Technical Memorandum

Date: July 26, 2023

To: Harvey Chen

From: Roen Hohlfeld

Project Number: 230708

Project Name: Mercer Island Chen

Re: Parcel 1924059317 Wetland and Stream Reconnaissance Study

On July 19th, 2023 Ecologists Roen Hohlfeld and Brent Rutley visited the undeveloped property located at 5024 W. Mercer Way (parcel #1924059317) in the City of Mercer Island, WA to screen for jurisdictional wetlands and streams. This technical memo summarizes the findings of the study.

The following documents are enclosed:

- Reconnaissance Site Sketch
- Wetland Determination Data Form

Summary

The subject property does not meet wetland criteria for hydrophytic vegetation, hydric soils, and wetland hydrology at any location and there are no indications of flowing water on-site. One watercourse (Stream A) was found within the study area, located off-site to the north of the subject parcel. Stream typing and associated buffer and setback widths, per Mercer Island Municipal Code (MIMC) 19.07.180, are summarized in Table 1 below.

Table 1. Summary of required watercourse buffers and setbacks (MIMC 19.07.180)

Watercourse Name	Type	Buffer (ft)	Setback (ft)
Stream A – open channel	Np	60	10
Stream A – piped channel	Piped	None required	45

Study Area

The study area includes the subject parcel (#1924059317), located in Section 19 of Township 24 North, Range 05 East, and areas immediately around the property. Based upon maximum potential widths of wetland and watercourse buffers and setbacks per MIMC 19.07.180 and 19.07.190, areas within 130 feet of the subject parcel was screened from the edge of the parcel or nearest publicly accessible land; no private property was accessed without permission.

Figure 1. Study area (in orange) includes areas within 130 feet of the subject parcel (in red).

Methods

The study area was evaluated for wetlands using methodology from the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010). Presence or absence of wetlands was determined based on an examination of vegetation, soils, and hydrology. These parameters

were sampled at several locations within the study area. Adjoining properties were viewed from the subject property but were not entered.

Characterization of weather conditions for precipitation in the Wetland Determination Data Forms were determined using the WETS table methodology (USDA, NRCS 2015). The "Seattle Tacoma Intl AP" station from 1991-2020 was used as a source for precipitation data (http://agacis.rcc-acis.org/). The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present in the study area region.

The study area was evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington (RCW) 90.58.030 and guidance documents including *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson 2016) and *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel and Lichvar 2014).

Public-domain information on the subject properties was reviewed for this reconnaissance study. Resources and review findings are presented in Table 2 of this letter's "Desktop Review" section.

Desktop Review

Public-domain information on the subject properties was reviewed for this study and include the following:

Table 2. Summary of online mapping and inventory resources.

Resource	Summary
USDA NRCS: Web Soil Survey	*Alderwood and Kitsap soils, very steep, mapped throughout subject parcel. This is not rated as hydric soil with a moderately well drained drainage class.*
USFWS: NWI Wetland Mapper	*Riverine habitat (R4SBC) mapped in the northwest portion of the subject parcel.*
WDFW: PHS on the Web	*None mapped within or adjacent to the subject parcel. Terrestrial Habitat (Mercer Island Open Space Area S.) mapped approximately 1,050-feet southeast of the subject parcel.*
WDFW & NWIFC: Statewide Washington Integrated Fish Distribution	*None mapped within or adjacent to the subject parcel. Lake Washington, approximately 1,857-feet west of subject parcel, mapped for documented presence of Chinook, coho, sockeye, steelhead, and coastal cutthroat trout.*
WA-DNR: Forest Practices Application Mapping Tool	*One Type-N stream mapped in the northwest portion of the subject parcel.*
King County iMap	*None mapped within or adjacent to the subject parcel.*
City of Mercer Island GIS Portal	*None mapped within the subject parcel. Type "Np" watercourse, with piped sections, mapped approximately 50-feet northwest and 115-feet north of subject parcel. Type "Ns" watercourse mapped approximately 90-feet southwest of subject parcel.*
USDA WETS Climatic Condition	*Normal; data from Seattle Tacoma Airport.*
USDA NRCS: Web Soil Survey	*Alderwood and Kitsap soils, very steep, mapped throughout subject parcel. This is not rated as hydric soil with a moderately well drained drainage class.*

Findings

Wetlands

No wetlands were identified within the subject parcel, or within 130 feet of the parcel. The property does not meet wetland criteria for hydrophytic vegetation, hydric soils, and wetland hydrology at any location.

Vegetation throughout the parcel is typical of non-wetland conditions. Dominant plants include bigleaf maple (*Acer macrophyllum*), Douglas-fir (*Pseudotsuga menziesii*), cherry laurel (*Prunus laurocerasus*), beaked hazelnut (*Corylus cornuta*), English holly (*Ilex aquifolium*), spurge laurel

(*Daphne laureola*), sword fern (*Polystichum munitum*), and English ivy (*Hedera helix*). Soils do not meet criteria for hydric soils and were very dry at the time of the site visit.

One data point (DP-1) was formally documented to demonstrate non-wetland conditions (see enclosed).

Streams

No bed and bank characteristics, scour, sorted sediments, drainage patterns, or other OHWM indicators were observed within the subject parcel.

One off-site stream (Stream A) was identified approximately 115-feet north of the subject parcel. A short stream segment, approximately 20-feet in length, was observed adjacent to SE 50th Street, with a culvert on the upstream and downstream ends of the defined channel. The stream bed consists of fine sediments which appeared to be saturated at the time of the site visit; however, no stream flow was observed. Stream A's channel is approximately 1 to 2 feet in width, with a very gradual gradient. The stream channel and banks are vegetated with herbaceous plants.

Additional watercourse features identified by the City of Mercer Island could not be identified from the subject parcel or right-of-way. However, based upon topography and field observations of Stream A, it is assumed that the watercourse would daylight where the piped section terminates per Mercer Island GIS mapping, approximately 50-feet northwest of the subject property (see Figure 2).

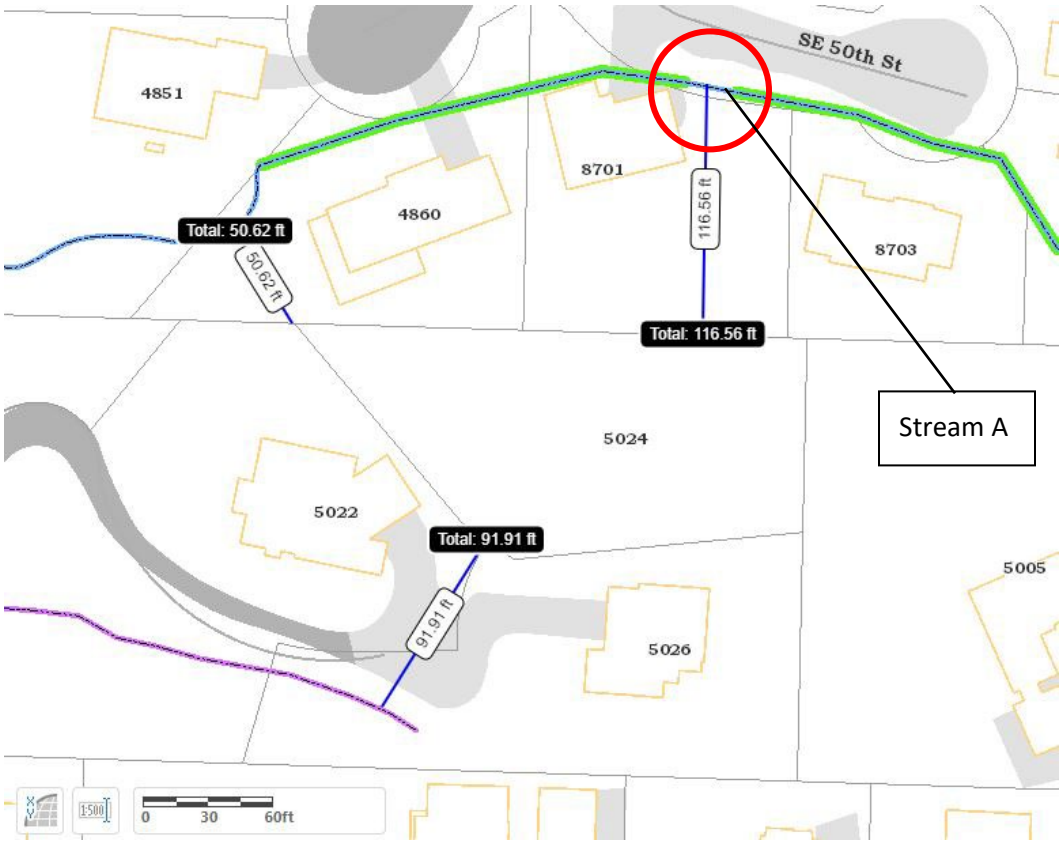


Figure 2. City of Mercer Island GIS mapped streams located in proximity to the subject parcel (#5024). A non-piped section of Stream A (circled in red) was observed during the site visit; no additional stream features could be identified from the subject parcel or right-of-way.

Local Regulations

The City of Mercer Island regulates streams, or watercourses, under MIMC 1.07.180 – *Watercourses*. Stream A is classified as a Type Np watercourse, with piped segments classified as Piped. Type Np streams require a standard 60-foot buffer and an additional 10-foot building setback in Mercer Island. Piped watercourse segments do not require a buffer. However, a 45-foot setback, offset from the centerline of the pipe, is required.

The observed open channel of Stream A, as well as piped segments as mapped by the City of Mercer Island, are located a minimum of approximately 75-feet from the subject parcel. As such, standard watercourse buffers and setbacks of these observed features do not appear to affect the

subject parcel. However, per City of Mercer Island GIS mapping resources, the downstream daylighted reach of Stream A, which could not be confirmed during the site visit, would partially encumber the subject property. It is estimated that the watercourse buffer would extend approximately 10-feet onto the northwest portion of the property, with the building setback extending an additional 10-feet.

Due to the size and shape of the subject parcel, it is expected that the property could be developed with a single-family residence without impacting the watercourse buffer or setbacks. Lot coverage and hardscape are not permitted within watercourse buffers without permitting variances. If buffer impacts are proposed, mitigation sequencing, as outlined in MIMC 19.07.199, must be demonstrated. In short, buffer impacts must be avoided if feasible, minimized to the maximum extent possible, and compensated for with mitigation.

Per MIMC 19.07.180.C.8, *"the following may be allowed in the critical area setback, provided no structures nor building overhangs may be closer than five feet from the edge of a watercourse buffer:*

a. Landscaping;

b. Uncovered decks less than 30 inches above existing or finished grade, whichever is lower;

c. Building overhangs if such overhangs do not extend more than 18 inches into the setback area;

d. Hardscape and driveways; provided, that such improvements may be subject to requirements in chapter 15.09, storm water master program;

e. Split-rail fences;

f. Trails, consistent with the requirements of this chapter; and

g. Subgrade components of foundations; provided, that any temporary impacts to building setbacks shall be restored to their previous condition or better."

State and Federal Regulations

Because no wetlands or streams are located on the subject parcel, no direct impacts to these critical areas are anticipated. Therefore, state or federal permitting related to wetland or stream impacts are not likely to apply to development of the subject parcel.

Disclaimer

The information contained in this document is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria referenced above. All discussions, conclusions, and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state, and federal regulatory authorities. No other warranty, expressed or implied, is made.

Site Photos (July 19, 2023)

Photo 1. Data point (DP) 1, demonstrating non-wetland conditions.

Photo 2. Typical non-wetland conditions throughout the subject parcel.

Photo 3. Stream A, located off-site to the north of the subject parcel, includes a piped segment located upstream of the pictured culvert and downstream of a second culvert (not pictured).

Photo 4. Presence of City of Mercer Island mapped Type Np stream segment could not be observed or confirmed from the subject parcel or right-of-way.

DCG WATERSHED

Seattle
9706 4th Ave NE, Ste 300
Seattle, WA 98115
Tel 206.523.0024

Kirkland
750 6th Street
Kirkland, WA 98033
Tel 425.822.5242

Mount Vernon
2210 Riverside Dr, Ste 110
Mount Vernon, WA 98273
Tel 360.899.1110

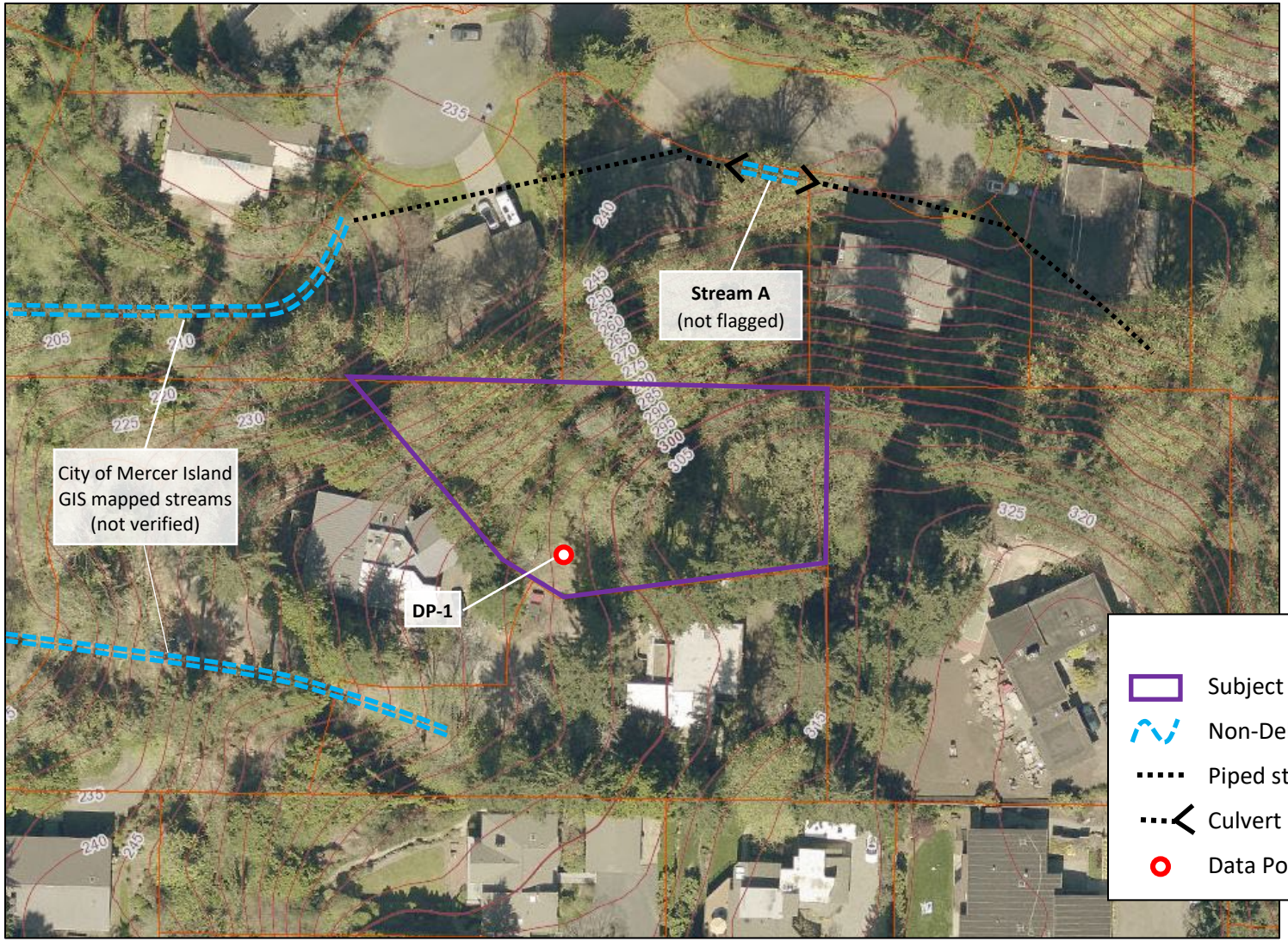
Whidbey
1796 E Main St, Ste 105
Freeland, WA 98249
Tel 360.331.4131

Federal Way
31620 23rd Ave S, Ste 307
Federal Way, WA 98003
Tel 253.237.7770

Spokane
601 Main Ave, Ste 617
Spokane, WA 99201
Tel 509.606.3600

Site Reconnaissance Sketch – Chen Property

Site Address:	5024 W. Mercer Way; Mercer Island, WA	Prepared for:	Harvey Chen
Parcel Number:	1924059317	TWC Ref. No.:	230708
Site Visit Date:	7-19-2023		



Note: Field sketch only. Features depicted are approximate and not to scale. Data points are marked with yellow- and black-striped flags. All observations were made from within the study area; adjoining private properties were not entered.

DCG WATERSHED

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

DP - 1

Project/Site: 5024 W. Mercer Way (parcel #1924059317) City/County: Mercer Island / King Sampling date: 7/19/2023

Applicant/Owner: Harvey Chen State: WA Sampling Point: 1

Investigator(s): R. Hohlfeld, B. Rutley Section, Township, Range: T.24N R.05E Section 19

Landform (hillslope, terrace, etc): Slight depression Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR): A Lat: - Long: - Datum: -

Soil Map Unit Name: Alderwood and Kitsap soils, very steep 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 on the site? ☒ 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 Soils Present?	Yes	☐	No	☒	
Wetland Hydrology Present?	Yes	☐	No	☒	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	90	Y	FACU
2.			
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3-m diameter)			
1. *Rubus bifrons*	50	Y	FAC
2. *Ilex aquifolium*	10	N	FACU
3.			
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 1-m diameter)			
1. *Hedera helix*	70	Y	FACU
2. *Geranium robertianum*	10	N	FACU
3. *Mycelis muralis*	10	N	UPL*
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 3-m diameter)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum:

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: 34% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	-	x 1 =	-
FACW species	-	x 2 =	-
FAC species	50	x 3 =	75
FACU species	180	x 4 =	720
UPL species	10	x 5 =	50
Column Totals:	240 (A)		845 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is > 50%
- ☐ 3 – Prevalence Index is ≤ 3.0[1]
- ☐ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 – Wetland Non-Vascular Plants[1]
- ☐ 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: *Non-listed species assumed UPL.

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/2	100					loam	
13-18	2.5Y 3/3	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Loc: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ 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 present):

Type:

Depth (inches):

Hydric soil present? Yes ☐ No ☒

Remarks: Soils wetted to color.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ ~~Water Stained Leaves (**except MLRA 1, 2, 4A & 4B**) (B9)~~
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (explain in remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A & 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (in): -

Water Table Present? Yes ☐ No ☒ Depth (in): -

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (in): -

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: Powder dry throughout soil profile.