Appendix I

Wetland Resources

Westwood

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MEMORANDUM

Date: June 12, 2024

Re: Wetland Delineation Report
Midwater BESS, Shell Rock Township, Freeborn County

Westwood File 0046089.00

To: Rachel Wehner, Freeborn County
USACE PM for Freeborn County

Cc: Mary Matze, Midwater BESS, LLC

From: Malia Stone

Please find enclosed the Joint Application form for Activities Affecting Water Resources in Minnesota and the Wetland Delineation Report for Midwater BESS, which is located in Shell Rock Township, Freeborn County, Minnesota. With this submittal the Applicant is requesting approval of delineated wetland boundaries.

Please review the enclosed report and feel free to contact me with questions at (507) 412-3292.

Joint Application Form for Activities Affecting Water Resources in Minnesota

This joint application form is the accepted means for initiating review of proposals that may affect a water resource (wetland, tributary, lake, etc.) in the State of Minnesota under state and federal regulatory programs. Applicants for Minnesota Department of Natural Resources (DNR) Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. Applicants can use the information entered into MPARS to substitute for completing parts of this joint application form (see the paragraph on MPARS at the end of the joint application form instructions for additional information). This form is only applicable to the water resource aspects of proposed projects under state and federal regulatory programs; other local applications and approvals may be required. Depending on the nature of the project and the location and type of water resources impacted, multiple authorizations may be required as different regulatory programs have different types of jurisdiction over different types of resources.

Regulatory Review Structure

Federal

The St. Paul District of the U.S. Army Corps of Engineers (Corps) is the federal agency that regulates discharges of dredged or fill material into waters of the United States (wetlands, tributaries, lakes, etc.) under Section 404 of the Clean Water Act (CWA) and regulates work in navigable waters under Section 10 of the Rivers and Harbors Act. Applications are assigned to Corps project managers who are responsible for implementing the Corps regulatory program within a particular geographic area.

State

There are three state regulatory programs that regulate activities affecting water resources. The Wetland Conservation Act (WCA) regulates most activities affecting wetlands. It is administered by local government units (LGUs) which can be counties, townships, cities, watershed districts, watershed management organizations or state agencies (on state-owned land). The Minnesota DNR Division of Ecological and Water Resources issues permits for work in specially-designated public waters via the Public Waters Work Permit Program (DNR Public Waters Permits). The Minnesota Pollution Control Agency (MPCA) under Section 401 of the Clean Water Act certifies that discharges of dredged or fill material authorized by a federal permit or license comply with state water quality standards. One or more of these regulatory programs may be applicable to any one project.

Required Information

Prior to submitting an application, applicants are **strongly encouraged** to seek input from the Corps Project Manager and LGU staff to identify regulatory issues and required application materials for their proposed project. Project proponents can request a pre-application consultation with the Corps and LGU to discuss their proposed project by providing the information required in Sections 1 through 5 of this joint application form to facilitate a meaningful discussion about their project. Many LGUs provide a venue (such as regularly scheduled technical evaluation panel meetings) for potential applicants to discuss their projects with multiple agencies prior to submitting an application. Contact information is provided below.

The following bullets outline the information generally required for several common types of determinations/authorizations.

- For delineation approvals and/or jurisdictional determinations, submit Parts 1, 2 and 5, and Attachment A.
- For activities involving CWA/WCA exemptions, WCA no-loss determinations, and activities not requiring mitigation, submit Parts 1 through 5, and Attachment B.
- For activities requiring compensatory mitigation/replacement plan, submit Parts 1 thru 5, and Attachments C and D.
- For local road authority activities that qualify for the state's local road wetland replacement program, submit Parts 1 through 5, and Attachments C, D (if applicable), and E to both the Corps and the LGU.

Submission Instructions

Send the completed joint application form and all required attachments to:

U.S Army Corps of Engineers. Applications may be sent directly to the appropriate Corps Office. For a current listing of areas of responsibilities and contact information, visit the St. Paul District's website at: http://www.mvp.usace.army.mil/Missions/Regulatory.aspx and select "Minnesota" from the contact Information box. Alternatively, applications may be sent directly to the St. Paul District Headquarters and the Corps will forward them to the appropriate field office.

Section 401 Water Quality Certification: Applicants do not need to submit the joint application form to the MPCA unless specifically requested. The MPCA will request a copy of the completed joint application form directly from an applicant when they determine an individual 401 water quality certification is required for a proposed project.

Wetland Conservation Act Local Government Unit: Send to the appropriate Local Government Unit. If necessary, contact your county Soil and Water Conservation District (SWCD) office or visit the Board of Water and Soil Resources (BWSR) web site (www.bwsr.state.mn.us) to determine the appropriate LGU.

DNR Public Waters Permitting: In 2014 the DNR will begin using the Minnesota DNR Permitting and Reporting System (MPARS) for submission of Public Waters permit applications (https://webapps11.dnr.state.mn.us/mpars/public/authentication/login). Applicants for Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. To avoid duplication and to streamline the application process among the various resource agencies, applicants can use the information entered into MPARS to substitute for completing parts of this joint application form. The MPARS print/save function will provide the applicant with a copy of the Public Waters permit application which, at a minimum, will satisfy Parts one and two of this joint application. For certain types of activities, the MPARS application may also provide all of the necessary information required under Parts three and four of the joint application. However, it is the responsibility of the Applicant to make sure that the joint application contains all of the required information, including identification of all aquatic resources impacted by the project (see Part four of the joint application). After confirming that the MPARS application contains all of the required information in Parts one and two the Applicant may attach a copy to the joint application and fill in any missing information in the remainder of the joint application.

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Mary Matze, Midwater BESS, LLC.
Mailing Address: 2916 N Miami Ave, Suite 830
Miami, FL 33127
Phone: 786-321-9379
E-mail Address: mmatze@spearmintenergy.com

Authorized Contact (do not complete if same as above):
Mailing Address:
Phone:
E-mail Address:

Agent Name: Malia Stone
Mailing Address: 12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
Phone: (507) 412-3292
E-mail Address: malia.stone@westwoodps.com

PART TWO: Site Location Information

County: Freeborn **City/Township:** Shell Rock Township
Parcel ID and/or Address: 020070041, 020080070, 020170012

Legal Description (Section, Township, Range): Sections 08 and 17, T101N, R20W
Lat/Long (decimal degrees): 43.5558353, -93.2630457
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): ~104.4 acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

PART FOUR: Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: Andrew Waranch [Jun 6, 2024 12:18 MDT] Date: June 6, 2024

I hereby authorize Westwood Professional Services to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

[1] **The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.**

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☒ **Wetland Type Confirmation**

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

WETLAND DELINEATION REPORT

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

MAY 29, 2024

PREPARED FOR:

Midwater BESS, LLC
2916 N Miami Ave, Suite 830
Miami, FL 33127

PREPARED BY:

Westwood

Wetland Delineation Report

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

Prepared for:

Midwater BESS, LLC
2916 N Miami Ave, Suite 830
Miami, FL 33127

Prepared by:

Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: R0046089.00
Date: 5/29/2024

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EXHIBITS

APPENDICES

1.0 PURPOSE

This report with the attached exhibits and appendices constitutes the wetland delineation report for the Midwater BESS Project ("Project Area" or "Site"), an approximately 104.4-acre area in Shell Rock Township, Freeborn County, Minnesota (PIN #s 020070041, 020080070, 020170012). Freeborn County is the Local Governmental Unit (LGU) that administers the Minnesota Wetland Conservation Act (WCA) in this area. This report provides the required documentation for wetland boundary determinations in conformance with the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, Waterways Experiment Station, 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Midwest Region (U.S. Army Corps of Engineers, 2010). The Joint Application Form for Activities Affecting Water Resources in Minnesota is included with the cover memo to this report.

2.0 SITE LOCATION AND DESCRIPTION

The site is located in Sections 08 and 17, T101N, R20W, Shell Rock Township, Freeborn County, Minnesota (**Exhibit 1**). Land use in the Site consists of cultivated fields, large wetland complexes, and the Shell Rock River. Surrounding land use consists of cultivated agriculture fields and wetland complexes associated with the Shell Rock River. Topography is undulating throughout the Project Area but generally slopes downward towards wetlands in the north and west, with the high point of the site located in the northwestern portion of the Project Area. Elevations range from 1204 feet to 1230 feet above mean sea level (msl).

3.0 FIELD DELINEATION METHODOLOGY

3.1 Mapping

Prior to delineating wetland boundaries in the field, the National Wetlands Inventory (NWI), the National Hydrography Dataset (NHD), the Minnesota Department of Natural Resources (MN DNR) Public Waters and Wetlands Inventory (PWI), Federal Emergency Management Agency (FEMA) Federal Insurance Rate Maps (FIRM) (**Exhibit 2**), and the Natural Resource Conservation Service (NRCS) Soil Survey Geographic database (SSURGO2) for Dakota County (**Exhibit 3**) were reviewed. Elevation mapping was completed using LiDAR contours from MnTOPO (**Exhibit 4**). These datasets, along with aerial photographs, were used to create Desktop Wetlands (**Exhibit 4**) which are desktop-delineated probable wetlands that occur outside of agricultural areas and are used to guide the field delineation.

3.2 Offsite Hydrology Review

Westwood reviewed historical aerial photography to identify potential wetlands (Suspect Areas) in cultivated portions of the property using the July 1st, 2016, Minnesota Board of Water and Soil Resources (BWSR)/USACE-accepted protocol for conducting off-site wetland determinations, *Guidance for Offsite Hydrology/Wetland Determinations*. Westwood reviewed 12 years of aerial photography between the years of 2003 to 2023. The offsite hydrology review, along with aerial photographs from each reviewed year, are included in **Appendix D.**

3.3 Wetland Delineation Methodology

On April 29 and 30, 2024, wetland scientists from Westwood delineated wetlands within the Project Area using a level two routine determination methods set forth in the USACE Wetlands Delineation Manual (Environmental Laboratory, Waterways Experiment Station 1987) and the supplemental methods set forth in the regional supplement to the USACE Wetland Delineation Manual: Midwest Region (US Army Engineer Research and Development Center 2010). Data sheets documenting soils, vegetation, and hydrology data as well as photographs of delineated wetlands are included in **Appendix A**.

Wetlands were classified according to Wetlands of the United States (U.S. Fish and Wildlife Service Circular 39; Shaw and Fredine; 1971) and Wetlands and Deepwater Habitats of the United States (FWS/OBS Publication 79/31; Cowardin et. al. 1979). Common and scientific names for vegetation identified in this report and on the attached data forms generally correspond with the nomenclature used in the 2022 National Wetland Plant List (USACE 2024). Wetland boundaries and sample points were delineated in the field using a Panasonic Toughbook® tablet and an EOS Arrow 100® unit capable of sub-meter accuracy (**Exhibit 5**).

Suspect Areas and Desktop Wetlands (**Exhibit 4**) identified either during the Offsite Hydrology Review or using the NWI, NHD, FEMA, NRCS soils, and/or topography datasets were reviewed in the field. Suspect Areas and Desktop Wetlands that did not exhibit all three wetland parameters were documented as a non-wetland sample point (**Exhibit 5**). Data forms and photographs were also collected detailing upland characteristics for these areas (**Appendix B**).

3.4 Ordinary High Water Mark Determinations

Drainages within the Project Area were considered non-wetland Waters of the U.S. (WOTUS), as they may not exhibit all parameters required for wetlands (i.e., predominance of hydrophytes, hydric soils, and jurisdictional hydrology). Accordingly, their boundaries were delineated in the field by documenting their Ordinary High-Water Marks (OHWMs), as determined according to the USACE Regulatory Guidance Letter No. 05-05 (U.S. Army Corps of Engineers, 2005).

USACE regulations set forth at 33 CFR 328.3(e) defines the OHWM for purposes of Clean Water Act (CWA) lateral jurisdiction:

> The term ordinary high-water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

USACE Regulatory Guidance Letter No. 05-05 (U.S. Army Corps of Engineers, 2005) indicates the following physical characteristics are deemed reasonably reliable, and therefore presence of these characteristics was evaluated in the field when making OHWM determinations for drainages in the Project Area:

- Natural line impressed on the bank
- Changes in the character of soil
- Presence of litter and debris
- Vegetation matted down, bent, or absent
- Leaf litter disturbed or washed away
- Deposition
- Bed and banks
- Change in plant community
- Shelving
- Destruction of terrestrial vegetation
- Wracking
- Sediment sorting
- Scour
- Multiple observed flow events
- Water staining

If present, watercourse boundaries and sample points were delineated in the field using a Panasonic Toughbook® tablet and an EOS Arrow 100® unit capable of sub-meter accuracy (**Exhibit 5)**. Data forms and photographs documenting delineated watercourse characteristics are included in **Appendix C**.

Areas which were noted on the NWI or NHD datasets, or areas which exhibited potential OHWM characteristics on aerial imagery but did not contain the physical characteristics of an OHWM were reviewed in the field. A non-watercourse sample point was collected in these locations along with a photograph.

4.0 RESULTS

4.1 Mapping

NWI data mapped 26 wetlands within the Project Area. NHD data mapped two (2) watercourses and three (3) waterbodies within the Project Area. Minnesota Public Waters Inventory (PWI) mapped one (1) watercourse and no water basins within the Project Area. Approximately 40 percent of the Project Area is located within FEMA mapped flood zones (**Exhibit 2**).

The NRCS SSURGO2 for Freeborn County indicates that the soils listed in **Table 4.1** are mapped within the Site (**Exhibit 3**). Based on the NRCS Web Soil Survey Hydric Rating, there are four (4) soil units classified as all hydric within the Site.

Table 4.1: Soil Summary Table

Map Symbol[1]	Map Unit Name[2]	Rating[2]	Percent Hydric Soil[3]
5	Dakota loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
5B	Dakota loam, 2 to 6 percent slopes	Predominantly Non-Hydric	4
5C	Dakota loam, 6 to 14 percent slopes	Predominantly Non-Hydric	4
41	Estherville sandy loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
41B	Estherville sandy loam, 2 to 6 percent slopes	Predominantly Non-Hydric	1
41C	Estherville sandy loam, 6 to 12 percent slopes	Predominantly Non-Hydric	4
156	Fairhaven loam, 0 to 2 percent slopes	Predominantly Non-Hydric	4
392	Biscay clay loam, 0 to 2 percent slopes	All Hydric	100
465	Kalmarville loam, frequently flooded	Predominantly Hydric	99
517	Shandep loam	All Hydric	100
525	Muskego soils, 0 to 1 percent slopes	All Hydric	100
1030	Pits, sand and gravel	Non-Hydric	0
1055	Aquents and Histosols, ponded	All Hydric	100

[1] – Soils determined using GIS geospatial query clipping the NRCS Soil Survey Geographic (SSURGO2) spatial data by Project boundaries.

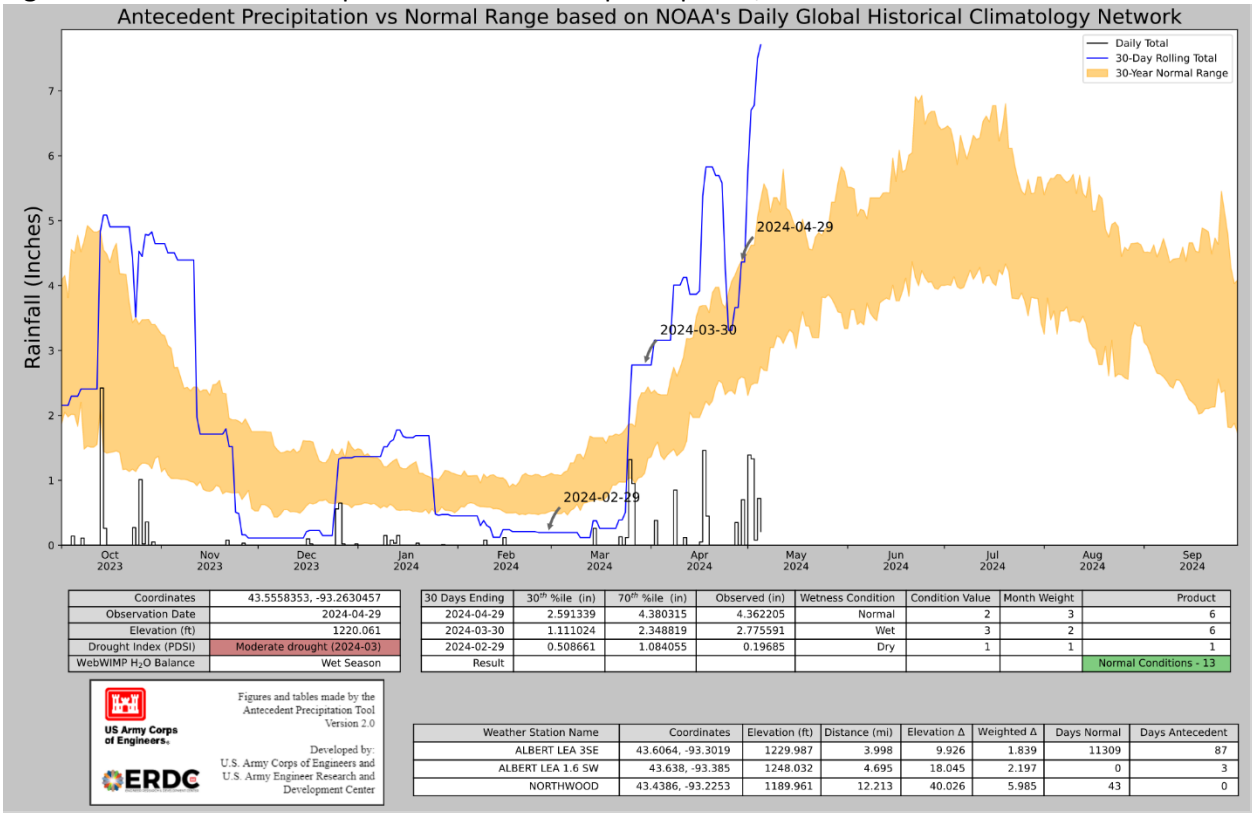
[2] – As indicated in the SSURGO2 database

[3] – Where percentages are small (e.g. < 15 %) the hydric soil is likely an inclusion that is not recognized in the map unit name. The absence of a value does not necessarily indicate the absence of hydric soils, but that the relative percentages of included minor soils have not been determined.

4.2 Antecedent Precipitation

Antecedent precipitation data was evaluated for the 90 days prior to the site visit using the *Antecedent Precipitation Tool* (APT) developed by the USACE. Results from this data indicate antecedent precipitation was considered normal prior to the field review (**Figure 4.2**).

Figure 4.2: Antecedent Precipitation Tool V2.0 Graph – April 29, 2024



Coordinates	43.5558353, -93.2630457
Observation Date	2024-04-29
Elevation (ft)	1220.061
Drought Index (PDSI)	Moderate drought (2024-03)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-29	2.591339	4.380315	4.362205	Normal	2	3	6
2024-03-30	1.111024	2.348819	2.775591	Wet	3	2	6
2024-02-29	0.508661	1.084055	0.19685	Dry	1	1	1
Result							Normal Conditions - 13

US Army Corps of Engineers.
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.998	9.926	1.839	11309	87
ALBERT LEA 1.6 SW	43.638, -93.385	1248.032	4.695	18.045	2.197	0	3
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0

4.3 Offsite Hydrology Review

The site was reviewed against 12 years of aerial imagery prior to the field delineation. Three (3) Suspect Areas were identified (SA-01-03) (**Exhibit 4**). The results of the offsite hydrology review are included in **Appendix D**.

4.4 On-Site Wetland and Watercourse Delineation Results

Wetlands

On April 29 and 30, 2024, Westwood delineated seven (7) wetlands and one pond totaling 28.48 acres. Summaries of the delineated wetlands and pond are included in **Table 4.4** below. Data forms and photographs documenting vegetation, soils, and hydrologic conditions are included in **Appendix A**.

Table 4.4: Delineated Wetland Summary Table

Wetland Name	Area (Acres)	Mapped on NWI	Cowardin Wetland Type	Circular 39 Type	Eggers & Reed Type	Latitude	Longitude
WB-01	2.48	PUBFx, PFO1Cx	PEM1E, PFO1C, PUBFx	Type 2/5/7	Fresh Wet Meadow, Floodplain Forest, Shallow Open Water	43.56033	-93.26708
WB-03	3.35	PEM1A, PEM1C, PEM1Fx,PUBFx	PEM1A, PEM1E, PUBF	Type 2/3/5	Fresh Wet Meadow, Shallow Marsh, Shallow Open Water	43.55921	-93.26495
WB-04	4.80	PEM1A, PEM1C, PUBFx	PEM1A, PEM1E, PUBF	Type 2/3/5	Fresh Wet Meadow, Shallow Marsh, Shallow Open Water	43.55810	-93.26574
WB-05	0.26	No	PEM1A	Type 1	Seasonally Flooded Basin	43.55671	-93.26539
WB-06	0.56	No	PEM1A	Type 1	Seasonally Flooded Basin	43.55644	-93.26429
WB-07	0.02	PEM1A	PEM1C	Type 2	Fresh Wet Meadow	43.56044	-93.26420
WB-08	15.85	PEM1A, PEM1C, PEM1F, PEM1Fx, PUBF	PEM1A, PEM1C, PEM1F, PFO1C, PUBF	Type 2/3/5/7	Fresh Wet Meadow, Shallow Marsh, Floodplain Forest, Shallow Open Water	43.55419	-93.26179
PO-01	1.16	PUBFx	PUBFx	Type 5	Shallow Open Water	43.55761	-93.26403
Total	**28.48**						

Watercourses

Westwood delineated one (1) perennial watercourse (**WC-01**) totaling 3.9 acres (3,407 linear feet) within the Project Area. This watercourse is located along the eastern boundary of the Site and flows to the southwest. It is a PWI watercourse identified as the Shell Rock River. Data forms and photographs documenting OHWM characteristics are included in **Appendix C**.

Non-Wetlands

Three (3) non-wetland points were gathered within the Project Area (**Exhibit 5**). These areas were identified prior to the delineation as either Suspect Areas or Desktop Wetlands. Data gathered at these sample points did not exhibit all three wetland parameters. Data forms and photographs documenting upland characteristics are included in **Appendix B.**

5.0 CONCLUSIONS

Westwood delineated seven (7) wetlands and one pond totaling 28.48 acres, and one (1) watercourse totaling 3.9 acres (3,407 linear feet) within the Midwater BESS site. Westwood requests that the LGU and the USACE review and process this report with the provided Joint Application Form and provide written concurrence that the extent of potentially jurisdictional water resources have been accurately identified. Please consider this report a formal Wetland Boundary request pursuant to Minn. Rules 8420.0405 and the CWA.

6.0 CERTIFICATION

I certify that, to the best of my knowledge and belief, the wetland delineation completed for this site is consistent with current wetland delineation practices and guidelines. I have the specific

qualifications, education, training, and experience to complete wetland delineations and determinations in accordance with federal and state requirements.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

Malia Stone
Wetland Scientist

7.0 LITERATURE CITED

Cowardin, L.M. , V.M. Carter , F.C. Golet , and E.T. LaRoe . 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Biological Services Program, Washington, DC, USA. FWS/OBS-79/31. 103pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Shaw, S.P. and C.G. Fredine. 1971. Wetlands of the United States. U.S. Fish and Wildlife Circular 39. U.S. Department of the Interior, Washington, D.C. 67 pp.

U.S. Army Corps of Engineers, St. Paul District and Minnesota Board of Water and Soils Resources. 2016. Guidance for Offsite Hydrology/Wetland Determinations.

U. S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Army Corps of Engineers. 2022. Antecedent Precipitation Tool v1.0.20. Available: https://github.com/erdc/Antecedent-Precipitation-Tool/releases/tag/v1.0.20

U.S. Army Corps of Engineers. National Wetland Plant List Notice. Federal Register. Vol. 89, No. 30. Published 13 February 2024. 10059 pp.

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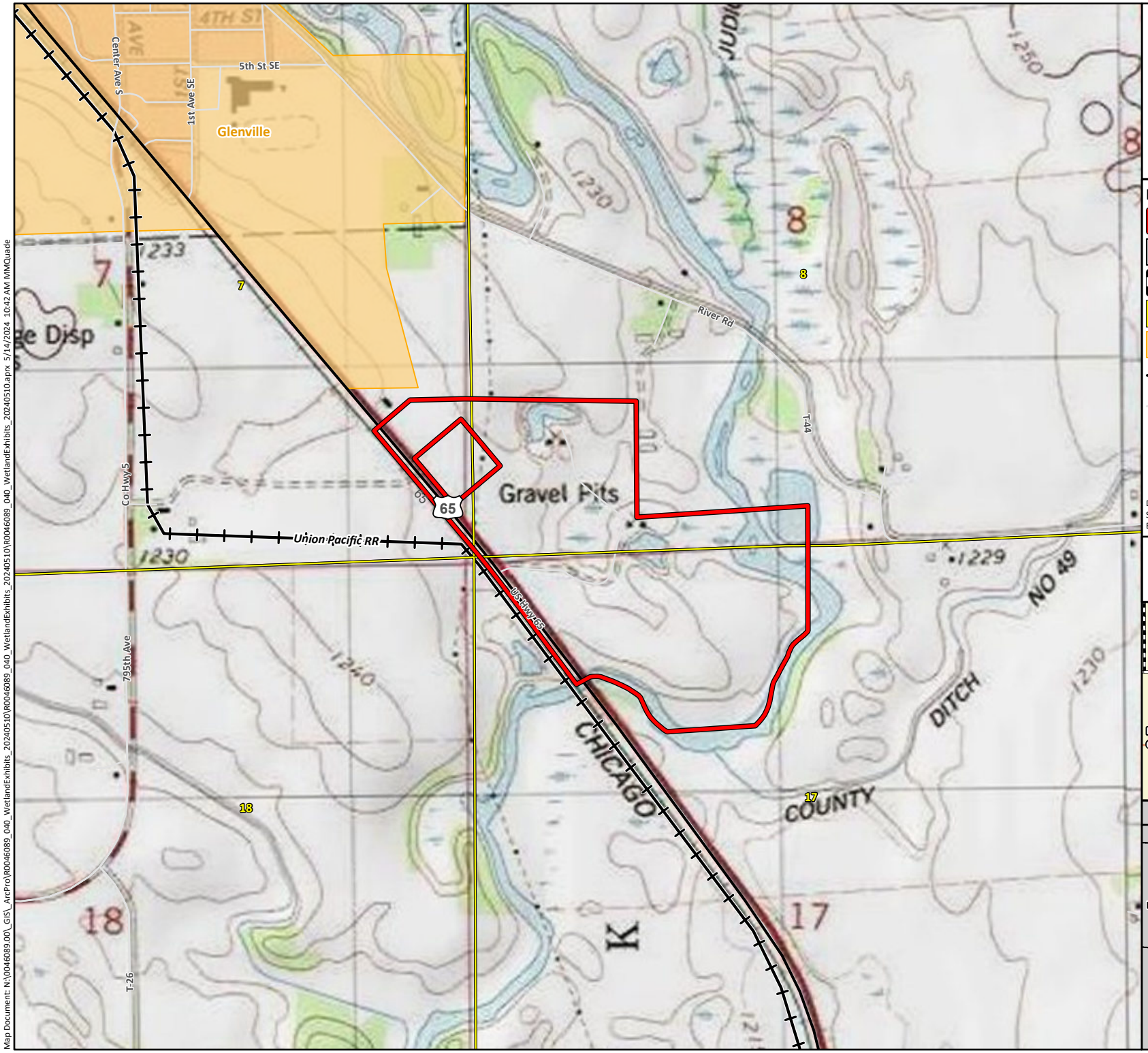
Westwood

Exhibits

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota



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Midwater BESS Project

Freeborn County, Minnesota

Project Area & USGS Topography

Exhibit 1

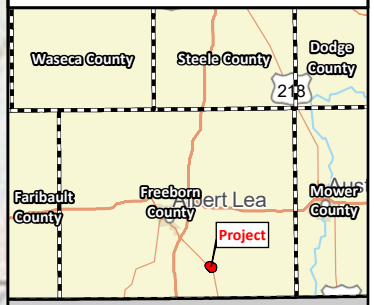
Legend

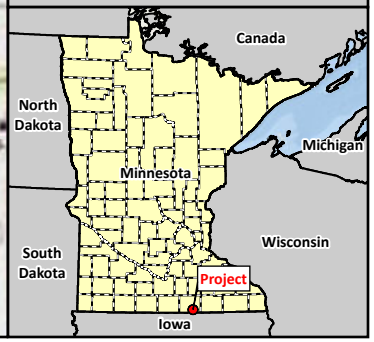
- Project Area
- State Boundary
- County Boundary
- PLSS Section Boundary
- Municipal Boundary
- Major Road
- Road
- Railroad

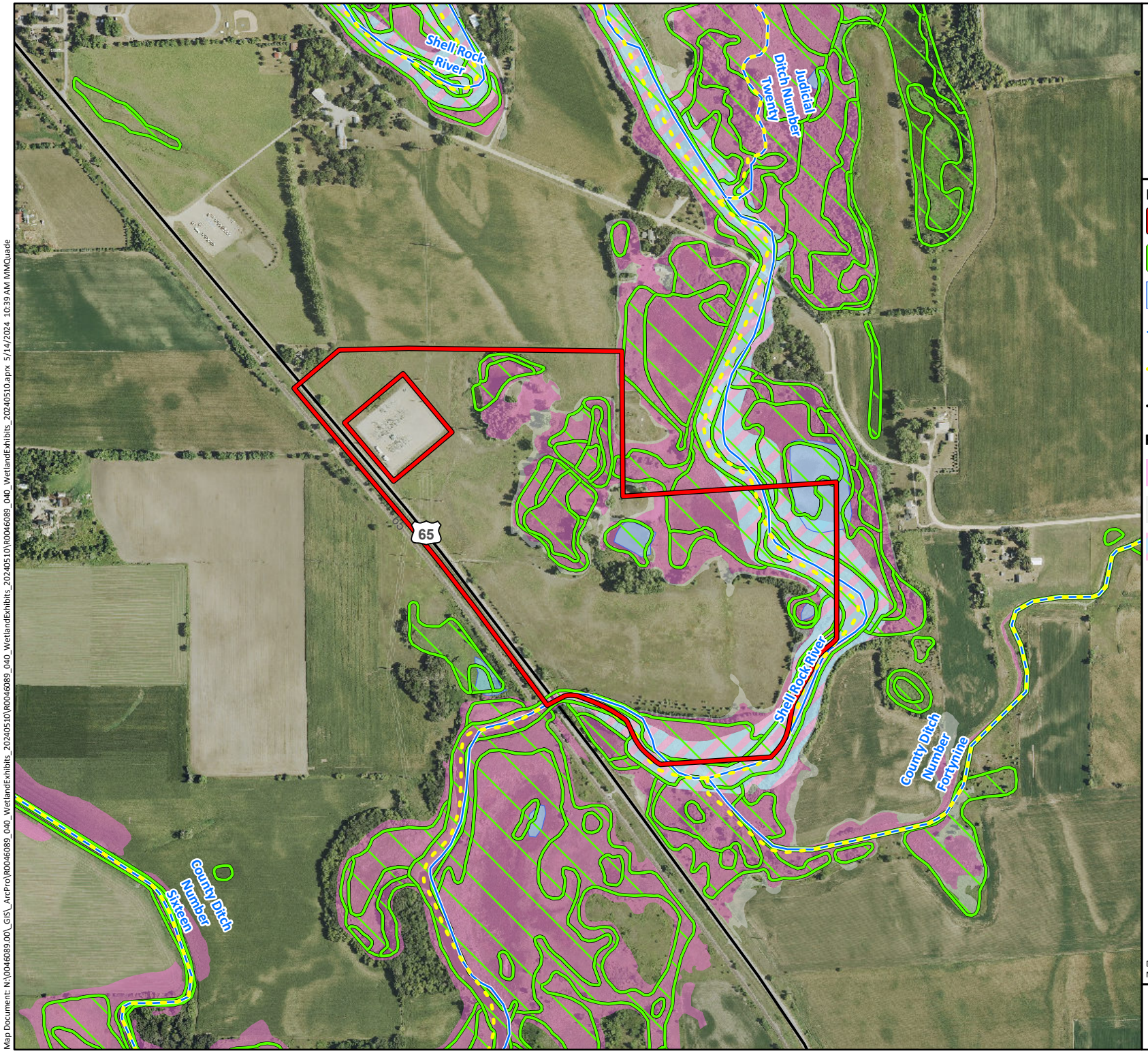
Data Source(s): Westwood (2024); ESRI WMS USA Topo & World Streets Basemaps (Accessed 2024); PLSS (2022); U.S. Census Bureau (2021 & 2023).

N

0 1,000 Feet







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Midwater BESS Project
Freeborn County, Minnesota

Water Resources

Exhibit 2

Legend

- Project Area
- NWI Wetland
- NHD Waterbody
- NHD Flowline
- PWI Watercourse
- Major Road

FEMA Flood Zone

- 100 Year Floodplain
- 500 Year Floodplain
- Floodway

Data Source(s): Westwood (2024); NAIP (2023); NWI (2023); NHD (2024); FEMA (2024); PWI (2023).

N

0 800 Feet

Map Document: N:\0046089.00_GIS_ArcPro\R0046089_040_WetlandExhibits_20240510\R0046089_040_WetlandExhibits_20240510\R0046089_040_WetlandExhibits_20240510.aprx 5/14/2024 10:39 AM MMQuade

Map Unit Symbol	Map Unit Symbol	Hydric Classification	Percent Hydric Classification
1030	Pits, sand and gravel	Non-Hydric	0
W	Water	Non-Hydric	0
41B	Estherville sandy loam, 2 to 6 percent slopes	Predominantly Non-Hydric	1
27	Dickinson fine sandy loam, 0 to 2 percent slopes	Predominantly Non-Hydric	3
156	Fairhaven loam, 0 to 2 percent slopes	Predominantly Non-Hydric	4
41C	Estherville sandy loam, 6 to 12 percent slopes	Predominantly Non-Hydric	4
5B	Dakota loam, 2 to 6 percent slopes	Predominantly Non-Hydric	4
5C	Dakota loam, 6 to 14 percent slopes	Predominantly Non-Hydric	4
41	Estherville sandy loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
5	Dakota loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
465	Kalmarville loam, frequently flooded	Predominantly Hydric	99
1055	Aquents and Histosols, ponded	All Hydric	100
392	Biscay clay loam, 0 to 2 percent slopes	All Hydric	100
517	Shandep loam	All Hydric	100
525	Muskego soils, 0 to 1 percent slopes	All Hydric	100

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Midwater BESS Project
Freeborn County, Minnesota

Soils

Exhibit 3

Legend

- Project Area
- Soil Unit Boundary
- Major Road
- Road
- Railroad

Hydric Classification

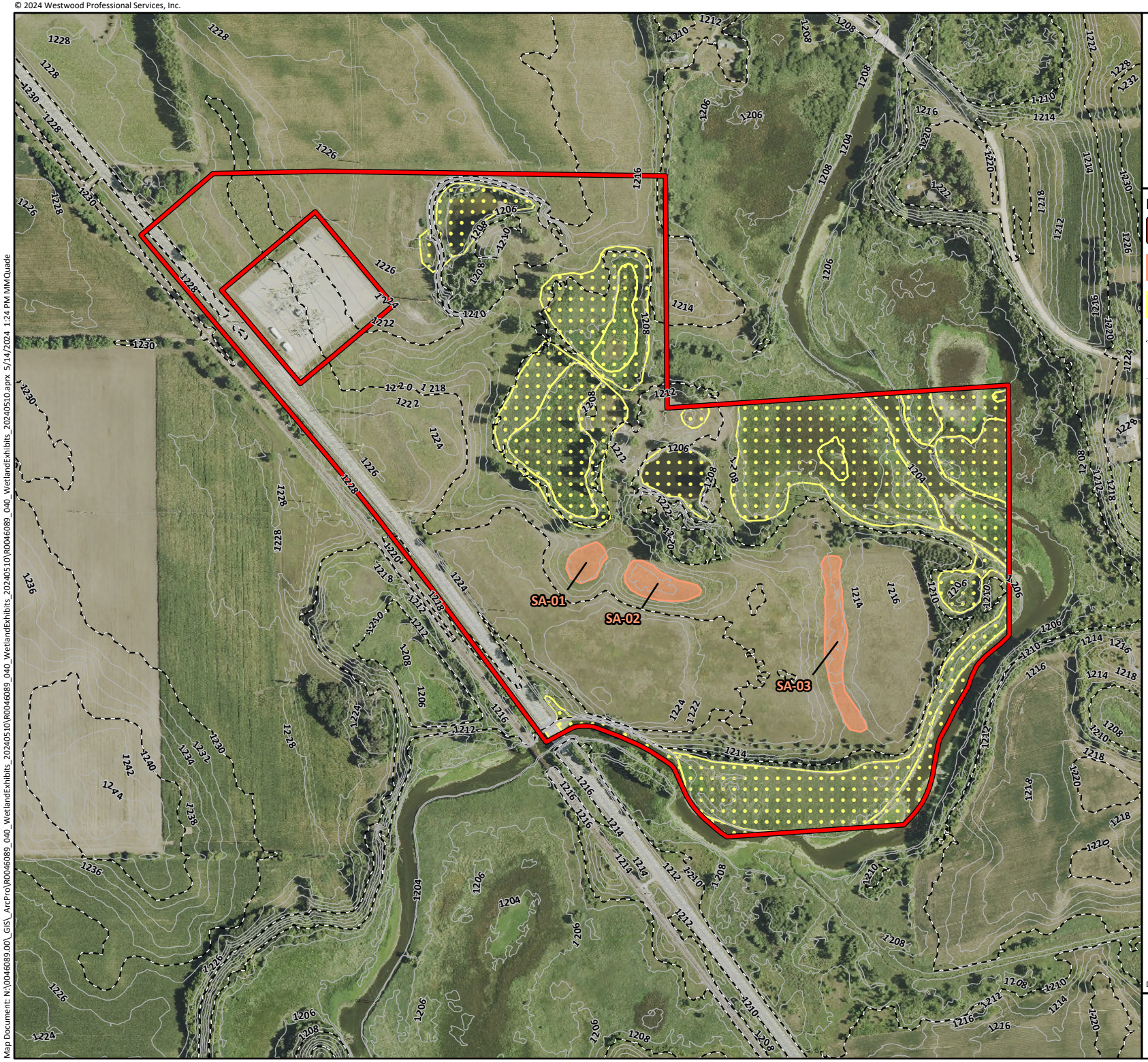
- All Hydric
- Predominantly Hydric

Data Source(s): Westwood (2024); NAIP (2023); NRCS Web Soil Survey (Accessed 2024); U.S. Census Bureau (2021 & 2023).

N

0 600 Feet

Map Document: N:\0046089.00_GIS_ArcPro\R0046089_040_WetlandExhibits_20240510\R0046089_040_WetlandExhibits_20240510.aprx 5/10/2024 11:24 AM MMQuade



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Midwater BESS Project

Freeborn County, Minnesota

Suspect Areas & LiDAR Contours

Exhibit 4

Legend

- Project Area
- Suspect Area
- Desktop Wetland
- 10ft Contour
- 2ft Contour

Data Source(s): Westwood (2024); NAIP (2023).

N

0 500 Feet

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Midwater BESS Project
Freeborn County, Minnesota

Field Delineated Features

Exhibit 5

Legend

- Project Area
- Field Delineated Pond
- Field Delineated Wetland
- Field Delineated Watercourse
- Wetland Sample Point
- Upland Sample Point
- Non-Wetland Sample Point
- Watercourse Sample Point
- Culvert

Data Source(s): Westwood (2024); NAIP (2023).

N

0 500 Feet

Map Document: \\westwoodps.local\Global Projects\0046089.00_GIS_ArcPro\R0046089_040_WetlandExhibits_20240510\R0046089_040_WetlandExhibits_20240510.aprx 5/16/2024 1:19 PM ALMcTaggart

Westwood

Appendix A

Wetland Data Forms & Photographs

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

Midwater BESS Project
Delineation Site Photograph

Westwood
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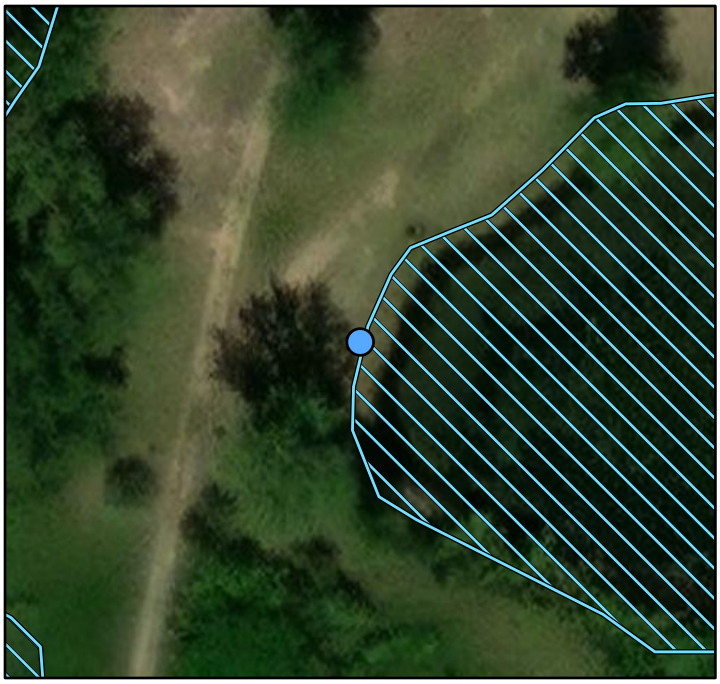
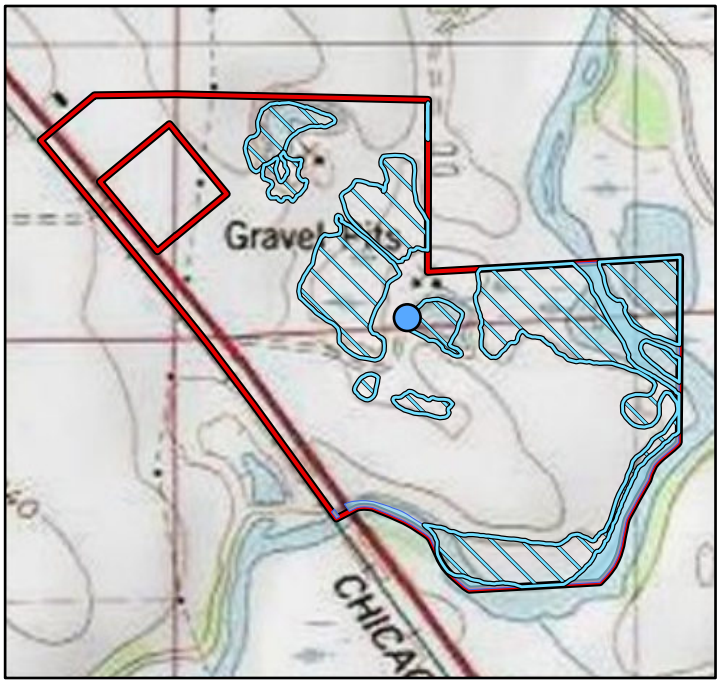
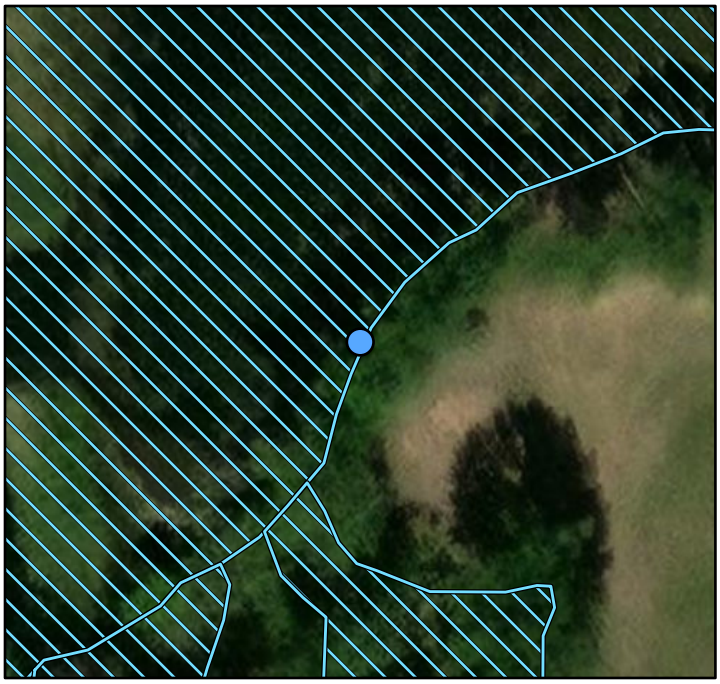
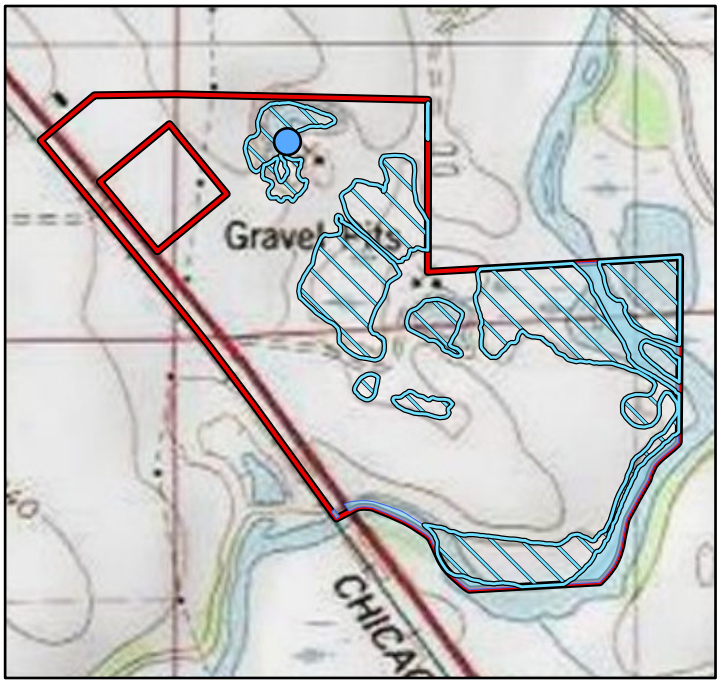




Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-01-wet

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.560191 Long: -93.266967 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: PUBFx

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	20	Y	FAC
2.			
3.			
4.			
5.			
	20.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	30	Y	FACW
2.			
3.			
4.			
5.			
	30.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	90	Y	FACW
2. *Equisetum hyemale*	15	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	135.00	x 2 =	270.00
FAC species	20.00	x 3 =	60.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	155.00 (A)		330.00 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-01-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					MMI	Sandy inclusions and organic r
2-6	10YR 4/1	100					COS	
6-16	10YR 4/1	100					COS	Gravel inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Sand

Depth (inches): 16

Hydric Soil Present? Yes ✔ No ___

Remarks:

Unable to sample further due to saturated sand falling out of auger back into hole.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ✔ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 8

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-01-up

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex

Slope (%): 3-7 Lat: 43.560147 Long: -93.266874 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	40	Y	FAC
2.			
3.			
4.			
5.			
	40.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera canadensis*	5	Y	FACU
2.			
3.			
4.			
5.			
	5.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	50	Y	FAC
2. *Bromus inermis*	20	Y	FACU
3. *Phalaris arundinacea*	16	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	86.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	16.00	x 2 =	32.00
FAC species	90.00	x 3 =	270.00
FACU species	25.00	x 4 =	100.00
UPL species	0.00	x 5 =	0.00
Column Totals:	131.00 (A)		402.00 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: WB-01-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					LS	Organic material
6-20	10YR 4/4	100					COS	
20-24	10YR 4/3	95	5YR 4/6	5	C	PL	LCOS	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

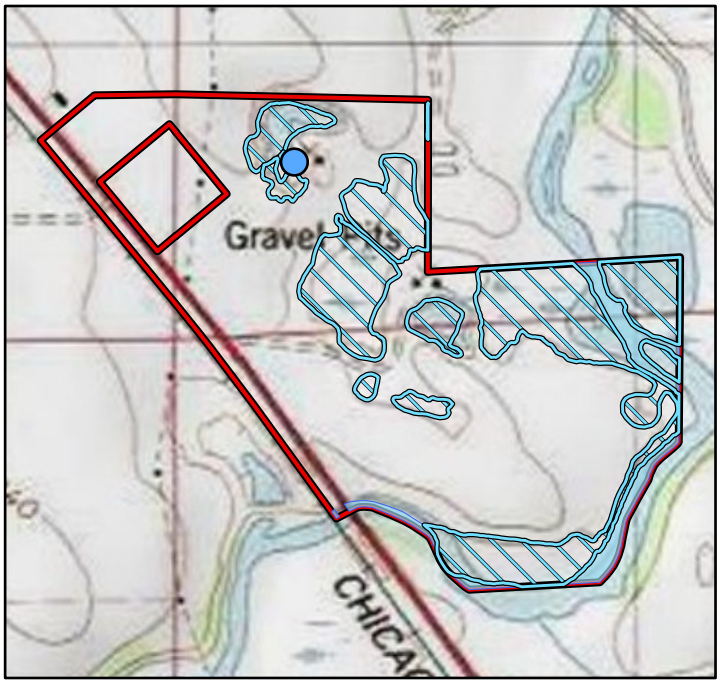
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-01A-WET

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.559822 Long: -93.266731 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix nigra*	10	Y	OBL
2. *Salix interior*	5	Y	FACW
3.			
4.			
5.			
	15.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	40	Y	FACW
2. *Carex spp.*	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	55.00	x 2 =	110.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	65.00 (A)		120.00 (B)

Prevalence Index = B/A = 1.85

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-01A-WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					MMI	Roots in upper 2in.
2-4	10YR 3/1	100					LS	
4-6	2.5Y 4/3	100					COS	
6-12	5GY 4/1	100					COS	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ✔ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? Yes ✔ No ___

Remarks:

Large rock resistance layer at 12in.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ✔ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-01A-UP

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex

Slope (%): 0-2 Lat: 43.559782 Long: -93.266581 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix nigra*	10	Y	OBL
2.			
3.			
4.			
5.			
	10.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	70	Y	FAC
2. *Phalaris arundinacea*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10.00	x 1 =	10.00
FACW species	10.00	x 2 =	20.00
FAC species	70.00	x 3 =	210.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		240.00 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-01A-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					L	Roots in upper 2in.
2-26	10YR 4/3	100					LS	Silty inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

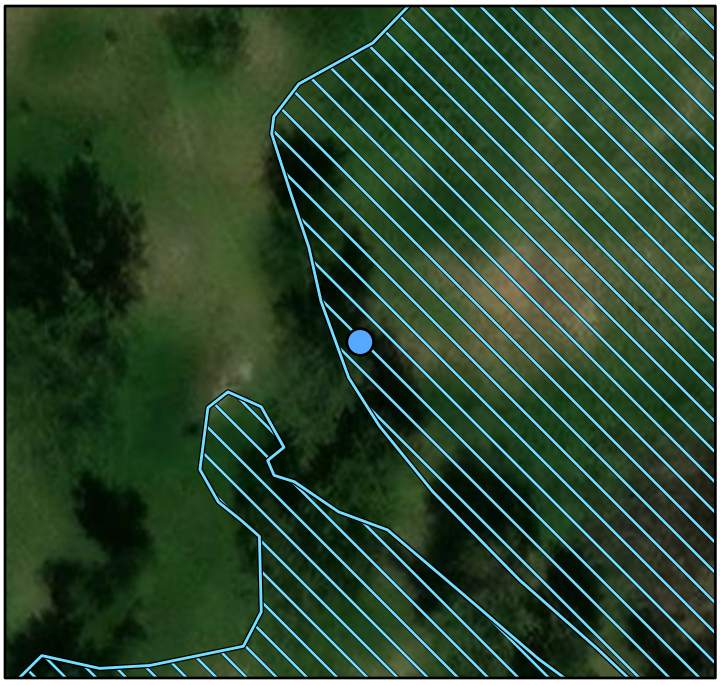
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

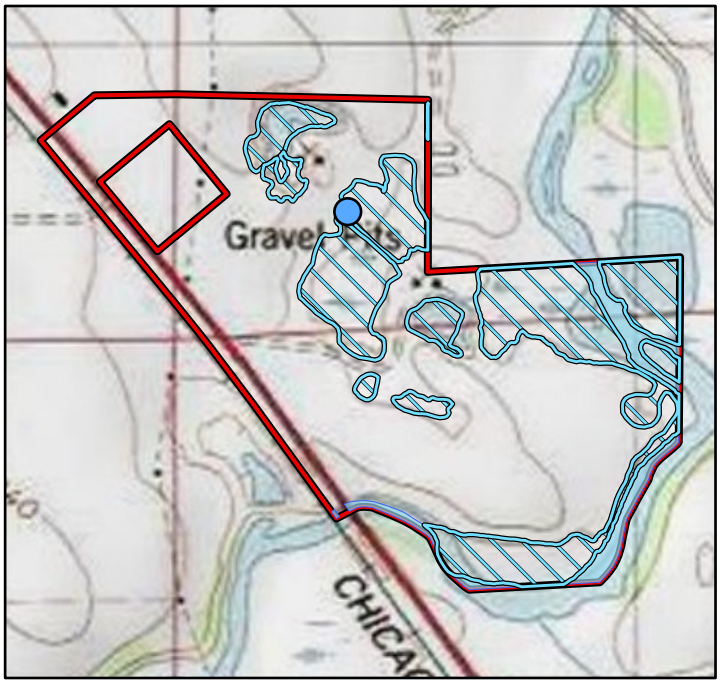
Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-03-wet

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.559195 Long: -93.265775 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: PEM1A

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	70	Y	FAC
2.			
3.			
4.			
5.			
	70.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	80	Y	FACW
2. *Typha X glauca*	20	N	OBL
3. *Carex spp.*	10	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	110.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	90.00	x 2 =	180.00
FAC species	70.00	x 3 =	210.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	180.00 (A)		410.00 (B)

Prevalence Index = B/A = 2.28

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-03-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					MMI	Roots in upper 2in.
2-4	10YR 2/2	98	7.5YR 4/6	2	C	PL	MMI	Sand included
4-12	10YR 3/2	70	7.5YR 5/6	5	C	M/PL	MMI	Sandy loam inclusions
	10YR 2/2	25					MMI	
12-24	10YR 3/2	40	2.5YR 3/6	5	C	M/PL	SC	
	10YR 2/1	45	7.5YR 4/6	10	C	M/PL	SC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✓ Stratified Layers (A5)
- ✓ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✓ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✓ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✓ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ✓ FAC-Neutral Test (D5)

Field Observations:

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

Water Table Present? Yes ✓ No ___ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 10

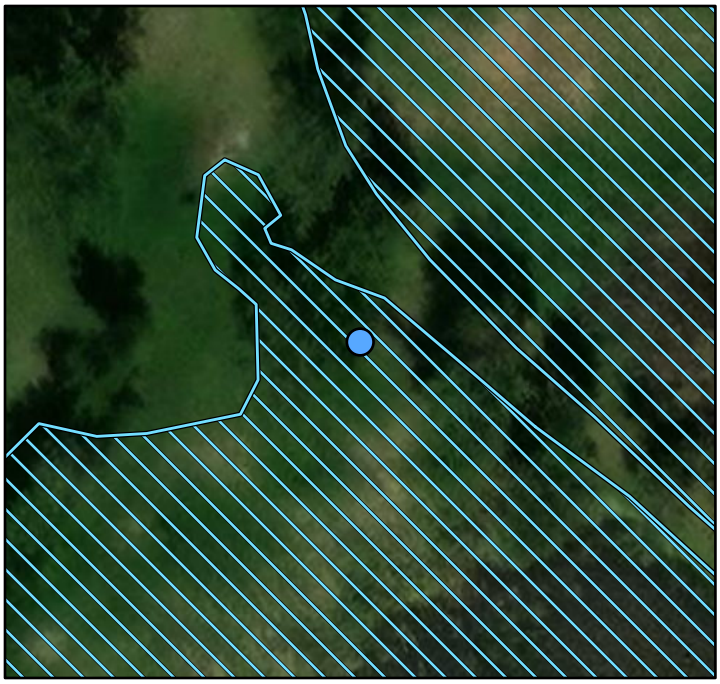
Wetland Hydrology Present? Yes ✓ No ___

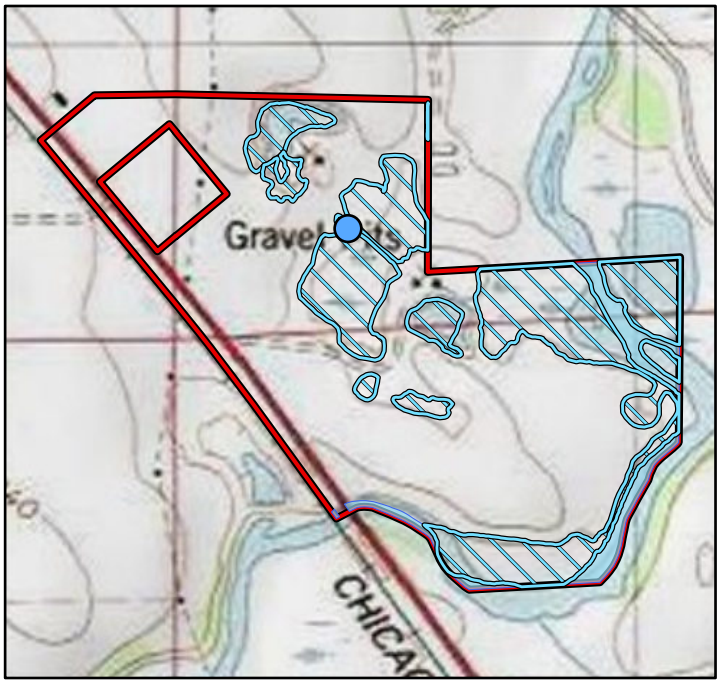
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-04-wet

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.558956 Long: -93.265764 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: PEM1A

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	50	Y	FAC
2.			
3.			
4.			
5.			
	50.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	80	Y	FACW
2. *Carex spp.*	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	90.00	x 2 =	180.00
FAC species	50.00	x 3 =	150.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	140.00 (A)		330.00 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-04-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					MMI	Roots in upper 2in.
4-18	10YR 3/1	85	5YR 3/4	5	C	M/PL	MMI	Sand and loam inclusions
			5YR 4/6	10	C	M/PL	MMI	
18-24	N 2.5/0	98	7.5YR 4/6	2	C	M	SIL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✔ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

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

Water Table Present? Yes ✔ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-03/04-up

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 0-2 Lat: 43.559107 Long: -93.265814 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	40	Y	FAC
2.			
3.			
4.			
5.			
	40.0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	50	Y	FACU
2. *Poa pratensis*	40	Y	FAC
3. *Echinochloa crus-galli*	30	N	FACW
4. *Taraxacum officinale*	20	N	FACU
5. *Trifolium pratense*	10	N	FACU
6. *Erigeron canadensis*	10	N	FACU
7. *Solidago canadensis*	5	N	FACU
8.			
9.			
10.			
	165.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	30.00	x 2 =	60.00
FAC species	80.00	x 3 =	240.00
FACU species	95.00	x 4 =	380.00
UPL species	0.00	x 5 =	0.00
Column Totals:	205.00 (A)		680.00 (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Point taken adjacent to roadside, vegetation disturbed.

SOIL

Sampling Point: WB-03/04-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					COSL	
4-12	10YR 4/2	90	10YR 4/6	10	C	M	COSL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Fill

Depth (inches): 12

Hydric Soil Present? Yes _____ No ✔

Remarks:

Fill restrictive layer at 12in.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

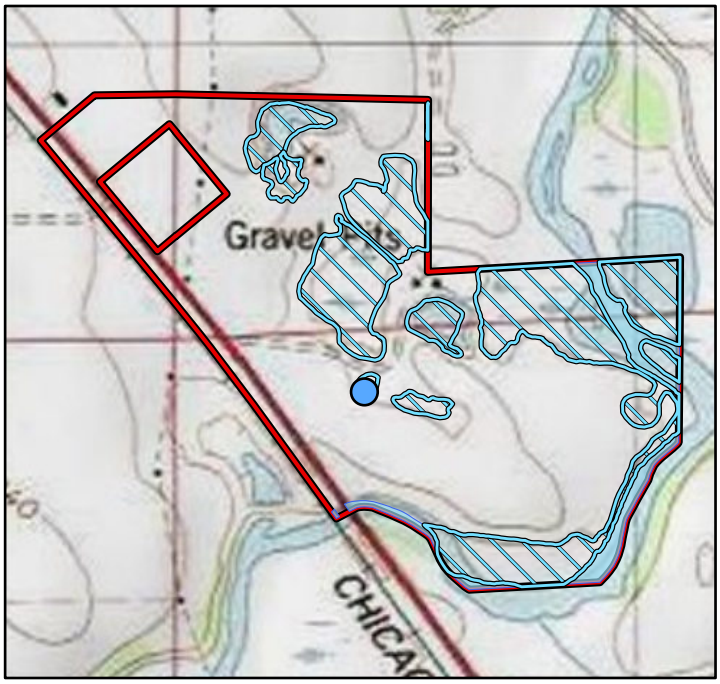
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-05-WET

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 17 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.556635 Long: -93.265435 Datum: WGS84

Soil Map Unit Name: Estherville sandy loam, 6 to 12 percent slopes NWI classification: None

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

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

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

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

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

Remarks:
Suspect area identified in Offsite Hydrology Review.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Bromus inermis*	37	Y	FACU
3. *Pastinaca sativa*	10	N	NI
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	97.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	50.00	x 2 =	100.00
FAC species	0.00	x 3 =	0.00
FACU species	37.00	x 4 =	148.00
UPL species	0.00	x 5 =	0.00
Column Totals:	87.00 (A)		248.00 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-05-WET

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 2/1	100					FSL	
14-18	10YR 2/1	100					FSL	Some silty inclusions
18-26	10YR 3/1	50					FSL	Mixed matrix, silty inclusions
	10YR 2/1	50					FSL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
Assumed A12

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

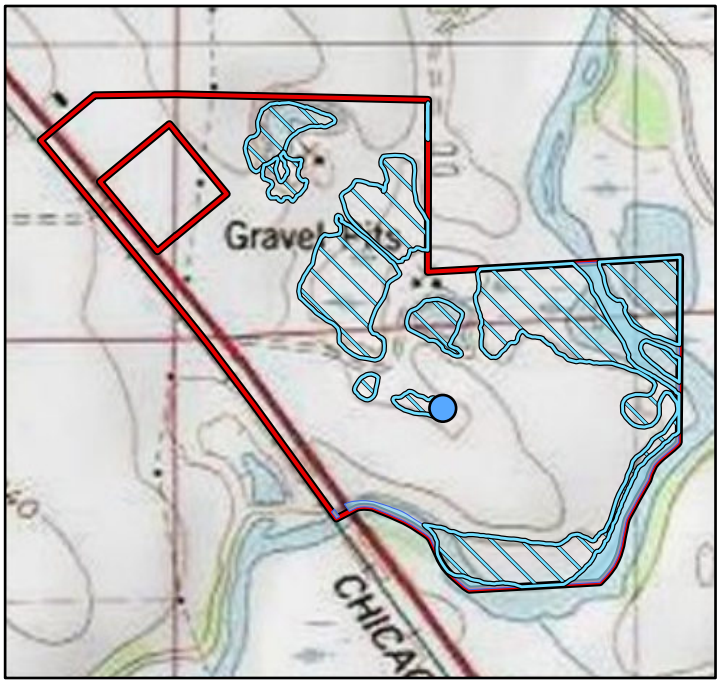
Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-06-wet

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 17 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.556407 Long: -93.263917 Datum: WGS84

Soil Map Unit Name: Estherville sandy loam, 6 to 12 percent slopes NWI classification: None

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

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

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

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

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

Remarks:
Suspect area identified in Offsite Hydrology Review.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	40	Y	FACU
2. *Phalaris arundinacea*	35	Y	FACW
3. *Poa pratensis*	20	Y	FAC
4. *Pastinaca sativa*	5	N	NI
5.			
6.			
7.			
8.			
9.			
10.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	35.00	x 2 =	70.00
FAC species	20.00	x 3 =	60.00
FACU species	40.00	x 4 =	160.00
UPL species	0.00	x 5 =	0.00
Column Totals:	95.00 (A)		290.00 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ✔ No _____**

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

SOIL

Sampling Point: WB-06-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/2	100					FSL	
18-28	10YR 2/1	100					FSL	Some silty inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:
Assumed A12

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-05/06-UP

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 17 T101N R020W

Landform (hillslope, terrace, etc.): Summit Local relief (concave, convex, none): Convex

Slope (%): 0-2 Lat: 43.556572 Long: -93.265063 Datum: WGS84

Soil Map Unit Name: Estherville sandy loam, 6 to 12 percent slopes NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	50	Y	FAC
2. *Bromus inermis*	20	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	50.00	x 3 =	150.00
FACU species	20.00	x 4 =	80.00
UPL species	0.00	x 5 =	0.00
Column Totals:	70.00 (A)		230.00 (B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: WB-05/06-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					FSL	Silty inclusions, grass roots inc
6-12	10YR 4/2	100					FSL	Gravel inclusions
12-20	10YR 4/4	100					FSL	gravel inclusions
20-26	10YR 5/4	100					FSL	Gravel inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

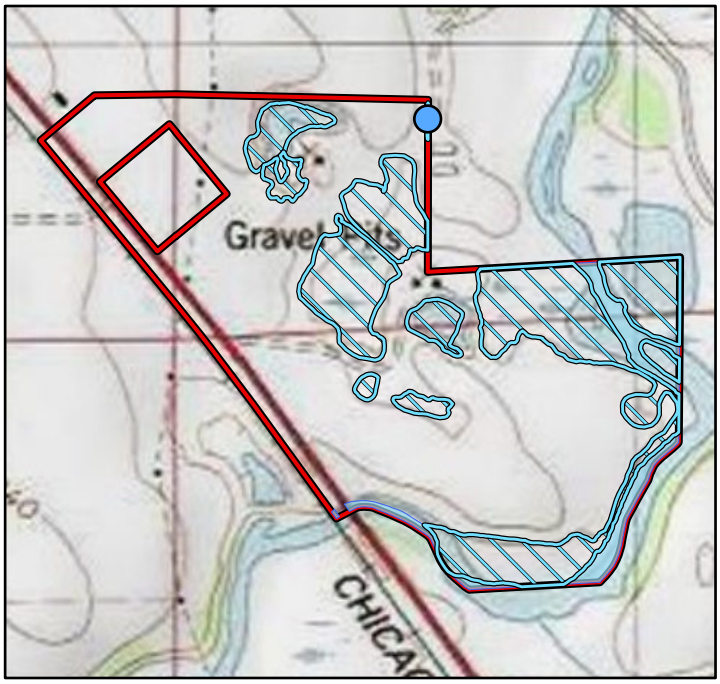
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-30

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-07-wet

Investigator(s): M. Stone Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.560501 Long: -93.264208 Datum: WGS84

Soil Map Unit Name: Aquents and Histosols, ponded NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	90	Y	FACW
2. *Salix nigra*	20	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	110.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	90.00	x 2 =	180.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	110.00 (A)		200.00 (B)

Prevalence Index = B/A = 1.82

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? **Yes ✔ No _____**

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

SOIL

Sampling Point: WB-07-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					SIL	
16-24	N 2.5/0	95	10Y 4/1	3	D	M	SCL	
			5GY 3/1	2	D	M	SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

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

Water Table Present? Yes ✔ No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 8

Wetland Hydrology Present? Yes ✔ **No** ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-30

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-07-up

Investigator(s): M. Stone Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.560492 Long: -93.264297 Datum: WGS84

Soil Map Unit Name: Estherville sandy loam, 2 to 6 percent slopes NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	5	Y	OBL
2.			
3.			
4.			
5.			
	5.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	90	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5.00	x 1 =	5.00
FACW species	0.00	x 2 =	0.00
FAC species	0.00	x 3 =	0.00
FACU species	90.00	x 4 =	360.00
UPL species	0.00	x 5 =	0.00
Column Totals:	95.00 (A)		365.00 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: WB-07-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					SL	
18-24	10YR 3/1	100					COSL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Point taken adjacent to farm road.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

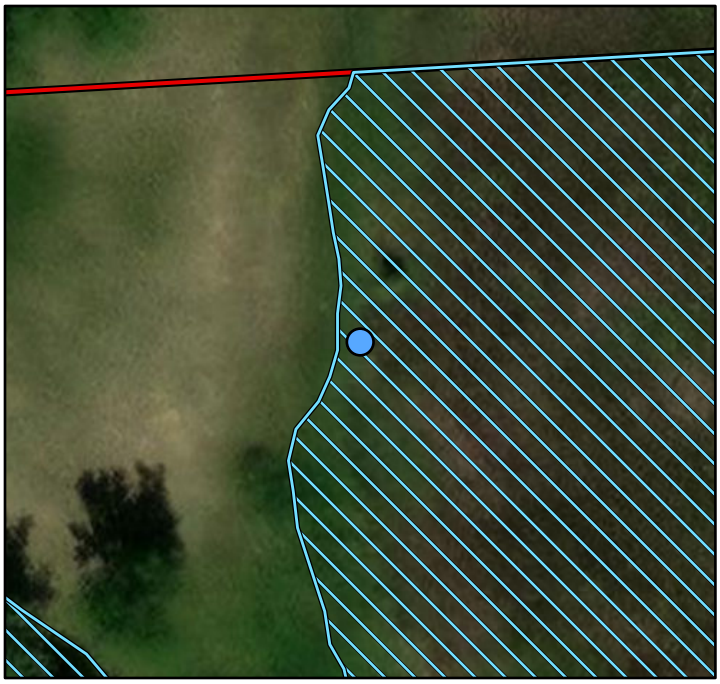
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

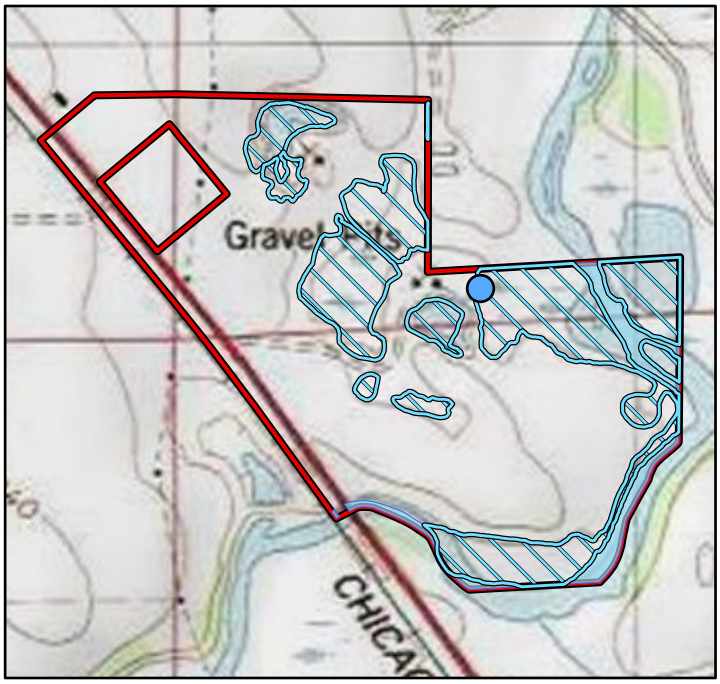
Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-30

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-08-wet

Investigator(s): M. Stone Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.558105 Long: -93.263211 Datum: WGS84

Soil Map Unit Name: Muskego soils, 0 to 1 percent slopes NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	70	Y	FACW
2. *Typha X glauca*	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	70.00	x 2 =	140.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		170.00 (B)

Prevalence Index = B/A = 1.7

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-08-wet

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					MMI	
2-6	10YR 2/2	100					COS	
6-18	N 2.5/0	95	2.5Y 4/2	5	D	M	MMI	Sandy mucky mineral
18-24	N 2.5/0	100					MMI	Loamy and silty

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✔ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ✔ FAC-Neutral Test (D5)

Field Observations:

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

Water Table Present? Yes ✔ No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-30

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: WB-08-up

Investigator(s): M. Stone Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Headslope Local relief (concave, convex, none): Convex

Slope (%): 3-7 Lat: 43.558125 Long: -93.263314 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	70	Y	FAC
2. *Androsace occidentalis*	15	N	FACU
3. *Danthonia compressa*	10	N	FACU
4. *Descurainia incana*	5	N	UPL
5.			
6.			
7.			
8.			
9.			
10.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	70.00	x 3 =	210.00
FACU species	25.00	x 4 =	100.00
UPL species	5.00	x 5 =	25.00
Column Totals:	100.00 (A)		335.00 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

SOIL

Sampling Point: WB-08-up

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/4	100					COS	
6-20	10YR 3/6						COS	
20-24	10YR 3/4	100					COS	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 20

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

None observed.

Westwood

Appendix B

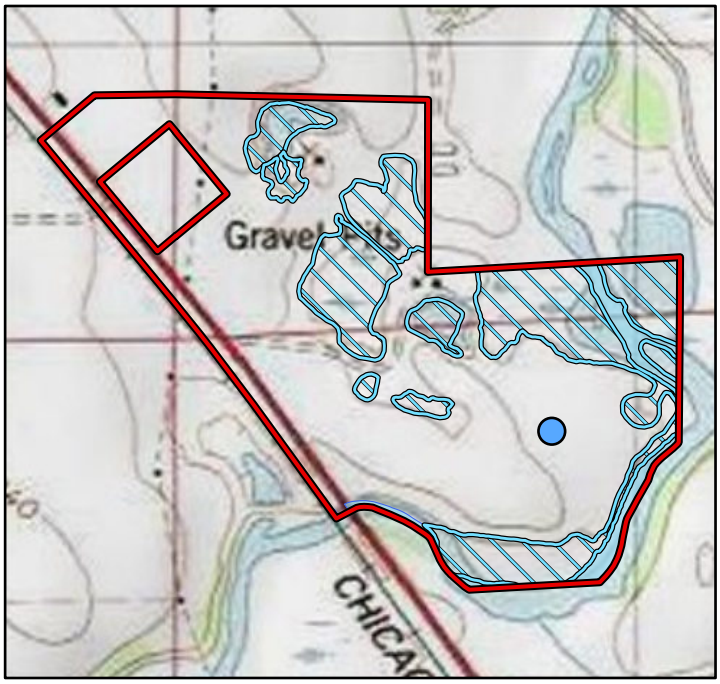
Non-Wetland Data Forms & Photographs

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: NW-01

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 17 T101N R020W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.556092 Long: -93.261782 Datum: WGS84

Soil Map Unit Name: Shandep loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	50	Y	FACU
2. *Poa pratensis*	30	Y	FAC
3. *Galium aparine*	30	Y	FACU
4. *Panicum capillare*	20	N	FAC
5. *Cirsium arvense*	20	N	FACU
6. *Pastinaca sativa*	10	N	NI
7. *Solidago canadensis*	5	N	FACU
8.			
9.			
10.			
	165.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	50.00	x 3 =	150.00
FACU species	105.00	x 4 =	420.00
UPL species	0.00	x 5 =	0.00
Column Totals:	155.00 (A)		570.00 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: NW-01

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR 2/1	100					L	
24-28	10YR 2/2	100					FSL	Some silty inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Hydric soil unit, unable to sample further due to auger length.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

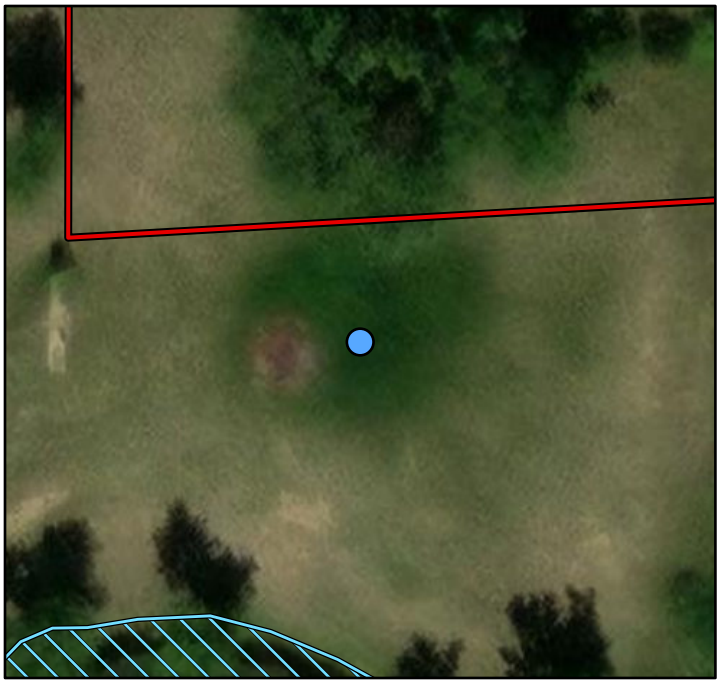
Wetland Hydrology Present? Yes _____ No ✔

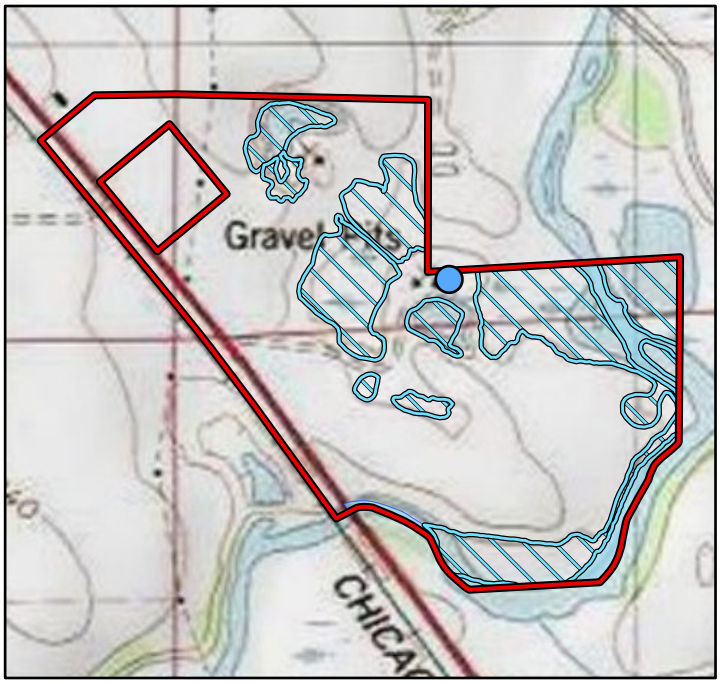
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-29

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: NW-02

Investigator(s): M. Stone, C. Gunn Section, Township, Range: sec 08 T101N R020W

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): Convex

Slope (%): 0-2 Lat: 43.558246 Long: -93.263813 Datum: WGS84

Soil Map Unit Name: Pits, sand and gravel NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	60	Y	FACU
2. *Poa pratensis*	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	30.00	x 3 =	90.00
FACU species	60.00	x 4 =	240.00
UPL species	0.00	x 5 =	0.00
Column Totals:	90.00 (A)		330.00 (B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: NW-02

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					COSL	
4-8	10YR 3/2	100					COSL	Gravel inclusions
8-16	10YR 2/2	100					SL	Gravel inclusions

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Fill/rock

Depth (inches): 16

Hydric Soil Present? Yes _____ No ✔

Remarks:

Rock layer of resistance at 16in.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

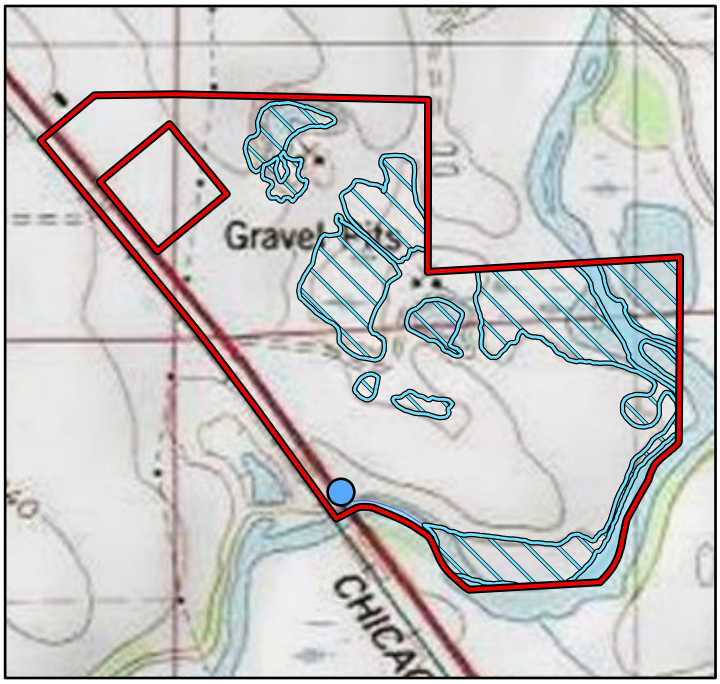
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None observed.

Midwater BESS Project
Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Midwater BESS City/County: Freeborn County Sampling Date: 2024-04-30

Applicant/Owner: Spearmint Renewable Development State: Minnesota Sampling Point: NW-03

Investigator(s): M. Stone Section, Township, Range: sec 17 T101N R020W

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 43.555223 Long: -93.265921 Datum: WGS84

Soil Map Unit Name: Kalmarville loam, frequently flooded NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus americana*	10	Y	FACU
2. *Populus deltoides*	5	Y	FAC
3.			
4.			
5.			
	15.0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	90	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90.0	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	5.00	x 3 =	15.00
FACU species	100.00	x 4 =	400.00
UPL species	0.00	x 5 =	0.00
Column Totals:	105.00 (A)		415.00 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

SOIL

Sampling Point: NW-03

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100					SIL	
16-24	10YR 3/2	100					SIL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Unable to sample further due to auger length.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

None other observed.

Westwood

Appendix C

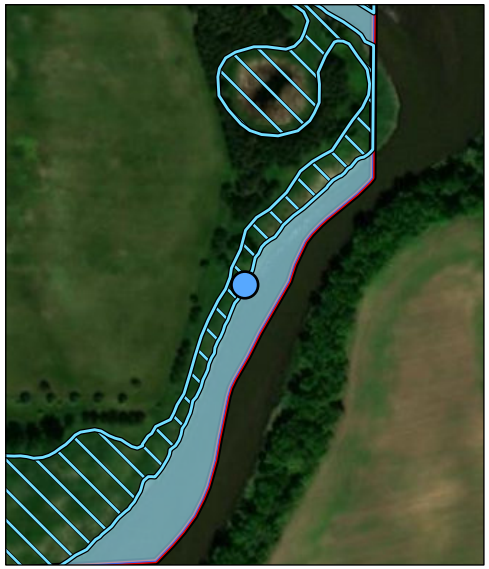
Watercourse Data Forms & Photographs

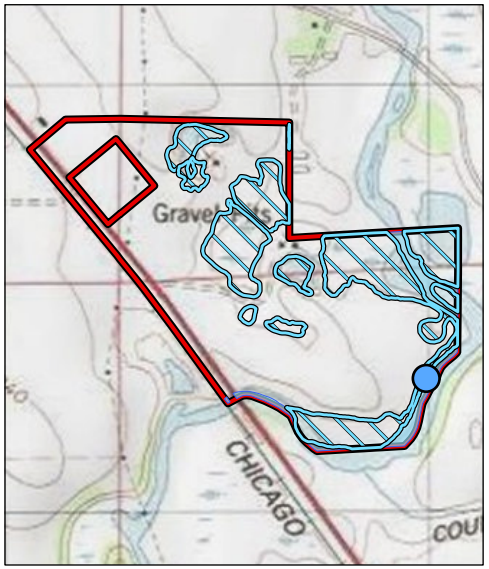
Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

Midwater BESS Project
Watercourse Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com





Midwater BESS Project
Watercourse Data Form

Westwood
Toll Free (888) 937-5150 westwoodps.com

Attributes	
Feature ID	WC-01
Defined Bed & Bank	Yes
Mapped on NHD	Yes
Mapped on NWI	Yes
Investigator	
Flow Characteristics	Perennial
Direction of the Flow	S
Water Width at Observation Point (ft)	50
Water Depth at Observation Point (ft)	15
Left Bank Height (ft) - Looking Downstream	3
Right Bank Height (ft) - Looking Downstream	4
OHWM Width (ft)	50+
OHWM Height (ft from Substrate)	12
Evidence of Scour or Erosion	Yes
OHWM Criteria	Bed and banks
Pools, Riffles, Runs Present?	Riffles
Substrate	Clay

Westwood

Appendix D

Offsite Hydrology Review

Midwater BESS

Shell Rock Township, Freeborn County, Minnesota

Hydrology Assessment with Aerial Imagery-Recording Form[1]

Project Name: Midwater BESS Date: 03/08/2024 County: Freeborn

Investigator: M. Stone Legal Description (S, T, R): 08/17-101N-20W

Summary Table

Photo Year[2]	Image Source[2]	Actual/ Estimated Photo Date[3]	Climate condition (wet, dry, normal)[4,5]	Interpretation (list hydrology indicators observed, e.g. crop stress, drowned out, etc.)[6]					
				SA-01	SA-02	SA-03			
2003	NAIP	07/18/2003	Normal	CS	CS	NV			
2005	NAIP	06/22/2005	Normal	CS	CS	CS			
2006	NAIP	07/18/2006	Dry	CS	NV	CS			
2008	NAIP	08/30/2008	Normal	DO	DO	NV			
2009	NAIP	06/13/2009	Normal	CS	CS	NV			
2010	NAIP	10/28/2010	Normal	SW, DO	NV	NV			
2013	NAIP	07/12/2013	Wet	CS (sm)	NV	NV			
2015	NAIP	09/30/2015	Wet	CS	CS	CS (sm)			
2017	NAIP	09/20/2017	Normal	NC, WS	NC, WS	NC, WS			
2019	NAIP	07/27/2019	Normal	CS, AP	AP	AP, CS			
2021	NAIP	08/14/2021	Dry	NV	NV	NV			
2023*	NAIP	07/30/2023	Dry	CS	CS	CS			

Summary Table

	SA-01	SA-02	SA-03
# Years of aerial photography	13	13	13
# Normal Years (1991-2017)	8	8	8
# signatures in Normal years	7	6	3
# signatures in Wet years	2	2	1
# Signatures in Dry years	2	1	2
# signatures in all years	11	9	6
% Usable Yrs with wet signatures[7]	7/8 = 87.5%	6/8 = 75%	3/8 = 37.5%

(sm)= smaller area than whole area showed signature

[1] Form adapted from BWSR/USACE Technical Guidance, July 1, 2016.

[2]Photo selection for historical aerial photography review are from the MnGEO WMS GIS server, Google Earth, and GIS sources such as County, watersheds, or cities.

[3]July 1 was used as the date for aerial photographs when determining antecedent precipitation when an actual date could not be determined. Other aerial photography from County GIS, Google imagery, NAIP, etc. was dated based on available information.

[4]MN State Climatology website used to produce three-prior-month (NRCS) method for parcel being investigated.

[5]Photo dates at the end of the month were advanced to the next month to determine climate conditions using the NRCS/3-prior-month method if the daily precipitation data from that month warranted it.

[6]Key below is used label photo interpretations. It is imperative the reviewer read and understand the guidance associated with the use of the labels.

[7]Equal number of most recent wet and dry years used if 5 normal years were not available. Otherwise only Normal years.

*Base photo for suspect areas

Definitions

WS-wetland signature CS-crop stress SGO-something going on	DO-drowned out NC-not cropped SS- soil wetness signature	SW-standing water AP-altered pattern DP-drainage pattern	NV-normal vegetative cover DNC-dry not cropped NSS- no soil wetness (sm)- smaller area
WS is typically used for interpretation in non-cropped areas or green areas in dry conditions			

Field data sheet reference (if applicable): _____

Wetland Determination from Aerial Imagery – Recording Form

Project Name: Midwater BESS Date: 03/11/2024 County: Freeborn

Investigator: M. Stone Legal Description (T, R, S): 101N 20W 17

Use the Decision Matrix below to complete Table 1.

Hydric Soils present[1]	Identified on NWI or other wetland map[2]	Percent with wet signatures from Exhibit 1	Field verification required[3]	Wetland?
Yes	Yes	>50%	No	Yes
Yes	Yes	30-50%	No	Yes
Yes	Yes	<30%	Yes	Yes, if other hydrology indicators present
Yes	No	>50%	No	Yes
Yes	No	30-50%	Yes	Yes, if other hydrology indicators present
Yes	No	<30%	No	No
No	Yes	>50%	No	Yes
No	Yes	30-50%	No	Yes
No	Yes	<30%	No	No
No	No	>50%	Yes	Yes, if other hydrology indicators present
No	No	30-50%	Yes	Yes, if other hydrology indicators present
No	No	<30%	No	No

[1] The presence of hydric soils can be determined from the "Hydric Rating by Map Unit Feature" under "Land Classifications" from the Web Soil Survey. "Not Hydric" is the only category considered to not have hydric soils. Field sampling for the presence/absence of hydric soil indicators can be used in lieu of the hydric rating if appropriately documented by providing completed field data sheets.

[2] At minimum, the most updated NWI data available for the area must be reviewed for this step. Any and all other local or regional wetland maps that are publically available should be reviewed.

[3] Area should be reviewed in the field for the presence/absence of wetland hydrology indicators per the applicable 87 Manual Regional Supplement, including the D2 indicator (geomorphic position).

Table 1.

Suspect Area	Hydric Soils Present	Identified on NWI or other wetland map	Percent with wet signatures from Exhibit 1	Other hydrology indicators present[1]	Wetland?
1	Yes	No	87.5		Yes
2	Yes	No	75		Yes
3	Yes	No	37.5		Yes, if other hydrology indicators present

[1] Answer "N/A" if field verification is not required and was not conducted.

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2003

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2005

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (2005).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2006

Legend

- Project Area
- Suspect Area

Data Source(s): Westwood (2024); NAIP (2006).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2008

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2009

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2013

Legend

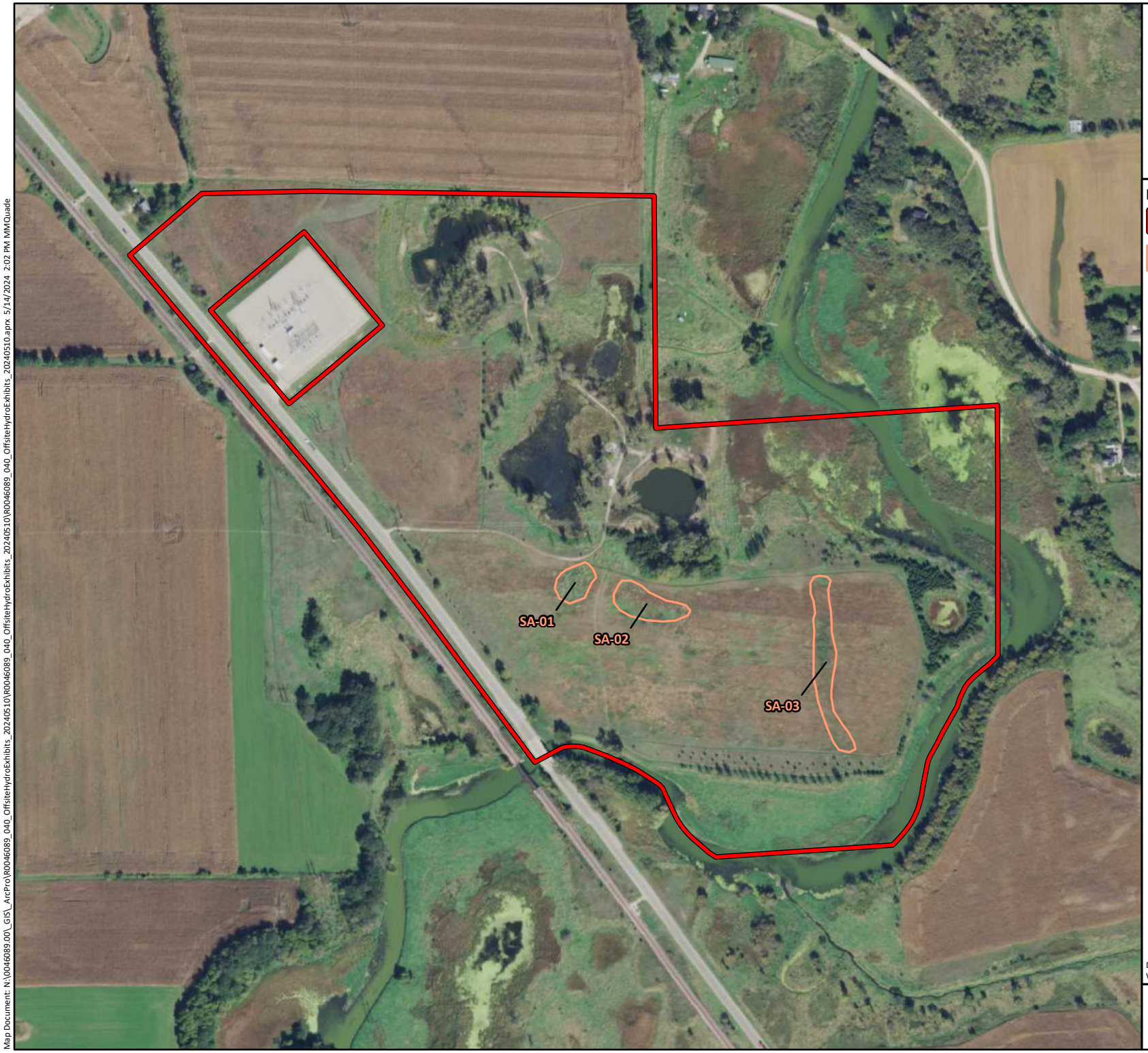
Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet



Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2015

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2017

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2019

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2021

Legend

Project Area

Suspect Area

Data Source(s): Westwood (2024); NAIP (Accessed via MNGEO WMS 2024).

N

0 500 Feet

Map Document: N:\0046089.00_GIS_ArcPro\R0046089_040_OffsiteHydroExhibits_20240510\R0046089_040_OffsiteHydroExhibits_20240510\R0046089_040_OffsiteHydroExhibits_20240510.aprx 5/14/2024 1:44 PM MMQuade

Westwood
Toll Free (888) 937-5150 westwoodps.com

Midwater BESS Project
Freeborn County, Minnesota

Offsite Hydrology Review

2023

Legend

Project Area

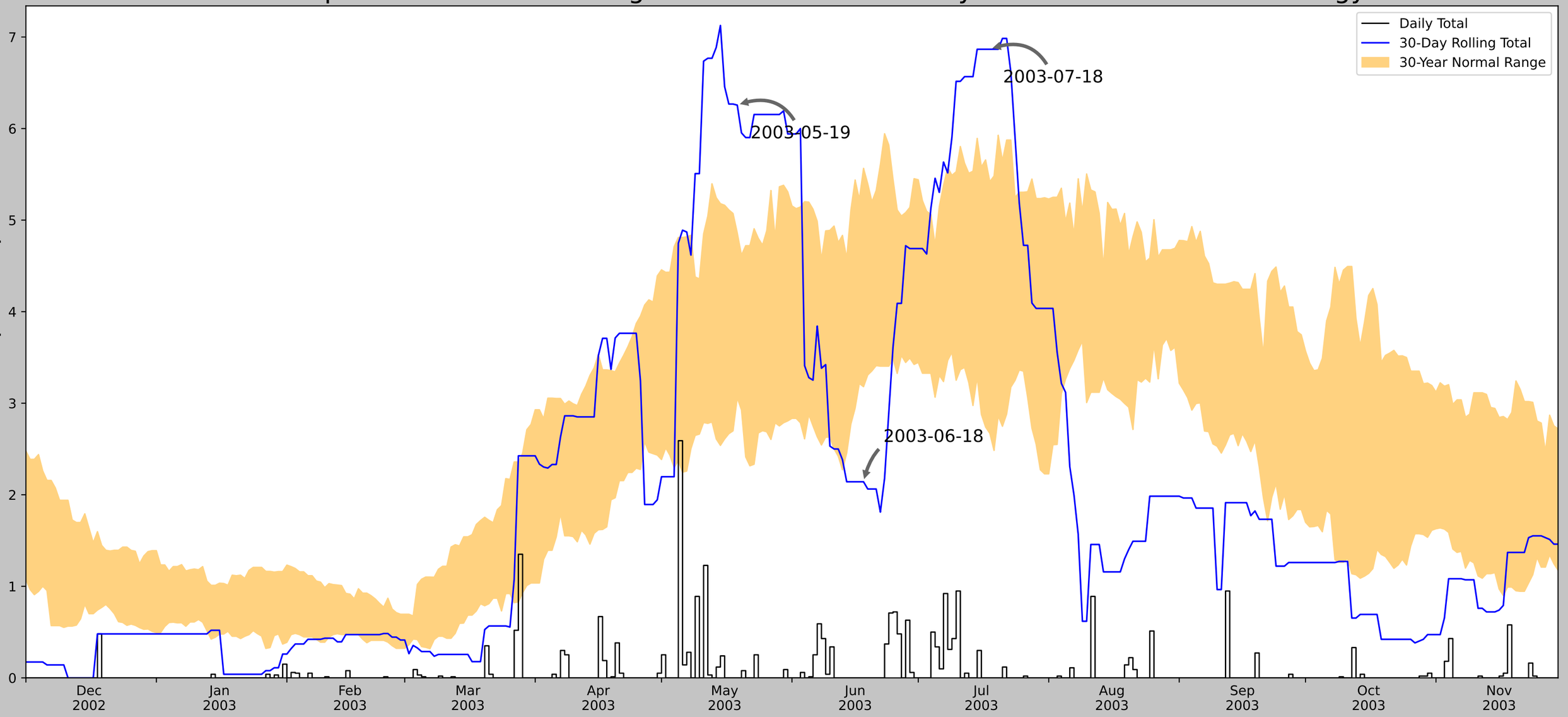
Suspect Area

Data Source(s): Westwood (2024); NAIP (2023).

N

0 500 Feet

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2003-07-18
Elevation (ft)	1225.833
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2003-07-18	2.67126	5.419685	6.866142	Wet	3	3	9
2003-06-18	3.179921	5.565748	2.141732	Dry	1	2	2
2003-05-19	3.059843	4.861024	6.255906	Wet	3	1	3
Result							Normal Conditions - 14

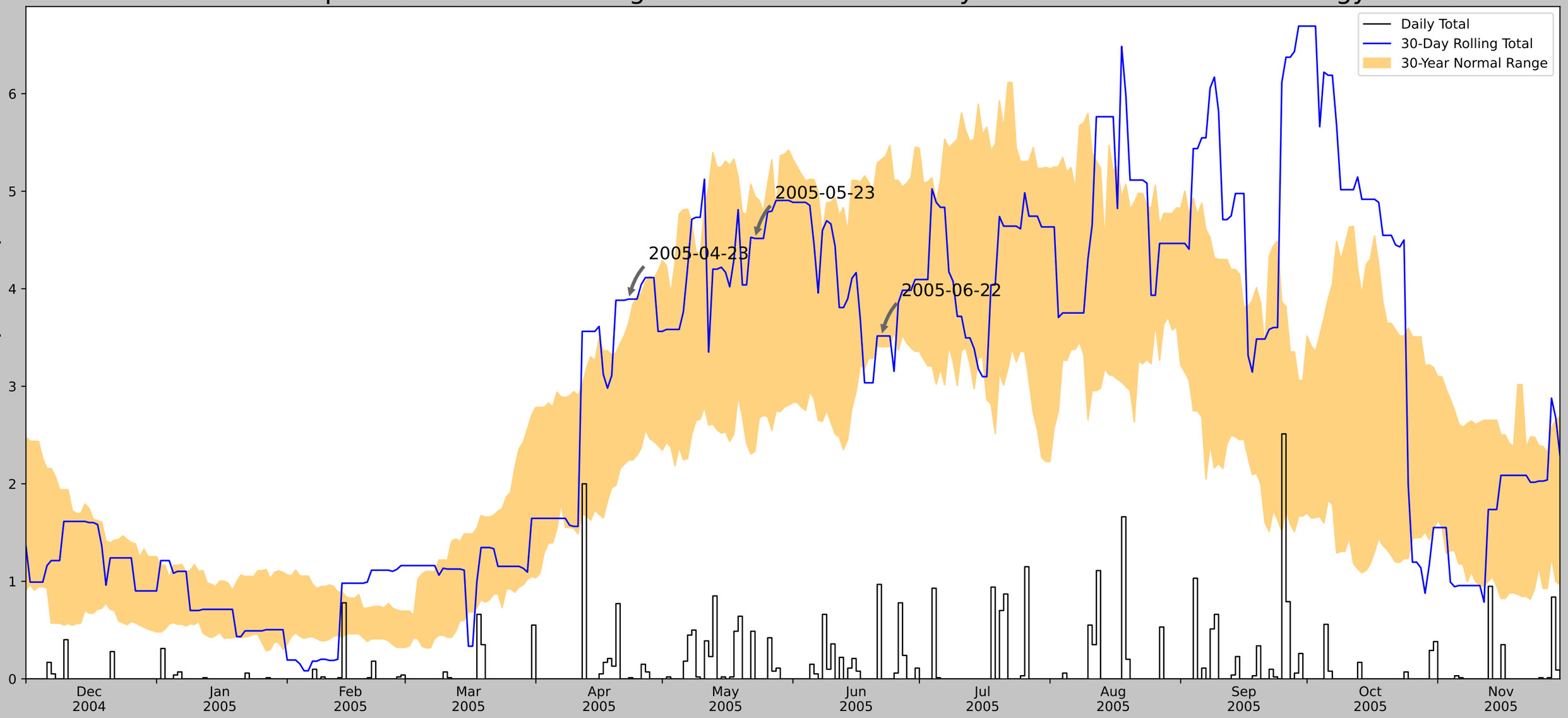
US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11299	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	54	0



Coordinates	43.5556353, -93.2642970
Observation Date	2005-06-22
Elevation (ft)	1225.833
Drought Index (PDSI)	Severe wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2005-06-22	3.404331	5.325197	3.515748	Normal	2	3	6
2005-05-23	2.333465	4.948425	4.515748	Normal	2	2	4
2005-04-23	2.243701	3.645276	3.893701	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

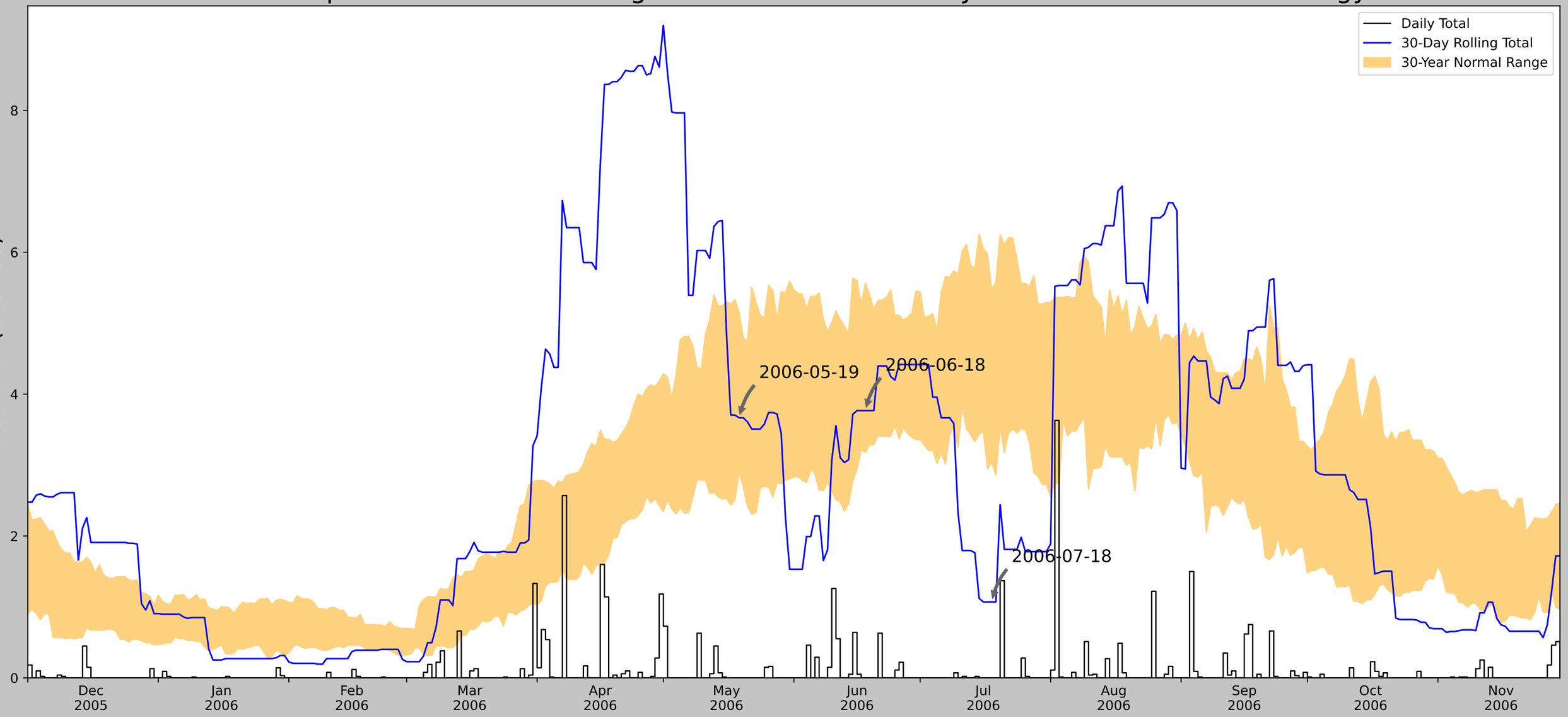
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11299	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	54	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2006-07-18
Elevation (ft)	1225.833
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2006-07-18	3.038583	5.481496	1.070866	Dry	1	3	3
2006-06-18	3.179921	5.565748	3.767717	Normal	2	2	4
2006-05-19	2.901575	5.151181	3.665354	Normal	2	1	2
Result							Drier than Normal - 9

US Army Corps of Engineers

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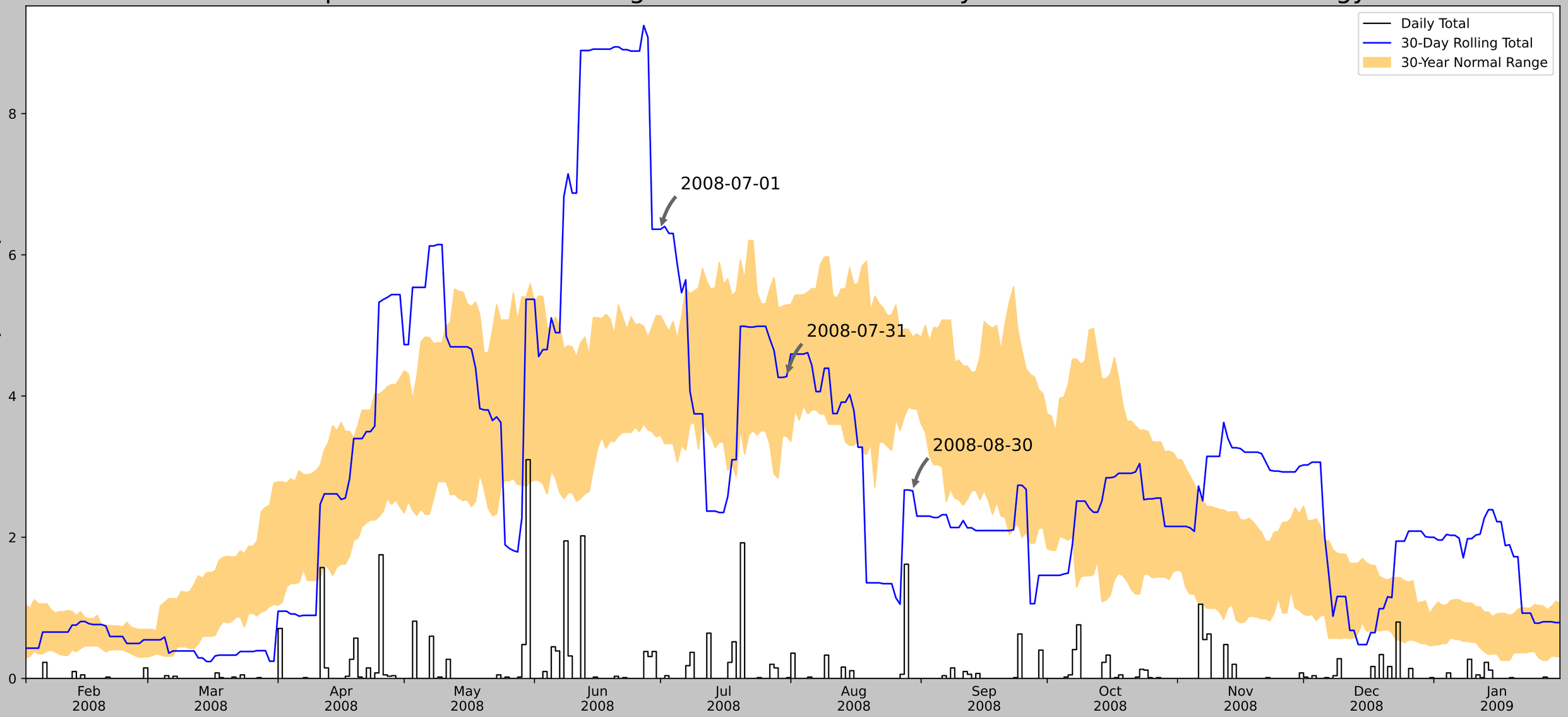
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11299	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	54	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2008-08-30
Elevation (ft)	1225.833
Drought Index (PDSI)	Incipient drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2008-08-30	3.817717	4.837008	2.65748	Dry	1	3	3
2008-07-31	3.433465	5.29252	4.275591	Normal	2	2	4
2008-07-01	3.445276	5.138583	6.362205	Wet	3	1	3
Result							Normal Conditions - 10

US Army Corps of Engineers

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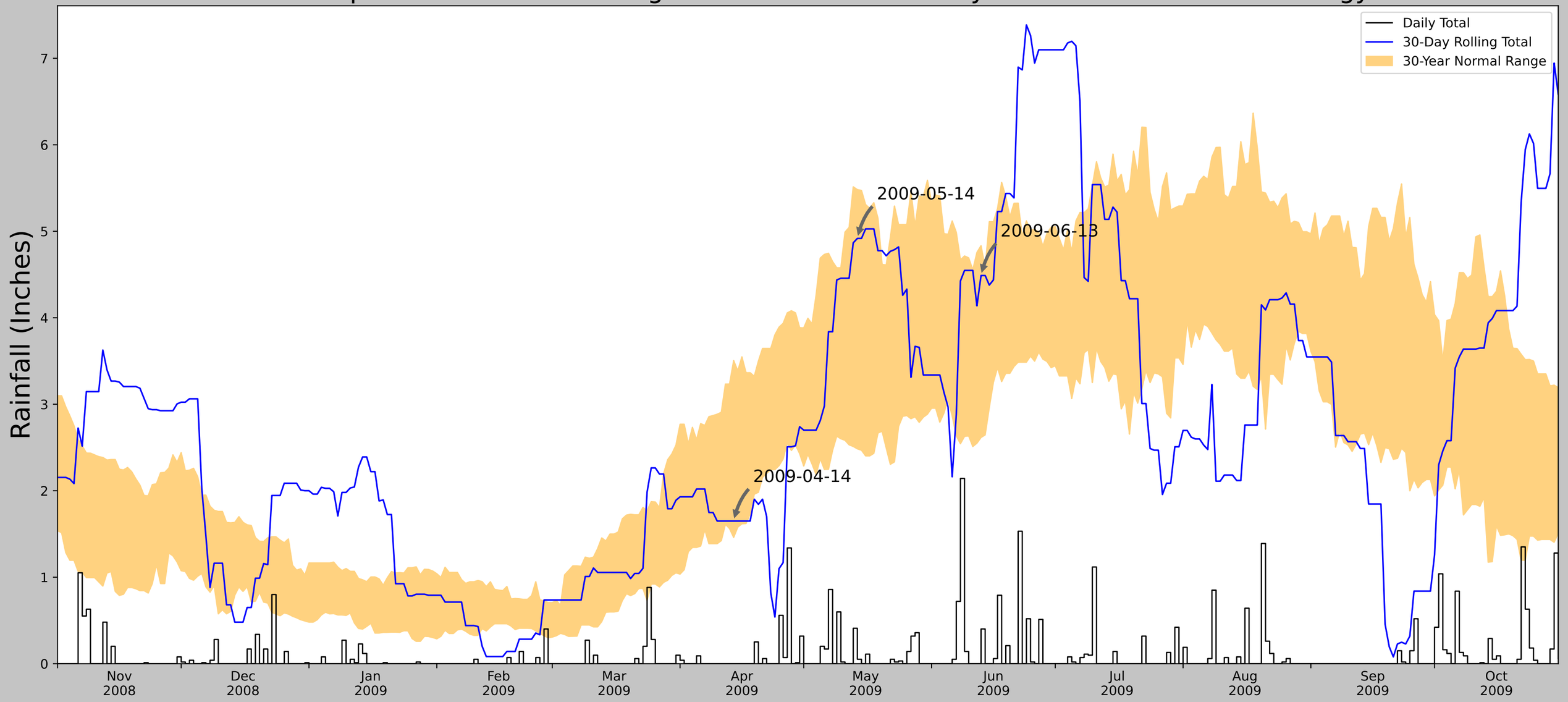
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11297	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	55	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2009-06-13
Elevation (ft)	1225.833
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2009-06-13	2.616142	4.833465	4.488189	Normal	2	3	6
2009-05-14	2.484252	5.481496	4.917323	Normal	2	2	4
2009-04-14	1.460236	3.505118	1.649606	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11299	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	54	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Coordinates	43.5556353, -93.2642970
Observation Date	2010-10-28
Elevation (ft)	1225.833
Drought Index (PDSI)	Extreme wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2010-10-28	1.436221	3.350394	0.692913	Dry	1	3	3
2010-09-28	1.911811	4.267717	9.913386	Wet	3	2	6
2010-08-29	3.735039	4.943701	1.57874	Dry	1	1	1
Result							Normal Conditions - 10

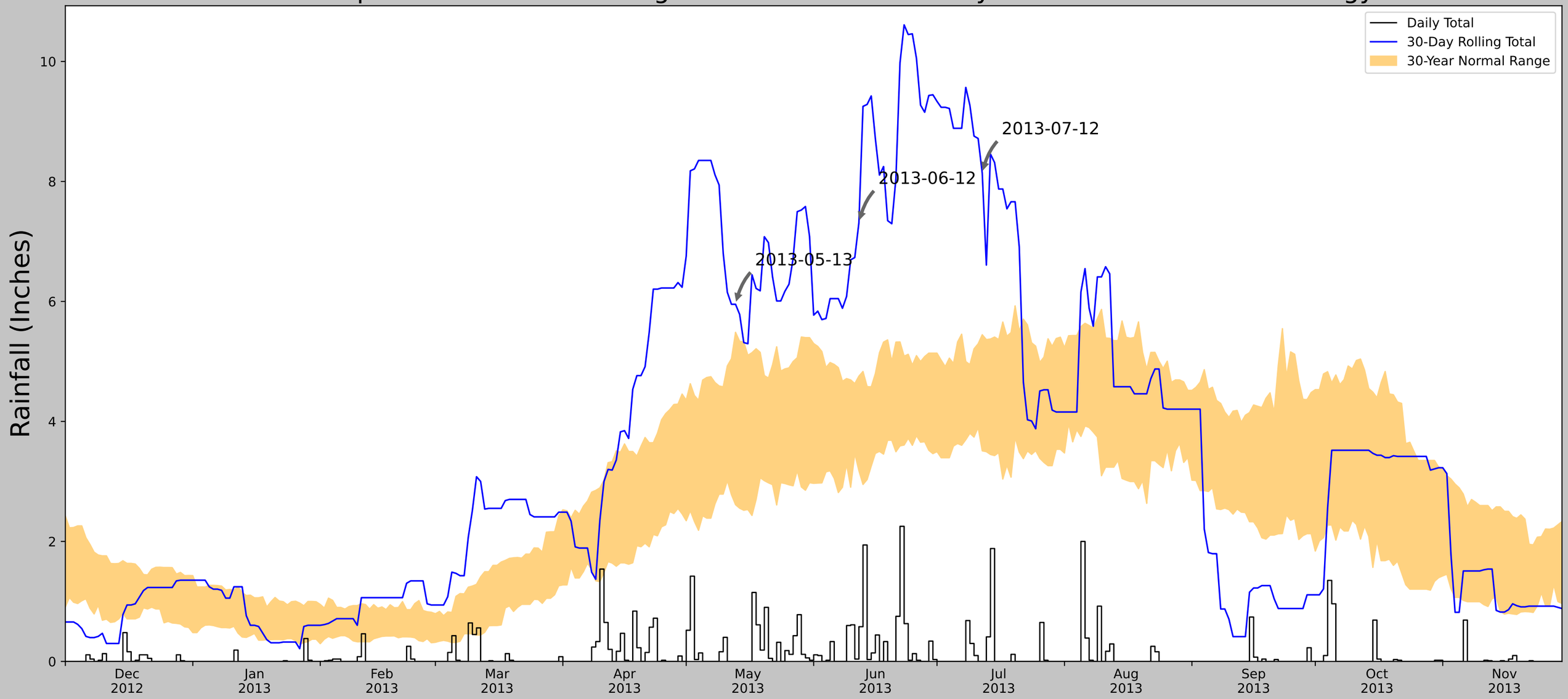
US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11296	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	57	0



Coordinates	43.5556353, -93.2642970
Observation Date	2013-07-12
Elevation (ft)	1225.833
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2013-07-12	3.509843	5.445669	8.137796	Wet	3	3	9
2013-06-12	3.179134	4.755118	7.311024	Wet	3	2	6
2013-05-13	2.612205	5.486221	5.952756	Wet	3	1	3
Result							Wetter than Normal - 18

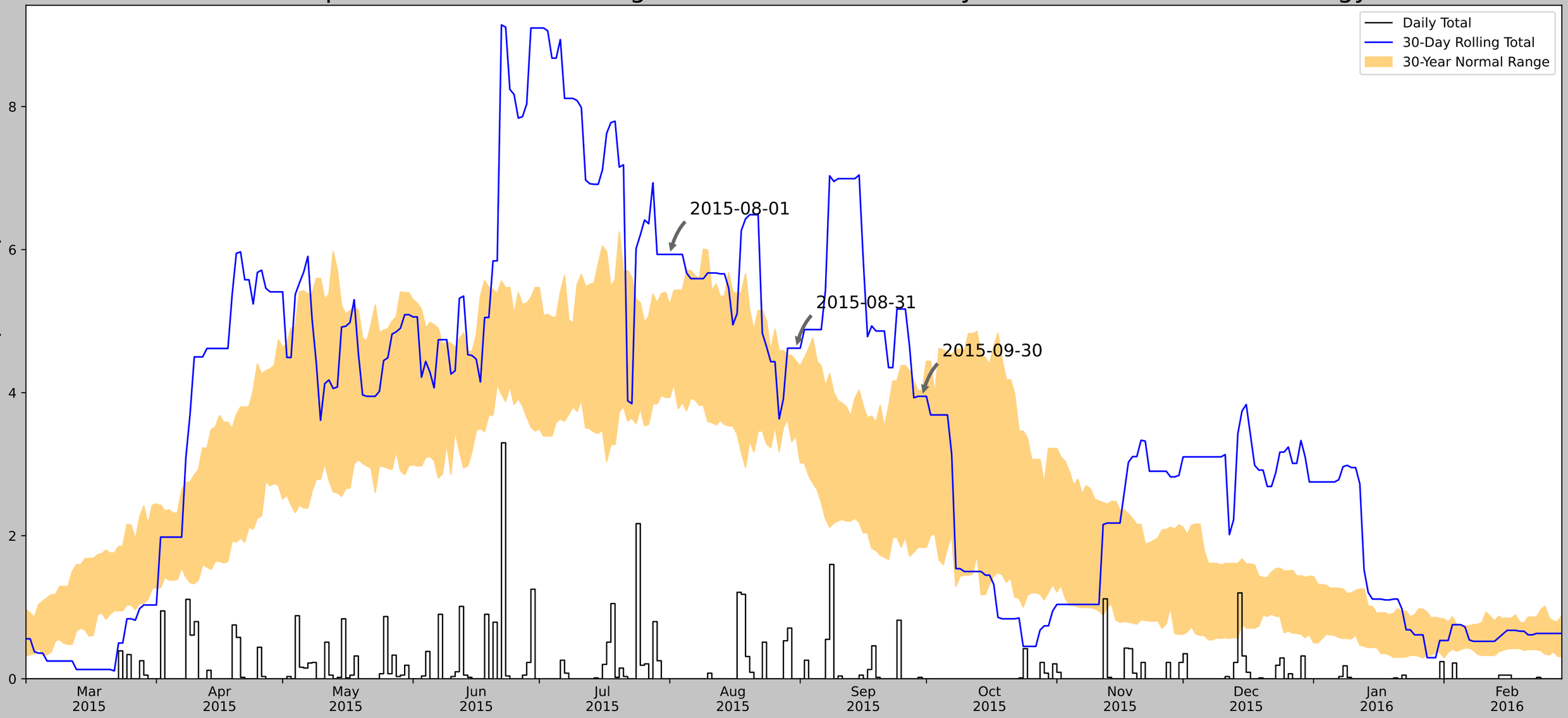
US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11296	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	57	0



Coordinates	43.5556353, -93.2642970
Observation Date	2015-09-30
Elevation (ft)	1225.833
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2015-09-30	1.838583	4.032284	3.948819	Normal	2	3	6
2015-08-31	3.399606	4.44252	4.622047	Wet	3	2	6
2015-08-01	3.933858	5.230709	5.933071	Wet	3	1	3
Result							Wetter than Normal - 15

US Army Corps of Engineers

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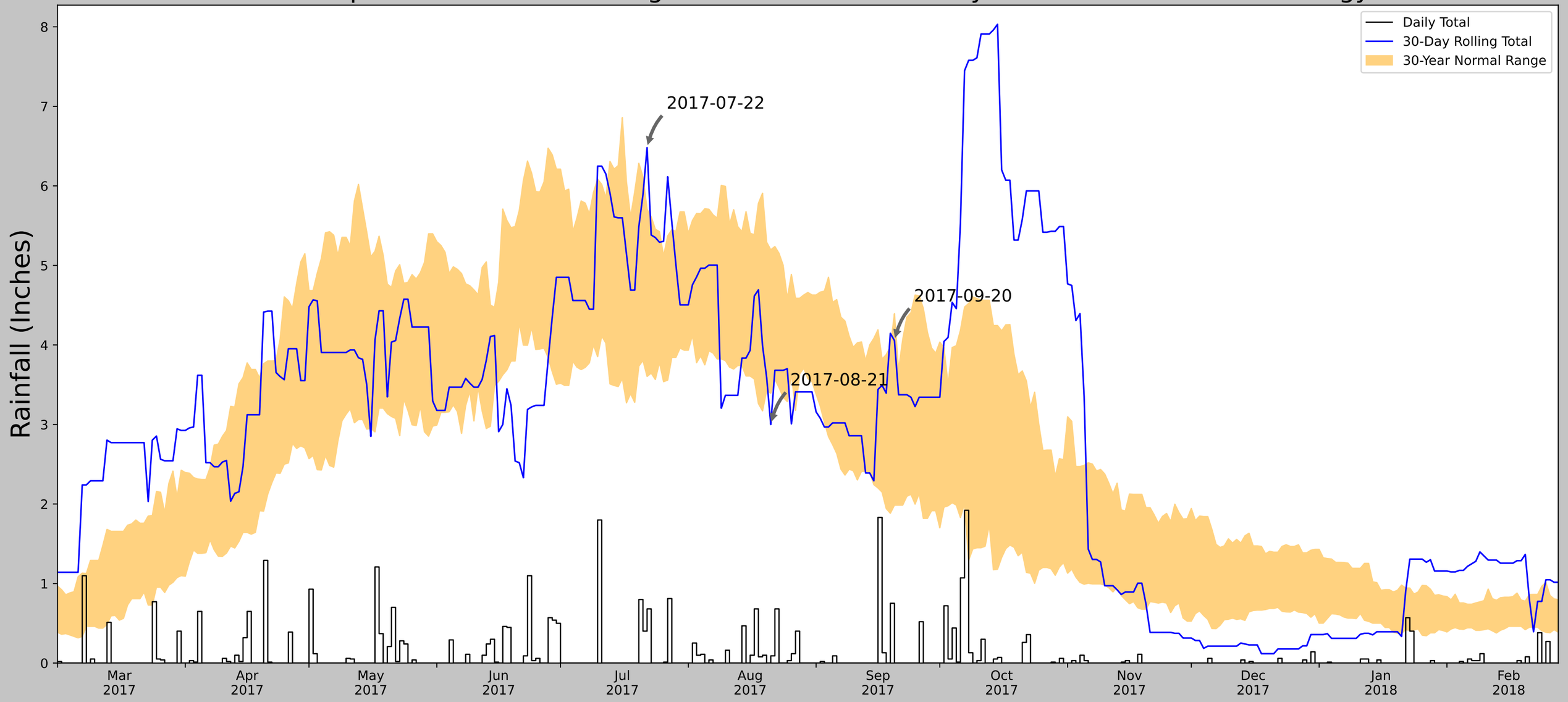
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11310	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2017-09-20
Elevation (ft)	1225.833
Drought Index (PDSI)	Severe wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2017-09-20	1.985827	4.392914	4.055118	Normal	2	3	6
2017-08-21	3.392913	5.196851	3.0	Dry	1	2	2
2017-07-22	3.604331	5.705906	6.480315	Wet	3	1	3
Result							Normal Conditions - 11

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Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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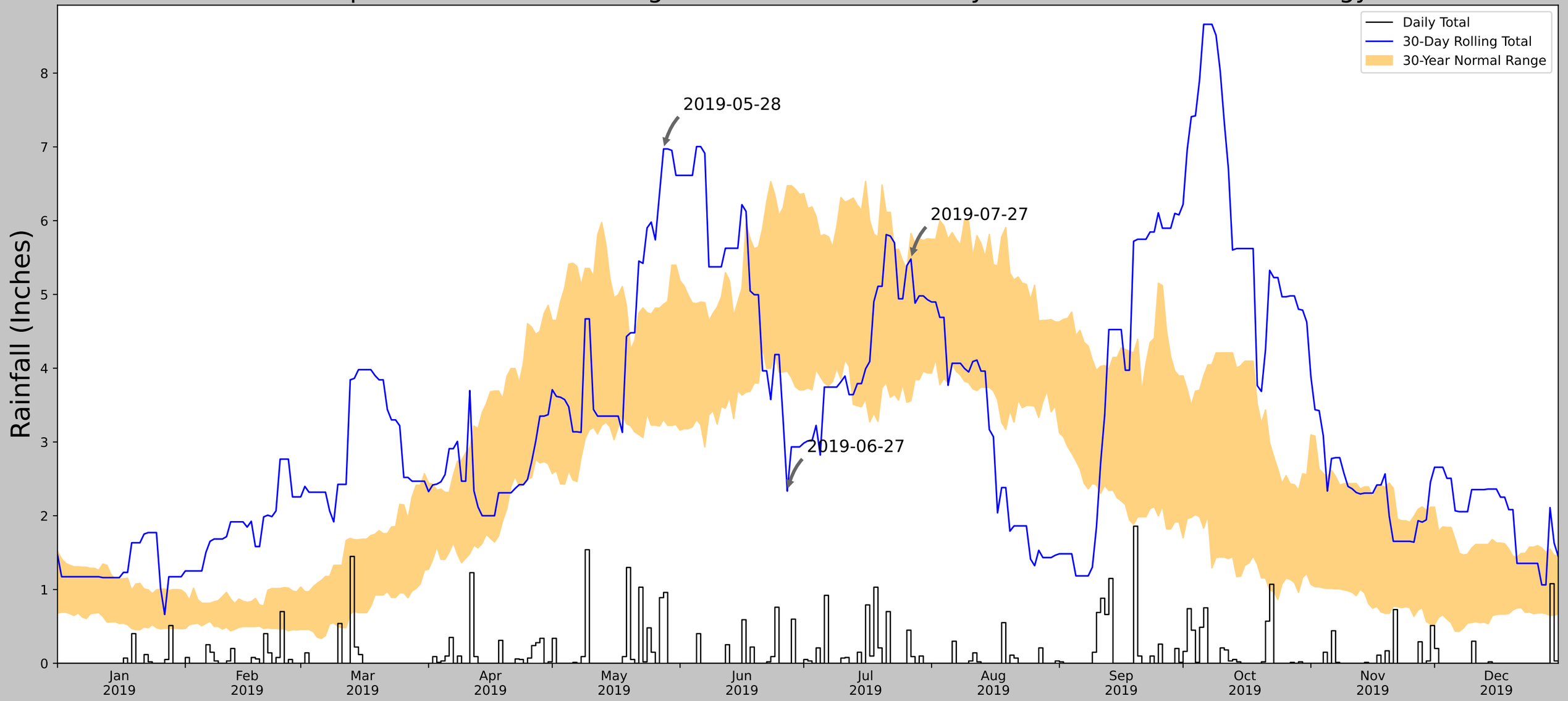
Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11310	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2019-07-27
Elevation (ft)	1225.833
Drought Index (PDSI)	Extreme wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2019-07-27	3.557874	5.826772	5.480315	Normal	2	3	6
2019-06-27	3.959449	6.474803	2.334646	Dry	1	2	2
2019-05-28	3.305512	4.866929	6.972441	Wet	3	1	3
Result							Normal Conditions - 11

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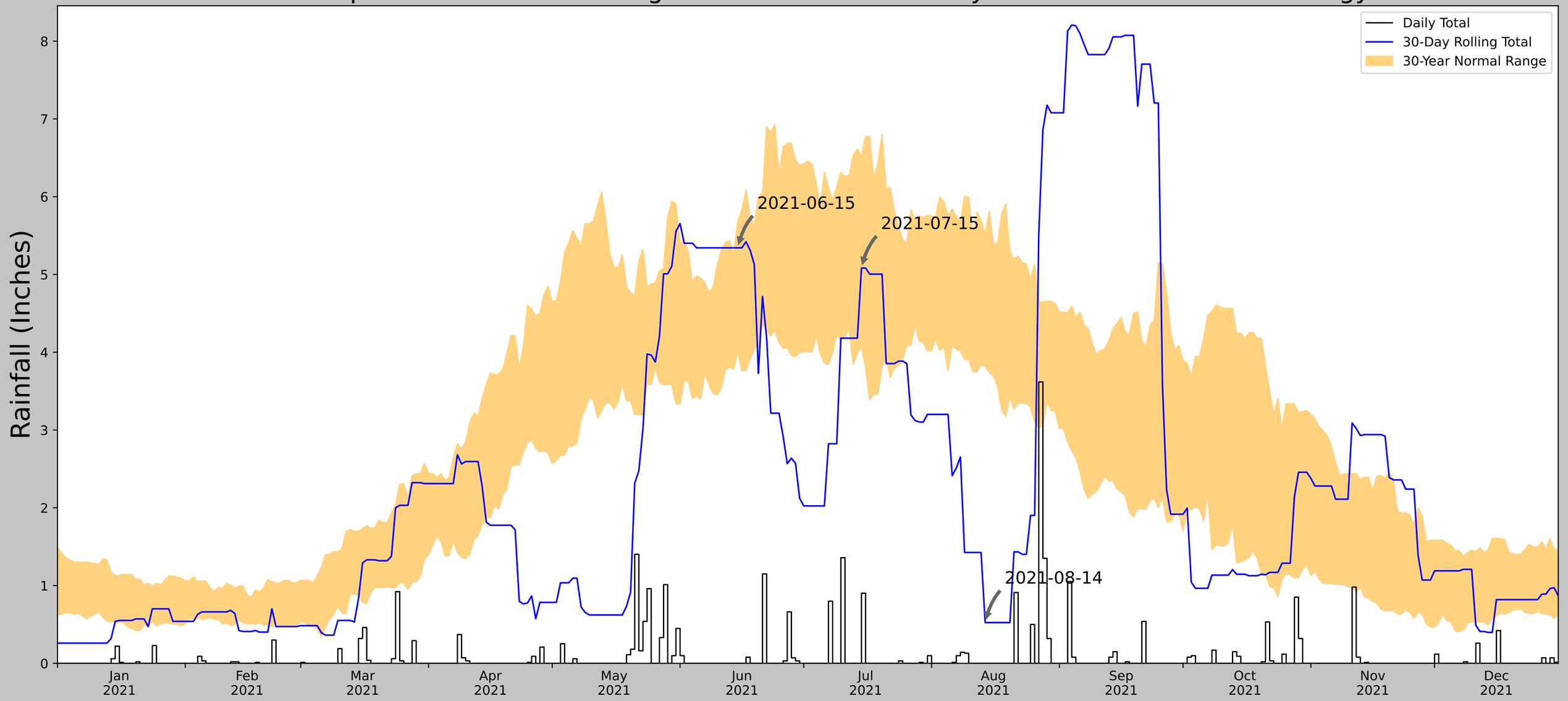
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11310	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2021-08-14
Elevation (ft)	1225.833
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-08-14	3.822835	5.512599	0.523622	Dry	1	3	3
2021-07-15	4.075197	6.52126	5.082677	Normal	2	2	4
2021-06-15	4.002362	5.675591	5.34252	Normal	2	1	2
Result							Drier than Normal - 9

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Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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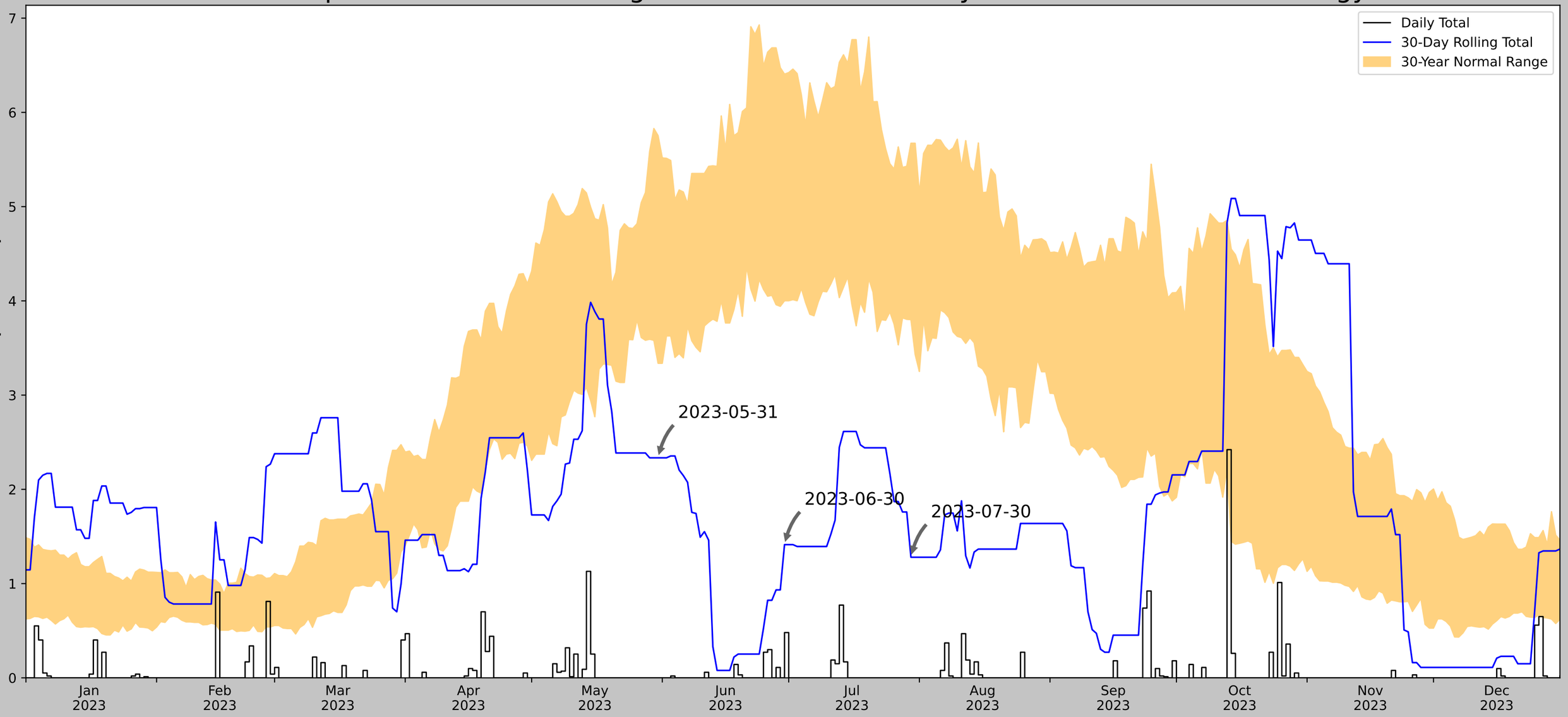
Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11310	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.5556353, -93.2642970
Observation Date	2023-07-30
Elevation (ft)	1225.833
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-07-30	3.800788	5.672835	1.279528	Dry	1	3	3
2023-06-30	4.001181	6.405906	1.413386	Dry	1	2	2
2023-05-31	3.337402	5.753543	2.334646	Dry	1	1	1
Result							Drier than Normal - 6

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Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ALBERT LEA 3SE	43.6064, -93.3019	1229.987	3.981	4.154	1.808	11310	90
NORTHWOOD	43.4386, -93.2253	1189.961	12.213	40.026	5.985	43	0