches of snow, the third-largest snowfall accumulation for the city in 120 years of record keeping. More than 9.8 million Illinois residents were in areas that received 12 or more inches of snow. Severe thunderstorms occur frequently during late spring and early summer. These storms can occasionally cause tornadoes, which sometimes cause major damage and loss of life. On August 10, 2020, a powerful derecho traveled through Illinois, producing widespread damaging winds. There were 15 tornadoes across northeastern Illinois, with several affecting the Chicago metropolitan area.

Under a higher emissions pathway, historically unprecedented warming is projected during this century (Figure 1). Even under a lower emissions pathway, annual average temperatures are projected to most likely exceed historical record levels by the middle of the century. However, a large range of temperature increases is projected under both pathways, and under the lower pathway, a few projections are only slightly warmer than historical records. During July 12–16, 1995, Chicago experienced a severe heat wave—the worst weather-related disaster in the city's history. Over a 5-day period, more than 700 people died. In addition to daytime highs of 90°F or higher (including 2 days of 100°F or higher), nighttime temperatures dropped only into the 80s (°F). Furthermore, the heat index, which considers both temperature and humidity, reached values of 105ºF or more for 42 hours during the event. Values of 105ºF or higher are considered dangerous by the National Weather Service. An analysis shows that the number of hours above critical thresholds of the heat index were the highest on record (Figure 7). If temperatures continue rising, future heat waves are likely to be more intense. High temperatures combined with high humidity pose risks to human health, particularly for residents of Chicago and other urban areas. By contrast, the intensity of cold waves is projected to decrease.

Summary. Within the literature reviewed, there is evidence that temperature, precipitation, and streamflow have increased over the observed period of record within the Upper Mississippi Watershed. Trends in water quality within the Upper Mississippi Watershed indicate decreases in total phosphorus and total suspended solids. Aquatic vegetation analysis indicates increases in SAV in L&D pools 4, 8, and 13 in early 2000s through 2010. SAV concentrations have plateaued through 2019. Projections of future hydrological and meteorological conditions show strong consensus on increases in future temperature, and moderate consensus on increases in future precipitation. There is little to no consensus related to trends in future streamflow. Figure 1 from the 2015 USACE *Civil Works Technical Report CWTS-2015-13* provides a visual summary of the trends in observed and projected hydrometeorological variables for 2-digit HUC 07, the Upper Mississippi Region.

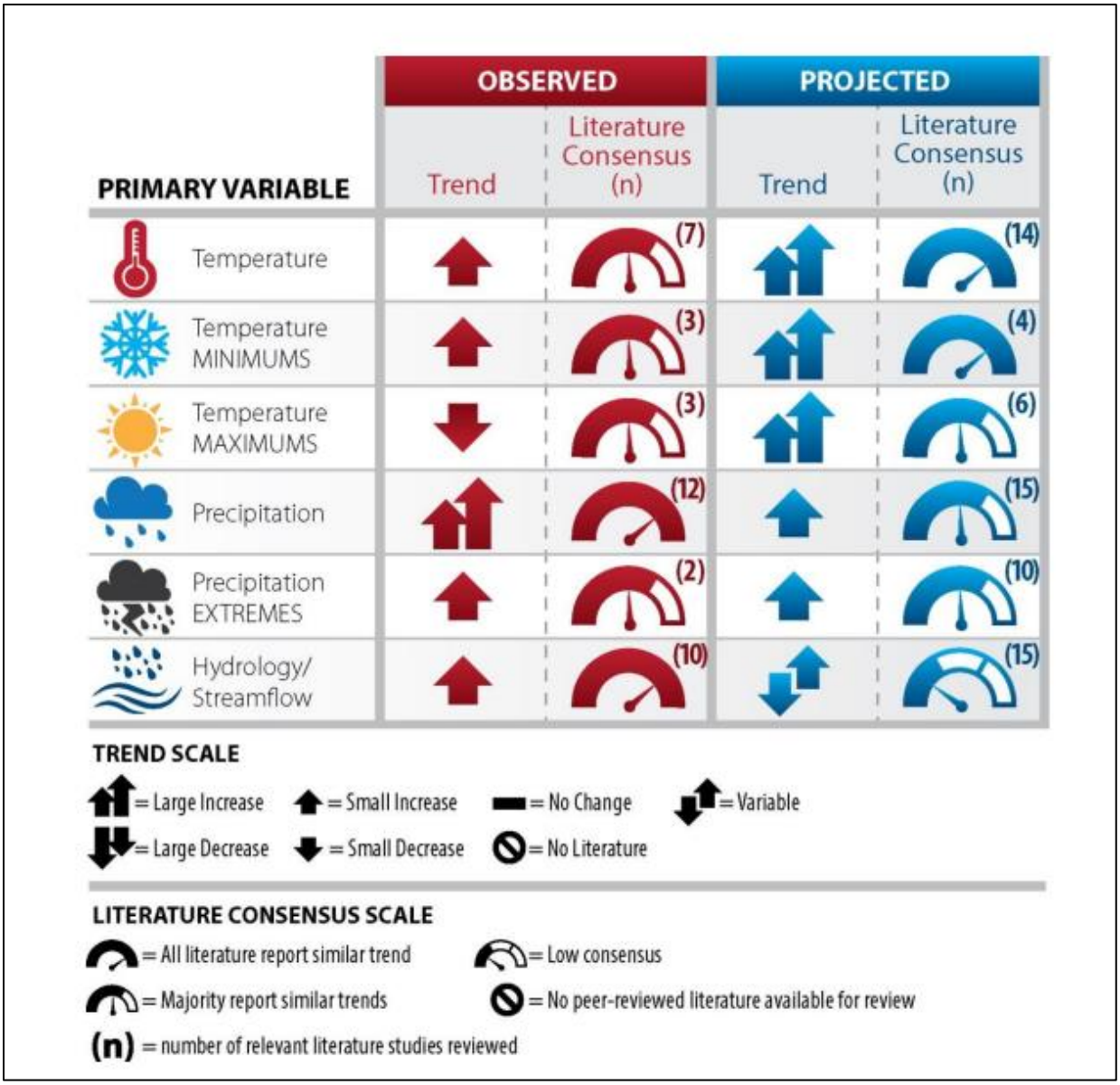


Figure 1. Summary matrix of UMR (HUC 07) observed and projected trends (USACE, 2015)

Nonstationarity Detection and Trend Analysis

The assumption that hydrologic timeseries are stationary (their statistical characteristics are unchanging) in time underlies many traditional hydrologic analyses. Statistical tests can be used to test this assumption using the techniques outlined in USACE Engineering Technical Letter (ETL) 1100-2-3, *Guidance for Detection of Nonstationarities* (2017). The USACE Time Series Toolbox (TST) tool is a web-based tool that performs the statistical tests described in the guidance. Average, annual streamflow is analyzed for Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project because project features are vulnerable to damage from flows during the first few years of establishing habitat. In the long-term, project feature elevations need to be designed so that they can withstand future conditions. More frequent siltation of project features can have adverse effects on overwintering habitats.

Observed, average, annual discharge for the L&D 24 tailwater (TW) is aggregated from the mean daily flow values computed by USACE from observed, mean daily, stage measurements. Because the streamflow record analyzed has been generated based on a flow-stage rating curve, the quality of the data was verified using observed, USACE streamflow records recorded at locations upstream and downstream between L&D 24 tailwater and L&D 25 upper pool. If unverified, changes in the flow-stage rating curve applied can introduce a source of nonstationarity and/or uncertainty into the streamflow record. This should be taken into consideration when interpreting the results of trend and nonstationarity analysis. Based on this evaluation no discrepancies were found the L&D 24 tailwater streamflow record.

The USACE L&D 24 gage captures 140,700 square miles of drainage area and is influenced by regulation from the L&D 25 on the Mississippi River. The L&Ds were constructed and placed into operation in 1940. The general objective of the L&Ds 24 and 25 is to maintain the authorized, nine-foot, navigation channel. The L&Ds maintain the minimum storage of water required for navigation at all times and any additional water volume is outflowed. Consequently, operation of the L&Ds does not have a significant impact on annual, average streamflow. The TST tool is applied to detect nonstationarities and trends for the period of record from 1960 to 2023.

As shown in *Figure* 2, the average flow record observed at L&D 24 has little evidence of a nonstationarity. A strong nonstationarity is one that demonstrates a degree of consensus, robustness and a significant increase or decrease in the sample mean and/or variance. While a small change in distribution, mean, and variance can be observed in the data the data does not change significantly. There was no potential breakpoint identified and the p-values do not meet significance requirements for consideration. Linear and monotonic trends are evaluated using the t-test, Mann-Kendall and Spearman Rank Order tests. The significance of trends is evaluated using a 0.05 level of significance threshold (p-value<0.05 is considered statistically significant). Trend analysis indicates a statistically significant, positive trend for the 1960-2020 period of by the t-Test (p-value= 0.082396), Mann-Kendall test(p-value=0.1247), and Spearman Rank-Order (p-value=0.10953) test, see trendline in Figure 3. There is no statistically significant trend in the data recorded between 1960-2023.

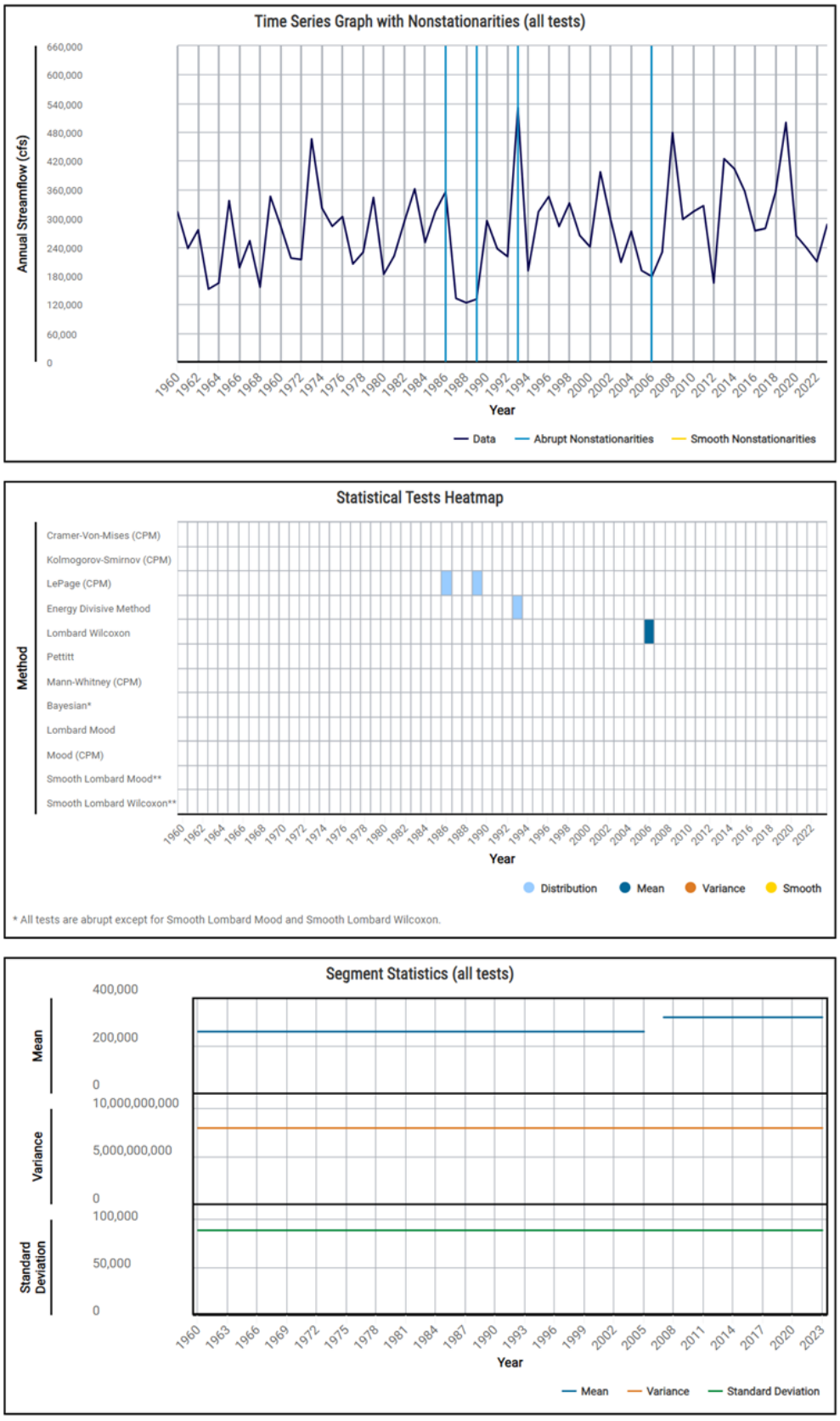


Figure 2. Time Series Toolbox Output for Annual Average Streamflow for L&D 24.

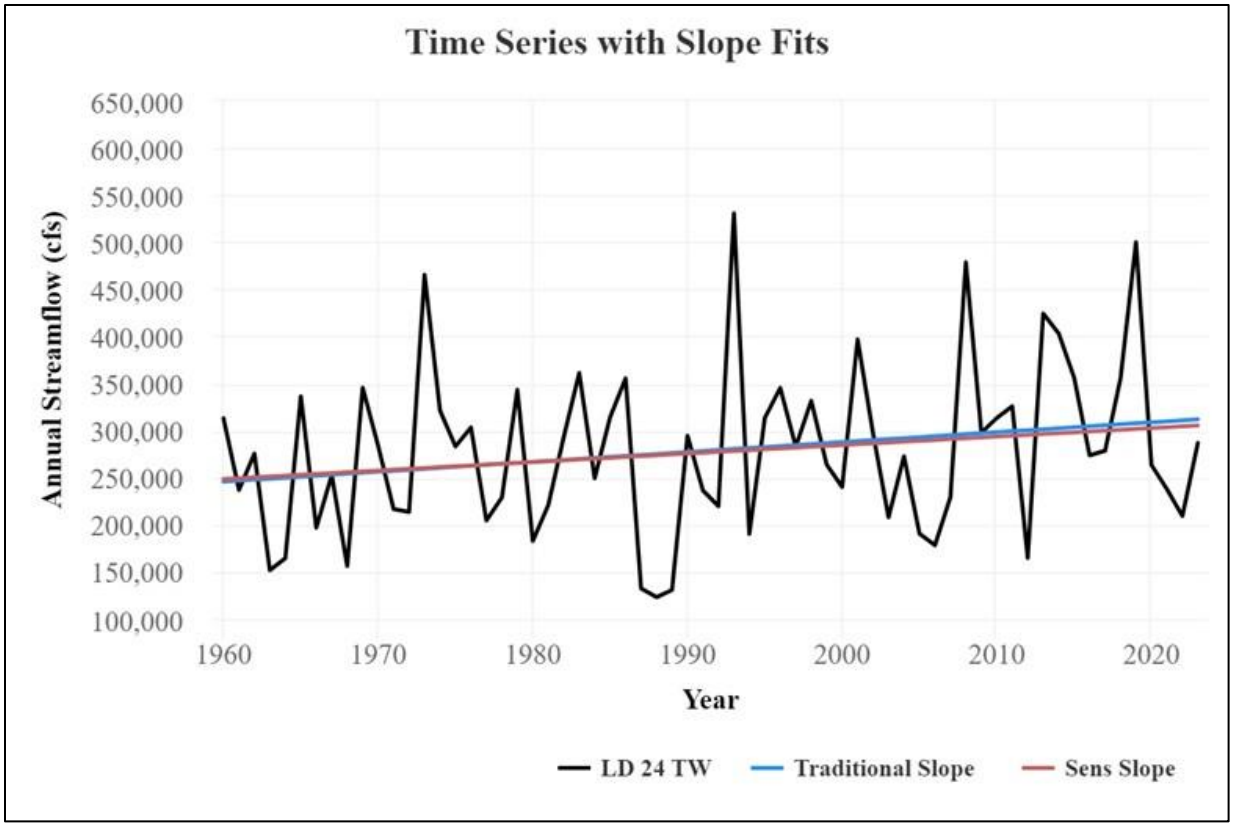


Figure 3. Trend Analysis for Annual Average Streamflow for L&D 24.

Climate Hydrology Assessment Tool (CHAT)

The USACE Climate Hydrology Assessment Tool (CHAT) displays various simulated, historic, and future streamflow, temperature, and precipitation outputs derived from 32 CMIP5. The CHAT uses Coupled Model Intercomparison Project Phase 5 (CMIP5) GCM meteorological data outputs that have been statistically downscaled using the Localized Constructed Analogs (LOCA) method. CMIP5 rely on scenarios representing different pathways to a given atmospheric concentration of greenhouse gas emissions (GHG) referred to as representative concentration pathways (RCPs). RCPs describe the change in radiative forcing at the end of this century, as compared with pre-industrial conditions. Projected hydroclimate data in the CHAT for 2006 to 2099 are produced using two future scenarios: RCP 4.5 (where greenhouse gas emissions stabilize by the end of the century) and RCP 8.5 (where greenhouse gas emissions continue to increase throughout the century). Simulated output representing the historic period of 1951 to 2005 is generated using a reconstitution of historic GHG emissions.

To analyze runoff, LOCA-downscaled GCM outputs are used to force an unregulated, Variable Infiltration Capacity (VIC) hydrologic model. Areal runoff from VIC is then routed through a stream network using MizuRoute. Outputs represent the daily in-channel, routed streamflow for each stream segment – valid at the stream segment endpoint. Since the runoff is routed, the streamflow value associated with each stream segment is a representation of the cumulative flow, including all upstream runoff, as well as the local runoff contributions to that specific segment. Within the CHAT, streamflow output can be selected by stream segment and precipitation/temperature output can be selected for a given 8-digit HUC watershed.

Clarksville and Carroll Islands are in 4-digit HUC 0711 (Upper Mississippi- Salt). The 8-digit HUC of interest specific to the study area is the Sny watershed (HUC 07110004). Mississippi River stream segment 07000599 runs parallel to the Clarksville and Carroll Islands study area. Figure 4 and Figure 5 show the range of the modeled, annual-mean streamflow and annual-maximum temperature output presented for the historic period (1951-2005) and the future period (2006-2099). The annual-mean streamflow is analyzed for this assessment to investigate if and how potential, future streamflow conditions will change. Maximum-annual temperature is analyzed for this assessment as a proxy for water temperature. Warmer water holds less dissolved oxygen (DO) which affects the survival of aquatic life (USGS 2018). The range of data is indicative of the uncertainty associated with projected streamflow and temperature.

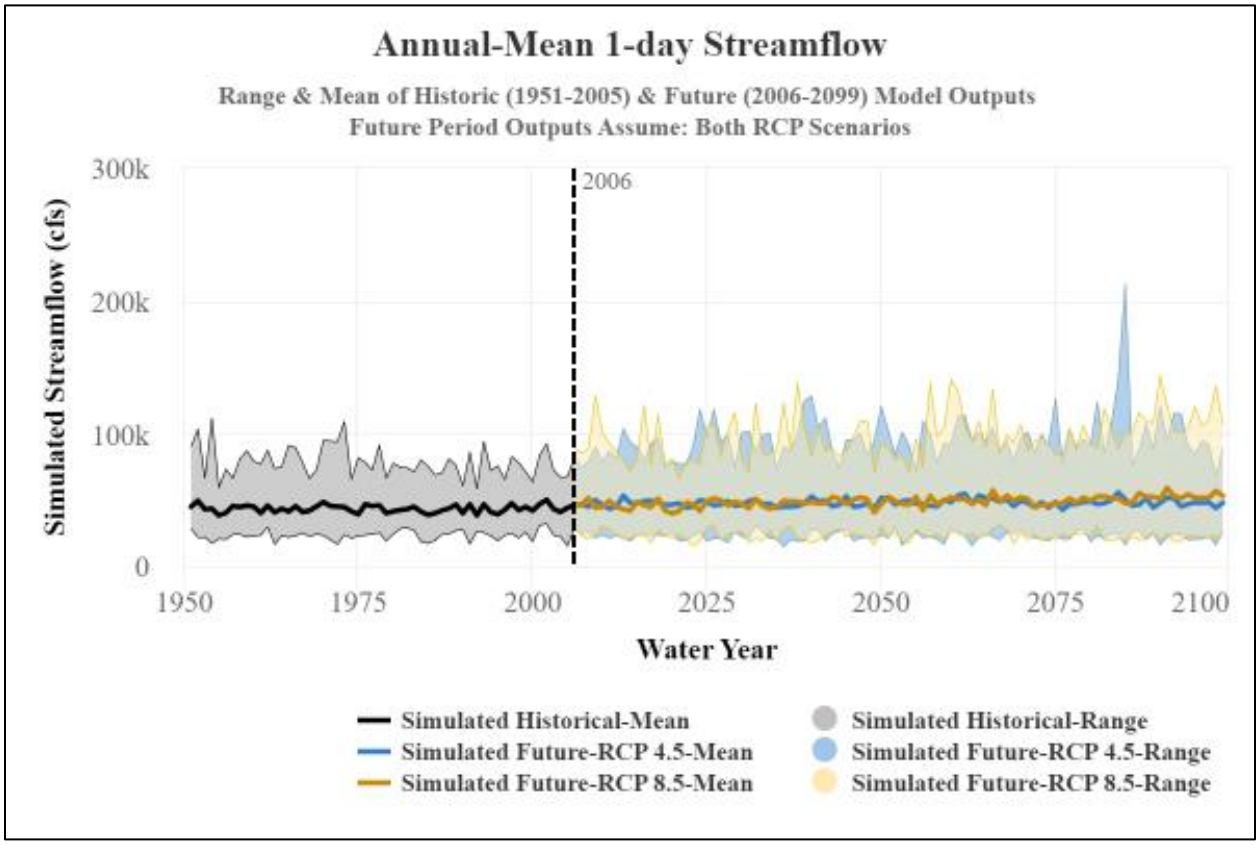


Figure 4. Range of Annual-Mean Streamflow Model Output for the Sny watershed (HUC07110004) Stream Segment: 07000599

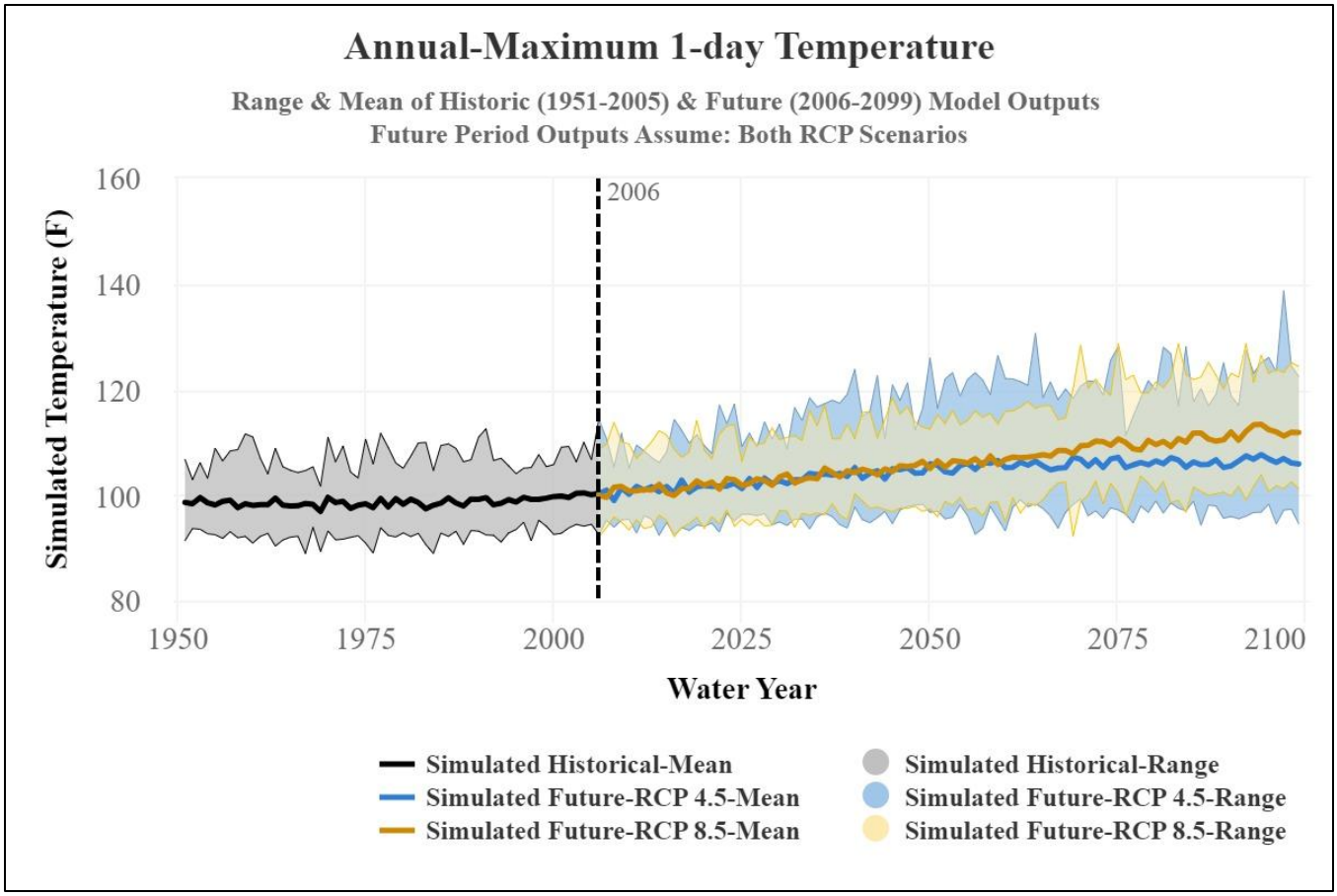


Figure 5. Range of Annual Maximum Temperature Model Output for the Sny watershed (HUC07110004) Stream Segment: 07000599)

For the Sny watershed (HUC07110004) trends are evaluated using the t-Test, Mann-Kendall and Spearman Rank-Order tests. All three statistical tests are applied using a 0.05 level of significance (p-values<0.05 are considered statistically significant). As displayed in Figure 6, the directionally and magnitude of change in statistically significant trends in annual-mean streamflow are evaluated using the slope of the fitted linear regression relationship. The results of the three statistical tests and the slopes associated with identified, statistically significant trends are presented in Table 1. The mean of the 32 projections of simulated, annual-mean streamflow for the future period (2006-2099) shows a statistically significant, positive trend for the Sny watershed (HUC07110004) Stream Segment-007000599 when RCP 8.5 is assumed. The trendline has a slope of 79.661 cfs a year, which equates to a 3,903 cfs change in the average of the 32 projections of annual- mean streamflow over a 50-year period. When the CHAT is used to evaluate the change in Epoch-Mean of simulated annual-mean streamflow it is found that the median change from the base Epoch (1950-2005) to the mid-century epoch (2035-2064) is 11.235%. By the end-century epoch (2070-2099) the change relative to the base period is 15.81%. There is no statistically significant trend in simulated, historic flows (1951-2005) or annual-mean streamflow for the future period (2006-2099) when RCP 4.5 is assumed.

Table 1. Trend Analysis of Average Model Output: Annual – Mean Streamflow Sny watershed (HUC07110004) Stream Segment: 07000599

Trend Analysis	Historic (1951-2005)	Future (2006-2099)		Historic (1951-2005)			Future (2006-2099)					
		RCP 4.5	RCP 8.5				RCP 4.5			RCP 8.5		
	p-values			Statistically Significant? (<0.05)	Slope (cfs/year)	Direction	Statistically Significant? (<0.05)	Slope (cfs/year)	Direction	Statistically Significant? (<0.05)	Slope (cfs/year)	Direction
t-Test	0.853	0.182	$8.6x10^{-10}$	No	-4.5885	↓	No	13.698	↑	Yes	79.661	↑
Mann-Kendall	0.919	0.174	$<2.2x10^{-16}$	No			No			Yes		
Spearman Rank Order	0.810	0.159	$3.79x10^{-10}$	No			No			Yes		

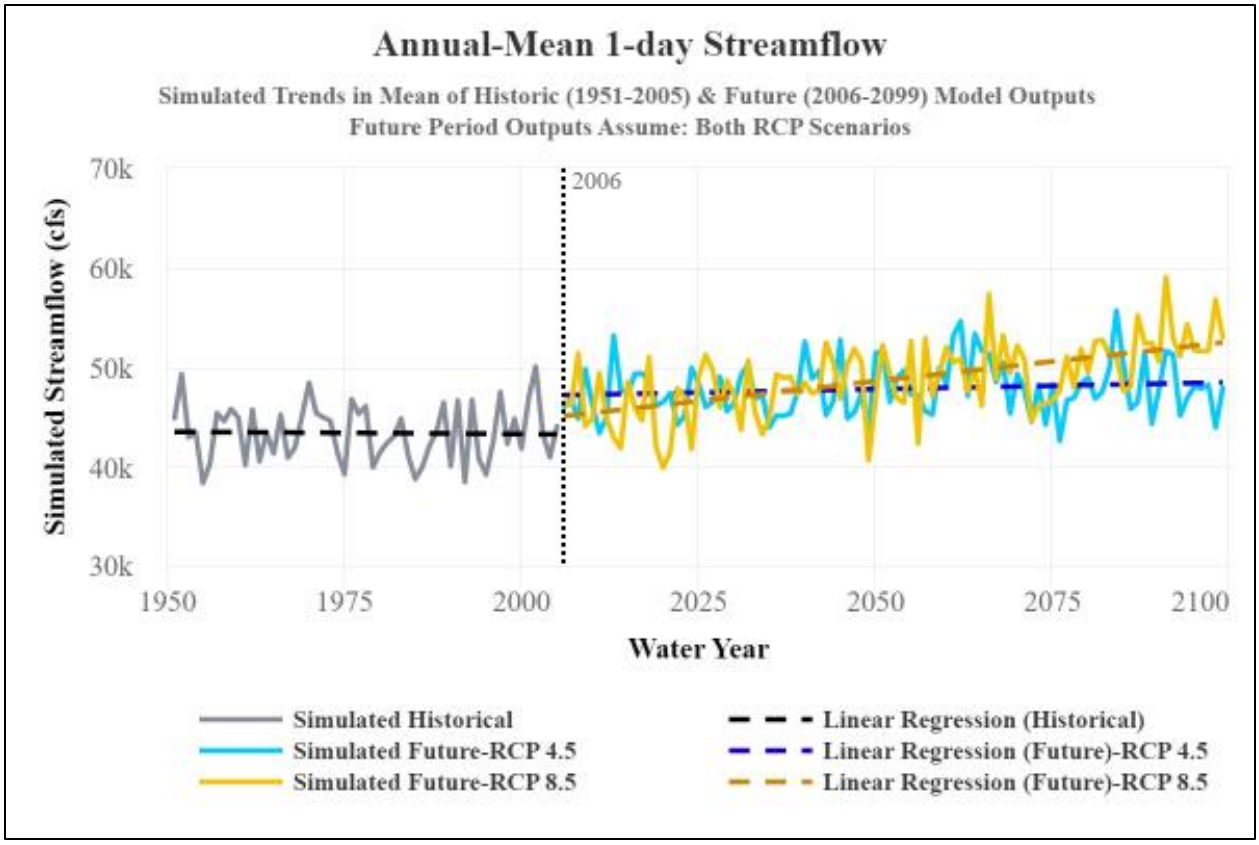


Figure 6. Trend Analysis of Average Model Output: Annual-Mean Monthly Streamflow Sny watershed (HUC07110004) Stream Segment: 07000599

For the mean of the 32 projections (per RCP) of annual-maximum temperatures, the results of the three statistical tests and the slopes associated with statistically significant trends are presented in Table 2 and Figure 7. The mean of the simulated, annual-maximum temperature projections (future period: 2006-2099) shows a statistically significant, positive trend for the Sny watershed under both the moderate (RCP 4.5) and higher (RCP 8.5) radiative forcings. Both outputs project a significant magnitude of change in temperature over the next fifty years. The CHAT computes a trendline slope of 0.0699 °F per year for the lower radiative forcing, which would be a 3.42 °F increase in maximum temperature over a 50-year period. The CHAT computes a trendline slope of 0.1357 °F per year for the RCP 8.5 radiative forcing, which would be a 6.65 °F increase in maximum temperature over a 50-year period. There is also a statistically significant increasing trend in simulated, historic temperatures between 1951 and 2005 (slope of 0.0248 °F per year). When the CHAT is used to evaluate the change in Epoch-Mean of simulated annual-maximum temperature it is found that the median change from the base Epoch (1950-2005) to the mid-century epoch (2035-2064) is 5.25 °F for RCP 4.5 and 6.51 °F for RCP 8.5. By the end-century epoch (2070-2099) the change relative to the base period is 6.13 °F for RCP 4.5 and 11.10 °F for RCP 8.5.

Table 2. Trend Analysis of Average Model Output: Annual Maximum Temperature for Sny watershed (HUC07110004) Stream Segment: 07000599

Trend Analysis	Historic (1951-2005)	Future (2006-2099)		Historic (1951-2005)			Future (2006-2099)					
		RCP 4.5	RCP 8.5				RCP 4.5			RCP 8.5		
	p-values			Statistically Significant? (<0.05)	Slope (°F/year)	Direction	Statistically Significant? (<0.05)	Slope (°F/year)	Direction	Statistically Significant? (<0.05)	Slope (°F/year)	Direction
t-Test	6.05×10^{-5}	2.2×10^{-16}	2.2×10^{-16}	Yes	0.0248	↑	Yes	0.0699	↑	Yes	0.1357	↑
Mann-Kendall	0.00026	2.2×10^{-16}	2.2×10^{-16}	Yes			Yes			Yes		
Spearman Rank Order	0.000169	2.2×10^{-16}	2.2×10^{-16}	Yes			Yes			Yes		

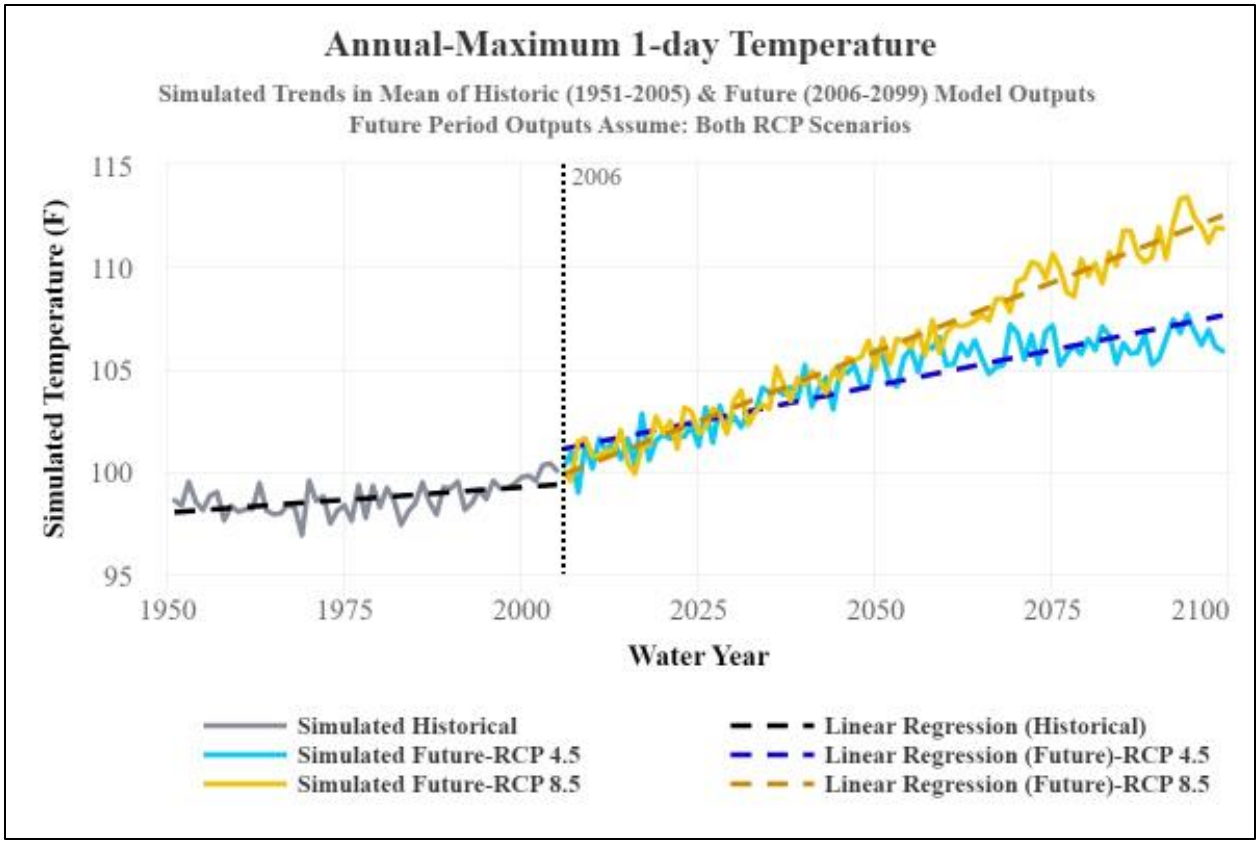


Figure 7. Historic and Projected trends in historic and projected mean annual maximum temperatures for the Sny watershed (HUC07110004) Stream Segment: 07000599

The CHAT provides streamflow and temperature outputs analyzed comparatively by describing simulated changes in monthly streamflow and temperature between different epochs (time periods). Monthly streamflow and temperature output is analyzed by determining the mean of the monthly value for the variable of interest for each GCM for three epochs: 1950-2005 (baseline), 2035-2064 (mid-century), and 2075-2099 (end of century). The difference between GCM/Month/Epoch means are determined for both the baseline vs. mid-century and baseline vs. end of century epochs and results are presented as boxplots. These boxplots provide insight into both the range of results and the seasonality of changes in streamflow and temperature overtime.

For stream segment 07000599 in the Sny watershed (HUC07110004), changes in epoch-mean of simulated monthly mean streamflow are presented in Figure 8. For the stream segment of the Mississippi River analyzed, it appears that for both the mid-century and end-century epochs November through May mean flows are increasing with those flows derived using RCP 8.5 than those derived by assuming RCP 4.5. Greater increases are observed during December through May for the end of the century epoch. August and September flows appear to be decreasing regardless of what RCP is assumed for both epochs and RCPs analyzed.

For the Sny watershed, simulated maximum temperatures for both the mid-century epoch (2035-2064) and the end-century epoch (2070-2099) are increasing relative to historic temperature simulations (1950-2005) for all months and both RCPs. For the mid-century comparisons, 3.9° F increases or greater in temperature are projected under RCP 8.5. Larger changes in temperature are projected by the end of century. As compared to the temperature changes projected by mid-century, for the 2070-2099 epoch, there are larger differences in results where RCP 8.5 was assumed versus RCP 4.5. When RCP 8.5 is assumed, over 10° F of warming is projected from June through October. All RCP 8.5 comparisons show greater than 5° F of warming. When RCP 4.5 is assumed, between 5° F to 10° F of warming is projected for all months except March, April, May, and November. Increases in maximum air temperature, particularly in the summer (June-August), are likely to increase water surface temperatures. This has the potential to adversely impact water quality by decreasing DO in backwater areas within the study area.

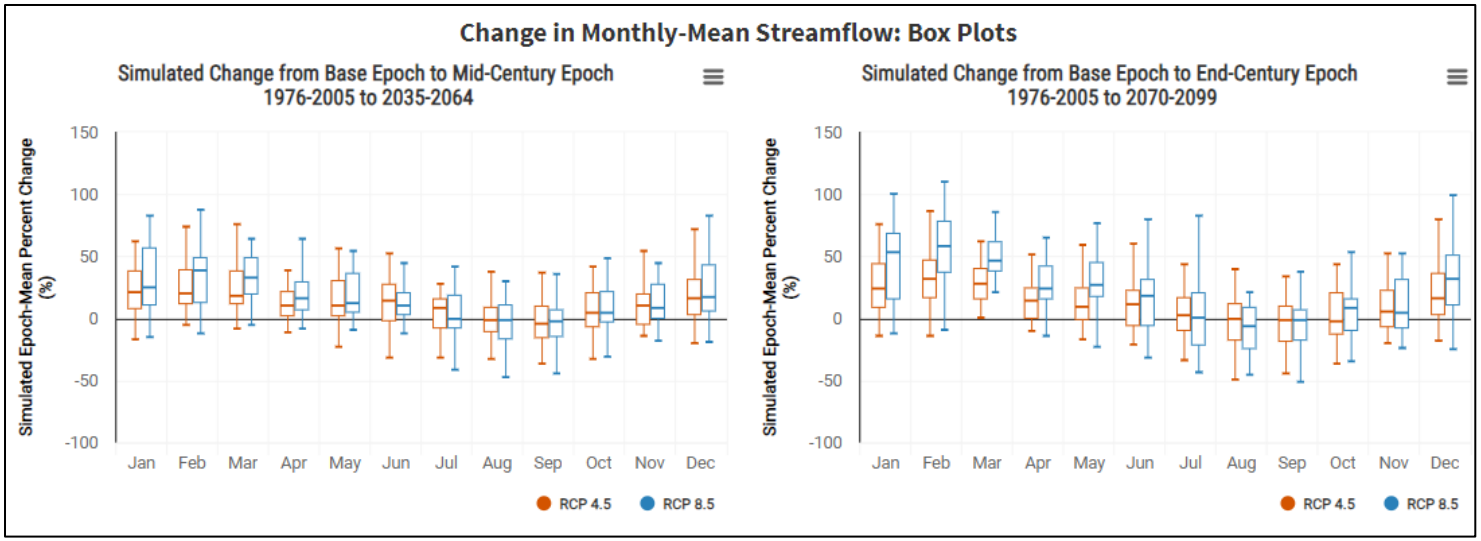


Figure 8. Change in Epoch-Mean of Simulated Monthly Mean Streamflow - Sny watershed (HUC07110004) Stream Segment: 07000599

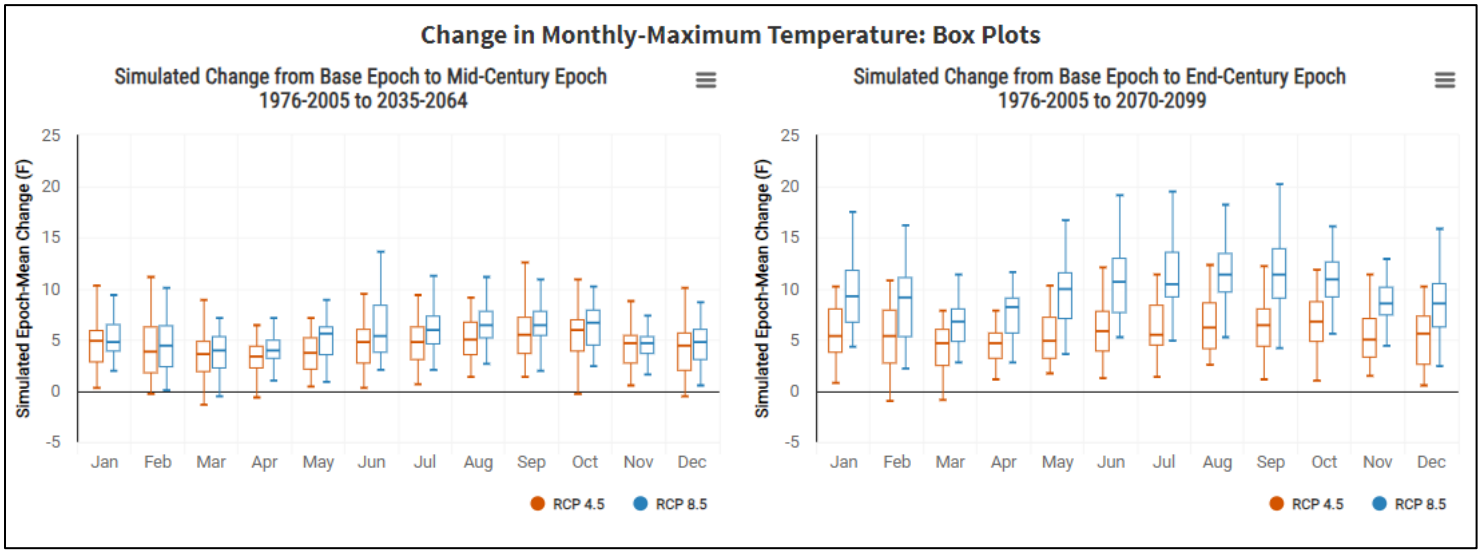


Figure 9. Change in Epoch-Mean of Simulated Monthly Maximum Temperature- Sny watershed (HUC07110004) Stream Segment: 07000599

Vulnerability Assessment

The USACE Vulnerability Assessment (VA) Tool facilitates a screening level, comparative evaluation of projects' exposure to long term weather variability for a selected USACE business line in a given 4-digit HUC watershed relative to the other 4-digit HUC watersheds within the continental United States (CONUS). A series of indicator variables are computed and aggregated into a vulnerability score using the weighted-order, weighted-average (WOWA) approach. The tool uses the CMIP5 GCM based Bias Corrected, Spatially Disaggregated (BCSD) VIC dataset (2014) to define projected, hydrologic, and meteorologic inputs to the tool's WOWA scores.

The WOWA scores and indicator variable values are available for two subsets of simulations (wet- top 50% by cumulative runoff projections and dry- bottom 50% by cumulative runoff projections). Data are available for three epochs. The epochs include a historic period (Base epoch) and two 30-year, future epochs (centered on 2050 and 2085). The Base epoch is not based on projections and so it is not split into a wet and dry subset. Watersheds with WOWA scores specific to a given business line, that fall within the top 20% of WOWA scores for watersheds in the CONUS are identified as being vulnerable to impacts from long term weather variability. The projected datasets incorporated into VA scores contain considerable uncertainty. Some of this uncertainty is reflected by the differences in results for each of the subset-epoch combinations.

The tool is applied using the default, National Standards Settings and for the ecosystem restoration business line. Indicators used to compute the Ecosystem Restoration WOWA score include: change in sediment load due to change in future precipitation, cumulative monthly runoff variation relative to mean annual runoff, runoff elasticity (ratio of streamflow runoff change to precipitation change), macroinvertebrate index of biotic condition, local mean annual runoff, low flow reduction, percent of freshwater plant communities at risk, and two indicators of flood magnification (indicator of how much high flows are projected to change over time).

As shown in Figure 10, compared to the other 4-digit HUC watersheds in the CONUS, the Upper Mississippi-Salt (HUC 0711) watershed does not have a vulnerability score in the top 20% for the ecosystem restoration business line. This is a comparative evaluation and thus does not imply that the watershed is not vulnerable to future long term weather variability. Results indicate that for the select metrics incorporated into the tool, this watershed may be less exposed to potential long term weather variability relative to other watersheds in the CONUS. This is true for both the wet and dry subsets and both the 2050 and 2085 epochs.

As can be seen in Figure 10 and Table 3, the dominant indicator variable contributing to the Ecosystem Restoration business line VA score for the Upper Mississippi-Salt (HUC 0711) watershed is (8) At Risk Freshwater Plants for all epoch and subset combinations. The WOWA score changes by more than 1% between the 2050 and 2085 epochs for both the wet and dry subsets. The percentage by which the indicator variable contributes to the VA score does not significantly change overtime. Because this indicator variable is not dependent on computed, GCM based changes in future hydrology (temperature, precipitation, streamflow) this indicator variable value is constant overtime.

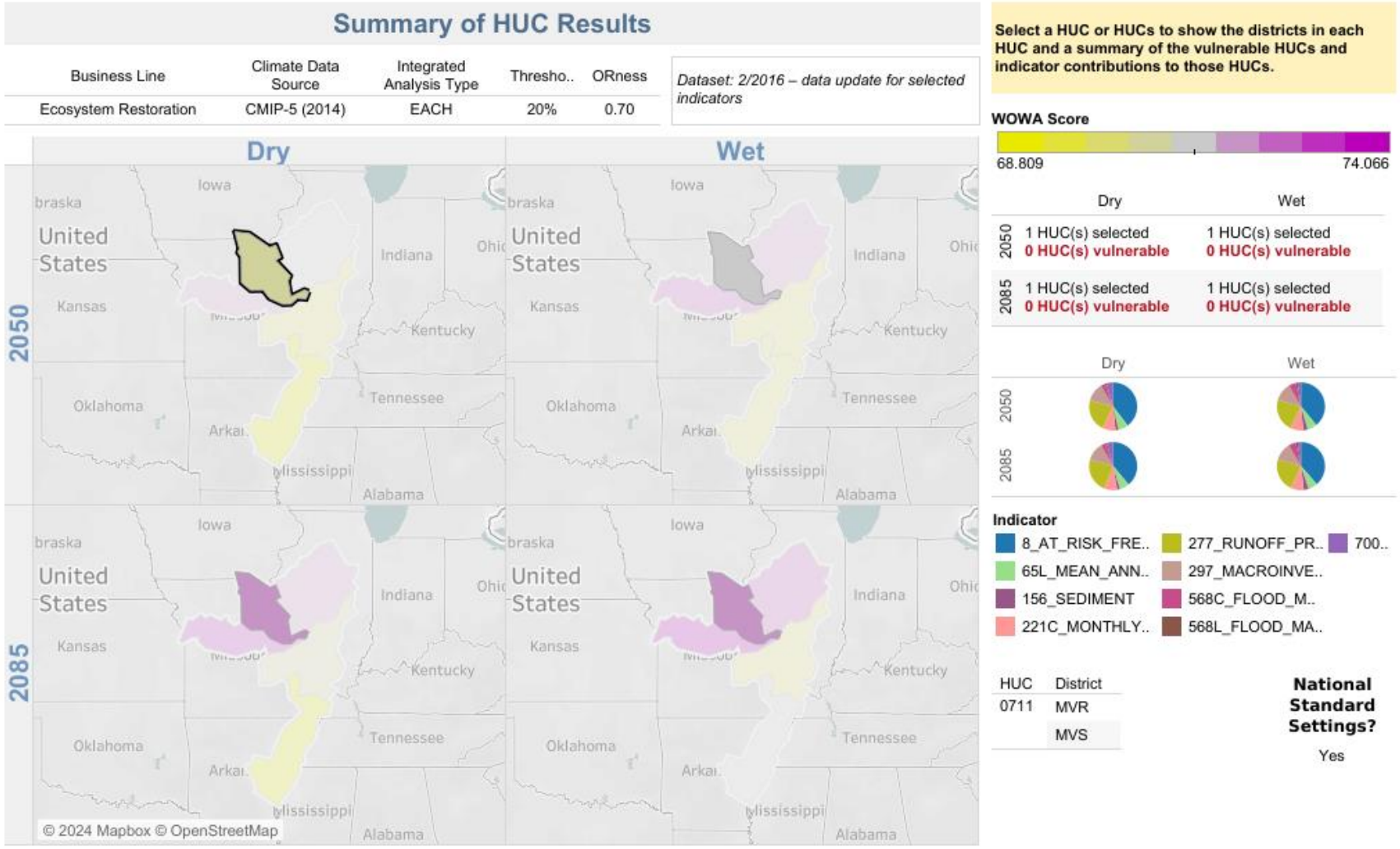


Figure 10. Output of the Vulnerability Assessment tool - Upper Mississippi-Salt watershed

Table 3. VA Tool Output- HUC 0706 Upper Mississippi-Maquoketa-Plum Watershed- Ecosystem Restoration

Subset	Epoch	VA Score	% Change in VA Score (2050 to 2085)	Dominant Indicator	Dominant Indicator % Change (2050 to 2085): Contribution to Overall WOWA Score	Dominant Indicator % Change (2050 to 2085): Indicator Value
WET	2050	71.261	+1.11%	8- At Risk Freshwater Plants	0.00%(constant)	56.524 (constant)
DRY	2085	72.053	+1.11%	8- At Risk Freshwater Plants	0.00% (constant)	56.524 (constant)
DRY	2050	70.646	+2.10%	8- At Risk Freshwater Plants	0.00%(constant)	56.524 (constant)
DRY	2085	72.130	+2.10%	8- At Risk Freshwater Plants	0.00% (constant)	56.524 (constant)

Conclusion

The purpose of the Clarksville-Carroll Islands Channel Restoration Ecosystem Restoration Project is to restore side channel connectivity, diversity, quality, and flow to benefit native riverine fish and wildlife; and improve side channel habitat, including substrate stability, to benefit native freshwater mussels and create aquatic habitat.

Proposed project features include the following to improve side channel habitat:

- Dredging a pilot channel and connections,
- Modifying and restoring an existing river training structure into a side channel enhancement dike,
- Constructing new river training structures utilizing hard points to direct flow,
- Mussel habitat enhancement with rock-gravel substrate, and
- Nature-based features utilizing woody bundles.

Output based on both historic, observed hydrometeorological data and projected, changed hydrometeorological data was reviewed to support qualitative statements about how to incorporate resilience over the Upper Pool 25 project's lifecycle.

Increases in precipitation are projected for Illinois, most likely during the winter and spring (Figure 8). The frequency and intensity of extreme precipitation events are also projected to increase, potentially increasing the frequency and intensity of floods. Springtime flooding in particular could pose a threat to Illinois's important agricultural economy by delaying planting and reducing yields.

The intensity of future droughts is projected to increase even if precipitation increases. Rising temperatures will increase evaporation rates and the rate of soil moisture loss. Thus, future summer droughts, a natural part of Illinois's hydrological and meteorological conditions, are likely to be more intense.

Based on the weight of evidence presented in this assessment, long term weather variability impacts are anticipated to affect the study area's hydrology over the project's 50-year life cycle. Available literature suggests warmer and wetter hydrological and meteorological conditions in the future. There are statistically significant increasing trends in both the observed and projected flow data analyzed specific to this study area. As flow increases, floodplain forest habitat may be inundated more often. There is also evidence that temperatures are increasing in the study area which may negatively affect water quality and aquatic habitat.

Table 4 indicates potential residual risks for this project, along with a qualitative rating of how likely those residual risks are to materialize and undermine project features resulting in harm to the study area.

Within the Upper Mississippi River Region, long term weather variability poses a potential risk to ecosystems due to the likelihood of the region experiencing shifts in the flow regime and increases in temperature in the future. Projects, like the Clarksville and Carroll Islands Channel Restoration Ecosystem Restoration Project will serve to offset some of this risk by improving water quality and diversifying habitat. The standard practices used to design and construct USACE, ecosystem restoration projects include a degree of resilience because features are typically designed to accommodate a wide range of flow conditions. Thus, it is unlikely that long term weather variability induced increases in flow will undermine project features. It is likely that increasing temperatures will place added stress on the ecosystem in the future. Ecosystem restoration standard design practices have been generated based on lessons learned from successful projects constructed between 1981 and 2015. The majority of these standards are listed in the 2012 *Upper Mississippi River Restoration (UMRR) Design Handbook* (USACE 2012).

Even though USACE ecosystem restoration projects can already be considered inherently resilient, it would be worthwhile to consult with experts in floodplain habitat creation and maintenance to see if there are any additional opportunities to incorporate additional innovative, resilient features into the final design without incurring a significant change in cost. Added resilience should be targeted at ensuring project features can withstand higher flows (and higher water surface elevations) and greater periods of inundation. Additionally, opportunities to reduce potential future long term weather variability driven water quality impacts from rising water temperatures should be identified. A potential mechanism by which to accomplish this is to explore the development of an adaptive management plan, whereby if conditions are observed to be changing in the future, certain project features can be designed and/or flagged to accommodate the flexibility to be modified in response to changing future conditions.

Table 4. Residual Risk

Project Feature	Trigger	Hazard	Harm	Qualitative Likelihood[1]	Justification of Likelihood Rating
Side Channel Habitat - Dredging	Increased discharge and decreased WSEL	Future flood volumes may be greater than at present.	Increased sedimentation reduces amount of available backwater habitat	Unlikely	Proposed design will ensure necessary depth for overwintering habitat.
River Training Structure - Hard Points, SCEDs	Increased discharge and WSEL	Future flood velocities and elevations may be higher.	Flow may overtop rock hard points, SCED more frequently causing erosion of the backwater channels.	Unlikely	Riprap is sized and graded to ensure a robust design and reduce project feature damage. Orientation of hard points and SCED are designed to withstand high flows to minimize wave impacts.
Mussel Habitat Enhancement - Rock-Gravel Substrate	Increased discharge and WSEL	Future flood volumes may be greater than at present.	Higher flows may cause erosion within the backwater channels. Additional placement of substrate may cause higher WSELs and slower flow velocities.	Unlikely	Proposed design would ensure quality habitat for mussels and fisheries.
Nature-Based Features - Woody Bundles	Increased discharge and WSEL	Future flood volumes may be greater than at present.	May build with too much debris closing off part of the backwater channel	Unlikely	Proposed design would ensure quality habitat for fisheries.

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PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

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AMONG
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
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THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

WHEREAS, the U.S. Army Corps of Engineers (USACE) is authorized to carry out the Upper Mississippi River – Illinois Waterway System (UMR-IWW) Navigation and Ecosystem Sustainability Program (NESP) pursuant to Title VIII of the Water Resources Development Act (WRDA) of 2007 (P.L. 110-114); and,

WHEREAS, the USACE implements projects under the NESP to attain and maintain the sustainability of the UMR-IWW ecosystem, addressing the cumulative impacts and ongoing effects of the navigation system and improving ecological integrity of the UMR-IWW, including projects with measures for island building, restoration of floodplain, backwater, side channels, and tributary confluences, fish passage, water level management, wing dam and dike restoration and modification, island and shoreline protection; topographical diversity, dam point control, use of dredged material for environmental purposes, spillway, dam, and levee modification to benefit the environment, and land and easement acquisition, as well as cultural resource management and mitigation and forest management; and,

WHEREAS, the USACE is also authorized to carry out the Upper Mississippi River Restoration (UMRR) Program for Habitat Rehabilitation and Enhancement Projects (HREP) pursuant to Section 1103 of the WRDA of 1986 (P.L. 99-662), as amended, codified in 33 U.S.C. 652; and,

WHEREAS, the USACE implements projects under the UMRR Program to rehabilitate and enhance habitat of the Upper Mississippi River System (UMRS); and,

WHEREAS, the USACE, as a Federal agency, is required to comply with Section 106 of the National Historic Preservation Act (NHPA), as amended (54 U.S.C. § 306108) and its implementing regulations, "Protection of Historic Properties," codified in 36 CFR § 800; and,

WHEREAS, the USACE has determined that projects under the NESP and UMRR Programs (hereinafter the "Programs") entail undertakings which may have the potential to affect historic properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) as defined under 36 CFR § 800.16(y); and,

WHEREAS, the USACE has determined due to the nature of the Programs, their generally shared multi-state geographic region and similar authorized purposes, that a combined Programmatic Agreement (PA) to address both Programs is needed to clarify review procedures, improve consistency, consultation, and accountability in fulfilling its responsibilities to comply with Section 106 of the NHPA pursuant to 36 CFR § 800.14(b)(2) for the Program undertakings, as defined in Stipulation I.A.; and,

WHEREAS, the Program undertakings are subject to development and analysis which is detailed in Project Implementation Reports (PIRs), Feasibility Reports, or other decision or implementation documents which discuss program undertaking alternatives and typically identify a Tentatively Selected Plan in the draft decision document, followed by a Recommended Plan in the final decision document, that becomes the proposed project after decision document approval; and,

WHEREAS, the Program undertakings are subject to environmental review under the National Environmental Policy Act (NEPA) and other environmental laws; and,

WHEREAS, the USACE may defer the identification of the Area of Potential Effect (APE), as defined in Attachment B, and completion of the Section 106 process to include final identification and evaluation of historic properties, assessment of project effects to historic properties, and resolution of adverse effects, if any, until after completing the final USACE decision document and requirements of NEPA for a Program undertaking but before the implementation of the Program undertaking begins; and,

WHEREAS, this PA does not invalidate or supersede existing program alternatives or any other applicable Section 106 agreements including project level agreements for Steamboat HREP (Rock Island District), Quincy Bay HREP (Rock Island District), and Green Island HREP (Rock Island District), executed for undertakings already being implemented under either of the Programs; and,

WHEREAS, the USACE shall seek ways to avoid, minimize, and mitigate any adverse effects to historic properties, listed on or eligible for inclusion in the NRHP; and,

WHEREAS, the USACE has consulted with the State Historic Preservation Offices of Illinois (IlSHPO), Iowa (IaSHPO), Minnesota (MnSHPO), Missouri (MoSHPO), and Wisconsin (WiSHPO) (collectively, the "SHPOs") on the development of this PA, and the SHPOs are Signatories to this PA; and,

WHEREAS, the U.S. Fish and Wildlife Service (USFWS) has designated the USACE as the lead federal agency for Section 106 compliance for the Programs but will participate as a Signatory to this PA because it will be responsible for the operation and maintenance of Program

undertakings on lands and waters it administers or manages and would need to issue an Archaeological Resources Protection Act (ARPA, 16 U.S.C. 470 et seq) permit for work on Federal lands under the agency's jurisdiction; and,

WHEREAS, the National Park Service (NPS) has designated the USACE as the lead federal agency for Section 106 compliance for the Programs but will participate as an Invited Signatory to this PA because it will be responsible for the operation and maintenance of Program undertakings on lands and waters it administers or manages and would need to issue an ARPA permit for work on Federal lands under the agency's jurisdiction; and,

WHEREAS, the USACE recognizes the Federal government's special relationship with Federally recognized Indian Tribes and is responsible for government-to-government consultation pursuant to the NHPA, 36 CFR § 800.2(c)(2)(ii), the American Indian Religious Freedom Act (AIRFA, 42 U.S.C. 1996), Executive Orders 13007 and 13175, and Sections 3(c) and 12 of the Native American Graves Protection and Repatriation Act (NAGPRA, 25 U.S.C. 3001 et seq.); and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(2)(ii), 800.3(f)(2), and 800.14(b)(2), the USACE, in a letter dated 14 October 2022, initiated consultation with 55 Federally recognized Indian Tribes (collectively, the "Consulting Tribes"), that may ascribe religious or cultural significance to historic properties that have the potential to be affected by Program undertakings and are entitled to be consulted about the identification and assessment of effects on historic properties, to consult on the development of this PA and these Tribes include the Absentee-Shawnee of Oklahoma, Bad River Band of Lake Superior Chippewa, Bois Fort Band of Chippewa, Caddo Nation of Oklahoma, Citizen Potawatomi Nation in Oklahoma, Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee of Oklahoma, Flandreau-Santee Sioux, Fond du Lac Band of Lake Superior Chippewa, Fort Belknap Community, Forest County Potawatomi Community, Grand Portage Band of Lake Superior Chippewa, Hannahville Indian Community, Ho-Chunk Nation of Wisconsin, Iowa Tribe of Kansas and Nebraska, Iowa Tribe of Oklahoma, Keweenaw Bay Community, Kickapoo Traditional Tribe of Texas, Kickapoo Tribe in Kansas, Kickapoo Tribe of Oklahoma, Lac Courte Oreilles Band of Lake Superior Chippewa, Lac du Flambeau Band of Lake Superior Chippewa, Lac Vieux Desert Band of Lake Superior Chippewa, Little Traverse Bay of Odawa, Leech Lake Band of Ojibwe, Lower Sioux Community, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, Menominee Tribe of Wisconsin, Mille Lacs Band of Ojibwe, Miami Tribe of Oklahoma, Nottawaseppi Huron Band of Potawatomi, Omaha Tribe of Nebraska, Otoe-Missouria Tribe, Peoria Tribe of Oklahoma, Pokagon Band of Potawatomi, Prairie Band of Potawatomi Nation, Prairie Island Community, Quapaw Nation, Red Cliff Band of Lake Superior Chippewa, Sac and Fox Nation of Missouri in Kansas and Nebraska, Sac and Fox Nation of Oklahoma, Sac and Fox Tribe of the Mississippi in Iowa (Meskwaki Nation), Santee Sioux Nation, Shakopee Mdewakanton Sioux, Shawnee Tribe, Sisseton-Wahpeton Oyate, Sokaogon Chippewa Community (Mole Lake Band of Lake Superior Chippewa), Spirit Lake Nation, St. Croix Band of Chippewa, The Osage Nation, United Keetoowah Band of Cherokee, Upper Sioux Community, White Earth Band of Ojibwe, and Winnebago Tribe of Nebraska; and,

WHEREAS, in accordance with 36 CFR § 800.6(c)(2), and based on each Consulting Tribe's response, the USACE has invited The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation to be Invited Signatories, as defined in Attachment B, in this PA and each has elected to sign the PA, each as a Invited Signatory and collectively included in "Consulting Tribes"; and,

WHEREAS, each Invited Signatory Tribe has identified the area within which it may attach religious or cultural significance to historic properties that have the potential to be affected by Program undertakings, the Invited Signatory Tribe's "consultation area", as defined in Stipulation I.E, and each consultation area is included in Attachment C; and,

WHEREAS, in accordance with 36 CFR § 800.6 (c)(3), the Iowa Tribe of Kansas and Nebraska and the Winnebago Tribe of Nebraska have been invited to participate in the development of this PA and have elected to sign the PA, as a Concurring Party, as defined in Attachment B, and collectively included in "Consulting Tribes"; and,

WHEREAS, nothing in this PA diminishes or affects any treaty right of a Federally recognized Indian Tribe or any other right of a Federally recognized Indian Tribe or external boundary of an Indian reservation of a tribe. No provision of the PA shall alter existing law regarding the sovereign immunity of tribes or shall be construed to alter existing law regarding the trust duty of the United States to tribes (either to limit or expand that trust duty); and,

WHEREAS, the USACE acknowledges that Consulting Tribes possess special knowledge regarding any religious and cultural significance they may ascribe to historic properties, including Traditional Cultural Properties/Places, that may be physically or visually affected by a Program undertaking, and possess special expertise in assessing the eligibility of such properties; and,

WHEREAS, the USACE Programs benefit from consultation with Consulting Tribes in the identification and management of properties of religious and cultural significance, and the USACE shall ensure that its NHPA Section 106 procedures recognize the interests of Consulting Tribes in historic properties potentially affected by USACE decisions and afford Consulting Tribes participation in the process leading up to a USACE decision, in accordance with 36 CFR § 800; and,

WHEREAS, the USACE, USFWS, NPS, each SHPO, and each Consulting Tribe is each a Consulting Party as defined in Stipulation I.D; and,

WHEREAS, a Consulting Party will be recognized by the USACE as a Signatory, Invited Signatory, or Concurring Party, as applicable, under this PA starting on the date the Consulting Party signs the PA and provide the USACE with a record of its signature; and,

WHEREAS, the definitions set forth in 36 CFR § 800.16 are incorporated herein by reference and apply throughout this PA; and,

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), the USACE, in a letter dated 19 October 2022, notified the Advisory Council on Historic Preservation (ACHP) of its decision to enter into this PA and has invited the ACHP to enter into consultation, and the ACHP has chosen to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and,

WHEREAS, the USACE provided opportunities for public review and comment on this PA by publishing online information, including a Public Notice posted on 15 November 2023 – 1 January 2024 for this PA, and receiving comments through online platforms, and will continue to engage the public, as appropriate, during Section 106 review of Program undertakings under the terms of this PA; and,

WHEREAS, for individual Program undertakings subject to this PA, the USACE may invite other agencies, organizations, and individuals to participate as Consulting Parties; and,

WHEREAS, each USACE District (St. Paul, Rock Island, or St. Louis, depending on individual Program undertakings), uses its own staff and authority and will consult with the SHPO of jurisdiction and the applicable Federally recognized Tribe(s) regarding the specific Program undertakings within its respective districts.

NOW, THEREFORE, the St. Paul, Rock Island, and St. Louis Districts of USACE, the IlSHPO, the IaSHPO, the MnSHPO, the MoSHPO, the WiSHPO, the USFWS, the ACHP (Signatories), the NPS, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation (Invited Signatories) agree that implementation of this PA in accordance with the following stipulations will allow the USACE to meet its responsibilities under Section 106 of the NHPA for the Program undertakings subject to this PA.

I. SCOPE AND APPLICABILITY

A. This PA shall apply to all undertakings under the NESP and UMRR Programs in the St. Paul, Rock Island, and St. Louis Districts of USACE that have the potential to cause effects to historic properties, if any, and require Section 106 review after the execution of this PA; are not otherwise covered by a separate memorandum of agreement (MOA) or programmatic agreement, and for which the USACE has not recognized another federal agency as lead federal agency (hereinafter the "Program undertakings").

B. The USACE will utilize this PA to fulfill its Section 106 responsibilities and those of the USFWS and NPS, who have designated the USACE as the lead federal agency pursuant to 36 CFR § 800.2(a)(2) for Program undertakings. The USFWS and/or NPS, as applicable may decide, and notify the USACE, for a specific Program undertaking that they will perform their own Section 106 compliance and the USACE will not be the lead federal agency for the Program undertaking. When the USACE is not designated as the lead federal agency and no other agency is designated lead federal agency, all federal agencies, including the USACE, remain individually responsible for their compliance with Section 106, but this PA will apply to Program undertakings. This provision does not prevent the USACE from recognizing another federal agency as lead federal agency for specific Program undertakings, as appropriate. If USACE recognizes another federal agency as lead federal agency for a specific Program undertaking that would otherwise be subject to this PA, this PA shall not apply.

C. All Program undertakings to which this PA is applicable shall be reviewed in accordance with the stipulations in this PA. The USACE may combine some or all of the steps during consultation in accordance with 36 CFR § 800.3(g).

D. Consultation among the SHPOs, Consulting Tribes, the USFWS, and the NPS (collectively, "Consulting Parties") when appropriate to this PA shall continue throughout the implementation of individual Program undertakings subject to this PA. The USACE shall identify and consult with the applicable Consulting Parties for each Program undertaking (the "Applicable Consulting Parties") consisting of:

1. The SHPO or SHPOs who reflect(s) the interests of the State(s) that overlaps with the Area of Potential Effects, as defined under Stipulation III.B and Attachment B, for the individual Program undertaking ("Applicable SHPO"); and,

2. The Consulting Tribes that are known to attach religious or cultural significance to historic properties within the Area of Potential Effects, as defined under Stipulation III.B, that may be affected by the individual Program undertaking ("Applicable Consulting Tribes"); and,

3. The USFWS and/or NPS when that agency would have operation and maintenance responsibility for the individual Program undertaking on lands or waters it administers or manages within the undertaking's Area of Potential Effects ("Applicable Federal Agency/ies").

E. The USACE acknowledges that contacts and consultation areas may change over time. Addressing this is primarily a USACE responsibility with assistance from the Consulting Parties. The relevant contact list for Consulting Parties at the time of execution of this PA is provided in Attachment D.

The USACE has requested and shall continue to request that each Consulting Tribe provide the area in which they may attach religious or cultural significance to historic properties (its "consultation area"), in the form of a map or other listing that USACE can use to identify Applicable Consulting Tribes for individual Program undertakings. All Invited Signatory Tribes have provided their consultation areas, included as Attachment C. For any Consulting Tribe who has not provided their consultation area, the USACE will use best available information to determine Applicable Consulting Tribes for Section 106 review of an individual Program undertaking.

F. The USACE shall seek ways to identify and preserve historic properties, and to avoid, minimize, or mitigate any adverse effects on historic properties. The USACE shall also endeavor to protect burials, cemeteries, or sites likely to contain human remains/artifacts and objects associated with interments or religious activities, and provide this information, studies, and/or reports to the Applicable Consulting Parties through the implementation of historic property surveys and testing, and the treatment of historic properties.

G. For each Program undertaking, the USACE shall achieve compliance with all relevant terms of this PA prior to initiating physical construction of the Program undertaking.

II. PERFORMANCE STANDARDS AND PROFESSIONAL QUALIFICATIONS STANDARDS

A. Pursuant to 36 CFR § 800.2(a), the Agency Official is the District Commander of the applicable USACE district with approval authority for a specific Program undertaking, who can commit the agency to take appropriate action for the Program undertaking to comply with Section 106 under this PA. The Agency Official may delegate authority to other USACE personnel who shall act on their behalf.

B. The USACE shall ensure all technical work, as defined in Attachment B, required under this PA is carried out in accordance with the professional standards and guidelines outlined in the Secretary of the Interior's (SOI) *Standards for Archaeology and Historic Preservation* (48 CFR 44716) and the SOI's *Standards for the Treatment of Historic Properties* (36 CFR Part 68), as applicable (individually or collectively, SOI Standards). The USACE will also consider other appropriate and applicable state laws, guidelines, or best practices for historic preservation activities within which state work is required.

1. Documentation in support of the USACE historic property eligibility determinations and findings of effect shall meet the documentation requirements specified in 36 CFR § 800.11 and the SOI Standards. Current state survey requirements/guidance for

documentation and reporting shall also be followed for work occurring in the respective state.

C. The USACE shall ensure that technical work conducted pursuant to this PA is carried out by or under the supervision of persons meeting qualifications set forth in the SOI's *Professional Qualification Standards*, as amended, for the pertinent discipline (see 48 F.R. 44738-44739) or the United States Office of Personnel Management (OPM) qualifications for cultural resources professionals such as Archaeologist GS-0193 series, Anthropologist GS-0190 series, or Historian GS-0170 series.

D. The USACE shall maintain professional qualified staff meeting SOI *Professional Qualification Standards,* OPM qualifications for cultural resources professionals, and/or Section 112 of the NHPA (hereafter referred to as "qualified staff".

1. The USACE qualified staff assigned to review USACE Program undertakings pursuant to this PA shall be a GS-9 or higher and meet the SOI *Professional Qualification Standards* or the OPM qualifications for cultural resources professionals such as Archaeologist GS-0193 series, Anthropologist GS-0190 series, or Historian GS-0170 series.

2. Qualified staff at or below the GS-7 level are considered to be performing duties in a developmental or technician capacity.

3. USACE qualified staff at GS-9 or higher shall oversee and review any work conducted by GS-7 or lower graded staff when the USACE implements any portion of the PA.

III. PROGRAM UNDERTAKING REVIEW PROCESS

A. USACE INTERNAL REVIEW PROCESS

1. At the earliest stages of developing a Program undertaking, the USACE shall assign a qualified staff member to ensure cultural resources and historic properties are identified and considered in the USACE planning process.

2. In general, the area of interest for the UMRR and NESP Programs includes the UMRS as defined in Public Law 99-662, which includes both the Mississippi River from its confluence with the Ohio River near Cairo, Illinois to Upper St. Anthony Falls Lock in Minneapolis-St. Paul and the Illinois River from its confluence with the Mississippi River at Grafton, Illinois to the Brandon Road Lock and Dam, Joliet, Illinois and river reaches having commercial navigation channels on the Minnesota River, Minnesota; Black River, Wisconsin; Saint Croix River, Minnesota and Wisconsin; Illinois River and Waterway, Illinois; and Kaskaskia River, Illinois and associated floodplains (Attachment A). The area of interest includes a 5-mile buffer on either side of the navigation centerline, to accommodate potential undertakings covered by the Programs, auditory and visual effects, and any other potential effects.

3. The USACE shall further refine the general area of interest for a specific project under the Programs in the development of the Recommended Plan, as defined in Attachment B, defining the Program undertaking subject to Section 106 review under this PA, defining and documenting an Area of Potential Effect, carrying out initial efforts to identify historic properties as stated under Stipulation III.A.4 and initiating an assessment of the Program undertaking's potential effects to historic properties.

4. Before the selection of the Recommended Plan for a specific Program undertaking, the USACE shall complete initial background research of the study area to include reviewing available investigations and consulting with the applicable state historic preservation databases and/or inventories to determine and direct adequate survey coverage for historic, architectural, and archaeological properties, terrestrial and aquatic.

5. At any given time during the development of the Recommended Plan for a specific Program undertaking, the USACE may seek input from the Applicable Consulting Parties as appropriate.

B. DEFINE AND DOCUMENT THE AREA OF POTENTIAL EFFECTS

1. In consultation with Applicable Consulting Parties, the USACE shall identify and document the Area of Potential Effects (APE) appropriate to the scope and scale of the Recommended Plan for a specific Program undertaking as identified through Stipulation III.A and include the following:

    i. The vertical and horizontal extents (i.e., height and depth), if available, of all construction activities required to complete the Program undertaking, including staging areas, access routes, and a reasonable buffer informed by consultation.

    ii. Areas outside of the construction areas of the Program undertaking where the Program undertaking's potential direct, indirect, or cumulative effects to historic properties may be reasonably anticipated.

2. The USACE is responsible for defining and documenting a final APE, including any modification to the APE as a result of change in scope and scale of the Recommended Plan, for each Program undertaking subject to review under this PA.

C. HISTORIC PROPERTY IDENTIFICATION

1. The USACE shall complete and document historic property identification efforts and issue formal NRHP-eligibility determinations for all properties within the APE for the proposed Program undertaking as follows.

2. The USACE shall complete a literature search of the APE.

i. The literature search shall include consulting the appropriate state historic inventory and archaeological site files, previous survey reports, historic contexts, and other pertinent documents of the appropriate state for information on previously developed historic contexts, recorded historic properties, and previously surveyed areas.

ii. The USACE shall use the literature search to determine adequacy of existing documentation and to inform the scope of any additional research or surveys, including the need for additional historic context development and/or re-evaluation of any previously identified historic properties or properties previously determined to be eligible for listing on the NRHP.

3. In accordance with appropriate state survey guidelines, implementation of historic property surveys and testing, the USACE shall record all properties meeting minimum criteria for recordation, such as buildings, structures, shipwrecks, objects, linear resources, landscapes, districts, Traditional Cultural Properties/Places, and archaeological/historical and burial sites. Recordation of structures, buildings, aquatic resources such as shipwrecks, objects, districts, and sites shall be prepared using the respective state recordation forms, as appropriate.

4. Pursuant to 36 CFR § 800.4(a)(4), historic property identification efforts shall include contacting the Tribal Historic Preservation Offices (THPOs), or other Tribal representative of Applicable Consulting Tribes for the Program undertaking, to assist in identifying properties within the APE, that may be of religious and cultural significance to them and may be eligible for listing on the NRHP.

5. The results of identification efforts, including any supporting documentation, shall be prepared in accordance with Stipulation II (Performance Standards and Qualifications).

6. The USACE shall make one of the following findings as a result of its historic property identification efforts:

i. "No Historic Properties Affected." If the USACE finds that either there are no historic properties identified within the APE or there are historic properties within the APE and the Program undertaking will have no effect upon them as defined in 36 CFR § 800.16(i) then the USACE shall make a "No Historic Properties Affected" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(d), to the Applicable Consulting Parties for review and comment.

(1) For Program undertakings with a finding of "No Historic Properties Affected" the USACE shall provide the Applicable Consulting Parties information including the following:

(a) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

(b) An APE map and narrative description of the APE for the Program undertaking;

(c) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

(d) Results of historic property identification efforts completed by the USACE, including an appropriate level of documentation, to include reports, forms, evaluations, eligibility determinations, or other documents supporting NRHP eligibility determinations;

(e) Any photos, additional maps, images, or plans, as appropriate; and

(f) A stated finding of "No Historic Properties Affected" for the Program undertaking and request for comment on said finding from the applicable SHPO(s).

(2) The Applicable Federal Agencies and Consulting Tribes are under no obligation to provide comments on the finding. However, if they wish the USACE to consider their comments regarding the "No Historic Properties Affected" finding, they shall submit comments in writing within thirty (30) calendar days of receipt of the fully documented finding, unless a request for extension was submitted. The USACE shall take any comments received from Applicable Federal Agencies and Consulting Tribes into consideration before concluding the consultation and will notify the Applicable SHPO of these concerns and the USACE response to them. Any objection to the finding received will be addressed in accordance with Stipulation III.C.6.4 below.

(3) The Applicable SHPO shall provide a response to a USACE finding within thirty (30) calendar days of receipt of a fully documented "No Historic Properties Affected" finding. If no comments or requests for an extension are received from the Applicable SHPO within the 30-day review period, the USACE will assume the SHPO has waived their opportunity to comment and has concurred with the finding.

(4) If an Applicable Consulting Party objects to the finding of "No Historic Properties Affected" within the 30-day review period, the USACE shall consult with the objecting party, and include other parties as appropriate, for no more than a total of thirty (30) calendar days, or other time period as agreed to among Applicable Consulting Parties, upon receipt of the notification of objection to attempt to resolve concerns as identified by the objecting party.

(a) The USACE may revise its finding of "No Historic Properties Affected." If the USACE revises its finding to "No Adverse Effect" for the specific Program undertaking, then the USACE shall continue consultation pursuant to Stipulation III.D.

(b) If at the end of the thirty (30) calendar days, the objecting party(ies) concurs with the finding of "No Historic Properties Affected", the USACE shall document this concurrence, and USACE has no further obligations for the specific Program undertaking under this Stipulation.

(c) If at the end of the thirty (30) calendar days, or agreed to specified time, the party(ies) objects to the finding of "No Historic Properties Affected" and the USACE has not altered its effects determination, the USACE shall notify the ACHP in accordance with Stipulation X.

(5) If an Applicable Consulting Party(ies) disagrees regarding NRHP eligibility of a property identified within the APE for a Program undertaking, the USACE shall notify all Applicable Consulting Parties. The USACE shall consult with the Applicable Consulting Party(ies) for no more than thirty (30) days upon receipt of the notification to resolve the disagreement. The USACE shall provide copies of the notification to other Applicable Consulting Parties within five (5) days of receipt. Upon request and at its discretion, the USACE may extend the consultation period to resolve the disagreement.

(i) If the dispute cannot be resolved, or if the ACHP or Secretary of the Interior so requests, the USACE shall obtain a determination of eligibility from the Keeper of the NRHP. The Keeper's determination will be final in accordance with 36 CFR Part 63.4.

(6) If the USACE does not carry out the Program undertaking as documented in the "No Historic Properties Affected" finding, then the USACE shall continue consultation in accordance with Stipulation III.C.

ii. If the USACE finds that there are historic properties identified within the APE which may be affected by the Program undertaking, then the USACE shall proceed to Stipulation III.D.

D. ASSESSMENT OF POTENTIAL ADVERSE EFFECTS TO HISTORIC PROPERTIES

1. Avoidance of adverse effects to historic properties is the preferred treatment approach. The USACE shall consider redesign of components of the Program undertakings to avoid potential adverse effects to historic properties. However, there may be instances where it is not feasible for the USACE to redesign Program undertakings to avoid adverse effects to historic properties.

2. The USACE shall assess potential adverse effects caused by the proposed Program undertaking on all identified historic properties within the APE. This assessment shall include consideration of all direct, indirect, and cumulative effects caused by the Program undertaking, and shall use the criteria of adverse effects (36 CFR § 800.5(a)(1)). The USACE shall make one of the following determinations:

    i. "No Adverse Effect to Historic Properties." If the USACE determines that historic properties present in the APE will be affected by the Program undertaking but the characteristics of the historic properties that qualify the properties for inclusion are not diminished or altered, then the USACE shall make a "No Adverse Effect to Historic Properties" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(e), to the Applicable Consulting Parties for review and comment in accordance with Stipulation III.D.3.

    ii. "Adverse Effect to Historic Properties." If the USACE determines that historic properties present in the APE will be affected by the Program undertaking and the characteristics of the historic properties that qualify them for inclusion will be diminished or altered, then the USACE shall make an "Adverse Effect to Historic Properties" finding and provide this finding, along with supporting documentation, in accordance with 36 CFR § 800.11(e), to the Applicable Consulting Parties for review and comment in accordance with Stipulation III.D.4.

3. No Adverse Effect to Historic Properties

    i. For Program undertakings with a finding of "No Adverse Effect to Historic Properties" the USACE shall provide the Applicable Consulting Parties with the following:

        (1) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

        (2) An APE map and narrative description of the APE for the Program undertaking;

        (3) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

        (4) Results of historic property identification efforts completed by the USACE, including an appropriate level of documentation to include reports, forms, evaluations, eligibility determinations, or other documents supporting NRHP eligibility determinations;

(5) A description of the affected historic properties including information on the characteristics that qualify them for the NRHP;

(6) A description of the Program undertaking's potential effects on the identified historic properties and explanation of why the criteria of adverse effect were found applicable or inapplicable;

(7) Any photos, additional maps, images, or plans, as appropriate; and

(8) A stated finding of "No Adverse Effect to Historic Properties" for the Program undertaking and request for comment for said finding from the Applicable SHPO.

ii. The Applicable Federal Agencies and Consulting Tribes are under no obligation to provide comments on the finding of "No Adverse Effect to Historic Properties". However, if they wish the USACE to consider their comments regarding the finding of effect, Applicable Federal Agencies or Consulting Tribes shall submit comments in writing within thirty (30) calendar days of receipt. The USACE shall take any comments received into consideration before concluding the consultation and will notify the applicable SHPO of these concerns and the USACE response to them. Objections shall be addressed in accordance with Stipulation III.D.3.v. below.

iii. The Applicable SHPO shall provide a response to a USACE finding within thirty (30) calendar days of fully documented "No Adverse Effect to Historic Properties" finding. If no comments or a request for an extension are received within the 30-day review period, the USACE will assume SHPO has waived their ability to comment and has concurred.

iv. If the Applicable SHPO concurs with the "No Adverse Effect to Historic Properties" finding for a specific Program undertaking, the USACE shall first determine if any other party has objected to the finding, and if there are no objections, the USACE has no further obligations under this Stipulation.

v. If an Applicable Consulting Party(ies) objects to the finding of "No Adverse Effect to Historic Properties," the USACE shall consult with the objecting party (ies), and include other parties as appropriate, for no more than a total of thirty (30) calendar days, upon receipt of the notification of non-concurrence to attempt to resolve concerns as identified by the objecting party.

(1) The USACE may revise its finding of "No Adverse Effect to Historic Properties." If the USACE revises its finding to "No Historic Properties Affected," then the USACE shall continue consultation pursuant to Stipulation III.C.5.i. If the USACE revises its finding to "Adverse Effect," then the USACE shall continue consultation pursuant to Stipulation III.D.4.

(2) If at the end of the thirty (30) calendar days, the objecting party concurs with the finding of "No Adverse Effect to Historic Properties," the USACE shall document this concurrence, and the USACE has no further obligations under this Stipulation for the specific Program undertaking.

(3) If at the end of the thirty (30) calendar days, the objecting party(ies) still objects to the finding of "No Adverse Effect to Historic Properties", and the USACE has not altered its effects determination, the USACE shall notify the ACHP in accordance with Stipulation X.

vi. If the USACE does not carry out the Program undertaking as documented in the "No Adverse Effect" finding, then the USACE shall continue consultation in accordance with Stipulation III.C.

4. Adverse Effect to Historic Properties

i. For a specific Program undertaking with a finding of "Adverse Effect to Historic Properties," the USACE shall provide the Applicable Consulting Parties with the following:

(1) A full description of the Program undertaking, to include depth and amount of ground disturbance, as well as above-ground effects, anticipated;

(2) An APE map and narrative description of the Program undertaking;

(3) A description of the steps taken, and justification for the level of effort, to identify historic properties within the APE;

(4) Results of historic property identification efforts completed by the USACE, including an appropriate level to include reports, forms, evaluations, eligibility determinations, or other documents of documentation supporting NRHP eligibility determinations;

(5) A description of the affected historic properties including information on the characteristics that qualify them for the NRHP;

(6) A description of the Program undertaking's potential effects on the historic properties and an explanation of why the criteria of adverse effect were found applicable or inapplicable;

(7) Any photos, additional maps, images, or plans, as appropriate;

(8) A stated finding of "Adverse Effect to Historic Properties" and request for comment for said finding from the Applicable SHPO.

ii. The USACE shall consult with the Applicable Consulting Parties to resolve the "Adverse Effect to Historic Properties" pursuant to Stipulation III.E.

E. RESOLUTION OF ADVERSE EFFECTS

1. The USACE shall notify Applicable Consulting Parties, and the public, upon receiving Applicable SHPO concurrence on a finding of "Adverse Effect to Historic Properties" for a Program undertaking using the following process:

   i. For public awareness, the USACE shall post a notice of the "Adverse Effect to Historic Properties" finding on the official USACE website for the involved District to include a description of the Program undertaking, a list of identified historic properties, the explanation for the finding of adverse effects, steps taken or considered by the USACE to avoid or minimize the adverse effects, any Applicable Consulting Party comments received by the USACE regarding the undertaking, and an invitation to provide written comment within thirty (30) calendar days of posting to the website.

   ii. Consulting Parties are under no obligation to provide comments on the finding of adverse effect. However, if they wish the USACE to consider their comments regarding the finding of adverse effect, Consulting Parties shall submit comments in writing within thirty (30) calendar days of receipt. The USACE shall take any comments received into consideration before concluding the consultation and will notify the Applicable Consulting Parties of any concerns and the USACE response to those concerns.

2. The USACE shall consult with the Applicable Consulting Parties to determine appropriate avoidance, minimization and/or mitigation measures to resolve the adverse effect. The USACE shall offer to facilitate a consultation meeting, to include Applicable Consulting Parties, within thirty (30) calendar days after notification of an adverse effect finding, to discuss Program undertaking alternatives to avoid, minimize, or mitigate the adverse effects, and may schedule additional meetings at its discretion.

3. If through consultation with Applicable Consulting Parties, the USACE modifies the Program undertaking to avoid adverse effects to historic properties within the APE, the USACE shall document the alternatives utilized to eliminate the potential adverse effects of the proposed Program undertaking resulting in a revised finding of "No Adverse Effect to Historic Properties," which must receive concurrence from the Applicable Consulting Parties pursuant to Stipulation III.D.3. Once concurrence is achieved, the USACE has no further obligations under this Stipulation for the specific Program undertaking.

4. If through consultation with the Applicable Consulting Parties, the USACE reaches agreement to appropriately resolve the adverse effects through minimization and/or mitigation measures then the measures agreed to by the USACE and the Applicable

Consulting Parties shall be specified in a Memorandum of Agreement (MOA) developed and executed for the Program undertaking in accordance with 36 CFR § 800.6(b)(1) and 800.6(c) and filed with the ACHP upon execution.

i. If any agreed-upon minimization and/or mitigation measure included in the final MOA involves archaeological data recovery or historic property documentation, then ground-disturbing activities or activities resulting in adverse effects to historic properties associated with the Program undertaking may not begin until after the adequate completion of the fieldwork for the data recovery or historic property documentation and the USACE has provided written notification in this regard.

ii. It is understood the USACE shall not complete archaeological data recovery while lands are under private ownership and mitigation of the adverse effect is not complete until the final draft of the data recovery report has been filed with and recommended for acceptance by the Applicable SHPO and other Applicable Consulting Parties as agreed-upon in the final MOA.

5. If through consultation with the Applicable Consulting Parties, the USACE cannot reach agreement to appropriately resolve adverse effects through minimization and/or mitigation measures, the USACE will notify the ACHP and seek a formal resolution in accordance with 36 CFR § 800.6(b)(2). The ACHP will only participate in the resolution of adverse effects for individual Program undertakings if a written request is received from the USACE or Applicable Consulting Party.

IV. SUBSEQUENT AGREEMENTS

A. Memoranda of Agreements developed to resolve adverse effects for specific Program undertakings under the Programs shall be negotiated between the respective USACE District (St. Paul, Rock Island, St. Louis), Applicable Consulting Parties, and ACHP, pursuant to 36 CFR § 800.6(c), and shall be independent of this PA.

V. REVIEW AND MONITORING OF PA IMPLEMENTATION

A. The purpose of the PA review and monitoring is to ensure the USACE identification and protection of historic properties in carrying out Program undertakings. This is accomplished through the review of Program undertakings that were completed during a reporting period and review of implementation of the PA. Electronic mail (email) will serve as the official correspondence method for all communications regarding this PA and its provisions. See Attachment D for a list of contacts and email addresses. Attachment D may be updated as needed without an amendment to this PA. It is the responsibility of each Consulting Party to inform a respective USACE District of any change in name, email address, or phone number of any point-of-contact listed in this PA. Following any updates to Attachment D, the USACE shall provide this information to all Consulting Parties. In order to foster cooperative relations as the terms of this PA are carried out, the USACE shall:

1. Beginning on the one-year anniversary of the execution of this PA, and on an annual basis thereafter, compile and distribute a report to Consulting Parties on the implementation of the terms of this PA.

2. Invite Consulting Parties to a review meeting every two (2) years. If it is agreed that such a meeting is not necessary at that time, the meeting may be waived. Meetings may be conducted in any mutually agreeable location and/or format, including in-person, video conferencing, or teleconferencing. The USACE shall remain responsible for initiating the biennial meetings in subsequent years. More frequent meetings may be appropriate based on specific circumstances and therefore an alternative meeting schedule may be established.

VI. CURATION

A. All records and materials resulting from the actions required by this PA shall be curated to the extent provided by law in accordance with 36 CFR Part 79, Curation of Federally Owned or Administered Archeological Collections, except those materials identified as Native American human remains and items associated with Native American burials which would be subject to Stipulation IX.

B. Subject to Stipulation VI and consistent with the USACE's property interest, the USACE or its contractors, in accordance with 36 CFR Part 79, will maintain all archaeological items and materials collected until any specified analyses and reviews are complete.

C. It is USACE policy that archaeological items and materials, not associated with human remains or burials, recovered from lands other than USACE fee-title, are the property of the respective landowner including private, state, federal, and other locally owned lands.

VII. CONFIDENTIALITY

A. The USACE shall seek and consider the views of the public in a manner that reflects the nature of the Program undertakings and their effects on historic properties following procedures pursuant to 36 CFR § 800.2(d) and in a manner that observes confidentiality requirements pursuant to Section 304 of the NHPA (54 U.S.C. 307103); Section 9 of the Archaeological Resources Protection Act (16 U.S.C. 470hh); and Section 552(b) of the Freedom of Information Act (5 U.S.C. 552) and applicable state laws.

B. The nature and location of archaeological sites and any other cultural resources discussed in this PA shall be considered confidential as provided for in 36 CFR § 800.11(c). The USACE shall use best efforts to protect sensitive information from disclosure as requested by Applicable Consulting Parties to the extent permitted by federal and applicable state laws identified in VII.A above.

VIII. POST-REVIEW DISCOVERIES

A. The USACE shall ensure that previously unidentified historic properties, or unanticipated effects to previously identified historic properties, discovered during the construction activities for Program undertakings are subject to the requirements of 36 CFR § 800.13(b-d). Discoveries of previously unidentified historic properties or unanticipated adverse effects to known historic properties is not anticipated. However, if this were to occur, the USACE shall ensure the following measures are met. USACE shall implement the provisions outlined below that are intended to ensure that Program undertakings are in compliance with applicable federal and state laws and regulations. These provisions will be included in all construction, operations, and maintenance plans.

1. The contractor will be instructed to cease all ground-disturbing activities in the area of the historic property, as well as within a 100-foot radius around but within the project footprint, to avoid and/or minimize harm to the property.

2. The contractor will be instructed to immediately notify the USACE of the discovery and implement interim measures, as appropriate, to protect the discovery from damage, looting, and vandalism, such as protective fencing and covering of the discovery with appropriate materials.

3. The USACE will inspect the work site to determine the extent of the discovery and ensure work activities have halted within the 100-foot radius.

4. The USACE will clearly mark the area of discovery and implement additional measures such as security, as appropriate, to protect the discovery from theft and vandalism.

5. The USACE shall provide an initial assessment of the resource's condition and eligibility to Applicable Consulting Parties and notify other Consulting Parties, if applicable, of the discovery within seven (7) calendar days.

B. If USACE, after consultation with Applicable Consulting Parties, determines the discovery is not a historic property as it is either isolated, does not retain integrity sufficient for listing on the NRHP, or if the historic property will not be further disturbed by construction activities, construction may resume within the 100-foot radius.

C. If USACE determines that the discovery is a historic property that is, or may be, eligible for listing on the NRHP, the USACE shall consult with Applicable Consulting Parties, regarding appropriate measures for site treatment pursuant to 36 CFR 800.6(a). Consulting Parties have ten (10) days to provide their comments on the proposed measures which may include:

1. Formal evaluation of the historic property;
2. Exploration of potential alternatives to avoid the historic property;

3. If the historic property will be adversely affected by project activities, preparation and implementation of a mitigation plan by USACE to resolve adverse effects in consultation with Applicable Consulting Parties.

D. The notified Applicable Consulting Parties have ten (10) days following notification to provide comment regarding NRHP eligibility determination of the discovery.

E. USACE shall prepare a report of findings describing the background history leading to and immediately following the reporting and resolution of an inadvertent discovery within thirty (30) days of the resolution for each inadvertent discovery.

F. USACE shall communicate the procedures to be observed to its contractors and personnel.

G. USACE shall provide a Notice to Proceed to the contractor to work in the area. Notices to Proceed may be issued by USACE for individual construction segments, defined by USACE in its construction specifications, after the identification and evaluation of historic properties and resolution of adverse effects has been completed.

IX. TREATMENT OF HUMAN REMAINS AND ITEMS OF RELIGIOUS AND CULTURAL IMPORTANCE

A. Under this PA, no investigative surveys or construction activities will be planned to knowingly disturb human remains, funerary objects, sacred objects, or objects of cultural patrimony. If any potential unmarked human burials or skeletal remains are encountered during construction activities, all ground disturbing activities will cease. Should any potential findings be made, field personnel will follow instructions provided by USACE for each project to initiate identification, evaluation, and consultation efforts as outlined below.

B. If human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered during field investigations or laboratory work or during construction activities, the USACE will comply with the provisions based on the nature of the land ownership at the time remains or objects are encountered.

1. The USACE will immediately notify appropriate law enforcement, appropriate medical examiner or coroner, the state archaeologist, Applicable SHPO, Applicable Consulting Tribes, and landowner within twenty-four (24) hours, or as soon as otherwise practicable, via email or telephone.

    i. The notification process will follow the state law appropriate for the location of the discovery:

        (1) Iowa per Code of Iowa 263B, Office of the State Archaeologist
        (2) Illinois per The Human Skeletal Remains Protection Act (20 ILCS 3440)

(3) Minnesota per Statutes Section 307.08, Office of the State Archaeologist and the Minnesota Indian Affairs Council
(4) Missouri Unmarked Human Burials Law (RSMo Chapter 194) and Missouri Cemeteries Law (RSMo Chapter 214); and/or
(5) Wisconsin per Statutes Section 157.70 and Wisconsin Administrative Code HS2, Wisconsin Burial Site Preservation Office

2. The USACE will require that all work will immediately cease within a 165-foot radius from the point of discovery and require that the contractor secure the area by placing pin flags within the work area radius around the discovery, and following other appropriate measures directed by USACE to protect the discovery from further disturbance. The USACE shall consult with the Applicable Consulting Parties regarding additional steps to be followed. All human remains, regardless of ancestry, will be treated with dignity and respect.

3. If the human remains, funerary objects, sacred objects, or objects of cultural patrimony appear to be Native American, the USACE, or the landowner, if located on private land, may be required to meet applicable federal, tribal, and state burial laws and ordinances. When on federal or tribal lands, the USACE will meet applicable requirements of the Native American Graves Protection and Repatriation Act for all Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony on a case-by-case basis, in accordance with 43 CFR Part 10.

4. If not on federal or tribal lands, the USACE shall notify appropriate authorities and work with the landowner and state to comply, as appropriate, with
   i. Code of Iowa 263B,
   ii. 20 Illinois Compiled Statue 3440
   iii. Minnesota Statutes Section 307.08,
   iv. Revised Statues of Missouri Chapters 194 and 214
   v. Wisconsin Statutes Section 157.70 and Wisconsin Administrative Code HS2.

5. Measures to protect the human remains and any associated artifact(s) will remain in effect until an appropriate treatment plan for the discovery (if applicable) has been completed for the remains and associated artifacts. The USACE will consider redesign of undertakings to avoid effects to human remains and any associated artifacts(s). The contractor will not resume work in the vicinity of the find until the USACE has granted clearance to do so.

6. Where suspected burial sites in the absence of human remains are encountered, the USACE or its contractor will comply, as applicable, with
   i. Code of Iowa 263B,
   ii. 20 Illinois Compiled Statue 3440
   iii. Minnesota Statutes Section 307.08,
   iv. Revised Statues of Missouri Chapters 194 and 214, and/or
   v. Wisconsin Statutes Section 157.70 and Wisconsin Administrative Code HS2

X. DISPUTE RESOLUTION

A. Should a Consulting Party to this PA object in writing regarding implementation of this PA, the USACE shall consult with the objecting party for no more than thirty (30) calendar days. The USACE shall provide copies of the written objection to other Consulting Parties within five (5) calendar days of receipt of the written objection. Upon request, the USACE shall make every effort to extend the consultation period, subject to mission requirements.

   1. The USACE shall take into account the reasons for the objection and evaluate the solutions suggested by the objecting party.

   2. If, after the thirty (30)-calendar-day review period, the USACE determines that the objection cannot be resolved, the USACE shall forward all documentation relevant to the dispute, including the USACE proposed resolution, to the ACHP.

      i. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and other Consulting Parties. The USACE shall provide Consulting Parties with a copy of this written response. The USACE will then proceed according to its final decision.

      ii. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar-day time period, the USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the signatories to the PA. The USACE shall provide Consulting Parties with a copy of this written response. The USACE will then proceed according to its final decision and notify Consulting Parties.

B. The USACE responsibilities to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

C. Should any member of the public raise a timely and substantive objection pertaining to the manner in which the terms of this PA are carried out, at any time during its implementation, the USACE shall take the objection into account by consulting with the objector. When the USACE responds to an objection, it shall notify the Consulting Parties of the objection and the manner in which it was resolved. The USACE may request the assistance of a Consulting Party to resolve an objection.

XI. SEVERABILITY

A. If any section, subsection, paragraph, sentence, clause, or phrase in this PA, for any reason, is held to be unconstitutional or invalid or ineffective, such decision shall not affect the validity or effectiveness of the remaining portions of this PA.

B. If any section, subsection, paragraph, sentence, clause, or phrase in this PA, for any reason, is held to be unconstitutional or invalid or ineffective, the signatories shall consult to determine whether an amendment to this PA is needed.

XII. ANTI-DEFICIENCY PROVISION

A. All parties to this agreement acknowledge the USACE fiduciary responsibilities pursuant to the Anti-Deficiency Act (31 USC 1341). All obligations on the part of the USACE under this PA shall be subject to the appropriations, allocation, and availability of sufficient funds available to the USACE for such purposes.

B. The legal responsibility of the USACE to comply with Section 106 of the NHPA is not affected by the availability of federal funding provided through appropriation.

XIII. AMENDMENTS

A. Any signatory to this PA may at any time propose amendments, whereupon all signatories shall consult to consider such amendment for no more than ninety (90) days. An amendment will be effective on the date a copy signed by all signatories is filed with the ACHP.

B. Any Consulting Tribe may update its consultation area in Attachment C without an amendment to this PA through notice to the respective USACE district. USACE will distribute the updated consultation area to all Consulting Parties.

XIV. TERMINATION OR WITHDRAWAL

A. If the USACE or the ACHP determines that the terms of this PA will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII, above. If within ninety (90) calendar days (or another time period agreed to by all signatories) an amendment cannot be reached, the USACE or the ACHP may terminate the PA upon written notification to the other signatories.

    1. Once the PA is terminated, the USACE must review all undertakings identified post termination in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14. The USACE will include this in a final annual report per Stipulation V.

B. Any SHPO may terminate this PA as to its jurisdiction after providing the USACE written notice ninety (90) calendar days prior to termination.

1. The USACE shall consult with the terminating SHPO to identify any mutually acceptable measures that would avoid the party's termination.

2. If mutually acceptable measures are identified that would require amendment to the PA, the USACE shall follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached, and the SHPO terminates, the PA will no longer apply within that SHPO's state, and the USACE will review all Program undertakings previously subject to this PA in that jurisdiction in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14, which may include entry into subsequent MOAs and/or PAs.

4. This PA will remain in effect in all other jurisdictions and for all other parties.

C. The USFWS and/or NPS may terminate the PA or withdraw as a Signatory/Invited Signatory after providing the USACE written notice ninety (90) calendar days prior to termination or withdrawal.

1. The USACE shall consult with the USFWS or NPS, as applicable, to identify any mutually acceptable measures that would avoid the termination or the party's withdrawal, as applicable.

2. If mutually acceptable measures are identified that would require an amendment to the PA, the USACE will follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached, the USFWS or NPS, as applicable, may terminate the PA upon written notification to the other signatories, or withdraw from the PA. If the USFWS or NPS, as applicable, terminates the PA, USACE will follow Stipulation XIV.A.1. If the USFWS or NPS, as applicable, withdraws, the PA will remain in full force and effect.

D. Any Invited Signatory Tribe may withdraw as an Invited Signatory or terminate the PA as to its consultation area after providing the USACE written notice ninety (90) calendar days prior to withdrawal or termination.

1. The USACE shall consult with the withdrawing or terminating Invited Signatory Tribe to identify any mutually acceptable measures that would avoid the party's withdrawal or termination.

2. If mutually acceptable measures are identified that would require amendment to the PA, the USACE shall follow the amendment process outlined in Stipulation XIII.

3. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached and an Invited Signatory Tribe withdraws, the USACE will continue to consult with the former Invited Signatory Tribe as a Consulting Tribe under the terms of this PA, and the PA will continue in full force and effect, including within the former Invited Signatory Tribe's consultation area. If within ninety (90) calendar days (or another time period agreed to by all signatories) mutually acceptable measures are not identified or an amendment cannot be reached and an Invited Signatory Tribe terminates as to its consultation area, the PA will no longer apply within that consultation area, and the USACE will review all Program undertakings previously subject to this PA in that consultation area in accordance with 36 CFR § 800.3 through 800.7 or an applicable alternative under 36 CFR § 800.14, which may include entry into subsequent MOAs and/or PAs. This PA will remain in effect in all other jurisdictions and for all other parties. The remaining Signatories may confer on whether additional amendment to the PA is warranted to address the termination by the Invited Signatory Tribe.

XV. DURATION

This PA shall remain in effect for ten (10) years, until March 18, 2034, and can be extended through amendment in accordance with Stipulation XIII. Prior to March 18, 2028 the USACE shall host a workshop for a four (4)-year review and assessment of the effectiveness of this PA.

XVI. IMPLEMENTATION

A. This PA may be executed in counterparts, with a separate page for each signature.

B. This PA shall become effective within the applicable state on the date of signature, whichever is latest, by the USACE, applicable SHPO or the ACHP.

C. The USACE shall ensure each consulting party is provided with a complete copy of the final PA and that the final PA and any amendments are filed with the ACHP.

XVII. EXECUTION

Execution of this PA by the St. Paul, Rock Island, and St. Louis Districts of the USACE, the IaSHPO, the IlSHPO, the MnSHPO, the MoSHPO, the WiSHPO, the USFWS, the NPS, the ACHP, The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians, the Miami Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Quapaw Nation, and The Osage Nation and implementation of its terms is evidence that the USACE has taken into account the effects of its undertaking on historic properties and has afforded the ACHP opportunity to comment pursuant to Section 106 of the NHPA.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT

E R Swenson Digitally signed by SWENSON.ERIC.RAYMOND.1032271894 Date: 2024.03.28 14:26:54 -10'00' **. Date:** 28 March 2024 **.**

Colonel Eric R. Swenson, St. Paul District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ROCK ISLAND DISTRICT

Digitally signed by CURRY.JESSE.THOMAS.1086509969
Date: 2024.04.02 12:46:17 -05'00'

. Date: 02 April 2024 **.**

Colonel Jesse T. Curry, Rock Island District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY
UNITED STATES ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT

PANNIER.ANDY.JOSEPH.1090474134 Digitally signed by PANNIER.ANDY.JOSEPH.1090474134 Date: 2024.03.22 13:20:53 -05'00'

_____. **Date:** _____.

Colonel Andy J. Pannier, St. Louis District Commander

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS,
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
IOWA STATE HISTORIC PRESERVATION OFFICE

Heather Gibb . **Date:** 04/16/2024 .

Heather Gibb, State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
ILLINOIS STATE HISTORIC PRESERVATION OFFICE

Carey L. Mayer **. Date:** 4/3/2024 **.**

Carey Mayer, Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
MINNESOTA STATE HISTORIC PRESERVATION OFFICE

_____. **Date:** 4/9/2024.

Amy H. Spong, Deputy State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
THE U.S. FISH AND WILDLIFE SERVICE,
THE NATIONAL PARK SERVICE,
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS
THE MIAMI TRIBE OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
MISSOURI STATE HISTORIC PRESERVATION OFFICE

_____. Date: 06/17/2024

Brian Stith, Deputy Director Division of State Parks and
Deputy Missouri State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
WISCONSIN STATE HISTORIC PRESERVATION OFFICE

Daina Penkiunas . **Date:** 4/11/2024 .

Daina Penkiunas, State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
UNITED STATES FISH AND WILDLIFE SERVICE

WILLIAM MEEKS Digitally signed by WILLIAM MEEKS Date: 2024.04.16 20:48:24 -05'00' **. Date:** _____.

Will Meeks, Midwest Regional Director

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

SIGNATORY:
ADVISORY COUNCIL ON HISTORIC PRESERVATION



. Date: June 25, 2024 .

Reid Nelson, Executive Director

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
NATIONAL PARK SERVICE

Digitally signed by HERBERT FROST
Date: 2024.08.02 16:44:13 -05'00'

_____. **Date:** _____.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE MATCH-E-BE-NASH-SHE-WISH BAND OF POTTAWATOMI INDIANS

Melissa Brown **. Date:** 5-2-24 .

Melissa Brown, Senior Director of Operations

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
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THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
MIAMI TRIBE OF OKLAHOMA

Douglas Lankford Digitally signed by Douglas Lankford Date: 2024.05.03 11:50:27 -05'00' **. Date:** _____.

Chief Douglas Lankford

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
QUAPAW NATION

Wena Supernaw . **Date:** 4/20/2024 .

Wena Supernaw, Chair

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE NATIONAL PARK SERVICE,
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE OSAGE NATION

_____. **Date:** 4-23-24.

Geoffrey M. Standing Bear, Principle Chief

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE NATIONAL PARK SERVICE,
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

INVITED SIGNATORY:
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA

_____. **Date:** 5/21/24 .

Chief Craig Harper

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, ST. PAUL,
ROCK ISLAND, AND ST. LOUIS DISTRICTS,
THE STATE HISTORIC PRESERVATION OFFICERS OF
IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN,
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THE MIAMI TRIBE OF OKLAHOMA,
THE PEORIA TRIBE OF INDIANS OF OKLAHOMA,
THE QUAPAW NATION,
THE OSAGE NATION, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

REGARDING

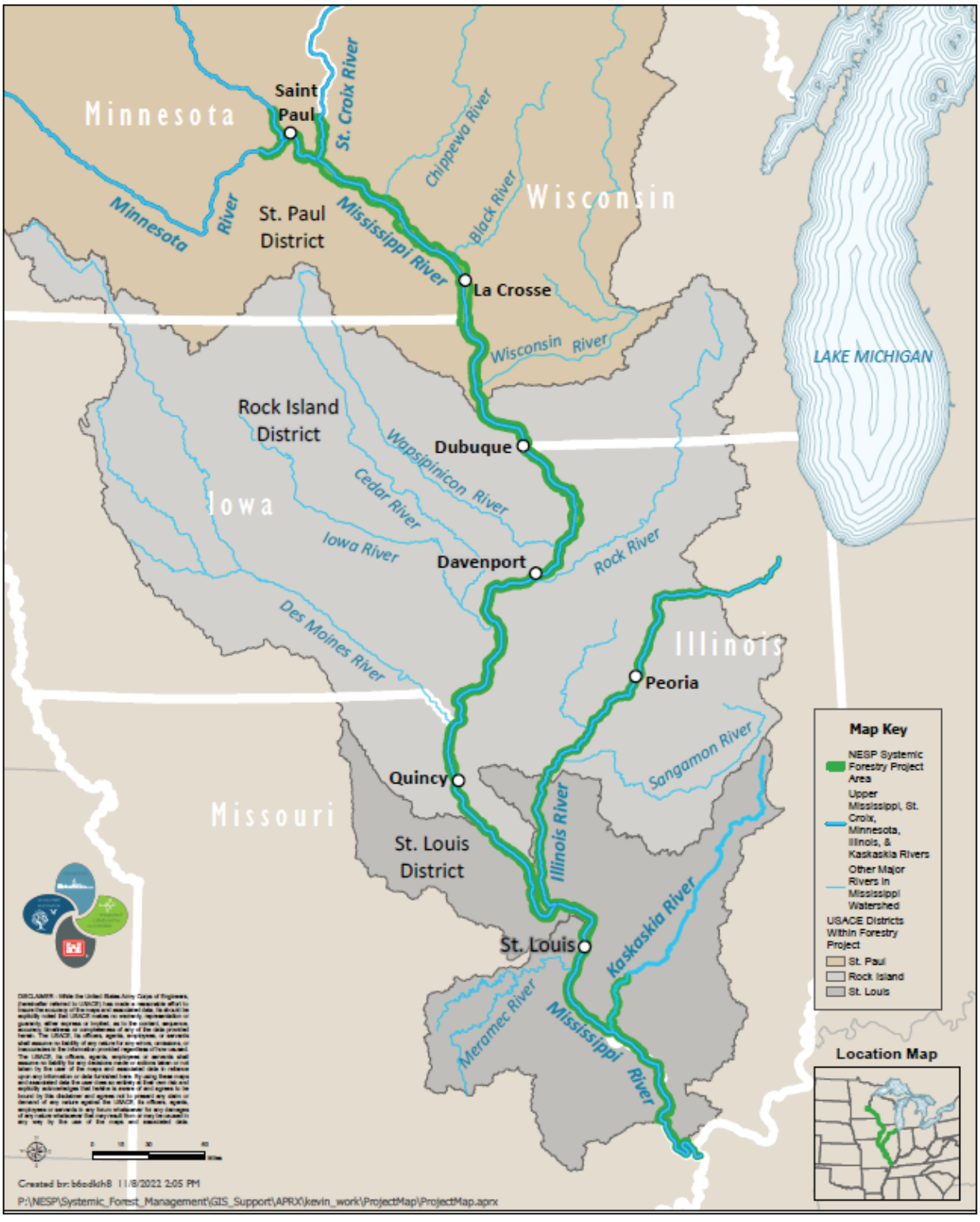
The Upper Mississippi River Restoration Program Habitat Rehabilitation and Enhancement Projects and the Navigation and Ecosystem Sustainability Program

CONCURRING:
IOWA TRIBE OF KANSAS AND NEBRASKA

Alan Kelley . Date: 04.03.2024

Alan Kelley, Deputy Tribal Historic Preservation Officer

Attachment A – NESP and UMRR General Area of Interest



Attachment B: Definitions

Tentatively Selected Plan	Under Engineer Regulation ER_1105-2-61, the tentatively selected plan is the single alternative chosen from all those considered during the feasibility study and identified in the draft feasibility report/NEPA report released to the public for review. The tentatively selected plan usually becomes the recommended plan after agency endorsement.
Recommended Plan	Under Engineer Regulation ER_1105-2-100, the recommended plan is the plan proposed in the final decision document for implementation.
Area of Potential Effect (APE)	Under 36 CFR § 800.16(d) the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.
Signatory	In accordance with 36 CFR § 800.6(c)(1), a Signatory has the authority to execute, amend, or terminate the Programmatic Agreement.
Invited Signatory	In accordance with 36 CFR § 800.6(c)(2), Invited Signatories who sign the Programmatic Agreement are signatories with the authority to amend and terminate the Programmatic Agreement.
Concurring Party	In accordance with 36 CFR § 800.6(c)(3), a Concurring Party is a Consulting Party invited to concur in the Programmatic Agreement but does not have the authority to amend or terminate the Programmatic Agreement.
Technical work	In this PA means all efforts to identify and delineate, evaluate historic, architectural, and archaeological properties, and to assess potential adverse effects, and perform subsequent treatment of historic properties, such as avoidance, minimization, data recovery excavation, monitoring, or recordation of potential historic properties that is required under this PA.

Attachment C. Provided Tribal Consultation Areas

Tribe	Consultation Area by County				
	Illinois	**Iowa**	**Minnesota**	**Missouri**	**Wisconsin**
The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Adams, Brown, Calhoun, Champaign, Madison, Monroe, Pike, and Saint Clair in MVS*	Clinton, Des Moines, Lee, Louisa, Muscatine, Scott	N/A	St. Charles, St. Louis, and St. Louis City in MVS*	Grant
The Miami Tribe of Oklahoma	All MVS*	N/A	N/A	Boone, Callaway, Cape Girardeau, Franklin, Gasconade, Jefferson, Lincoln, Marion, Mississippi, Montgomery, Osage, Perry, Pike, Ralls, St. Charles, St. Louis City, St. Louis Co., Ste. Genevieve, Scott, and Warren in MVS*	N/A
The Osage Nation	All MVS* and Adams, Boone, Brown, Bureau, Calhoun, Carroll, Cass, Champaign, Christian, De Witt, Fulton, Hancock, Henderson, Henry, Jo Daviess, Knox, Lee, Logan, Macon, Macoupin, Marshall, Mason, Menard, Mercer, Montgomery, Morgan, Moultrie, Ogle, Peoria, Piatt, Pike, Putnam, Rock Island, Sangamon, Schuyler, Shelby, Stark, Stephenson, Tazewell, Warren, Whiteside, Winnebago, and Woodford Counties in MVR*	Clinton, Des Moines, Henry, Jackson, Lee, Louisa, Muscatine, Scott, and Van Buren Counties	N/A	All MVS* and Adair, Clark, Knox, Lewis, Marion, Monroe, Ralls, Schuyler, Scotland, and Shelby Counties in MVR*	N/A

The Peoria Tribe of Indians in Oklahoma	Adams, Alexander, Calhoun, Carroll, Hancock, Henderson, Jackson, Jersey, Jo Daviess, Madison, Mercer, Monroe, Pike, Randolph, Rock Island, St. Clair, Union, and Whiteside Counties	All MVR*	All MVP*	All MVR*and MVS*	All MVP* and MVR*
Quapaw Nation	Alexander, Jackson, Johnson, Madison, Monroe, Pulaski, Randolph, St. Clair, and Union Counties	N/A	N/A	Bollinger, Butler, Cape Girardeau, Iron, Jefferson, Madison, Mississippi, Perry, Reynolds, St. Charles, Ste. Genevieve, St. Francois, St. Louis, St. Louis City, Scott, and Wayne Counties	N/A

*MVP is the St. Paul District, MVR is the Rock Island District, and MVS is the St. Louis District.

Attachment D: Consulting Party Distribution List (January 2024)

Agency and/or Tribe	Name	Title	Email
Iowa State Historic Preservation Office	Dr. Heather Gibb	State Historic Preservation Officer	heather.gibb@iowa.gov
Illinois State Historic Preservation Office	Mr. Jeffrey Kruchten	State Historic Preservation Officer	jeff.kruchten@illinois.gov
Minnesota State Historic Preservation Office	Amy Spong	Deputy State Historic Preservation Officer	amy.spong@state.mn.us
Missouri State Historic Preservation Office	Ms. Amy Rubingh	Review, Compliance, Records Coordinator	amy.rubingh@dnr.mo.gov
Wisconsin State Historic Preservation Office	Mr. Tyler Howe	State Historic Preservation Officer	tyler.howe@wisconsinhistory.org
National Park Service	Ms. Susan Snow	Superintendent – Effigy Mounds National Monument	Susan_Snow@nps.gov
U.S. Fish and Wildlife Service	Ms. Sabrina Chandler	Refuge Manager/Area Supervisor – UMR national Wildlife and Fish Refuge	sabrina_chandler@fws.gov
U.S. Fish and Wildlife Service	Mr. James Myster	Archaeologist	James_Myster@fws.gov
Advisory Council on Historic Preservation	Mr. Chris Daniel	Program Analyst	cdaniel@achp.gov
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Absentee-Shawnee Tribe of Indians in Oklahoma	Ms. Carol Butler	Cultural Preservation Director	cbutler@astribe.com
Bad River Band of Lake Superior Chippewa	Mr. Larry Plucinski	Tribal Historic Preservation Officer	thpo@badriver-nsn.gov
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Caddo Nation of Oklahoma	Mr. Jonathan M. Rohrer	Tribal Historic Preservation Officer	jrohrer@mycaddonation.com
Citizen Potawatomi Nation, Oklahoma	Ms. Kelli Mosteller	Assistant Tribal Historic Preservation Officer	cpnthpo@potawatomi.org
Delaware Nation, Oklahoma	Ms. Carissa Speck	Historic Preservation Director	cspeck@delawarenation-nsn.gov
Delaware Tribe of Indians	Ms. Susan Bachor	Tribal Historic Preservation Officer	lheady@delawaretribe.org
Eastern Shawnee Tribe of Oklahoma	Mr. Paul Barton	Tribal Historic Preservation Officer	pbarton@estoo.net
Flandreau-Santee Sioux Tribe	Mr. Garrie Kills-A-Hundred	Tribal Historic Preservation Officer	garrie.killsahundred@fsst.org
Fond du Lac Band of Lake Superior Chippewa	Mr. Evan Schroeder	Tribal Historic Preservation Officer	EvanSchroeder@FDLREZ.com
Fort Belknap Indian Community	Emma "Emmy" Filesteel	Tribal Historic Preservation Officer	emma.filesteel@ftbelknap.org

Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
Forest County Potawatomi Community	Mr. Ben Rhodd	Tribal Historic Preservation Officer	Benjamin.Rhodd@fcp-nsn.gov
Forest County Potawatomi Community	Ms. Nicole Reske	Assistant Tribal Historic Preservation Officer	Nicole.Reske@fcpotawatomi-nsn.gov
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Iowa Tribe of Kansas and Nebraska	Mr. Alan Kelley	Deputy Tribal Historic Preservation Officer	akelly@iowas.org
Iowa Tribe of Oklahoma	Ms. Candace Pershall	Cultural Preservation	cpershall@iowanation.org
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Lac du Flambeau Band of Lake Superior Chippewa	Ms. Sarah Thompson	Tribal Historic Preservation Officer	Sarah.Thompson@ldftribe.com
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Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	Ms. Lakota Hobia	Tribal Historic Preservation Officer	lakota.hobia@glt-nsn.gov
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Mille Lacs Band of Ojibwe	Mr. Mike Wilson	Tribal Historic Preservation Officer	Mike.Wilson@millelacsband.com
Miami Tribe of Oklahoma	Mr. Logan York	Tribal Historic Preservation Officer	lyork@miamination.com

Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
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Prairie Band of Potawatomi Nation	Ms. Tara Mitchell	Deputy Tribal Historic Preservation Officer	taramitchell@pbpnation.org
Prairie Island Indian Community	Mr. Noah White	Tribal Historic Preservation Officer	Noah.White@piic.org
Quapaw Nation	Mr. Billie Burtrum	Tribal Historic Preservation Office	Billie.Burtrum@quapawnation.com
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The Osage Nation	Ms. Sarah O'Donnell	Preservation Office	sodonnell@osagenation-nsn.gov

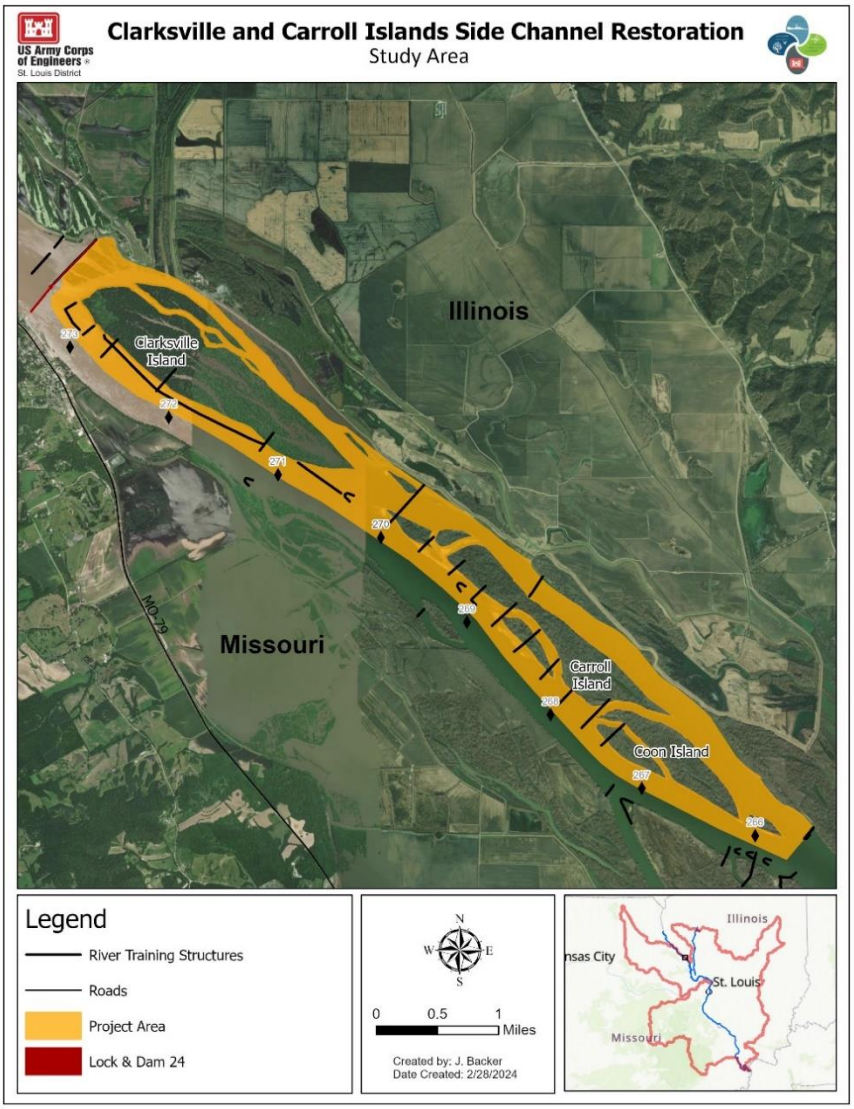
Attachment D: Continued			
Tribe	**Name**	**Title**	**Email**
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NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM

PROJECT IMPLEMENTATION REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

CLARKSVILLE/CARROLL ISLAND COMPLEX SIDE CHANNEL RESTORATION ECOSYSTEM RESTORATION PROJECT

POOL 25, UPPER MISSISSIPPI RIVER MILES 273-266
CALHOUN COUNTY, ILLINOIS



US Army Corps of Engineers®
St. Louis District

July 2025
Appendix J
Clean Water Act

1 PROJECT DESCRIPTION

1.1 Location

The Clarksville and Carroll Island complex project area consists of approximately 1,079 acres of side channel and connected backwater habitat along the left descending bank of the Mississippi River, Pool 25, Calhoun County, Illinois, between river miles (RM 273 – 266) (Figure 1). The study area encompasses the side channels and connected backwaters below the OHWM within the area of Clarksville Island, Carroll Island and Coon Island. The island complex is located immediately downstream of Lock & Dam (L&D) 24, Clarksville, MO (RM 273.4) (Figure 1).

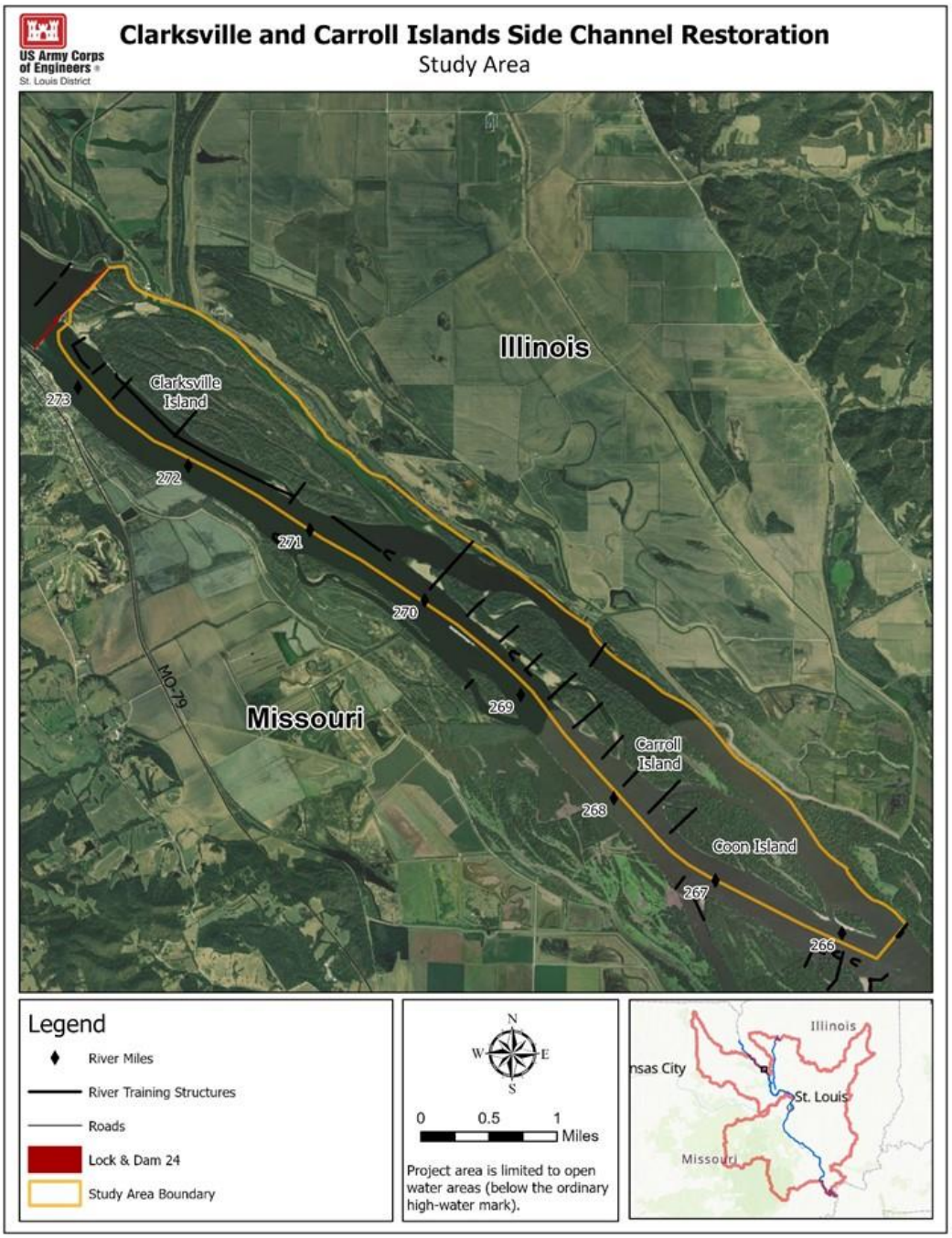


Figure 1: NESP Pool 25 – Clarksville and Carroll Islands project area.

1.2 General Description

The need for rehabilitation of the Project is based on the following factors:

- The project would restore and improve the quality of existing side channel habitat, by enhancing substrate diversity and connectivity. It would also increase quality of fish and mussel habitat.

The following objectives were considered in detail to achieve the project goal of increasing depth and flow diversity of aquatic side channels throughout the project area to:

- restore side channel sediment transport and geomorphic diversity.
- increase side channel habitat quantity and quality for native fish and mussel species.
- increase side channel habitat quality for native fish spawning, rearing, juvenile, and/or overwintering habitat.
- increase side channel area, flow diversity, water quality and clarity for native mussel species habitat.
- reduce sediment deposition within side channel flowing water habitats to maintain and restore main channel connectivity and increase quality of habitat for riverine dependent native fish.

1.3 Authority and Purpose

The Corps proposes to rehabilitate the Clarksville and Carroll Islands complex through construction of measures that would support quality side channel habitat for desirable native plant and animal species and emulate more natural river processes, structures, and functions for a resilient and sustainable ecosystem. The Corps prepared a Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (PEIS) for the Upper Mississippi River – Illinois Waterways (UMR-IWW) System Navigation Feasibility Study (USACE, 2004), and recommended a dual-purpose authorization to address the navigation efficiency and ecosystem restoration of the UMR-IWW over a 50-year planning horizon. The planning of the Pool 25 Clarksville and Carroll islands NESP project is proposed under the ecosystem restoration component of the dual-purpose authorization and the site-specific environmental assessment integrated within this document tiers-off the PEIS and incorporates it by reference. The dual-purpose navigation and ecosystem sustainability program (NESP) was authorized under Section 8004(b)(2) of the Water Resources Development Act (WRDA) of 2007, “The Secretary shall carry out, consistent with requirements to avoid adverse effects on navigation, ecosystem restoration projects to attain and maintain the sustainability of the ecosystem of the Upper Mississippi River (UMR) and Illinois River in accordance with the general framework outlined in the Plan”. Paragraphs (b)(2)(a-h) identify potential types of ecosystem restoration projects to pursue.

The purpose of the main report, a PIR with Integrated Environmental Assessment (EA), including the Finding of No Significant Impact (FONSI), is to evaluate a range of alternatives or actions and their environmental effects and identify the plan that reasonably maximizes ecosystem restoration benefits compared to costs.

The purpose of the evaluation portion of this document is to comply with Section 404 of the Clean Water Act pertaining to guidelines for the placement of dredged or fill material into waters of the United States. This evaluation, in conjunction with the *PIR with Integrated Environmental Assessment (EA), including the Finding of No Significant Impact (FONSI)* would assist in analysis of alternatives for the proposed project, resulting in a designated Tentatively Selected

Plan. Further, this evaluation would provide information and data to the state water quality certifying agency demonstrating compliance with state water quality standards.

1.4 General Description of Excavated and Placed Materials

1.4.1 General Characteristics of Materials

a. Fill material:

The term "discharge of fill material" is defined as the addition of fill material used for the primary effect of replacing any portion of a water of the U.S. with dry land or of changing the bottom elevation of a water of the U.S., including wetlands. Fill materials for the Pool 25 Clarksville and Carroll islands project would include creation of two SCEDs by modifying two existing dikes: Dike 273.2L (SCED273) and Dike 267.7L (SCED267), the creation of mussel riffles, as well as the placement of hard points and woody bundles within the study area.

The mussel riffles would be created by enhancing rock gravel substrate. The rock for substrate enhancement would be acquired by modifying the existing closure structure in Clarksville Slough and dragging rock immediately downstream and for use in other areas where it is feasible to create mussel riffles for an overall increase in available areas of substrate heterogeneity to promote freshwater mussel colonization.

Placement of hardpoint structures would increase structural complexity and result in areas with heterogeneous flows and substrates, thereby increasing its attractiveness to invertebrates (including mussels), fishes, reptiles, and amphibians. Eleven alternating hard points would be located along the side channel of Clarksville as well as one singular hard point near the pilot chute to help direct flow.

In addition, woody bundles would be placed in the downstream end of Clarksville Slough to enhance channel stability, increase flow and substrate diversity for fishes, mussels, and invertebrates.

b. Excavated material:

Excavated material is defined as material that is either hydraulically dredged or mechanically excavated from waters of the United States. Alluvial material excavated from the side channel and slough in the Clarksville and Carroll Islands complex would consist of alluvial sands, silts, and clays. Dredge centerlines were aligned to favor the left descending bank of the side channel. Three profiles were chosen: Pilot Channel (red), Pilot Chute (green), and Pilot Side (blue) as seen illustrated in Figure 2. The Pilot Channel will allow the main flow from the river to enter the side channel and is expected to provide majority of the flow needed for restoration. The Pilot Chute would enhance the existing overflow chute and allow aquatic habitat connectivity. There is an estimated 16-foot-deep scour pocket located at the downstream of the chute which would be retained for habitat and bathymetric diversity. Finally, the Pilot Side profile was chosen to reopen the tertiary channel flowing through Clarksville Island. Preliminary investigations show evidence of fallen trees that may have created a debris jam, which has built up sediment over the years. Removing the debris and creating a pilot channel here will re-establish this channel. Overall, this accumulated material is currently causing reduced flow, shallow depths, and reduced oxygen levels in the side channel. Stone material would come from within the project area by modifying two existing dikes and the existing closure structure.

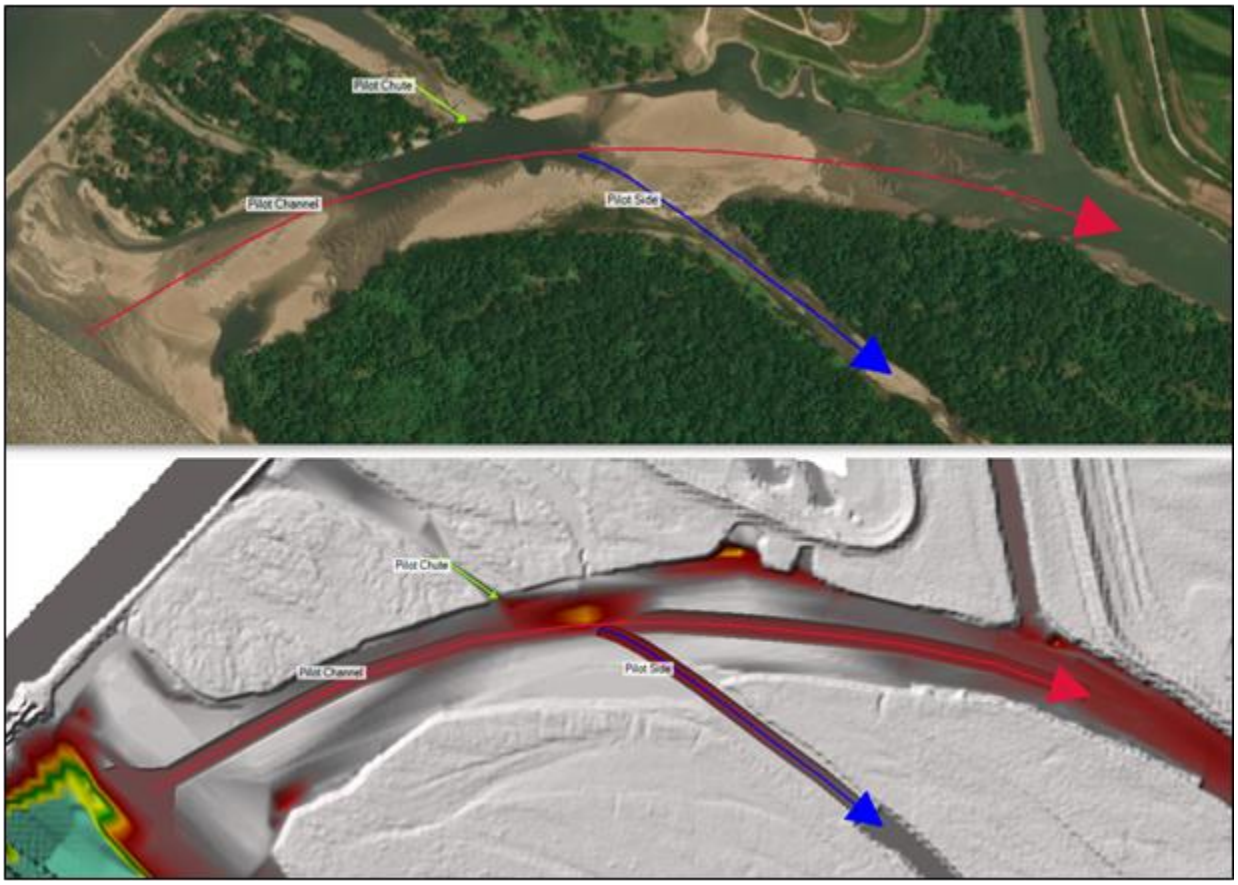


Figure 2: Excavation paths follow a trapezoidal cross section. Refinement of dredge dimensions and methods may be altered during construction.

1.4.2 Quantity of Materials

a. Side Channel:

- *Excavated or dredged side channel improvement material:* The total dredged material from the side channel is estimated to be approximately 130,620 BCY.

b. Side Channels:

- *Stone material:* The total placed stone material for mussel substrate enhancement is estimated to be approximately 32,734 CY.
- *Logs (Woody Bundles)*: The total placed large woody material for substrate and habitat enhancement is estimated to be approximately 50 logs.

1.5 Description of the Proposed Placement Sites

1.5.1 Location.

The excavated material from the side channel and slough openings would be deposited in approved placement areas within the Mississippi River along the riverside borders of Clarksville, Carroll, and Coon Islands (Gold, Brown, Tan Polygons, Figure 3). The proposed placement sites of stone for mussel habitat is located within the Clarksville-Carroll Island side channel complex, (Blue Outline Areas, Figure 3). Placement of stone for side channel enhancement dikes (SCED) are located near the side channel opening (Purple Lines, Figure 3), while placement of stone for hardpoints to create substrate diversity are located in the upper portion

of the side channel (Yellow Points, Figure 3). Placement of large woody bundles are located in the lower end of the side channel near Carroll and Coon Islands (Orange Points, Figure 3).

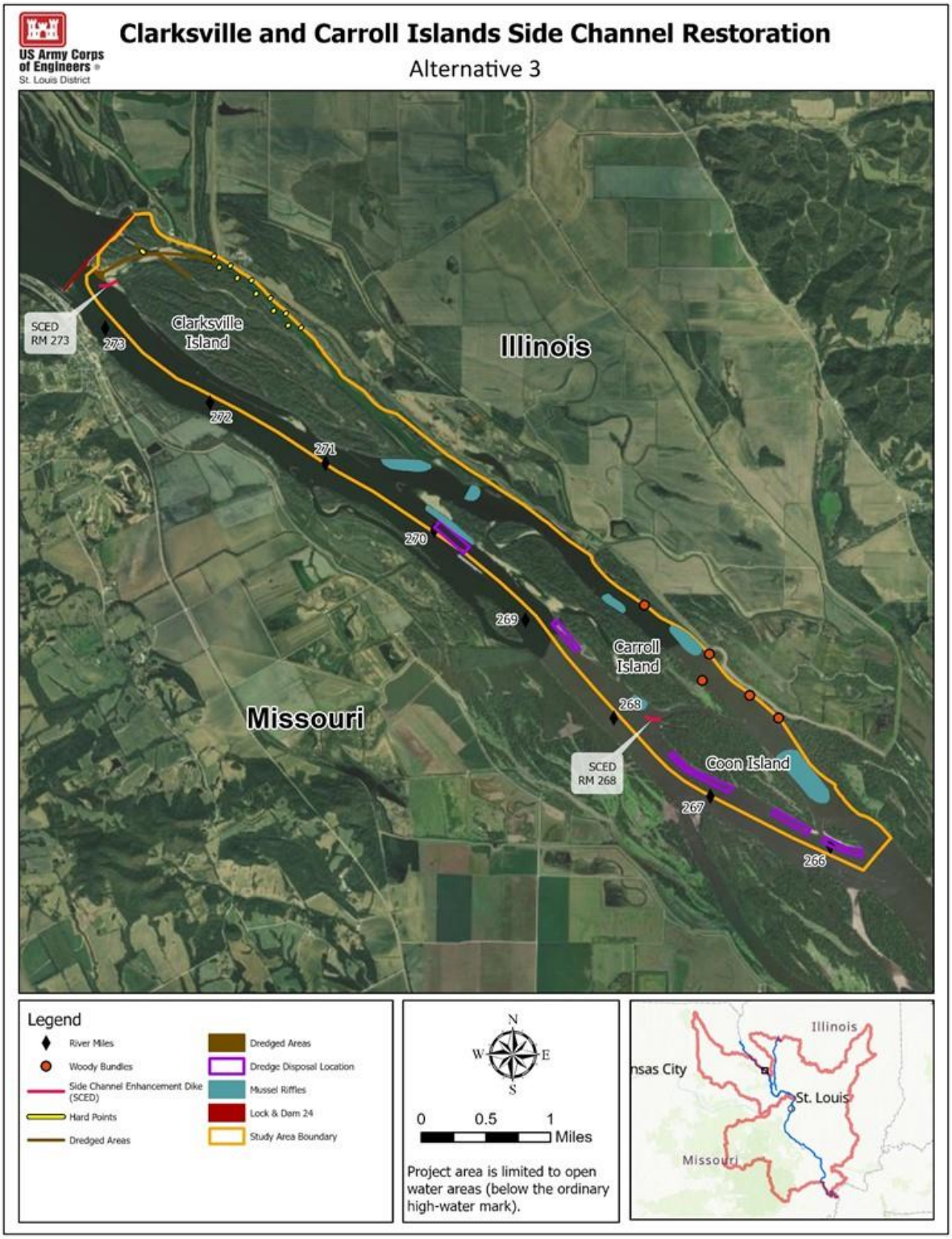


Figure 3: Proposed project measures included with the TSP.

1.5.2 Size and Types of Habitats.

Final placement of project features will result in some loss or conversion of minor amounts of benthic habitat. The placement of the excavated alluvial material would occur in approved placement sites within the Mississippi River. Stone and woody material would be placed to benefit freshwater fishes and mussels. Recent mussel and substrate survey describe the side channels as predominantly loose, shifting sands, which are detriments to the colonization of freshwater mussels. The large, sparsely, and sporadically placed cobble and stone would offer areas of lower flows behind them, which would accrete small gravels and larger sand grains to create more suitable mussel habitat. This would also aid in overall water quality as it creates areas of flow diversity and provide more turbulence and oxygenation throughout the side channel. Overall, implementation and construction of the project features would enhance the ecosystem functionality within the project area. No conversion or removal of existing forested habitat is anticipated.

1.5.3 Type of Site.

a. Permanent Deposits of Excavated or Fill Material.

The construction of the proposed measures would result in permanent placement of stone, woody material, and excavated alluvial material. Material excavated from the side channel would be deposited in approved placement areas within the Mississippi River along the riverside borders of Clarksville, Carroll, and Coon Islands, while stone would be placed to increase flow into the side channel or create riffle habitat within the side channel. Placed large woody bundles would create diverse substrate deposition patterns, create flow refugia, and increase substrate opportunities for a diverse macroinvertebrate community, and provide shelter for fishes.

b. Temporary Deposits of Excavated or Fill Material.

Temporary placement of fill material would be done in such a manner as to avoid and minimize impacts to wetlands and other natural features. Construction staging areas are anticipated to be minimal as most of the excavation and stone placement work would be done via floating plant.

1.5.4 Timing and Duration of Placement.

The excavation and stone placement work would likely require work to be performed within higher (but non-flood) stages. Depending on local weather and river flooding conditions, the construction period may occur over several years.

1.6 Description of the Placement Method

Material excavated from the side channel and slough openings would be hydraulically or mechanically dredged, or both, depending on contractor's equipment utilized for the Project. Hydraulic dredging equipment could consist of a cutterhead dredge, pontoons, and/or pipelines to transport the excavated dredge material in the form of a slurry. Mechanical dredging equipment could consist of a crane with clamshell bucket or a barge mounted excavator along with deck barges to transport the excavated dredge material in a more solid or cohesive condition.

Stone and wood used to construct the SCEDs, mussel riffle features, and woody bundles would be transported by barge to the project site. Heavy equipment (e.g., cranes and/or excavators) operating from a barge would be used to place stone to construct these features.

2 FACTUAL DETERMINATIONS

2.1 Physical Determinations

Elevation and Slope

Construction considerations are provided in the full report (Section 7.5), and Appendix D – Hydraulics and Hydrology. The following tables display the preliminary design geometry for the dredging and SCEDs. These estimated quantities are to be developed in more detail and accuracy in PED phase, after more topographic and bathymetric surveys are completed as necessary.

Table D-1. Dredge Dimensions

Measurements	Pilot Channel	Pilot Chute	Pilot Side
Bottom Width	83 ft	20 ft	53 ft
Left Side Slope V:H	1:6	1:2	1:6
Right Side Slope V:H	1:6	1:2	1:6
Max Top Extent	125 ft	30 ft	80 ft
Length	4950 ft	365 ft	1745 ft
Dredge Depth Range	3 ft - 5 ft	0 ft - 2 ft	6 ft – 10 ft

Table D-2. SCED Geometry

Measurements	SCED273	SCED268
Left Side Slope V:H	1:2	1:2
Right Side Slope V:H	1:2	1:2
Crown Length Extent	10 ft	10 ft
Crest Elevation	438 ft	438 ft
Length	750 ft	550 ft

Sediment Type

The primary sediment type includes alluvial sands, silts, and clays. Sediment sampling and testing will occur during PED to document that the dredged material meets General Condition 12 of the Illinois EPA 401 Water Quality Certification - Discharged Material Quality (sediment size).

Actions Taken to Minimize Impacts

Best Management Practices for construction would be enforced. Conservation measures are provided in the main report and Biological Assessment. Feature designs incorporated methods to avoid tree clearing.

2.2 Water Circulation, Fluctuation, and Salinity Determinations

Table D-3. Potential Impacts on Physical and Chemical Characteristics

Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Substrate					X	
Suspended particulates/turbidity				X		
Water				X		
Current patterns & water circulation					X	
Normal water fluctuations		X				
Salinity gradients	X					

Water

a. Salinity – Not applicable.
b. Water Chemistry - Excavation is expected to have a short-term temporary effect on water chemistry. Increased turbidity in areas where excavation occurs is expected; however, turbidity levels are not expected to significantly affect any aquatic organisms or downstream habitat. The removal of material in the side channel opening would improve depths and connectivity to the river, thus improving water chemistry. The side channel excavation channels, described in Sec 2.1, would allow it to be self-maintaining into the future, limiting erosion, sedimentation, and inundation on upstream forest resources.
c. Clarity – Elevated suspended sediment levels are expected to occur in a localized nature within the backwater during excavation. Decreased water clarity is expected to be short-term.
d. Color – No change is expected.
e. Odor – The project is not expected to have an impact on water odors.
f. Taste – The project is not expected to impact water taste.
g. Dissolved Gas Levels – Construction activities associated with the project are not expected to have a significant adverse impact on dissolved gas levels.
h. Nutrients – Nutrients would be released to the water column during dredging; however, this would represent a temporary increase and is not considered significant.
i. Eutrophication – The project is not expected to contribute toward eutrophication of the water column.
j. Water Temperature – Temperatures are expected to improve with increased depth, flow, and connectivity, thus allowing for the backwaters to support a larger diversity of aquatic life.

Current Patterns and Circulation

The main purpose of this project is to increase depth, connectivity, and access to the side channel. The excavation work would improve connectivity and flow for these areas. The placed stone for mussel riffle habitat, hard points, and woody bundles for fish habitat, would add flow diversity to the side channels, adding turbulence and oxygenation by minor disruption to flows and velocities. This is anticipated to provide a net benefit to aquatic habitat.
Overall, the project would slightly alter circulation and flow patterns; however, these alterations are not expected to significantly change river hydraulics.

a. Velocity – There should be no detectible changes in current velocity in the Mississippi River.
b. Stratification – Stratification does not occur within the project area because of shallow depths. Stratification is not likely to occur after construction completion even with increased depths throughout the side channel. The target depths of side channel excavation is not anticipated to be deep enough to allow for temperature stratification; additional flow would also offset any potential for stratification.
c. Hydrologic Regime – The project would not alter the hydrologic regime or the flood profile of the Mississippi River.

Normal Water Level Fluctuations

Normal water level fluctuations in the Mississippi River would be unaffected. Restoration features would not detrimentally increase flood heights or adversely affect private property or infrastructure. Refer to Appendix D - *Hydrology & Hydraulics* for details on H&H modeling.

Actions That Will Be Taken to Minimize Impacts
Best Management Practices for construction would be enforced. Refer to Chapter 5 in the main report for Environmental Effects, Section 7.5, in the main report for more details on Construction Considerations, and the Biological Assessment in Appendix A – Coordination for conservation measures.

2.3 Suspended Particulate/Turbidity Determinations

Expected Changes in Suspended Particles and Turbidity Levels in Vicinity of Placement Site.
Increases in suspended particulates and turbidity due to construction activities are expected to be greatest within the vicinity of the dredged material placement locations. This would cease after construction completion. Refer to Sections 7.4 and 7.5 for Design and Construction details in the main report for more details. The improved flow diversity and substrate heterogeneity would increase benefits to fish and mussel resources over the 50-year evaluation period. Stabilization of the stone placement areas would be realized upon construction completion. Refer to Appendix B - *Habitat Evaluation and Quantification* for more details.

Effects on Chemical and Physical Properties of the Water Column.

a. Light Penetration. There would be a temporary reduction until sediments suspended as part of the project activities settle out of the water column.
b. Dissolved Oxygen. No adverse effects expected. Improved dissolved oxygen is expected post-construction due to increased flow diversity and depth in the side channels.
c. Toxic Metals and Organics. No adverse effects are expected. Hazardous material surveys would be completed during Plans & Specs.
d. Aesthetics. Aesthetics of work sites are likely to be slightly adversely affected during construction but are expected to be temporary and improve after construction. Increased aesthetics would likely be realized after construction when the side channel experiences adequate flow.
e. Effects on Biota. The project would likely result in some short-term displacement of biota in the immediate vicinity of construction activities due to temporary decreases in water quality and disturbance by construction equipment. Long-term beneficial effects should occur as aquatic species, especially freshwater mussels and fishes benefit from the improved substrate and habitat within the project area side channels. Refer to Section 5, Environmental Effects and Appendix B - *Habitat Evaluation and Quantification* for more details.

2.4 Contaminant Determinations

The Phase I Hazardous, Toxic, and Radioactive Waste survey conducted for this study did not identify contaminant sources or migration pathways from surrounding properties that would adversely impact surrounding environments (human and ecological receptors). It does not appear that there is a risk of HTRW contamination within the project area. Please refer to Appendix F – *Hazardous Toxic Radioactive Waste* for more details.

2.5 Aquatic Ecosystem and Organism Determinations

More information is provided Section 5.9 of the PIR and the Biological Assessment for species-specific determinations in Appendix A - Coordination.

Table D-4 Potential Impacts on Biological Characteristics.

Biological Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Threatened & endangered species			X			
Fish, crustaceans, mollusk, & other aquatic organisms				X		
Other wildlife				X		

Effects on Plankton
The project could have a temporary adverse effect on the plankton in the immediate vicinity of the project area. This would cease after construction completion.

Effects on Benthos
The excavation of the side channel entrances would temporarily disrupt the aquatic environment. Benthos present in these areas would be adversely affected by dredging during excavation. The benthic community in the area of the dredge cut would experience decreases in diversity, abundance, and biomass immediately following the dredging disturbance. Recovery of the benthic community is dependent on several environmental conditions including sediment type, habitat type, spatial scale of the disturbance, and timing and frequency of disturbance. Overall, estimates of benthic recovery rates are estimated to range from several months to several years (Qian, Qiu, Kennish, & Reid, 2003). However, the benefits gained from improved aquatic habitat would far outweigh any loss in benefits during the time of construction.

Effects on Nekton
Temporary adverse effects may be experienced by free-swimming aquatic life during construction, as with the benthic community; the long-term impact would be beneficial.

Effects on Aquatic Food Web
The project would improve side channel habitats, and increase overall habitat diversity (terrestrial and aquatic) throughout the Clarksville and Carroll island side channel complex project area. The increase in connectivity, flow and habitat diversity would improve the overall health and food web of the project area. Freshwater mussel and fishes are expected to increase as habitat diversity is improved by the project.

Effects on Special Aquatic Sites
Although riverine wetlands within the Project Area would be impacted by the channel opening dredging, the impacts would be offset and considered self – mitigating from the improved side channel habitat improvement realized by increased flow through the side channel. Overall, the riverine wetland impacts would be outweighed by improvement within the project area that otherwise would continue to persist as degraded habitat. The riverine wetland impacts and restoration are summarized in Table D-5 and discussed below:

Table D-5 Potential impacts on special aquatic sites.

Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Sanctuaries & Refuges	X					
Riverine Wetlands				X		
Mud Flats	X					
Vegetated Shallows		X				
Coral reefs	X					

a. Mussel Riffle Stone Placement – The stone placement for mussel habitat would solely be placed in the side channel within the Clarksville-Carroll Island side channel complex. Therefore, this feature would no effects on terrestrial wetlands. This measure would have a minor short-term effect on riverine wetlands.

b. Side Channel Opening Improvements – To improve drainage and subsequent side channel health, entrances to the side channel would be dredged of accumulated material, but would cause no impacts to terrestrial wetlands. This measure would have a minor short-term effect on riverine wetlands.

Threatened and Endangered Species.
Presence of, or use by, endangered and threatened species is discussed in the PIR with an integrated Environmental Assessment. No adverse impacts are expected to result from this project. Also refer to the Biological Assessment for species-specific determinations in Appendix A – Coordination for more details.

2.6 Proposed Placement Site Determinations

Mixing Zone Determinations
Suspended particulates and turbidity would increase during construction activities. These increases would be most evident at the point of excavation or dredging and would quickly fall within baseline conditions in the mixing zone. No significant adverse impacts to the chemical and physical properties of the water column are expected.

Determination of Compliance with Applicable Water Quality Standards
This Clean Water Act Section provides the necessary compliance required by law. Section 401 Water Quality certification in compliance with the Clean Water Act, and all other permits necessary for the completion of the project, would be obtained prior to project construction.

Potential Effects on Human Use Characteristics
No long-term adverse impacts to municipal and private water supplies; water-related recreation; aesthetics; or parks, national and historic monuments, national seashores, wilderness areas, research sites or similar preserves would occur. During construction the immediate area would not be available for recreational or commercial fishing. Following construction, the proposed project would enhance fishing and hunting opportunities in the area and improve the overall condition of the Clarksville-Carroll Island side channel complex project area. In addition, H&H modeling has shown that there would be no negative impacts to navigation and no impacts to flood heights. Refer to the Appendix D - *Hydraulics and Hydrology* for more details.

2.7 Determinations of Cumulative Effects on the Aquatic Ecosystem

Although minor short-term construction-related impacts to local fish and wildlife populations are likely to occur, no negative cumulative impacts to fish and wildlife are identified. From a systemic approach, the tentatively selected plan would result in positive long-term benefits to the Clarksville-Carroll Island side channel complex project area and throughout the UMR. Refer to Section 5, Environmental Effects in the main report for more details.

2.8 Determinations of Secondary Effects on the Aquatic Ecosystem

No adverse secondary effects should result from the proposed action. Long-term benefits to aquatic habitat and wildlife are expected. Refer to Section 5, Environmental Effects of the PIR

and the Biological Assessment in Appendix A – Coordination for species-specific determinations for more details.

3 FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE

No significant adaptations of 404(b)(1) guidelines were made relative to this evaluation. Alternatives that were considered for the proposed action included similar measures to those of the tentatively selected plan. All feasible combinations of measures, four final alternatives including the no action alternative were analyzed for environmental benefits and costs (Refer to Section 6, Evaluation and Comparison of Final Array of Alternatives in the main report for more details on alternatives analysis). The tentatively selected plan provided a large number of environmental benefits and best met project objectives and the four plan formulation criteria of completeness, effectiveness, efficiency, and acceptability.

1 Certification under Section 401 of the Clean Water Act would be obtained from the Illinois Department of Natural Resources where applicable.

2 Prior to construction, full compliance with the Endangered Species Act would be documented.

3 The project is situated along an inland freshwater river system. No marine sanctuaries are involved or would be affected by the proposed action.

4 No municipal or private water supplies would be affected by the proposed action, and no degradation of waters of the United States is anticipated to result from the proposed action. The proposed construction activity would not have a significant adverse effect on human health and welfare, recreation and commercial fisheries, plankton, fish, shellfish, wildlife, or special aquatic sites. No significant adverse effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems are expected to result. The proposed construction activity would have no significant adverse effects on aquatic ecosystem diversity, productivity, and stability. No significant adverse effects on recreational, aesthetic, and economic values would occur.

5 The materials used for construction would be chemically and physically stable and non-contaminating.

6 No other practical alternatives have been identified. The proposed action would be in compliance with Section 404(b)(1) of the Clean Water Act, as amended prior to construction. The proposed action would not significantly impact water quality.

7 Based on this evaluation, the project is anticipated to qualify for a Nationwide Permit Number 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities. The Nationwide 27 permit includes general conditions that meet IDNR Section 401 water quality certification requirements. Therefore, the necessary Section 401 water quality certification would be achieved through the associated Nationwide 27 permit conditions. Should the size or scope of the excavation or fill quantities change during the PED phase of the project, this evaluation would be revisited for further consideration.

Appendix K
Cost

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1 COST ESTIMATE SUMMARY

1.1 GENERAL

The Project is located on the left descending bank of the Mississippi River, immediately downstream of Lock and Dam 24, near Clarksville, Missouri, in Calhoun County, Illinois. The proposed project lies in the upper portion of Pool 25 between River Miles (RM) 273 and 266The approximately 950-acre area consists of side channels and connected backwaters in the vicinity of Clarksville, Carroll, and Coon Islands.

The objectives for the NESP Clarksville & Carroll Islands project are as follows:

a. Restore side channel sediment transport and geomorphic diversity.
b. Increase side channel habitat quantity and quality for native fish and mussel species.
c. Increase side channel habitat quality for native fish spawning, rearing, juvenile, or overwintering habitat.
d. Increase side channel area, flow diversity, quality, and clarity for native mussel species habitat.
e. Reduce sediment deposition within side channel flowing water habitats to maintain and restore main channel connectivity and increase quality of habitat for riverine dependent native fish.

The final array of alternatives include:

- No Action
- Alternative 1 – Minimum
- Alternative 2 – Intermediate
- Alternative 3 - Maximum

The measures included in each Alternative are listed below:

<u>Alternative 1 – Minimum</u>:

- Dredging

<u>Alternative 2 – Intermediate</u>:

- Partial Degradation/Notching
- Hard Points
- Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement)
- Dredging

<u>Alternative 3 – Maximum</u>:

- Partial Degradation/Notching
- Hard Points
- Mussel Habitat Enhancement (Rock-Gravel Substrate Enhancement)
- Dredging
- Woody Bundles

A detailed cost estimate, abbreviated risk analysis, and construction schedule were developed for the recommended plan: Alternative 3 – Maximum.

1.2 BASIS OF COST ESTIMATE

The cost estimate has been prepared based on current concept designs and site-specific information available to date.

Quantities were developed by the MVS Civil Design Section. The Cost estimate was developed using MCACES. The wage rates were developed using Davis Bacon, Heavy & Highway construction for Calhoun County, IL IL2025017 Last Revised January 10, 2025. The MII 2024 Equipment Region 5 was used for equipment rates. The 2024 Cost Book was used.

Costs for dredging were developed in the MII software assuming mechanical dredging with a barge mounted excavator. It is assumed that the dredge disposal areas will be multiple miles away from the dredging location and that the most feasible way to transfer the excavated material is to place it on a work barge and have the material hauled to the placement site where there will be another barge mounted excavator to place the excavated material.

Quotes were obtained from a quarry in Ste. Genevieve, MO and a crew was built to account for hauling the stone via barge to the project area. Crews were built for placement of the stone based on historical production rates for stone placement in the Mississippi River.

1.3 CONTINGENCIES

The Abbreviated Risk Analysis process indicated a 38% construction contingency based on associated project risks for the Recommended Plan. The total project contingency is 36%. A 27% contingency was applied to planning, engineering, and design and construction management had a contingency of 32%.

1.4 PLANNING, ENGINEERING, AND DESIGN (PED)

Planning, engineering, and design costs are based on historical data of similar projects in the St. Louis District. Recommended percentages by the cost MCX were taken into consideration as well. 15% of the construction cost was used to determine the PED costs. The Adaptive Management and Monitoring costs are not included in the total project costs for this project as they are captured by in the NESP programmatic costs.

1.5 CONSTRUCTION MANAGEMENT

Construction Management costs are based on historical data of similar projects in the St. Louis District. Recommended percentages by the cost MCX were taken into consideration as well. 10% of the construction cost was used to determine the CM costs.

****** TOTAL PROJECT COST SUMMARY ******

PROJECT: **NESP Clarksville & Carroll Islands**
PROJECT NO: P2 514199
LOCATION: Calhoun County, Illinois

DISTRICT: **St. Louis District** **PREPARED:** **5/5/2025**
POC: **CHIEF, COST ENGINEERING, Drew Collins**

This Estimate reflects the scope and schedule in report; Clarksville & Carroll Islands PIR Report

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)						TOTAL PROJECT COST (FULLY FUNDED)			
						Program Year (Budget EC): 2026									
						Effective Price Level Date: 1 OCT 25									
WBS NUMBER	Civil Works Feature & Sub-Feature Description	COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	**TOTAL ($K)**	Spent Thru: **1-Oct-24** ($K)	**TOTAL FIRST COST** ($K)	INFLATED (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*		*K*	*L*	*M*	*N*	*O*
06	FISH & WILDLIFE FACILITIES	$6,540	$2,485	38.0%	$9,025	2.6%	$6,711	$2,550	$9,261	$0	$9,261	6.6%	$7,156	$2,719	$9,875
	CONSTRUCTION ESTIMATE TOTALS:	$6,540	$2,485		$9,025	2.6%	$6,711	$2,550	$9,261	$0	$9,261	6.6%	$7,156	$2,719	$9,875
30	PLANNING, ENGINEERING & DESIGN	$981	$265	27.0%	$1,246	3.2%	$1,013	$273	$1,286	$0	$1,286	2.7%	$1,040	$281	$1,321
31	CONSTRUCTION MANAGEMENT	$654	$209	32.0%	$863	3.2%	$675	$216	$891	$0	$891	8.0%	$729	$233	$962
	PROJECT COST TOTALS:	$8,175	$2,959	36.0%	$11,134		$8,399	$3,040	**$11,439**	$0	**$11,439**	6.3%	$8,925	$3,233	$12,158

_____ **CHIEF, COST ENGINEERING, Drew Collins**

_____ **PROJECT MANAGER, Shane Simmons**

_____ **CHIEF, REAL ESTATE, Jennifer Wils**

_____ **CHIEF, PLANNING, Elisa Royce**

_____ **CHIEF, ENGINEERING, Susan Wilson**

_____ **CHIEF, OPERATIONS, Lou Dell'Orco**

_____ **CHIEF, CONSTRUCTION, Tony Jones**

_____ **CHIEF, CONTRACTING, Aaron Sanford**

_____ **CHIEF, PM-PB, xxxx**

_____ **CHIEF, DPM, John Peukert**

ESTIMATED TOTAL PROJECT COST: **$12,158**

NESP FEASIBILITY STUDY COST: **$700**

ESTIMATED FEDERAL COST OF PROJECT: **$12,858**

****** TOTAL PROJECT COST SUMMARY ******

****** CONTRACT COST SUMMARY ******

PROJECT: NESP Clarksville & Carroll Islands
LOCATION: Calhoun County, Illinois
This Estimate reflects the scope and schedule in report; Clarksville & Carroll Islands PIR Report

DISTRICT: St. Louis District
POC: CHIEF, COST ENGINEERING, Drew Collins

PREPARED: 5/5/2025

Civil Works Work Breakdown Structure		ESTIMATED COST				PROJECT FIRST COST (Constant Dollar Basis)				TOTAL PROJECT COST (FULLY FUNDED)				
		Estimate Prepared: 5-May-25 Effective Price Level: 1-Oct-24				Program Year (Budget EC): 2026 Effective Price Level Date: 1 OCT 25								
WBS NUMBER *A*	Civil Works Feature & Sub-Feature Description *B*	COST ($K) *C*	CNTG ($K) *D*	RISK BASED CNTG (%) *E*	TOTAL ($K) *F*	ESC (%) *G*	COST ($K) *H*	CNTG ($K) *I*	TOTAL ($K) *J*	Mid-Point Date *P*	INFLATED (%) *L*	COST ($K) *M*	CNTG ($K) *N*	FULL ($K) *O*
	CONTRACT 1													
06	FISH & WILDLIFE FACILITIES	$6,540	$2,485	38.0%	$9,025	2.6%	$6,711	$2,550	$9,261	2028Q3	6.6%	$7,156	$2,719	$9,875
	CONSTRUCTION ESTIMATE TOTALS:	$6,540	$2,485	38.0%	**$9,025**		$6,711	$2,550	$9,261			$7,156	$2,719	$9,875
30	PLANNING, ENGINEERING & DESIGN													
2.5%	Project Management	$164	$44	27.0%	$208	3.2%	$169	$46	$214	2026Q4	2.3%	$173	$47	$219
0.5%	Planning & Environmental Compliance	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2026Q4	2.3%	$35	$9	$44
9.0%	Engineering & Design	$589	$159	27.0%	$748	3.2%	$608	$164	$772	2026Q4	2.3%	$622	$168	$790
0.5%	Reviews, ATRs, IEPRs, VE	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2026Q4	2.3%	$35	$9	$44
0.5%	Life Cycle Updates (cost, schedule, risks)	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2026Q4	2.3%	$35	$9	$44
0.5%	Contracting & Reprographics	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2026Q4	2.3%	$35	$9	$44
0.5%	Engineering During Construction	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2028Q3	8.0%	$36	$10	$46
0.5%	Planning During Construction	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2028Q3	8.0%	$36	$10	$46
0.5%	Project Operations	$33	$9	27.0%	$42	3.2%	$34	$9	$43	2026Q4	2.3%	$35	$9	$44
31	CONSTRUCTION MANAGEMENT													
7.5%	Construction Management	$491	$157	32.0%	$647	3.2%	$506	$162	$668	2028Q3	8.0%	$547	$175	$722
1.0%	Project Operation:	$65	$21	32.0%	$86	3.2%	$68	$22	$89	2028Q3	8.0%	$73	$23	$96
1.5%	Project Management	$98	$31	32.0%	$129	3.2%	$101	$32	$134	2028Q3	8.0%	$109	$35	$144
	CONTRACT COST TOTALS:	$8,175	$2,959		$11,134		$8,399	$3,040	**$11,439**			$8,925	$3,233	**$12,158**

Abbreviated Risk Analysis

Project (less than $40M): **NESP - Clarksville & Carroll Island Recommended Plan** **Alternative: Maximum Habitat Benefit**

Project Development Stage/Alternative: **Feasibility (Recommended Plan)**

Risk Category: **Moderate Risk: Typical Project Construction Type** **Meeting Date: 5/6/2025**

Total Estimated Construction Contract Cost = $ 6,540,000

	CWWBS	Feature of Work	Contract Cost	% Contingency	$ Contingency	Total
1	06 FISH AND WILDLIFE FACILITIES	Mob/Demob	$ 312,000	30.59%	$ 95,427	$ 407,427
2	06 FISH AND WILDLIFE FACILITIES	Dredging	$ 4,752,000	41.93%	$ 1,992,606	$ 6,744,606
3	06 FISH AND WILDLIFE FACILITIES	River Training Structures	$ 1,141,000	25.39%	$ 289,668	$ 1,430,668
4	06 FISH AND WILDLIFE FACILITIES	Mussel Substrate	$ 212,000	34.63%	$ 73,419	$ 285,419
5	06 FISH AND WILDLIFE FACILITIES	Woody Bundles	$ 123,000	24.18%	$ 29,742	$ 152,742
13	30 PLANNING, ENGINEERING, AND DESIGN	Planning, Engineering, & Design	$ 981,000	26.61%	$ 261,023	$ 1,242,023
14	31 CONSTRUCTION MANAGEMENT	Construction Management	$ 654,000	32.21%	$ 210,628	$ 864,628
XX	FIXED DOLLAR RISK ADD (EQUALLY DISPERSED TO ALL, MUST INCLUDE JUSTIFICATION SEE BELOW)				$ -	

Totals				
Real Estate	$ -	0.00%	$ -	$ -
Total Construction Estimate	$ 6,540,000	37.93%	$ 2,480,862	$ 9,020,862
Total Planning, Engineering & Design	$ 981,000	26.61%	$ 261,023	$ 1,242,023
Total Construction Management	$ 654,000	32.21%	$ 210,628	$ 864,628
Total Excluding Real Estate	**$ 8,175,000**	**36.12%**	**$ 2,952,513**	**$ 11,127,513**

NESP - Clarksville & Carroll Island Recommended Plan Ma

Feasibility (Recommended Plan)
Abbreviated Risk Analysis
Meeting Date: 6-May-25

Risk Level

	Negligible	Marginal	Moderate	Significant	Critical
Very Likely	2	3	4	5	5
Likely	1	2	3	4	5
Possible	0	1	2	3	4
Unlikely	0	0	1	2	3

Risk Register

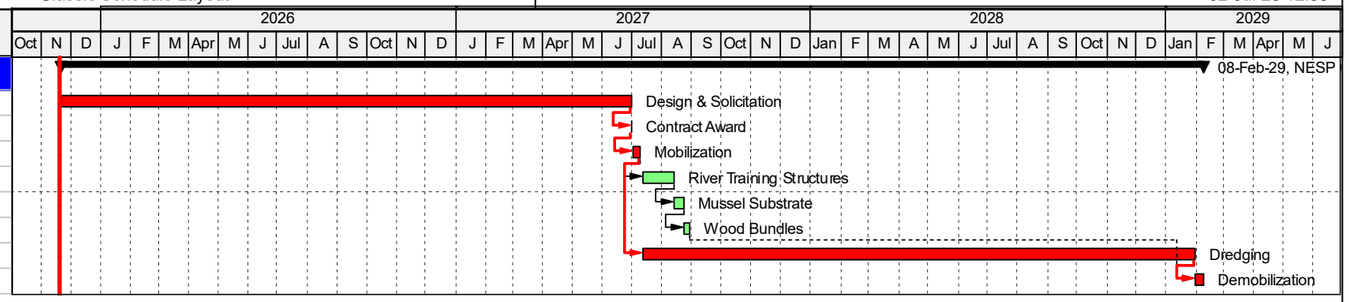
36%

Risk Element	Feature of Work	Concerns	PDT Discussions & Conclusions (Include logic & justification for choice of Likelihood & Impact)	Impact	Likelihood	Risk Level	Line Item Magnitude ($000)
Project Management & Scope Growth				**Maximum Project Growth**		**75%**	
PS-1	Mob/Demob	Potential for scope growth, added features?	A site specific crew has been developed which lowers the risk for this feature.	Marginal	Possible	1	$312k
PS-2	Dredging	Potential for scope growth, added features? Project accomplished intent?	Current methodology is mechanical dredging. However, the intent is to leave the specifications vauge enough to allow the contractor to select whichever method for dreding they prefer. Unit costs will decrease if pipeline dredging is selected.	Moderate	Possible	2	$4,752k
PS-3	River Training Structures	Potential for scope growth, added features? Project accomplished intent?	If additonal hard points are needed and side channel enhancement dike were extended, quantities would increase. If functionality of the features needed improvement, then there could be potential for scope growth. Unlikely to add hard points or extend SCED because additional hydraulic beneifts may be minimal	Moderate	Unlikely	1	$1,141k
PS-4	Mussel Substrate	Potential for scope growth, added features? Project accomplished intent?	Not a typical MVS construction measure. Uncertain how contractor will approach this measure. Additional requirements may be determined during design.	Moderate	Likely	3	$212k
PS-5	Woody Bundles	No concerns.	No concerns.	Negligible	Unlikely	0	$123k
PS-13	Planning, Engineering, & Design	Potential for scope growth, added features? Project accomplished intent?	Potential rise/takings anaylsis occurs during design resulting in potential flowage easement requirments which could increase PED costs. Construction funding is currently uncertain. It does not appear likley that this project will receive construction funding as originally anticipated. It is not possible at this time to determine when construction funding will be received, which could delay PED. The longer PED is delayed, the higher costs will be to complete PED	Moderate	Likely	3	$981k
PS-14	Construction Management	Potential for scope growth, added features? Project accomplished intent?	Construction funding is currently uncertain. It does not appear likley that this project will receive construction funding as originally anticipated. It is not possible at this time to determine when construction funding will be received, which could delay CM. The longer CM is delayed, the higher costs will be to complete CM	Moderate	Likely	3	$654k
Acquisition Strategy				**Maximum Project Growth**		**30%**	
AS-1	Mob/Demob	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$312k
AS-2	Dredging	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$4,752k
AS-3	River Training Structures	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$1,141k
AS-4	Mussel Substrate	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$212k

AS-5	Woody Bundles	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$123k
AS-13	Planning, Engineering, & Design	Contracting plan firmly established? Limited bid competition anticipated?	No concern that the acquisition strategy will affect the planning, engineering, and design.	Negligible	Unlikely	0	$981k
AS-14	Construction Management	Contracting plan firmly established? Limited bid competition anticipated?	In the feasibility phase the contracting plan has not been established.	Marginal	Likely	2	$654k
Construction Elements				**Maximum Project Growth**		**25%**	
CE-1	Mob/Demob	Accelerated schedule or harsh weather schedule?	The contractor may need to wait to water levels reach a certain height prior to mobbing equipment in via bage.	Moderate	Likely	3	$312k
CE-2	Dredging	High risk or complex construction elements, site access, in-water? Special equipment or subcontractors needed?	May need a flexifloat/shallow draft barge to perform mechanical excavation. Uncertian method of construction contractor will select.	Moderate	Likely	3	$4,752k
CE-3	River Training Structures	Accelerated schedule or harsh weather schedule?	Schedule constraints. Will be difficult to perfrom in low water.	Marginal	Likely	2	$1,141k
CE-4	Mussel Substrate	Unique construction methods?	Not a typical MVS construction measure. Uncertain how contractor will approach this measure. Quantity of rock unlikely to change, but difficult to estimate time to place rock .	Marginal	Possible	1	$212k
CE-5	Woody Bundles	Unique construction methods?	Not a typical MVS construction measure. Uncertain how contractor will approach this measure. Difficult to estimate crew production rate.	Significant	Possible	3	$123k
CE-13	Planning, Engineering, & Design		No concern that the construction elements will affect the planning, engineering, and design.	Negligible	Unlikely	0	$981k
CE-14	Construction Management		Flood/river level will impact construction. Assumed to be shallow draft worksites. Threatened & endangered species may also impact the construction schedule.	Marginal	Likely	2	$654k
Specialty Construction or Fabrication				**Maximum Project Growth**		**65%**	
SC-1	Mob/Demob		Not applicable for this project.	Negligible	Unlikely	0	$312k
SC-2	Dredging		Not applicable for this project.	Negligible	Unlikely	0	$4,752k
SC-3	River Training Structures		Not applicable for this project.	Negligible	Unlikely	0	$1,141k
SC-4	Mussel Substrate		Not applicable for this project.	Negligible	Unlikely	0	$212k
SC-5	Woody Bundles		Not applicable for this project.	Negligible	Unlikely	0	$123k
SC-13	Planning, Engineering, & Design		Not applicable for this project.	Negligible	Unlikely	0	$981k
SC-14	Construction Management		Not applicable for this project.	Negligible	Unlikely	0	$654k
Technical Design & Quantities				**Maximum Project Growth**		**30%**	
T-1	Mob/Demob	Level of confidence based on design and assumptions?	A project specific crew will need to be developed for this feature. Temporary mob/demobs may be needed to capture different construction seasons.	Moderate	Possible	2	$312k
T-2	Dredging	Level of confidence based on design and assumptions?	Terrain data collection over a span of years may not accurately reflect current conditions of the river. Sedimentation could continue from now until the time of construction which could increase the amount of dredge quantities. The methodologies of construction may not match design methods/assumptions.	Significant	Possible	3	$4,752k
T-3	River Training Structures	Possibility for increased quantities due to loss, waste or subsidence?	Concern based on typical construction waste and current river bathymetric conditions.	Marginal	Possible	1	$1,141k
T-4	Mussel Substrate	Level of confidence based on design and assumptions?	Rock quantity has been modeled and there is a marginal risk of the quanity increasing.	Marginal	Possible	1	$212k

T-5	Woody Bundles	Possibility for increased quantities due to loss, waste or subsidence?	Concern based on typical construction waste and current river bathymetric conditions.	Marginal	Possible	1	$123k
T-13	Planning, Engineering, & Design	Possibility for increased quantities due to loss, waste or subsidence?	The PED of this project may change based on the quantities developed for this project. There is a potential for 401 water quality compliance testing which could increase design costs.	Moderate	Possible	2	$981k
T-14	Construction Management	Possibility for increased quantities due to loss, waste or subsidence?	The CM of this project may change based on the quantities developed for this project.	Marginal	Possible	1	$654k
Cost Estimate Assumptions					**Maximum Project Growth**	**35%**	
EST-1	Mob/Demob	Assumptions reagrding crew, productivity, overtime? Site accessibility, transport delays, congestion?	A project specific crew was developed for river work with mechanical dredging. If pipeline dredging is selected, it could increase mob/demob costs substantially.	Moderate	Possible	2	$312k
EST-2	Dredging	Assumptions reagrding crew, productivity, overtime? Site accessibility, transport delays, congestion?	Dredging was assumed to be done by a mechanical excavtor on a barge. A shallow draft barge will need to be used more than likley during winter months to ensure there is enough water to access areas. At this stage of design, it is uncertain where the excavated material will be disposed of. This could lead to a significant cost growth if it has to be hauled off site vs side casted or used for other purposes nearby the excavated area.	Significant	Possible	3	$4,752k
EST-3	River Training Structures	Assumptions reagrding crew, productivity, overtime? Site accessibility, transport delays, congestion?	Estimate has site specific crews built for river training structures based off MVS IDIQ dike & revetment production rates. Estimate has a quote for stone and hauling included via barge from the quarry to the jobsite.	Moderate	Possible	2	$1,141k
EST-4	Mussel Substrate	Assumptions reagrding crew, productivity, overtime? Site accessibility, transport delays, congestion?	Estimate received a quote for 2200 lb riprap that will be hauled to the site via barge. However, this type of rock placement is different than typical MVS riprap projects and the entire gradation does not need to be 2200 lb riprap. A specification on placement of riprap for mussel riffles is currently being written. There is a moderate risk that the production rate will be much slower than the historical average for riprap placement projects.	Moderate	Possible	2	$212k
EST-5	Woody Bundles	Assumptions reagrding crew, productivity, overtime?	An assumed costs was used for each log. The price of each log could increase costs, but the likelihood is considered low.	Moderate	Unlikely	1	$123k
EST-13	Planning, Engineering, & Design	No concerns.		Negligible	Unlikely	0	$981k
EST-14	Construction Management	No concerns.		Negligible	Unlikely	0	$654k
External Project Risks					**Maximum Project Growth**	**40%**	
EX-1	Mob/Demob	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adversse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$312k
EX-2	Dredging	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adversse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$4,752k
EX-3	River Training Structures	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adversse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$1,141k
EX-4	Mussel Substrate	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adversse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$212k
EX-5	Woody Bundles	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adversse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$123k
EX-13	Planning, Engineering, & Design	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	If archaelogical surveys reveal sensitive area then design will have to work around cultural area. The impact will be moderate but chance is unlikely.	Moderate	Possible	2	$981k
EX-14	Construction Management	Potential for Severe Adverese Weather? Potential for market volatility impacting competition, pricing?	Adverse weather could effect the contract duration impacting the overall cost of construction. Escalation of material costs and labor rates would increase overall costs. There is also the continued risk of inflation/labor shortages.	Moderate	Possible	2	$654k

#	Activity ID	Activity Name	Original Duration	Start	Finish
1	NESP Clarksville	NESP Clarksville & Carroll Islands	781	20-Nov-25	08-Feb-29
2	A0900	Design & Solicitation	420	20-Nov-25	30-Jun-27
3	A1000	Contract Award	1	01-Jul-27	01-Jul-27
4	A1010	Mobilization	5	02-Jul-27	09-Jul-27
5	A1020	River Training Structures	22	12-Jul-27	13-Aug-27
6	A1030	Mussel Substrate	5	13-Aug-27	23-Aug-27
7	A1040	Wood Bundles	5	23-Aug-27	30-Aug-27
8	A1050	Dredging	350	12-Jul-27	30-Jan-29
9	A1060	Demobilization	5	30-Jan-29	08-Feb-29



Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
summary

TASK filter: All Activities

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NESP Clarksville & Carroll Islands

Minimum Habitat Benefit (Alternative 1) 9/18/2024

**Excludes Real Estate & Mitigation Costs

ITEM	ESTIMATED AMOUNT	
Mobilization and Demobilization	$250,000	
Dredging	$3,590,000	
SUBTOTAL:	$3,840,000	
Contingency:	$1,536,000	40%
SUBTOTAL:	$5,376,000	
E & D	$806,000	15%
S & A	$538,000	10%
MAM	$161,000	3%
TOTAL COST:	**$6,881,000**	

NESP Clarksville & Carroll Islands

Intermediate Habitat Benefit (Alternative 2) 9/18/2024

**Excludes Real Estate & Mitigation Costs

ITEM	ESTIMATED AMOUNT	
Mobilization and Demobilization	$250,000	
Dredging	$3,590,000	
River Training Structures		
Graded A-Stone	$910,000	
R400 Riprap	$420,000	
Mussel Substrate		
R650 Riprap	$250,000	
SUBTOTAL:	$5,420,000	
Contingency:	$2,168,000	40%
SUBTOTAL:	$7,588,000	
E & D	$1,138,000	15%
S & A	$759,000	10%
MAM	$228,000	3%
TOTAL COST:	**$9,713,000**	

NESP Clarksville & Carroll Islands

Maximum Habitat Benefit (Alternative 3) 9/18/2024

**Excludes Real Estate & Mitigation Costs

ITEM	ESTIMATED AMOUNT	
Mobilization and Demobilization	$250,000	
Dredging	$3,590,000	
River Training Structures		
Graded A-Stone	$910,000	
R400 Riprap	$420,000	
Mussel Substrate		
R650 Riprap	$250,000	
Woody Bundles	$30,000	
SUBTOTAL:	$5,450,000	
Contingency:	$2,180,000	40%
SUBTOTAL:	$7,630,000	
E & D	$1,145,000	15%
S & A	$763,000	10%
MAM	$229,000	3%
TOTAL COST:	**$9,767,000**	