APPENDIX 3E

Aquatic Resources Delineation Report and UDOT Environmental Review for Aquatic Resources

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Kimball Junction
ENVIRONMENTAL IMPACT STATEMENT

Aquatic Resources Delineation Report

Kimball Junction Environmental Impact Statement

Lead Agency: Utah Department of Transportation

UDOT PIN: 19477

April 25, 2024

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by UDOT pursuant to 23 United States Code Section 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and UDOT.

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Executive Summary

On behalf of the Utah Department of Transportation, HDR, Inc., has prepared this aquatic resources delineation report in support of the Environmental Impact Statement for the Kimball Junction Project in Summit County, Utah. The delineation team conducted fieldwork for the delineation on August 7 and 8, 2023. The delineation was conducted in accordance with the following delineation manuals and delineation reference guides:

- *Corps of Engineers Wetlands Delineation Manual* (USACE 1987)
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Mountains, Valleys, and Coasts Region (Version 2.0)* (USACE 2010)
- *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE 2022)
- U.S. Army Corps of Engineers regulatory guidance letters and joint agency regulations, policies, references, and guidance

The entire delineation survey area is about 230 acres and contains a total of 1.08 acres of aquatic resources. These resources consist of 0.71 acre of palustrine emergent wetlands, 0.04 acre (199 linear feet) of perennial streams, 0.18 acre of open-water ponds, 0.01 acre of seeps, and 0.14 acre (1,842 linear feet) of ditches.

Contents

Tables

Attachments

Attachment A. Project Overview Map
Attachment B. Aquatic Resources Delineation Map Series
Attachment C. Delineation Data Forms
Attachment D. Representative Aquatic Resource Photographs
Attachment E. Plant Species Observed
Attachment F. USDA NRCS Custom Soil Resource Report

Acronyms and Abbreviations

°F	degrees Fahrenheit
EIS	Environmental Impact Statement
GPS	global positioning system
I-80	Interstate 80
ID	identifier
NWPL	National Wetland Plant List
OHWM	ordinary high water mark
Proposed Project	Kimball Junction Project
SP	sampling point
spp.	multiple species
SR	state route
ssp.	subspecies
TNW	traditional navigable water
U.S.	United States
UDOT	Utah Department of Transportation
USACE	U.S. Army Corps of Engineers
USDA NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service

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1.0 Introduction

The Utah Department of Transportation (UDOT) is preparing an Environmental Impact Statement (EIS) to evaluate improvements at the Interstate 80 (I-80) and State Route 224 (SR-224) interchange at Kimball Junction and on SR-224 from Kimball Junction through the Olympic Parkway intersection in Summit County, Utah (Proposed Project). The EIS will evaluate the long-term mobility needs of the study area and identify solutions that consider a broad range of perspectives while avoiding and minimizing impacts to the environment.

The purpose of this report is to identify and describe aquatic resources in the delineation survey area (survey area) for the Proposed Project (see Appendix A, *Project Overview Map*). The results of the delineation are summarized in Table 4, *Aquatic Resources Summary*, on page 10. The jurisdictional status of the delineated aquatic resources is subject to determination by the U.S. Army Corps of Engineers (USACE).

1.1 Aquatic Resources Delineation Survey Area

The survey area for the Proposed Project is about 230 acres and is located along both sides of I-80 between mileposts 142.30 and 145.50 and along both sides of SR-224 between mileposts 10.65 and 11.65 in Summit County, Utah. The survey area includes Rasmussen Road and Kilby Road, both of which run parallel to I-80 west of Kimball Junction, and Bitner Road and Highland Drive, both of which run parallel to I-80 east of Kimball Junction. The width of the survey area varies to accommodate the proposed project elements. The survey area includes land owned by public and private entities.

The survey area can be accessed from the USACE Bountiful Field Office by heading west toward I-15, taking I-15 south until reaching the interchange with I-80, taking exit 304 for I-80 east toward Cheyenne, and continuing on I-80 east and taking exit 145 at Kimball Junction. As defined by the Public Land Survey System, the survey area is located in Township 1 South; Ranges 3 and 4 East; and Sections 12, 13, 14, 18, 19, 20, and 24. The elevation in the survey area ranges from approximately 6,340 to 6,450 feet above mean sea level.

1.2 Contact Information

1.2.1 Project Applicant and Owner

Utah Department of Transportation, Environmental Services
4501 Constitution Blvd.
Taylorsville, Utah 84129

Attention: Rod Hess
(801) 830-9589
rhess@utah.gov

1.2.2 Land Ownership

Land in the survey area is owned by public and private entities. Contact and access information for landowners can be coordinated as necessary.

1.2.3 Contact Information for the Delineation Consultant

The delineation was performed by HDR.

HDR, Inc.
2825 E. Cottonwood Parkway, Suite 200
Salt Lake City, Utah 84121

Field Biologists:
Joshua McMillin
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2.0 Delineation Methodology

The delineation team conducted delineation fieldwork to map aquatic resources on August 7 and 8, 2023. All areas within the approximately 230-acre survey area were included in the delineation. Attachment B, *Aquatic Resources Delineation Map Series*, provides maps of the aquatic resources that were delineated in the survey area.

2.1 Preliminary Data Gathering

Before conducting delineation fieldwork, the delineation team reviewed information from several sources, including the following:

- Aerial images of the survey area
- Topography and surface water maps from the U.S. Geological Survey
- National Hydric Soils List for Utah (USDA NRCS 2023a)
- Prior surveys and delineations across portions of the survey area
- U.S. Fish and Wildlife Service's National Wetland Inventory maps
- U.S. Department of Agriculture, Natural Resources Conservation Service's (USDA NRCS) Web Soil Survey (USDA NRCS 2023b)
- USACE delineation manuals and delineation reference guides (described in Section 2.2, *Delineation Procedures*)

In addition, HDR conducted a previous delineation survey in August 2021 as part of the SR-224 Bus Rapid Transit Categorical Exclusion project. This survey was conducted in accordance with the applicable delineation procedures and guidance for that time. Within the areas previously surveyed that overlap with the survey area for the Proposed Project, the delineation team verified through visual observation that the hydrology and vegetation characteristics appeared consistent with the characteristics observed during the previous delineation survey. If the hydrology and vegetation characteristics were consistent, the data were incorporated into this report and the sites were not

delineated again. At sites with observed differences, the delineation team applied the procedures described below to delineate aquatic resources based on the existing conditions.

2.2 Delineation Procedures

The delineation was conducted in accordance with the following delineation manuals and delineation reference guides:

- *Corps of Engineers Wetlands Delineation Manual* (USACE 1987)
- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Mountains, Valleys, and Coasts Region* (Version 2.0) (USACE 2010)
- *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE 2022)
- U.S. Army Corps of Engineers regulatory guidance letters and joint agency regulations, policies, references, and guidance

The delineation team assessed the entire survey area to determine the presence or absence of aquatic features. The routine method was applied by selecting sampling point locations in the field. These sampling points were placed at locations where landform, vegetative, or hydrologic characteristics indicated the potential for wetlands. A minimum of one set of paired sampling points (one in a wetland and one just outside the wetland boundary) was established to help delineate each wetland or wetland complex. Additional sampling points were located as needed to help determine wetland boundaries.

The delineation team recorded detailed information about vegetation, soils, and hydrologic characteristics for each sampling point and used this information to determine whether an area qualifies as a wetland and to help identify the wetland boundaries. All datasheets are included in Attachment C, *Delineation Data Forms,* and representative sampling point photographs are included in Attachment D*, Representative Aquatic Resource Photographs.*

Based on information gathered from sampling points and observable changes in elevation and plant communities, the delineation team mapped aquatic resource boundaries in the survey area through a combination of global positioning system (GPS)-based field mapping (using ArcGIS Field Maps, a sub-meter GPS receiver, and a tablet or mobile phone) and desktop digitization using images from Hexagon from 2021. To produce aquatic resource delineation maps for the survey area, data were exported into geographic information systems (GIS) software (ArcPro 2.8.8). These data were also used to calculate the area of aquatic features in the survey area.

2.2.1 Wetlands

A determination of the occurrence of wetlands is based on the presence or absence of hydrophytic (wetland) vegetation, hydric (wetland) soils, and wetland hydrology. The presence of all three criteria is necessary for an area to be designated as a wetland unless problematic conditions or significant disturbance is identified and evaluated in accordance with delineation procedures. Wetland boundaries are considered to be a line across which the vegetation, soils, and hydrologic characteristics begin or cease to meet wetland criteria.

Vegetation

Hydrophytic vegetation refers to the plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (USACE 1987). Hydrophytic vegetation indicators include (1) a prevalence of hydrophytic vegetation—that is, a majority of dominant plant species are facultative, facultative wetland, or obligate wetland plants as listed in the National Wetland Plant List (NWPL; USACE 2020)—and (2) morphological or physiological adaptations to saturated soil conditions.

Table 1 lists the most recent NWPL indicator statuses assigned to plant species for the purpose of delineating wetlands (Lichvar and others 2012). A list of plant species observed at delineation sampling points, including their indicator status, is provided in Attachment E, *Plant Species Observed*.

Table 1. Wetland Indicator Status System

Indicator Status	Indicator Symbol	Definition
Obligate wetland	OBL	Plants that almost always occur in wetlands.
Facultative wetland	FACW	Plants that usually occur in wetlands but could occur in non-wetlands.
Facultative	FAC	Plants that occur in wetlands and non-wetlands.
Facultative upland	FACU	Plants that usually occur in non-wetlands but could occur in wetlands.
Upland plants	UPL	Plants that almost never occur in wetlands.
Not listed	NL	Plants that are not listed on the NWPL and therefore are assumed to be upland.

Source: Lichvar and others 2012

The delineation team documented vegetation within a sample plot surrounding each sampling point location. Each polygon area was visually inspected, and plant species were identified and procedures for hydrophytic vegetation indicators were applied. Vegetation was considered hydrophytic when over 50% of the dominant species had an indicator status of facultative (FAC), facultative wetland (FACW), or obligate (OBL) or when the Prevalence Index was less than 3.0 in cases where the dominance was less than or equal to 50%.

Soils

Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile. Anaerobic conditions favor the growth and regeneration of hydrophytic vegetation. Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. The delineation team used a standard Munsell soil color chart to determine the soil matrix and mottle colors (Munsell Color 2009). In accordance with USACE methodology, soil profiles were investigated at sampling points in the survey area and were examined for indicators of hydric conditions.

Hydrology

The term *wetland hydrology* encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Wetland hydrology indicators include obvious characteristics such as surface water, soil saturation, and water table depth. Other indicators include soil cracking, the presence of a salt crust, drainage patterns, water-stained leaves, and the presence of oxidized rhizospheres. The delineation team evaluated hydrology at each sampling point in the survey area.

2.2.2 Other (Non-wetland) Aquatic Resources

This delineation also evaluated the presence of aquatic resources other than wetlands potentially subject to USACE's jurisdiction. In non-tidal areas, USACE maintains jurisdiction over areas below the ordinary high water mark (OHWM) in water features such as navigable streams, rivers, and lakes, and tributaries to navigable waters.

The delineation team delineated non-wetland aquatic features based on the presence of a bed and bank and an OHWM (USACE 2005, 2022). Potentially jurisdictional non-wetland features were delineated along the OHWM. If a feature did not exhibit a bed and bank and an OHWM, and did not show distinct vegetation changes, it was not further evaluated as a potential aquatic resource or considered to be a potentially jurisdictional water. Additionally, if a feature exists in a culvert or pipe, it was not further evaluated as a potential aquatic resource.

3.0 Existing Conditions

The survey area consists primarily of roads and road shoulders; urban land developed for residential, industrial, and commercial uses; upland grass communities adjacent to roads; and some wetland areas.

The survey area is part of the Wasatch and Uinta Mountains ecoregion in the Mountain Valleys subregion (Woods and others 2001). The Mountain Valleys ecoregion is characterized by terraces, floodplains, alluvial fans, and hills. The average annual precipitation in the survey area is 21 inches, and the average annual snowfall is 95 inches. Weather data for the survey area were obtained from historical records collected in Park City, Utah (U.S. Climate Data 2023).

The delineation field reconnaissance was conducted on August 7 and 8, 2023. During the field surveys, temperatures ranged from 51 to 78 degrees Fahrenheit (°F), skies were mostly sunny to partly cloudy, and there was no measurable precipitation (NOAA 2023).

3.1 General Hydrology

The survey area is located in the Lower Weber River watershed (hydrologic unit code 16020102) (USGS 2023). The hydrology of the watershed is characterized by the Weber River, which flows from the Uinta Mountains to the Great Salt Lake. Water in the survey area generally flows north into East Canyon Creek, which continues northwest beyond the survey area, where water is impounded in East Canyon Reservoir. Water released from East Canyon Reservoir is returned to East Canyon

Creek, where it flows into the Weber River, eventually terminating into the Great Salt Lake, which is a traditional navigable water (TNW).

The Swaner Preserve and EcoCenter is partially within the survey area to the east of SR-224 about one-third of a mile south of Newpark Boulevard. The Preserve protects 1,200 acres of open space that includes 800 acres of wetlands, streams, and other valuable wildlife habitat. Wetland and streams in the Swaner Nature Preserve flow into Kimball Creek to the north. Kimball Creek joins an unnamed creek from the north to eventually become East Canyon Creek north of I-80.

3.2 General Plant Community Types

The survey area consists primarily of roads and road shoulders, commercial and residential development, uplands, and some wetland areas.

Uplands in the survey area consist primarily of road shoulders, commercial landscaping, and some upland grass communities. Common upland grass species include crested wheatgrass (*Agropyron cristatum*), western wheatgrass (*Pascopyrum smithii*), and basin wildrye (*Leymus cinereus*).

Wetland areas in the survey area consist primarily of broadleaf cattail (*Typha latifolia*), mountain rush (*Juncus arcticus* ssp. *littoralis*), sedges (*Carex* spp.), reed canarygrass (*Phalaris arundinacea*), and meadow foxtail (*Alopecurus pratensis*).

3.3 General Soil Conditions

Five soil types were identified in the survey area (Table 2). Minor components of Echocreek-Kovich loams, 0 to 10 percent slopes, and Wanship loam, 0 to 3 percent slopes, are listed as hydric in the Soil Survey of Utah (USDA NRCS 2023a). Soil map unit boundaries for the survey area are provided in Attachment F, *USDA NRCS Custom Soil Resource Report* (USDA NRCS 2023b).

Table 2. Soil Types Identified in the Survey Area

Soil Name	Map Unit Symbol	Acreage
Agassiz-Rock outcrop complex, 30 to 70 percent slopes	101	4.5
Echocreek-Kovich loams, 0 to 10 percent slopes	127	3.0
Harter gravelly loam, 2 to 15 percent slopes	139	69.2
Manila-Ant Flat loams, 2 to 8 percent slopes	154	131.2
Wanship loam, 0 to 3 percent slopes	178	22.1
Total		**230.0**

4.0 Results

Section 4.0 describes the results of the aquatic resources delineation survey. The maps in Attachment B, *Aquatic Resources Delineation Map Series*, show the extent of aquatic resources in the survey area and the locations of wetland delineation sampling points. To help delineate potential wetlands in the survey area, the delineation team completed 30 wetland determination forms (see Attachment C, *Delineation Data Forms*). Table 3 summarizes the wetland delineation sampling points collected by the delineation team ordered by their locations on the map sheets in Attachment B, *Aquatic Resources Delineation Map Series*.

The entire delineation survey area is about 230 acres and contains a total of 1.08 acres of aquatic resources. These resources consist of 0.71 acre of palustrine emergent wetlands, 0.04 acre (199 linear feet) of perennial streams, 0.18 acre of open-water ponds, 0.01 acre of seeps, and 0.14 acre (1,842 linear feet) of ditches. Table 4, *Aquatic Resources Summary*, on page 10 summarizes all of the aquatic resource features that were delineated.

Table 3. Wetland Delineation Sampling Points Summary

Map ID	Hydrophytic Vegetation Present?	Hydric Soils Present?	Wetland Hydrology Present?	Sampled Area within Wetland?	Map Sheet Number(s)[a]
SP-1	Yes	Yes	Yes	Yes	4
SP-2	No	—	No	No	4
SP-3	Yes	Yes	Yes	Yes	6, 7
SP-4	No	—	No	No	6, 7
SP-5	Yes	Yes	Yes	Yes	7
SP-6	No	—	No	No	7
SP-7	Yes	Yes	Yes	Yes	7
SP-8	No	—	No	No	7
SP-9	Yes	Yes	Yes	Yes	7
SP-10	No	—	No	No	7
SP-11	Yes	Yes	Yes	Yes	8
SP-12	No	—	No	No	8
SP-13	Yes	Yes	Yes	Yes	12
SP-14	No	—	No	No	12
SP-15	Yes	Yes	Yes	Yes	12
SP-16	No	—	No	No	12
SP-17	Yes	No	No	No	12
SP-18	Yes	Yes	Yes	Yes	13
SP-19	No	—	No	No	13
SP-20	Yes	Yes	Yes	Yes	14
SP-21	Yes	Yes	Yes	Yes	14
SP-22	No	—	No	No	14
SP-23	Yes	Yes	Yes	Yes	14

(*Continued on next page*)

Table 3. Wetland Delineation Sampling Points Summary

Map ID	Hydrophytic Vegetation Present?	Hydric Soils Present?	Wetland Hydrology Present?	Sampled Area within Wetland?	Map Sheet Number(s)[a]
SP-24	No	—	No	No	14
SP-25	Yes	No	No	No	9
SP-26	Yes	Yes	Yes	Yes	9
SP-27	No	—	No	No	9
SP-28	Yes	Yes	Yes	Yes	9
SP-29	No	—	No	No	9
SP-30	Yes	No	No	No	10, 11

[a] See Appendix B, *Aquatic Resources Delineation Map Series*.

4.1 Wetlands

Wetlands were delineated in the survey area as 17 separate polygons, all of which were identified as palustrine emergent wetlands, totaling 0.71 acre. Wetlands in the survey area are hydrologically supported by perennial streams, stormwater runoff, and shallow groundwater. Four wetlands (PEM-12a, PEM-12b, PEM-13a, and PEM-13b) are adjacent with a continuous surface connection because they physically abut relatively permanent tributaries to Kimball Creek. Six wetlands (PEM-1, PEM-2, PEM-3a, PEM-3b, PEM-5, and PEM-6) appear to lack a surface connection to a relatively permanent water or any other aquatic resources that have a downstream connection to a relatively permanent water. Other wetlands (PEM-4, PEM-7a, PEM-7b, PEM-8, PEM-9, PEM-10, and PEM-11) would be considered adjacent because they have a continuous surface connection by way of a discrete feature, such as a non-jurisdictional ditch, culvert, swale, or pipe, that eventually drains into East Canyon Creek, Kimball Creek, or Swaner Nature Preserve.

Wetlands in the survey area perform physical, chemical, and biological functions. Physical functions include surface and subsurface water storage for most wetlands in the survey area, and wetlands located along surface waters also retain particulates and dissipate energy. Chemical functions provided by all wetlands in the survey area include cycling nutrients and exporting organic carbon. Biological functions performed by wetlands in the survey area consist of supporting wetland vegetation communities and animal communities that use wetland environments to complete life cycle requirements. The extent to which each wetland provides these functions varies depending on characteristics such as condition, plant community composition, hydrogeomorphology, size, and land use.

The characteristics of the delineated wetlands are summarized in Table 4, *Aquatic Resources Summary*, on page 10, which provides descriptions for each wetland or similarly situated complex of wetlands. Table 4 also provides information about the size, classification, and location for each wetland.

4.2 Other (Non-wetland) Aquatic Resources

Other (non-wetland) aquatic resources identified in the survey area consist of perennial streams, open-water ponds, seeps, and ditches. Table 4 provides information about the size, classification, and location for each aquatic resource. All other (non-wetland) aquatic resources were delineated and mapped based on an OHWM determination. All streams have been mapped and delineated based on an OHWM determination following the *National OHWM Field Delineation Manual for Rivers and Streams* (USACE 2022).

4.2.1 Perennial Streams

Three perennial stream segments (P-1, P-2a, and P-2b) that total 0.04 acre (199 linear feet) were delineated in the survey area. All stream segments flow north and drain into either Kimball Creek or East Canyon Creek. Kimball Creek joins an unnamed creek from the north to eventually become East Canyon Creek north of I-80. East Canyon Creek flows west and north from this confluence and eventually flows into East Canyon Reservoir. Water released from East Canyon Reservoir is returned to East Canyon Creek, where it flows into the Weber River, eventually terminating into the Great Salt Lake.

Perennial stream segment P-1 supports some woody riparian vegetation before it flows into a culvert beneath I-80 and then into East Canyon Creek. Perennial stream segments P-2a and P-2b support adjacent wetland terraces and flow north into Kimball Creek.

4.2.2 Open-water Ponds

Four open-water ponds that total 0.18 acre were delineated in the survey area. Open-water ponds OW-1, OW-3, and OW-4 are stormwater detention basins that were constructed in uplands, and open-water pond OW-2 is an ornamental feature located on a residential property.

4.2.3 Seeps

One 0.01 acre seep (Seep-1) was delineated in the survey area. Seep-1 is a small seep that appears to be hydrologically supported by an ornamental feature to the west. Seep-1 has a continuous surface connection to wetland PEM-1.

4.2.4 Ditches

Eleven ditch segments totaling 0.14 acre (1,842 linear feet) were delineated in the survey area. All of the ditches in the survey area appear to be entirely human-made to provide drainage, were constructed in uplands, and lack a relatively permanent flow of water.

Table 4. Aquatic Resources Summary

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
Wetlands							
PEM-1	PEM	0.03	—	40.7335052	–111.5531921	4	Wetland PEM-1 is located in a swale on the south side of Kilby Road. This wetland is characterized by sampling point SP-1. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and mountain rush, hydric soil indicators F3 (depleted matrix) and F6 (redox dark surface), and saturation as a primary hydrology indicator. The hydrology source for this wetland is stormwater runoff from adjacent roads. Wetland PEM-1 lacks a surface connection to a relatively permanent water or any other aquatic resources.
PEM-2	PEM	0.08	—	40.7305260	–111.550621	6, 7	Wetland PEM-2 is located in a detention basin on the south side of Kilby Road. This wetland is characterized by sampling point SP-3. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail, common spikerush, and mountain rush; and surface water as a primary hydrology indicator. Hydric soils were assumed given the dominance of obligate vegetation and the presence of surface water. The hydrology source for this wetland is stormwater runoff from adjacent roads. Wetland PEM-2 lacks a surface connection to a relatively permanent water or any other aquatic resources.
PEM-3a	PEM	0.16	—	40.7290573	–111.5496368	7	Wetlands PEM-3a and PEM-3b are located in swales on the west side of Landmark Drive. These wetlands are characterized by sampling point SP-7. Observations in these wetlands include hydrophytic vegetation with the dominance of mountain rush, hydric soil indicator F6 (redox dark surface), and saturation as a primary hydrology indicator. The hydrology source for these wetlands is stormwater runoff from adjacent roads. Wetlands PEM-3a and PEM-3b drain into wetland PEM-1 through a series of culverts. Wetland PEM-1 lacks a surface connection to a relatively permanent water or any other aquatic resources.
PEM-3b	PEM	0.06	—	40.7299080	–111.5499802	6, 7	

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Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
PEM-4	PEM	<0.01	—	40.7288742	–111.5490341	7	Wetland PEM-4 is located in a channel on the east side of Landmark Drive. This wetland is characterized by sampling point SP-5. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and surface water as a primary hydrology indicator. Hydric soils were assumed given the dominance of obligate vegetation and presence of surface water. The hydrology source for this wetland is stormwater runoff from adjacent roads. Wetland PEM-4 drains into ditch D-2, which flows into a culvert beneath I-80 and appears to drain into East Canyon Creek.
PEM-5	PEM	0.02	—	40.7280884	–111.5492706	7	Wetland PEM-5 is located in a detention basin on the south side of Landmark Drive. This wetland is characterized by sampling point SP-9. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and surface water as a primary hydrology indicator. Hydric soils were assumed given the dominance of obligate vegetation and presence of surface water. The hydrology source for this wetland is stormwater runoff from adjacent roads. Wetland PEM-5 lacks a surface connection to a relatively permanent water or any other aquatic resources.
PEM-6	PEM	<0.01	—	40.7268982	–111.545105	8	Wetland PEM-6 is located in a detention basin on the south side of the I-80 eastbound off-ramp. This wetland is characterized by sampling point SP-11. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and surface water as a primary hydrology indicator. Hydric soils were assumed given the dominance of obligate vegetation and presence of surface water. The hydrology source for this wetland is stormwater runoff from adjacent roads. Wetland PEM-6 lacks a surface connection to a relatively permanent water or any other aquatic resources.

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Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
PEM-7a	PEM	<0.01	—	40.7213020	–111.5453186	12	Wetlands PEM-7a and PEM-7b are located west of SR-224 and just south of Olympic Parkway. These wetlands are characterized by sampling point SP-13. Observations in these wetlands include hydrophytic vegetation with the dominance of mountain rush, hydric soil indicator F6 (redox dark surface), and saturation as a primary hydrology indicator. The hydrology source for these wetlands is stormwater runoff from adjacent roads. Wetlands PEM-7a and PEM-7b drain into ditch D-3, which appears to eventually drain into the Swaner Nature Preserve.
PEM-7b	PEM	<0.01	—	40.7214165	–111.5452194	12	
PEM-8	PEM	0.01	—	40.7211647	–111.5451279	12	Wetland PEM-8 is located west of SR-224 and just south of Olympic Parkway. This wetland is characterized by sampling point SP-15. Observations in this wetland include hydrophytic vegetation with the dominance of mountain rush and Canada thistle, hydric soil indicator F6 (redox dark surface), and surface soil cracks as a primary hydrology indicator. The hydrology source for this wetland appears to be stormwater runoff from adjacent roadways and meadows to the west. Wetland PEM-8 appears to drain into ditch D-5, which appears to eventually drain into the Swaner Nature Preserve.
PEM-9	PEM	0.07	—	40.7192612	–111.5452423	13	Wetland PEM-9 is located west of SR-224 and south of Olympic Parkway. This wetland is characterized by sampling point SP-18. Observations in this wetland include hydrophytic vegetation with the dominance of meadow foxtail, mountain rush, and water sedge; hydric soil indicator F6 (redox dark surface); and surface soil cracks as a primary hydrology indicator. The hydrology source for this wetland appears to be meadows to the west. Wetland PEM-9 drains into ditch D-7, which appears to eventually drain into Kimball Creek.
PEM-10	PEM	0.06	—	40.7148743	–111.5444489	14	Wetland PEM-10 is located east of SR-224 and is part of the Swaner Nature Preserve. This wetland is characterized by sampling points SP-20 and SP-21. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and reed canarygrass; hydric soil indicators A4 (hydrogen sulfide) and F6 (redox dark surface); and surface water, high water table, saturation, and hydrogen sulfide odor as primary hydrology indicators. The hydrology source for this wetland is stormwater runoff from SR-224, shallow groundwater, and meadows to the west. Wetland PEM-10 is a part of the Swaner Nature Preserve.

(*Continued on next page*)

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
PEM-11	PEM	0.05	—	40.7144051	–111.5450439	14	Wetland PEM-11 is located west of SR-224 and south of Bear Cub Drive. This wetland is characterized by sampling point SP-23. Observations in this wetland include hydrophytic vegetation with the dominance of broadleaf cattail and mountain rush, and the presence of surface water, as a primary hydrology indicator. Hydric soils were assumed given the dominance of obligate vegetation and the presence of surface water. The hydrology source for this wetland is a seep to the west. Wetland PEM-11 drains into ditch D-8, which appears to flow into the Swaner Nature Preserve.
PEM-12a	PEM	0.04	—	40.7248993	–111.5358429	9	Wetlands PEM-12a and PEM-12b are located north of I-80 between I-80 and Bitner Road. These wetlands are characterized by sampling point SP-26. Observations in these wetlands include hydrophytic vegetation with the dominance of mountain rush, hydric soil indicator F6 (redox dark surface), and saturation as a primary hydrology indicator. The hydrology source for these wetlands is stormwater runoff from adjacent roads and perennial stream segment P-2a. Wetlands PEM-12a and PEM-12b are adjacent to perennial stream segment P-2a, which flows into Kimball Creek.
PEM-12b	PEM	<0.01	—	40.7249451	–111.5361099	9	
PEM-13a	PEM	0.05	—	40.7241898	–111.5360870	9	Wetlands PEM-13a and PEM-13b are located south of I-80 between I-80 and Highland Drive. These wetlands are characterized by sampling point SP-28. Observations in these wetlands include hydrophytic vegetation with the dominance of bitter dock, mountain rush, Nebraska sedge, and wild mint; hydric soil indicator F3 (depleted matrix); and saturation and high water table as primary hydrology indicators. The hydrology source for these wetlands is stormwater runoff from adjacent roads and perennial stream segment P-2b. Wetlands PEM-13a and PEM-13b have a continuous surface connection to perennial stream segment P-2b, which flows into Kimball Creek.
PEM-13b	PEM	0.01	—	40.7242470	–111.5362549	9	

(*Continued on next page*)

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
Perennial Streams							
P-1	R3UB	<0.01	18	40.7390556	–111.5587387	2	Perennial stream P-1 is located south of I-80 between I-80 and Kilby Road. The OHWM was identified primarily by changes in vegetation cover and species and a break in the bank slope. Perennial stream P-1 supports woody riparian vegetation consisting primarily of narrowleaf willow (*Salix exigua*). The delineated width to the OHWM at a representative transect measured 9 feet. Perennial stream P-1 flows north under I-80 and eventually flows into East Canyon Creek.
P-2a	R3UB	0.01	49	40.7249260	–111.5360947	9	Perennial stream P-2 consists of two segments, P-2a and P-2b, that total 0.04 acre (181 linear feet). The OHWM was identified primarily by changes in vegetation cover and species and a break in the bank slope. Perennial stream P-2 supports adjacent low-terrace wetlands. The delineated widths to the OHWM at representative transects of P-2a and P-2b measured 6 and 9 feet, respectively. Perennial stream segment P-2b flows north under I-80, connecting to perennial stream segment P-2a and eventually flowing into Kimball Creek.
P-2b	R3UB	0.03	132	40.7241669	–111.5362244	9	
Open-water Ponds							
OW-1	PUB	0.08	—	40.7414322	–111.5605392	1	Open-water pond OW-1 is located south of I-80 between I-80 and Kilby Road. OW-1 is a stormwater detention basin that was constructed in uplands and captures runoff from adjacent roads. Standing water was present at the time of the survey. Open-water pond OW-1 appears to drain through a culvert beneath I-80. The outfall of this culvert was not identified during the field survey.
OW-2	PUB	0.03	—	40.7369041	–111.5565338	3	Open-water pond OW-2 is located south of Kilby Road. OW-2 is an impoundment of an unnamed perennial stream that originates south of the survey area. Standing water was present at the time of the survey. Open-water pond OW-1 appears to drain through a culvert beneath I-80 into East Canyon Creek.
OW-3	PUB	0.06	—	40.7292023	–111.5492477	7	Open-water pond OW-3 is located east of Landmark Drive. OW-3 is a stormwater detention basin that was constructed in uplands and captures runoff from adjacent roads. Standing water was present at the time of the survey. Open-water pond OW-3 appears to be isolated.

(*Continued on next page*)

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
OW-4	PUB	0.02	—	40.7249603	–111.5363007	9	Open-water pond OW-4 is located north of I-80 between I-80 and south of Bitner Road. OW-4 is a stormwater detention basin that was constructed in uplands and captures runoff from adjacent roads and ditch D-9. Standing water was present at the time of the survey. Open-water pond OW-4 appears to drain through a culvert into perennial stream segment P-2a, which flows into Kimball Creek.
Seeps							
Seep-1	PUB	0.01	—	40.7333984	–111.5531387	4	Seep Seep-1 is located on a hillslope above wetland PEM-1 on the south side of Kilby Road. The hydrology source for this seep appears to be water leaching from an ornamental pond located upslope. Seep-1 drains into wetland PEM-1, which lacks a surface connection to a relatively permanent water or any other aquatic resources.
Ditches							
D-1	R6	<0.01	54	40.7289925	–111.5492859	7	Ditch D-1 is located east of Landmark Drive. The delineated width to the OHWM at a representative transect measured 1 foot. There was no flowing water present at the time of the survey. Ditch D-1 drains into open-water pond OW-3, which appears to be isolated.
D-2	R6	<0.01	15	40.7288780	–111.5485687	7	Ditch D-2 is located east of Landmark Drive. The delineated width to the OHWM at a representative transect measured 4 feet. There was no flowing water present at the time of the survey. Ditch D-2 continues into a culvert beneath I-80. The outfall of this culvert was not identified during the field survey.
D-3	R6	0.01	149	40.7214050	–111.5451965	12	Ditch D-3 is located west of SR-224 and just south of Olympic Parkway. The delineated width to the OHWM at a representative transect measured 3 feet. There was no flowing water present at the time of the survey. Ditch D-3 flows southwest and connects with ditch D-4, which flows into wetland PEM-8. Wetland PEM-8 drains into ditch D-5, which continues into a culvert to the east. The outfall of this culvert was not identified during the field survey.

(*Continued on next page*)

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
D-4	R6	<0.01	30	40.7212410	–111.5454025	12	Ditch D-4 is located west of SR-224 and just south of Olympic Parkway. The delineated width to the OHWM at a representative transect measured 3 feet. There was no flowing water present at the time of the survey. Ditch D-4 connects with ditch D-3 and flows east through a culvert into wetland PEM-8, which appears to eventually drain into the Swaner Nature Preserve.
D-5	R6	0.02	184	40.7211342	–111.5440598	12	Ditch D-5 is located east of SR-224 and just south of Olympic Parkway. The delineated width to the OHWM at a representative transect measured 5 feet. There was no flowing water present at the time of the survey. Ditch D-5 continues into a culvert to the east. The outfall of this culvert was not identified during the field survey.
D-6	R6	<0.01	147	40.7210579	–111.5440216	12	Ditch D-6 is located east of SR-224 and just south of Olympic Parkway. The delineated width to the OHWM at a representative transect measured 1 foot. There was no flowing water present at the time of the survey. Ditch D-6 continues into a culvert to the east, which appears to eventually drain into the Swaner Nature Preserve.
D-7	R6	<0.01	38	40.7193947	–111.5450287	13	Ditch D-7 is located west of SR-224 and south of Olympic Parkway. The delineated width to the OHWM at a representative transect measured 5 feet. There was no flowing water present at the time of the survey. Ditch D-7 continues into a culvert to the east. The outfall of this culvert was not identified during the field survey.
D-8	R6	0.03	553	40.7149925	–111.5449829	14	Ditch D-8 is west of SR-224 and south of Bear Cub Drive. The delineated width to the OHWM at a representative transect measured 2 feet. There was no flowing water present at the time of the survey. Ditch D-8 continues into a culvert beneath SR-224, which appears to eventually drain into Kimball Creek.
D-9	R6	0.07	601	40.7252693	–111.5373917	9	Ditch D-9 is located north of I-80 between I-80 and Bitner Road. The delineated width to the OHWM at a representative transect measured 5 feet. There was no flowing water present at the time of the survey. Ditch D-9 continues east, draining into open-water pond OW-4, which appears to drain through a culvert into perennial stream segment P-2a. Perennial stream segment P-2a drains into Kimball Creek.

(*Continued on next page*)

Aquatic Resource Feature Name	Cowardin Code[a]	Size (acres)[b]	Length (feet)[c]	Latitude[d]	Longitude[d]	Map Page Number(s)[e]	Description
D-10	R6	<0.01	57	40.7242661	–111.5363922	9	Ditch D-10 is located south of I-80 between I-80 and Highland Drive. The delineated width to the OHWM at a representative transect measured 2 feet. There was no flowing water present at the time of the survey. Ditch D-10 continues east, flowing into perennial stream segment P-2b, which drains into Kimball Creek.
D-11	R6	<0.01	14	40.7216187	–111.5262756	11	Ditch D-11 is located south of Highland Drive. The delineated width to the OHWM at a representative transect measured 4 feet. There was no flowing water present at the time of the survey. Ditch D-11 continues north into a culvert, which drains into Kimball Creek.

[a] Codes from *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin and others 1979): **PEM** (palustrine, emergent), **PUB** (unconsolidated bottom, palustrine), **R3UB** (riverine, upper perennial, unconsolidated bottom), and **R6** (a wetland, spring, stream, river, pond, or lake that exists only for a short period).

[b] Displayed values are rounded to two decimal places, so the totals might not match the sum of the reported values exactly.

[c] Displayed values are rounded to the nearest whole linear foot, so the totals might not match the sum of the reported values exactly.

[d] Coordinates for the center point of each feature are listed.

[e] See Attachment B, *Aquatic Resources Delineation Map Series*.

5.0 Delineation Summary

All areas in the delineation survey area were assessed to determine the presence or absence of aquatic resources, including wetlands and other waters, in accordance with the procedures and guidelines established by USACE. The entire delineation survey area is about 230 acres and contains a total of 1.08 acres of aquatic resources. These resources consist of 0.71 acre of palustrine emergent wetlands, 0.04 acre (199 linear feet) of perennial streams, 0.18 acre of open-water ponds, 0.01 acre of seeps, and 0.14 acre (1,842 linear feet) of ditches. All features recorded and mapped are included in Attachment B, *Aquatic Resources Delineation Map Series*.

5.1 Jurisdictional Status of Delineated Aquatic Resources

Aquatic resources in the survey area do not have an identifiable connection to interstate or foreign commerce, and they do not include any interstate waters or traditional navigable waters (TNW). The descriptions included in Table 4 above provide information that USACE could use to help determine the jurisdictional status of each delineated aquatic resource feature.

6.0 References

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Attachment A. Project Location Overview Map

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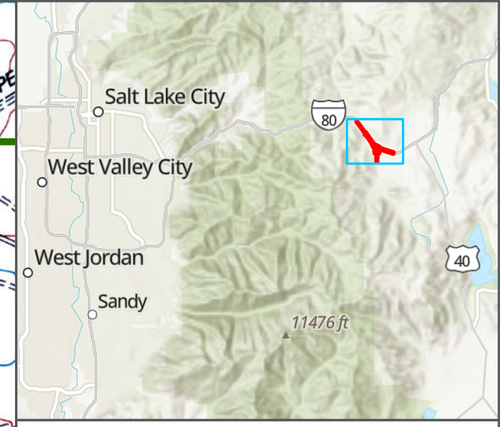
Big Dutch Hollow

Park City West



LEGEND

- Delineation Survey Area
- 7.5 Minute Quadrangles
- Map Series Pages

*This map series only includes areas containing aquatic resources.

DATA SOURCES: © ESRI (2021), HDR (2021), USGS

PROJECT OVERVIEW MAP

KIMBALL JUNCTION EIS

N

0 0.25 0.5
MILES

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Attachment B. Aquatic Resources Delineation Map Series

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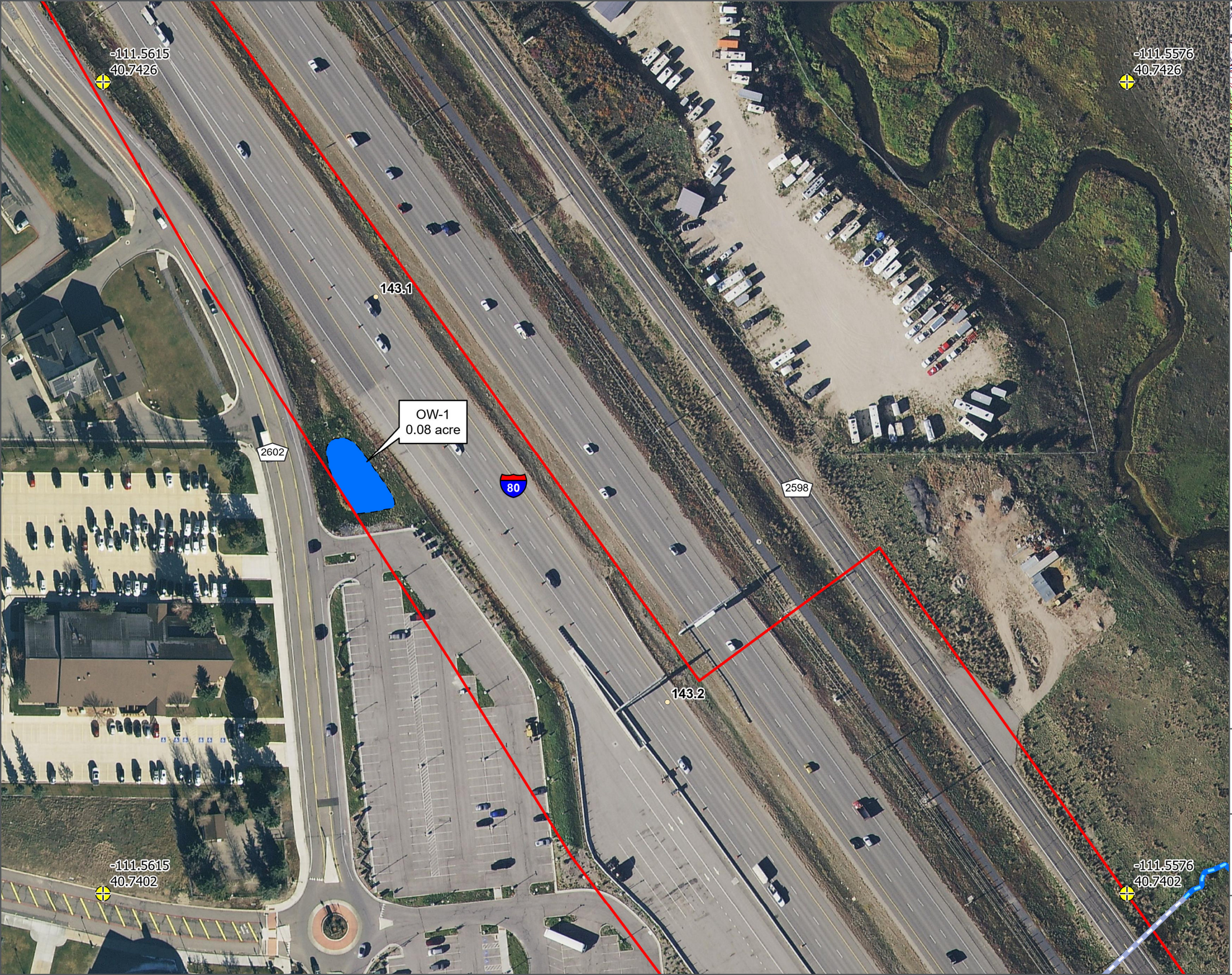
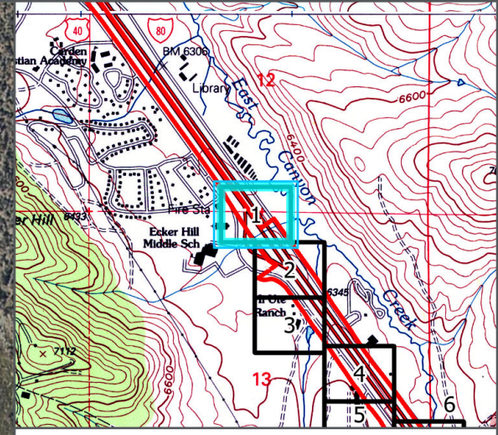




LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- Culvert
- Surface Connection
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Open Water (0.18 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES

KIMBALL JUNCTION EIS

N

0 100 200

US FEET

1 inch equals 100 feet

-111.5596
40.7402

-111.5557
40.7402

143.3

P-1
<0.01 acre
18 ft

Width to OHWM 9 ft

80

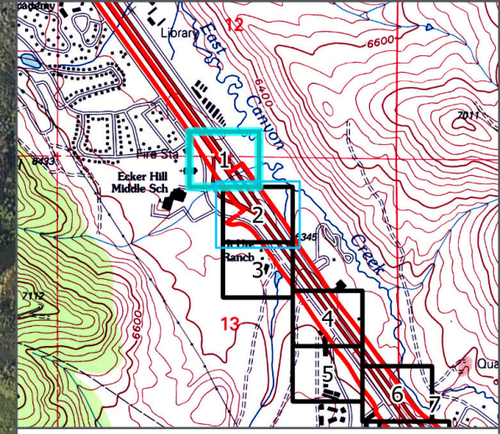
2598

2602

143.4

-111.5596
40.7379

-111.5557
40.7379



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- OHWM Transects
- Culvert
- Surface Connection
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Perennial Stream (0.04 acres, 199 linear feet)

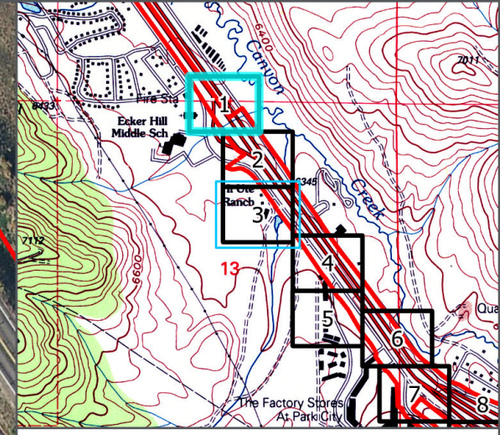
*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- Culvert
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Open Water (0.18 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES

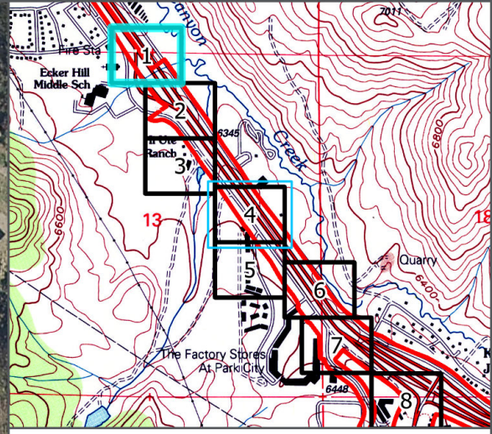
KIMBALL JUNCTION EIS

N

0 100 200

US FEET

1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- Delineation Survey Area (230 acres)
- Palustrine Emergent Wetland (0.71 acre)

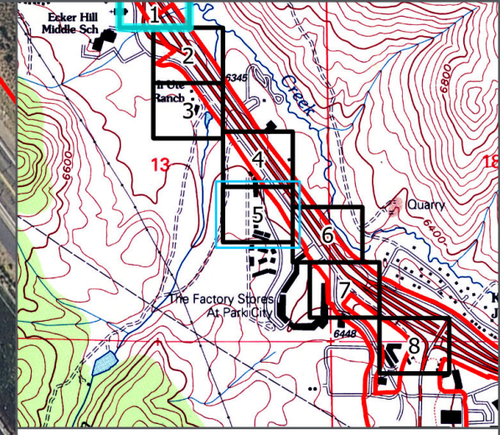
*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Palustrine Emergent Wetland (0.71 acre)
- Seep (0.01 acres)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES

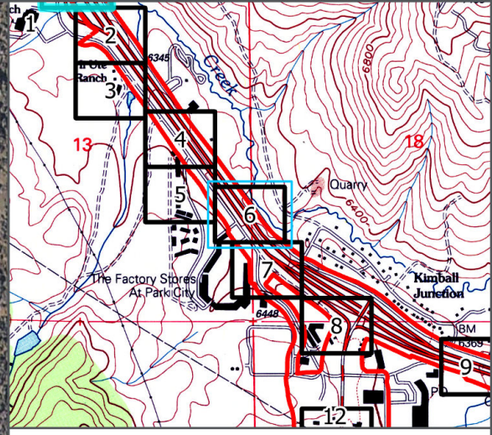
KIMBALL JUNCTION EIS

N

0 100 200

US FEET

1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- Delineation Survey Area (230 acres)
- Palustrine Emergent Wetland (0.71 acre)

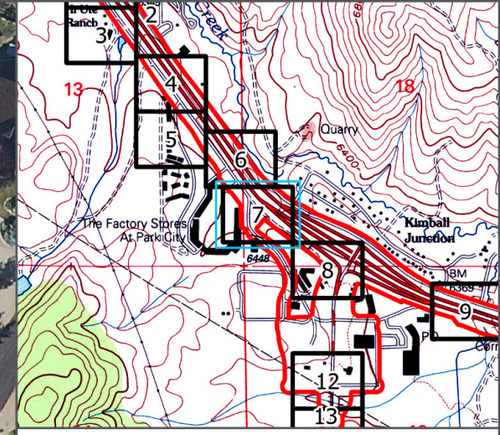
*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- OHWM Transects
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)
- Open Water (0.18 acre)
- Palustrine Emergent Wetland (0.71 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

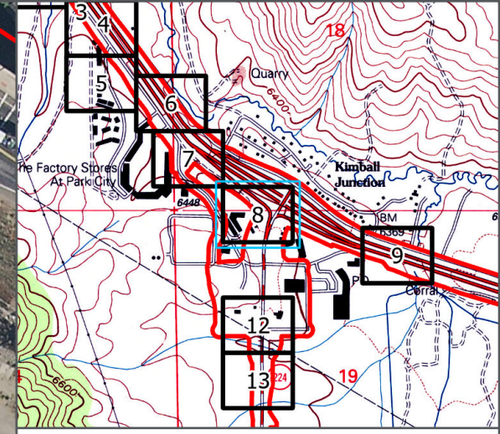
*This map series only includes areas containing aquatic resources.

DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- Delineation Survey Area (230 acres)
- Palustrine Emergent Wetland (0.71 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES

KIMBALL JUNCTION EIS

N

0 100 200

US FEET

1 inch equals 100 feet

-111.5391
40.7261

-111.5352
40.7261

Width to OHWM 5 ft

SP-25

2598

D-9
0.07 acre
601 ft

144.8

OW-4
0.02 acre

PEM-12b
<0.01 acre

SP-26

SP-27

P-2a
0.01 acre
49 ft

PEM-12a
0.04 acre

Width to OHWM 6 ft

80

144.9

P-2b
0.03 acre
132 ft

SP-29

SP-28

D-10
<0.01 acre
57 ft

Width to OHWM 4 ft

PEM-13a
0.05 acre

PEM-13b
0.01 acre

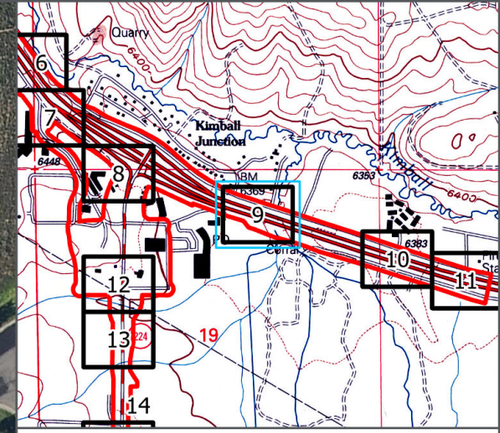
Width to OHWM 9 ft

2602

-111.5391
40.7238

2627

-111.5352
40.7238



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- OHWM Transects
- Culvert
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)
- Open Water (0.18 acre)
- Palustrine Emergent Wetland (0.71 acre)
- Perennial Stream (0.04 acres, 199 linear feet)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

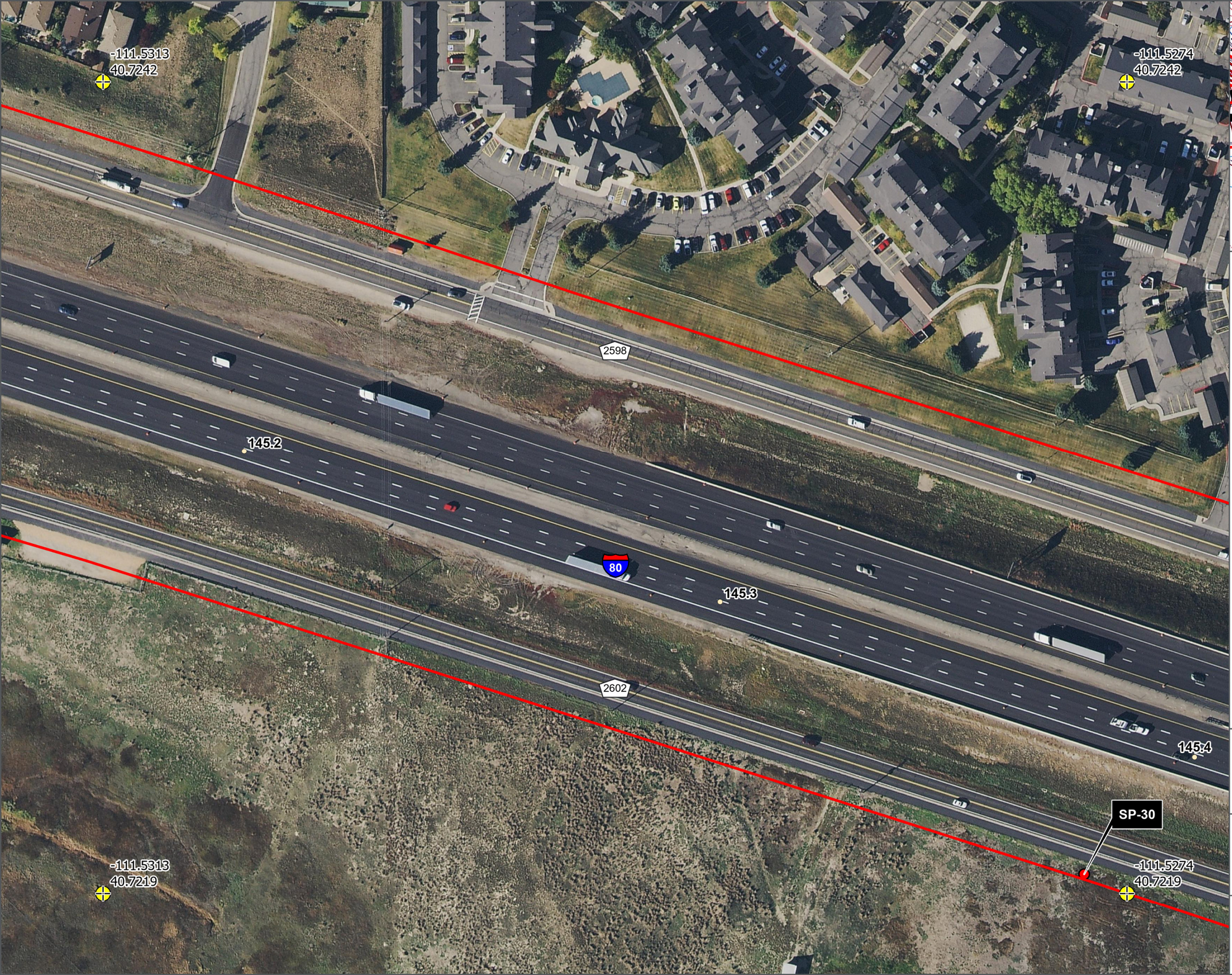
DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

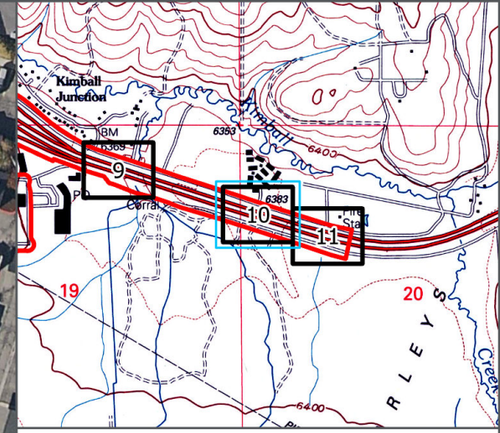
AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet

HDR





LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- Out Point - Non Wetland
- Delineation Survey Area (230 acres)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

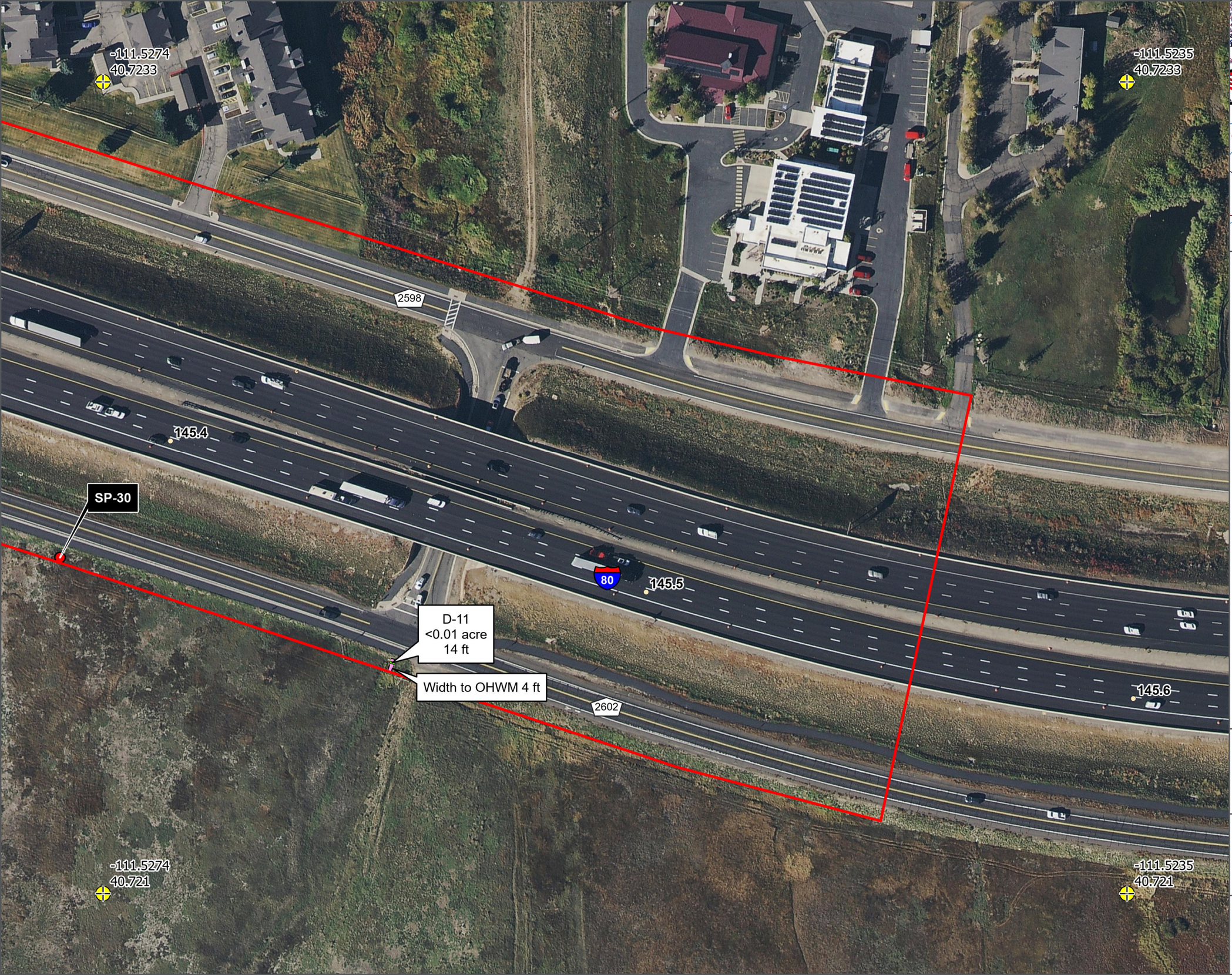
*This map series only includes areas containing aquatic resources.

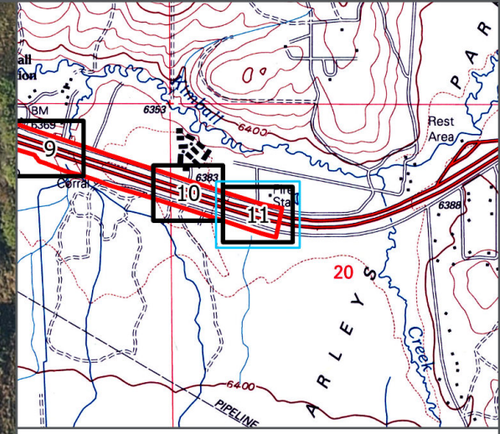
DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet





LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- OHWM Transcects
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

DATA SOURCES: © 2021 HxGN Content Program, Hexagon, HDR (2021), ESRI (2021)

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet

-111.5469
40.7232

11.3

-111.543
40.7232

2629

224

2627

11.2

D-3
0.01 acre
149 ft

Width to OHWM 3 ft

PEM-7b
<0.01 acre

SP-14

PEM-7a
<0.01 acre

PEM-8
0.01 acre

SP-15

SP-16

Width to OHWM 3 ft

D-4
<0.01 acre
30 ft

SP-13

Width to OHWM 1 ft

Width to OHWM 5 ft

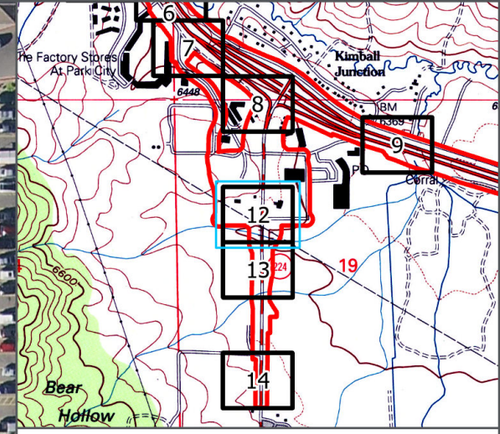
D-5
0.02 acre
184 ft

D-6
<0.01 acre
147 ft

SP-17

-111.5469
40.7208

-111.543
40.7208



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- OHWM Transects
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)
- Palustrine Emergent Wetland (0.71 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet

-111.5469
40.7208

SP-17

11.1

2629

224

Width to OHWM 5 ft

D-7
<0.01 acre
38 ft

SP-19

PEM-9
0.07 acre

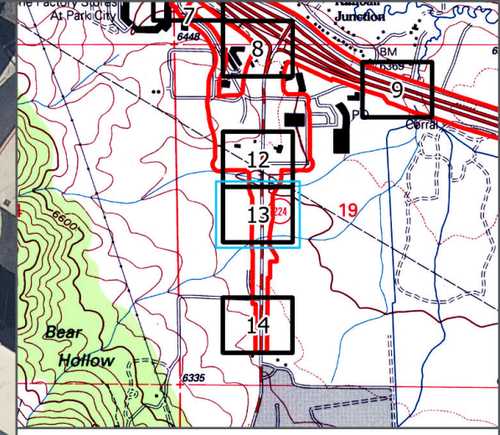
SP-18

11

-111.5469
40.7184

-111.543
40.7208

-111.543
40.7184



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- OHWM Transects
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)
- Palustrine Emergent Wetland (0.71 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet

-111.5469
40.7161

-111.543
40.7161

10.8

Width to OHWM 2 ft

SP-20

D-8
0.03 acre
553 ft

PEM-10
0.06 acre

224

SP-24

SP-21

10.7

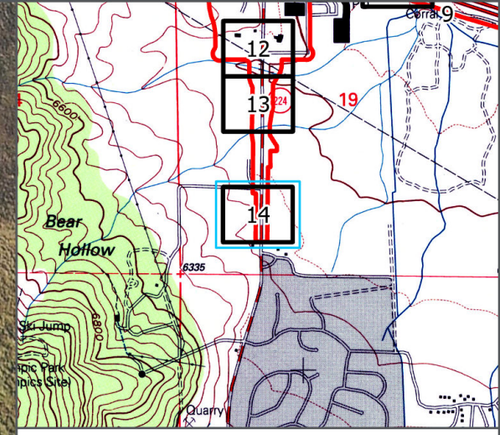
PEM-11
0.05 acre

SP-23

SP-22

-111.5469
40.7137

-111.543
40.7137



LEGEND

- Geographic Control Points
- Tenth Mile Reference Markers
- In Point - Wetland
- Out Point - Non Wetland
- OHWM Transects
- Culvert
- Delineation Survey Area (230 acres)
- Ordinary High Water Mark (OHWM)
- Ditch (0.15 acres, 1,842 linear feet)
- Palustrine Emergent Wetland (0.71 acre)

*Acreages displayed in the legend represent the total acreage for that aquatic resource type in the survey area.

*This map series only includes areas containing aquatic resources.

AQUATIC RESOURCES DELINEATION MAP SERIES
KIMBALL JUNCTION EIS

N

0 100 200
US FEET
1 inch equals 100 feet

Attachment C. Delineation Data Forms

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U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-1

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.73336411 | Long: -111.5530624 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha latifolia*	30	Yes	OBL
2. *Juncus arcticus ssp. littoralis*	70	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		170 (B)

Prevalence Index = B/A = 1.70

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Loamy/Clayey	Roots
2-10	10YR 2/1	94	7.5YR 4/6	6	C	M	Loamy/Clayey	Prominent redox concentrations
10-15	10YR 4/2	75	7.5YR 4/6	25	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Hydric soil indicators F3 and F6 present

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

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

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

Remarks:
Hydrology present with saturation as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-2

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.73338318 | Long: -111.5530396 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Pascopyrum smithii*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 75

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	25 (A)		100 (B)

Prevalence Index = B/A = 4.00

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-3

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 20

Subregion (LRR): LRR E | Lat: 40.73038483 | Long: -111.5505447 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
No soil pit dug given the dominance of obligate vegetation and presence of surface water. Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha latifolia*	50	Yes	OBL
2. *Eleocharis palustris*	30	Yes	OBL
3. *Juncus arcticus ssp. littoralis*	20	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		120 (B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

No soil pit dug given the dominance of obligate vegetation and presence of surface water. Hydric soils assumed to be present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

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

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

Remarks:

Hydrology present with surface water as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-4

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.73039246 | Long: -111.5506058 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Ribes aureum*	3	No	FAC
2.			
3.			
4.			
5.			
	3 =Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Elymus elymoides*	40	Yes	FACU
2. *Sonchus asper*	15	Yes	FACU
3. *Phragmites australis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	3	x 3 =	9
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	63 (A)		239 (B)

Prevalence Index = B/A = 3.79

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** X

Remarks:
Hydrophytic vegeation present.

SOIL

Sampling Point: SP-4

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-5

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S18, T1S, R4E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 20

Subregion (LRR): LRR E | Lat: 40.72890472 | Long: -111.5492935 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
No soil pit dug given the dominance of obligate vegetation and presence of surface water. Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha latifolia*	90	Yes	OBL
2. *Rumex crispus*	5	No	FAC
3. *Cardaria draba*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	100 (A)		130 (B)
Prevalence Index = B/A =			1.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-5

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

No soil pit dug given the dominance of obligate vegetation and presence of surface water. Hydric soils assumed to be present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 0.25
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

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

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

Remarks:

Hydrology present with surface water as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-6

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S18, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.72894669 | Long: -111.549324 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Iva axillaris*	90	Yes	FACU
2. *Pascopyrum smithii*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-6

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-7

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72859573 | Long: -111.5496063 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Juncus arcticus ssp. littoralis*	95	Yes	FACW
2. *Rumex crispus*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		205 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Loamy/Clayey	
3-7	7.5YR 4/6	100					Loamy/Clayey	
7-15	10YR 2/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

Hydric soil indicators A4 and F6 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

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

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

Remarks:

Hydrology present with saturation and hydrogen sulfide odor as primary hydrology indicators.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-8

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S13, T1S, R3E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72857285 | Long: -111.5495911 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Convolvulus arvensis*	80	Yes	UPL
2. *Lappula squarrosa*	10	No	UPL
3. *Elymus elymoides*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	90	x 5 =	450
Column Totals:	100 (A)		490 (B)

Prevalence Index = B/A = 4.90

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-8

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-9

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S18, T1S, R4E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 3

Subregion (LRR): LRR E | Lat: 40.72806549 | Long: -111.5492096 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
No soil pit dug given presence of obligate vegetation and surface water. Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha latifolia*	80	Yes	OBL
2. *Rumex crispus*	5	No	FAC
3. *Carex nebrascensis*	10	No	OBL
4. *Juncus arcticus ssp. littoralis*	10	No	FACW
5. *Cirsium arvense*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	107 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	10	x 2 =	20
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	107 (A)		131 (B)

Prevalence Index = B/A = 1.22

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-9

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

No soil pit dug given the presence of obligate vegetation and surface water. Hydric soils assumed to be present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 0.25
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

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

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

Remarks:

Hydrology present with surface water as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-10

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex | Slope (%): 2

Subregion (LRR): LRR E | Lat: 40.72805786 | Long: -111.5491867 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators and sampling point location on landscaped lawn. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Cynodon dactylon*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-10

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators and sampling point location on landscaped lawn.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-11

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72688675 | Long: -111.5450974 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
No soil pit dug given the presence of obligate vegetation and surface water. Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Typha latifolia*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		100 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-11

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

No soil pit dug given the presence of obligate vegetation and surface water. Hydric soils assumed to be present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

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

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

Remarks:

Hydrology present with surface water as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-12

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.72686768 | Long: -111.5450745 | Datum: NAD83

Soil Map Unit Name: Manila-Ant Flat loams, 2 to 8 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Rumex crispus*	10	Yes	FAC
2. *Cirsium arvense*	20	Yes	FAC
3. *Sisymbrium altissimum*	5	No	FACU
4. *Linaria dalmatica*	10	Yes	UPL
5. *Epilobium brachycarpum*	5	No	FAC
6. *Cynoglossum officinale*	10	Yes	FACU
7.			
8.			
9.			
10.			
11.			
	60 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 40

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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	15	x 4 =	60
UPL species	10	x 5 =	50
Column Totals:	60 (A)		215 (B)

Prevalence Index = B/A = 3.58

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-12

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-13

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Basin | Local relief (concave, convex, none): Concave | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72130203 | Long: -111.5452957 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Juncus arcticus ssp. littoralis*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Loamy/Clayey	
3-7	10YR 2/1	96	10YR 4/6	4	C	M	Loamy/Clayey	Prominent redox concentrations
7-10	10YR 2/1	60	10YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
	10YR 6/2	20						
10-17	10YR 2/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Hydric soil indicator F6 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 11

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

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

Remarks:
Hydrology present with saturation as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-14

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.72130203 | Long: -111.5452728 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Agropyron cristatum*	70	Yes	UPL
2. *Pascopyrum smithii*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	70	x 5 =	350
Column Totals:	100 (A)		470 (B)

Prevalence Index = B/A = 4.70

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-14

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

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

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

Remarks:

No surface hydrology indicators present.

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

Project/Site: SR-224 BRT City/County: Summit County Sampling Date: 08/24/2021

Applicant/Owner: Summit County State: Utah Sampling Point: SP-15

Investigator(s): Josh McMillin, Katie Lueth Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR E Lat: 40.721158 Long: -111.545089 Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes NWI classification: PEM

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Depression, sparse vegetation, surface soil cracks. Between two culverts. Sampling point meets the criteria for a wetland. *Sampling point W-1-IN SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Juncus arcticus ssp. littoralis	30	Y	FACW
2. Cirsium arvense	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60

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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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 X No _____

Remarks:

Hydrophytic vegetation present.

SOIL

Sampling Point: SP-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Silty Loam	
6-15	10YR 2/1	40	10YR 6/8	10	C	M	Silty Clay Loam	Prominent Redox
	10YR 3/3	40	N 2.5/	10	C	M	Clay Loam	
15-20	10YR 6/1	80	10YR 6/8	10	C	M	Clay	
			Gley 1 2.5/N	10	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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** X **No** _____

Remarks:

Hydric soil indicator F6 present.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Hydrology present with surface soil cracks as a primary hydrology indicator.

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

Project/Site: SR-224 BRT City/County: Summit County Sampling Date: 08/24/2021

Applicant/Owner: Summit County State: Utah Sampling Point: SP-16

Investigator(s): Josh McMillin, Katie Lueth Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15

Subregion (LRR): LRR E Lat: 40.721118 Long: -111.54503 Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.*Sampling point W-1-OUT in SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Eriogonum ovalifolium	30	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 70

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	30 (A)		120 (B)

Prevalence Index = B/A = 4.0

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 X

Remarks:

Upland vegetation present.

SOIL

Sampling Point: SP-16

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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: Roadfill

Depth (inches): 0

Hydric Soil Present? Yes _____ No _____

Remarks:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-17

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Basin | Local relief (concave, convex, none): Concave | Slope (%): 2

Subregion (LRR): LRR E | Lat: 40.72058487 | Long: -111.5451584 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Juncus arcticus ssp. littoralis*	20	Yes	FACW
2. *Carex praegracilis*	50	Yes	FACW
3. *Rumex crispus*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 25

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		155 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

No hydric soil indicators present.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Remarks:

No hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-18

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 1

Subregion (LRR): LRR E | Lat: 40.71930695 | Long: -111.5452271 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Alopecurus pratensis*	40	Yes	FAC
2. *Carex aquatilis*	30	Yes	OBL
3. *Juncus arcticus ssp. littoralis*	40	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		230 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-18

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Loamy/Clayey	
4-17	10YR 2/1	87	7.5YR 4/6	13	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Hydric soil indicator F6 present.

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)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Remarks:
Hydrology present with surface soil cracks as a primary hydrology indicator.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-19

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 3

Subregion (LRR): LRR E | Lat: 40.7193222 | Long: -111.5451813 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Agropyron cristatum*	90	Yes	UPL
2. *Leymus cinereus*	5	No	FAC
3. *Cirsium arvense*	2	No	FAC
4. *Pascopyrum smithii*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	107 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	7	x 3 =	21
FACU species	10	x 4 =	40
UPL species	90	x 5 =	450
Column Totals:	107 (A)		511 (B)
Prevalence Index = B/A =			4.78

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-19

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-20

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 20

Subregion (LRR): LRR E | Lat: 40.71519089 | Long: -111.5444489 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	100	Yes	FACW
2. *Cirsium arvense*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	102 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	102 (A)		206 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-20

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	
6-11	10YR 2/1	95	10YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
11-18	10YR 2/1	88	10YR 4/6	12	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

Hydric soil indicator F6 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 11

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

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

Remarks:

Hydrology present with saturation as a primary hydrology indicator.

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

Project/Site: SR-224 BRT City/County: Summit County Sampling Date: 08/24/2021

Applicant/Owner: Summit County State: Utah Sampling Point: SP-21

Investigator(s): Josh McMillin, Katie Lueth Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR E Lat: 40.7145337 Long: -111.5444696 Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes NWI classification: PEM

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

Sampling point meets the criteria for a wetland.*Sampling point W-3-IN in SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phalaris arundinacea	60	Y	FACW
2. Typha latifolia	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10

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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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 X No _____

Remarks:

Hydrophytic vegetation present.

SOIL

Sampling Point: SP-21

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					Silty Loam	Hydrogen Sulfide Odor

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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** X **No** _____

Remarks:

Hydric soil indicator A4 present.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1

Water Table Present? Yes X No _____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Hydrology present with surface water, high water table, saturation, and hydrogen sulfide odor as primary hydrology indicators.

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

Project/Site: SR-224 BRT City/County: Summit County Sampling Date: 08/24/2021

Applicant/Owner: Summit County State: Utah Sampling Point: SP-22

Investigator(s): Josh McMillin, Katie Lueth Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): LRR E Lat: 40.7145289 Long: -111.5445123 Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators. Sampling point does not meet the criteria for a wetland.*Sampling point W-3-OUT in SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Cirsium arvense	30	Y	FAC
2. Bassia hyssopifolia	20	Y	UPL
3. Agropyron cristatum	20	Y	UPL
4. Epilobium brachycarpum	30	Y	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	70	x 5 =	350
Column Totals:	100 (A)		440 (B)

Prevalence Index = B/A = 4.4

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 X

Remarks:

Upland vegetation present.

SOIL

Sampling Point: SP-22

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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:

No soil pit was dug due to lack of hydrophytic vegetation and lack of surface hydrology indicators.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No surface hydrology indicators present.

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

Project/Site: SR-224 BRT City/County: Summit County Sampling Date: 08/26/2021

Applicant/Owner: Summit County State: Utah Sampling Point: SP-23

Investigator(s): Josh McMillin, Katie Lueth Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): LRR E Lat: 40.714468 Long: -111.545026 Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes NWI classification: PEM

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

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

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

Remarks:

Roadside ditch originally filled with Typha latifolia but was recently excavated. No soil pit taken with presence of obligate vegetation and surface water. Sampling point meets the criteria for a wetland.*Sampling point W-4-IN in SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Juncus arcticus ssp. littoralis	10	Y	FACW
2. Typha latifolia	20	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 70

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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

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 X No _____

Remarks:

Very little vegetation left in plot due to excavation. Remaining adjacent vegetation includes Juncus arcticus. Hydrophytic vegetation present.

SOIL

Sampling Point: SP-23

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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** X **No** _____

Remarks:

No soil pit taken with presence of obligate vegetation and surface water. Hydric soils assumed to be present.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 4

Water Table Present? Yes _____ No _____ Depth (inches): 0

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

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

Hydrology present with surface water as a primary hydrology indicator.

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

Project/Site: SR-224 BRT | City/County: Summit County | Sampling Date: 08/26/2021

Applicant/Owner: Summit County | State: Utah | Sampling Point: SP-24

Investigator(s): Josh McMillin, Katie Lueth | Section, Township, Range: S19, T1S, R4E

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex | Slope (%): 2

Subregion (LRR): LRR E | Lat: 40.714532 | Long: -111.544968 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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

Are Vegetation X, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder. Sampling point does not meet the criteria for a wetland.*Sampling point W-4-OUT in SR224 BRT Delineation Report.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. Phleum pratense	15	Y	FAC
2. Bromus inermis	40	Y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 45

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 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	55 (A)		245 (B)

Prevalence Index = B/A = 4.45

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 X

Remarks:

Upland vegetation present.

SOIL

Sampling Point: SP-24

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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]:

- ___ 2 cm 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:

No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder.

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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ 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, and 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 (D7)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-25

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Basin | Local relief (concave, convex, none): Concave | Slope (%): 2

Subregion (LRR): LRR E | Lat: 40.72539902 | Long: -111.5377884 | Datum: NAD83

Soil Map Unit Name: Harter gravelly loam, 2 to 15 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Juncus arcticus ssp. littoralis*	80	Yes	FACW
2. *Carex praegracilis*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-25

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 2/1	100					Loamy/Clayey	
13-17	10YR 2/1	98	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

No hydric soil indicators present.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

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

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

Remarks:

No hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/8/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-26

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.72493744 | Long: -111.536026 | Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Atriplex prostrata*	10	No	FAC
2. *Juncus arcticus ssp. littoralis*	80	Yes	FACW
3. *Polygonum aviculare*	20	No	FAC
4. *Cirsium arvense*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		265 (B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-26

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	Roots
6-16	10YR 2/1	92	7.5YR 4/6	8	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Hydric soil indicator F6 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 16		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

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

Remarks:
Hydrology present with saturation as a primary hydrology indicator and dry-season water table and FAC-Neutral test as secondary hydrology indicators.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/8/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-27

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72488022 | Long: -111.536026 | Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes | NWI classification:

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 X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Pascopyrum smithii*	10	No	FACU
2. *Agropyron cristatum*	30	Yes	UPL
3. *Atriplex prostrata*	5	No	FAC
4. *Polygonum aviculare*	10	No	FAC
5. *Symphyotrichum ascendens*	40	Yes	FACU
6. *Grindelia squarrosa*	10	No	FACU
7.			
8.			
9.			
10.			
11.			
	105 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	60	x 4 =	240
UPL species	30	x 5 =	150
Column Totals:	105 (A)		435 (B)

Prevalence Index = B/A = 4.14

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-27

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 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 (D7)

Field Observations:

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

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

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/8/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-28

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): 10

Subregion (LRR): LRR E | Lat: 40.72424698 | Long: -111.5361557 | Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sampling point meets the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Mentha arvensis*	20	Yes	FACW
2. *Juncus arcticus ssp. littoralis*	50	Yes	FACW
3. *Rumex obtusifolius*	20	Yes	FAC
4. *Carex nebrascensis*	20	Yes	OBL
5. *Phalaris arundinacea*	5	No	FACW
6. *Nasturtium officinale*	10	No	OBL
7. *Cirsium arvense*	5	No	FAC
8.			
9.			
10.			
11.			
	130 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	75	x 2 =	150
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		255 (B)

Prevalence Index = B/A = 1.96

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-28

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Mucky Peat	
4-13	10YR 4/2	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Cobble

Depth (inches): 13

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soil indicator F3 present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X 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 (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

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

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

Remarks:
Hydrology present with saturation and high water table as primary hydrology indicators.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/8/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-29

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S19, T1S, R4E

Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5

Subregion (LRR): LRR E | Lat: 40.72428513 | Long: -111.5360794 | Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes | NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder. Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Pascopyrum smithii*	35	Yes	FACU
2. *Agropyron cristatum*	35	Yes	UPL
3. *Atriplex prostrata*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	35	x 4 =	140
UPL species	35	x 5 =	175
Column Totals:	80 (A)		345 (B)

Prevalence Index = B/A = 4.31

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** X

Remarks:
Upland vegetation present.

SOIL

Sampling Point: SP-29

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

No soil pit was dug due to lack of hydrophytic vegetation, lack of surface hydrology indicators, and sampling point location on road shoulder.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- X 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 (D7)

Field Observations:

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

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

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

Remarks:

No surface hydrology indicators present.

U.S. Army Corps of Engineers

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

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kimball Junction EIS | City/County: Summit County | Sampling Date: 8/7/2023

Applicant/Owner: UDOT | State: UT | Sampling Point: SP-30

Investigator(s): Joshua McMillin, Lacey Wilder | Section, Township, Range: S20, T1S, R4E

Landform (hillside, terrace, etc.): Basin | Local relief (concave, convex, none): Concave | Slope (%): 2

Subregion (LRR): LRR E | Lat: 40.72192764 | Long: -111.5275421 | Datum: NAD83

Soil Map Unit Name: Wanship loam, 0 to 3 percent slopes | NWI classification:

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 X 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sampling point does not meet the criteria for a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft radius)			
1. *Juncus arcticus ssp. littoralis*	85	Yes	FACW
2. *Lepidium perfoliatum*	5	No	FACU
3. *Lepidium campestre*	2	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	92	=Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 8

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	2	x 5 =	10
Column Totals:	92 (A)		200 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 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** X **No** ____

Remarks:
Hydrophytic vegetation present.

SOIL

Sampling Point: SP-30

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					Loamy/Clayey	
5-17	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: 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)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ 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]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

No hydric soil indicators present.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

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

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

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

Remarks:

No hydrology indicators present.

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: P-1	Site Name: Kimball Junction EIS	Date and Time: 8/7/2023
Location (lat/long): 40.73905563, -111.55873871	Investigator(s): Joshua McMillin, Lacey Wilder	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Delineation was conducted following an abnormally wet winter.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

There were no apparent man-made structures present. Stream flows from culvert to the south and continues north beyond the survey area into an additional culvert.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** x
  - [x] *on the bank:* x
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** x

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* woody shrubs
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Project ID #: P-1

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

The location of the OHWM was determined by the presence of bank slopes and changes in vegetation cover and density. Bank slopes on both sides of the channel are densely vegetated with woody shrubs.

Additional observations or notes

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: See attachment D for photographs.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: P-2a and P-2b	Site Name: Kimball Junction EIS	Date and Time: 8/8/2023
Location (lat/long): 40.72492599, -111.53609467	Investigator(s): Joshua McMillin, Lacey Wilder	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- ☐ gage data
- ☐ LiDAR
- ☐ geologic maps
- ☐ climatic data
- ☒ satellite imagery
- ☐ land use maps
- ☒ aerial photos
- ☒ topographic maps
- ☐ Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Delineation was conducted following an abnormally wet winter.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Adjacent to the stream channel is a path separated by a concrete barrier in some areas. Path is primarily elevated above the stream channel.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- ☒ **Break in slope:** x
  - ☒ *on the bank:* x
  - ☐ *undercut bank:*
  - ☐ *valley bottom:*
  - ☐ Other: _____
- ☒ **Shelving:** x
  - ☒ *shelf at top of bank:* x
  - ☐ *natural levee:*
  - ☐ *man-made berms or levees:*
  - ☐ *other berms:* _____
- ☐ **Channel bar:**
  - ☐ *shelving (berms) on bar:*
  - ☐ *unvegetated:*
  - ☐ *vegetation transition (go to veg. indicators)*
  - ☐ *sediment transition (go to sed. indicators)*
  - ☐ *upper limit of deposition on bar:*
- ☐ **Instream bedforms and other bedload transport evidence:**
  - ☐ *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - ☐ *bedforms (e.g., pools, riffles, steps, etc.):*
- ☐ *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- ☐ **Secondary channels:**

Sediment indicators

- ☐ **Soil development:**
- ☐ **Changes in character of soil:**
- ☐ **Mudcracks:**
- ☐ **Changes in particle-sized distribution:**
  - ☐ *transition from* _____ to _____
  - ☐ *upper limit of sand-sized particles*
  - ☐ *silt deposits:*

Vegetation Indicators

- ☐ **Change in vegetation type and/or density:**

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - ☐ *vegetation absent to:*
  - ☐ *moss to:*
  - ☐ *forbs to:*
  - ☐ *graminoids to:*
  - ☐ *woody shrubs to:*
  - ☐ *deciduous trees to:*
  - ☐ *coniferous trees to:*
- ☐ **Vegetation matted down and/or bent:**
- ☐ **Exposed roots below intact soil layer:**

Ancillary indicators

- ☐ **Wracking/presence of organic litter:**
- ☐ **Presence of large wood:**
- ☐ **Leaf litter disturbed or washed away:**
- ☐ **Water staining:**
- ☐ **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Project ID #: P-2a and P-2b

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

The location of the OHWM was determined by the presence of bank slopes and changes in vegetation cover. Bank slopes on both sides of the channel are densely vegetated with graminoids. The east side of perennial stream segment P-2a includes a concrete barrier separating the path. The path adjacent to perennial stream segment P-2b is wooden and elevated above the stream channel.

Additional observations or notes

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: See attachment D for photographs.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

Attachment D. Representative Aquatic Resource Photographs

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Sampling Point SP-1

Orientation: Northwest

Date: August 7, 2023

Sampling Point SP-2

Orientation: Northwest
Date: August 7, 2023

Sampling Point SP-3

Orientation: Northwest
Date: August 7, 2023

Sampling Point SP-4

Orientation: Northwest
Date: August 7, 2023

Sampling Point SP-5

Orientation: East
Date: August 7, 2023

Sampling Point SP-6

Orientation: South
Date: August 7, 2023

Sampling Point SP-7

Orientation: North

Date: August 7, 2023

Sampling Point SP-8

Orientation: Southeast
Date: August 7, 2023

Sampling Point SP-9

Orientation: Northwest
Date: August 7, 2023

Sampling Point SP-10

Orientation: North
Date: August 7, 2023

Sampling Point SP-11

Orientation: North
Date: August 7, 2023

Sampling Point SP-12

Orientation: West
Date: August 7, 2023

Sampling Point SP-13

Orientation: West

Date: August 7, 2023

Sampling Point SP-14

Orientation: North
Date: August 7, 2023

Sampling Point SP-15

Orientation: West

Date: August 24, 2021

Sampling Point SP-16

Orientation: East
Date: August 24, 2021

Sampling Point SP-17

Orientation: North

Date: August 7, 2023

Sampling Point SP-18

Orientation: West

Date: August 7, 2023

Sampling Point SP-19

Orientation: North
Date: August 7, 2023

Sampling Point SP-20

Orientation: Northeast

Date: August 7, 2023

Sampling Point SP-21

Orientation: North

Date: August 24, 2021

Sampling Point SP-22

Orientation: North
Date: August 24, 2021

Sampling Point SP-23

Orientation: South
Date: August 24, 2021

Sampling Point SP-24

Orientation: South
Date: August 24, 2021

Sampling Point SP-25

Orientation: Southeast

Date: August 8, 2023

Sampling Point SP-26

Orientation: West

Date: August 8, 2023

Sampling Point SP-27

Orientation: East
Date: August 8, 2023

Sampling Point SP-28

Orientation: South

Date: August 8, 2023

Sampling Point SP-29

Orientation: East
Date: August 8, 2023

Sampling Point SP-30

Orientation: East

Date: August 8, 2023

Perennial Stream Segment P-1

Orientation: Southwest, Upstream
Date: August 7, 2023

Perennial Stream Segment P-2a

Orientation: South, Upstream
Date: August 8, 2023

Perennial Stream Segment P-2b

Orientation: South, Upstream
Date: August 8, 2023

Ditch Segment D-1

Orientation: South
Date: August 7, 2023

Ditch Segment D-2

Orientation: West
Date: August 7, 2023

Ditch Segment D-3

Orientation: Northeast
Date: August 7, 2023

Ditch Segment D-4

Orientation: East
Date: August 7, 2023

Ditch Segment D-5

Orientation: West
Date: August 7, 2023

Ditch Segment D-6

Orientation: East

Date: August 7, 2023

Ditch Segment D-7

Orientation: East
Date: August 7, 2023

Ditch Segment D-8

Orientation: North
Date: August 26, 2021

Ditch Segment D-9

Orientation: Northwest
Date: August 8, 2023

Ditch Segment D-10

Orientation: Southeast
Date: August 8, 2023

Ditch Segment D-11

Orientation: South
Date: August 8, 2023

Open Water Pond OW-1

Orientation: Southeast
Date: August 7, 2023

Open Water Pond OW-2

Orientation: West
Date: August 7, 2023

Open Water Pond OW-3

Orientation: North
Date: August 7, 2023

Open Water Pond OW-4

Orientation: West
Date: August 8, 2023

Attachment E. Plant Species Observed

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Appendix E. Plant Species Observed

Scientific Name	Common Name[a]	Wetland Indicator Status[b]
Agropyron cristatum	crested wheatgrass	UPL
Alopecurus pratensis	meadow foxtail	FAC
Atriplex prostrata	triangle orache	FAC
Bassia hyssopifolia	fivehorn smotherweed	UPL
Bromus inermis	smooth brome	UPL
Cardaria draba	whitetop	UPL
Carex aquatilis	water sedge	OBL
Carex praegracilis	clustered field sedge	FACW
Carex nebrascensis	Nebraska sedge	OBL
Cirsium arvense	Canada thistle	FAC
Convolvulus arvensis	field bindweed	UPL
Cynodon dactylon	Bermudagrass	FACU
Cynoglossum officinale	gypsyflower	FACU
Eleocharis palustris	common spikerush	OBL
Elymus elymoides	squirreltail	FACU
Epilobium brachycarpum	tall annual willowherb	UPL
Eriogonum ovalifolium	cushion buckwheat	FACU
Grindelia squarrosa	curlytop gumweed	FACU
Iva axillaris	povertyweed	FACU
Juncus arcticus ssp. *littoralis*	mountain rush	FACW
Lappula squarrosa	European stickseed	UPL
Lepidium campestre	field pepperweed	UPL
Lepidium perfoliatum	clasping pepperweed	FACU
Leymus cinereus	basin wildrye	FAC
Linaria dalmatica	Dalmatian toadflax	UPL
Mentha arvensis	wild mint	FACW
Nasturtium officinale	watercress	OBL
Pascopyrum smithii	western wheatgrass	FACU
Phalaris arundinacea	reed canarygrass	FACW
Phleum pratense	timothy	FAC
Phragmites australis	common reed	FACW
Polygonum aviculare	prostrate knotweed	FAC

(continued on next page)

Scientific Name	Common Name[a]	Wetland Indicator Status[b]
Symphyotrichum ascendens	western aster	FACU
Rumex crispus	curly dock	FAC
Rumex obtusifolius	bitter dock	FAC
Sisymbrium altissimum	tall tumblemustard	FACU
Sonchus asper	spiny sowthistle	FAC
Typha latifolia	broadleaf cattail	OBL

FAC = facultative; FACU = facultative upland; FACW = facultative wetland; UPL = upland plants; OBL = obligate wetland

[a] Naming conventions according to USDA NRCS Plants Database (https://plants.usda.gov).

[b] Indicator status as assigned for the Western Mountains, Valleys, and Coasts in the National Wetland Plant List (USACE 2020).

Attachment F. USDA NRCS Custom Soil Resource Report

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Summit Area, Utah, Parts of Summit, Salt Lake and Wasatch Counties

Kimball Junction EIS

September 19, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit Area, Utah, Parts of Summit, Salt Lake and Wasatch Counties
Survey Area Data: Version 14, Aug 29, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2021—Jun 21, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Agassiz-Rock outcrop complex, 30 to 70 percent slopes	4.5	1.9%
127	Echocreek-Kovich loams, 0 to 10 percent slopes	3.0	1.3%
139	Harter gravelly loam, 2 to 15 percent slopes	69.2	30.1%
154	Manila-Ant Flat loams, 2 to 8 percent slopes	131.2	57.1%
178	Wanship loam, 0 to 3 percent slopes	22.1	9.6%
Totals for Area of Interest		**230.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Summit Area, Utah, Parts of Summit, Salt Lake and Wasatch Counties

101—Agassiz-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: k1vf
Elevation: 5,200 to 8,200 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Not prime farmland

Map Unit Composition

Agassiz and similar soils: 60 percent
Rock outcrop: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agassiz

Setting

Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Colluvium derived from limestone

Typical profile

A1 - 0 to 6 inches: very cobbly loam
A2 - 6 to 14 inches: very cobbly loam
R - 14 to 24 inches: bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Available water supply, 0 to 60 inches: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R047XA446UT - Mountain Shallow Loam (mountain big sagebrush)
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Escarpments, ridges

Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Horrocks

Percent of map unit: 10 percent
Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA461UT - Mountain Stony Loam (mountain big sagebrush)
Hydric soil rating: No

Hades

Percent of map unit: 5 percent
Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA432UT - Mountain Loam (oak)
Hydric soil rating: No

127—Echocreek-Kovich loams, 0 to 10 percent slopes

Map Unit Setting

National map unit symbol: k1sm
Elevation: 5,200 to 8,000 feet
Mean annual precipitation: 14 to 22 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 60 to 100 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Echocreek and similar soils: 65 percent
Kovich and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Echocreek

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone, quartzite and shale

Typical profile

Ap - 0 to 7 inches: loam
A1 - 7 to 18 inches: loam
A2 - 18 to 26 inches: loam
Bk1 - 26 to 38 inches: loam
Bk2 - 38 to 45 inches: loam
Bk3 - 45 to 60 inches: loam

Properties and qualities

Slope: 2 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R047XA310UT - Upland Loam (basin wildrye)
Hydric soil rating: No

Description of Kovich

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from sandstone, quartzite and shale

Typical profile

A1 - 0 to 9 inches: loam
A2 - 9 to 22 inches: clay loam
A3 - 22 to 29 inches: clay loam
2C - 29 to 44 inches: fine sandy loam
3C - 44 to 60 inches: very gravelly loamy fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: NoneRareOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D
Ecological site: R047XA008UT - Interzonal Wet Fresh Meadow (sedge)
Hydric soil rating: Yes

Minor Components

Toddspan

Percent of map unit: 10 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R047XA008UT - Interzonal Wet Fresh Meadow (sedge)
Hydric soil rating: Yes

Wanship

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R047XA004UT - Interzonal Cold Semi-wet Fresh Meadow (meadow sedge/tufted hairgrass)
Hydric soil rating: No

139—Harter gravelly loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: k1t0
Elevation: 6,100 to 7,000 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Harter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Harter

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex

Typical profile

A1 - 0 to 5 inches: gravelly loam
A2 - 5 to 12 inches: gravelly loam
AB - 12 to 19 inches: gravelly loam
Bt1 - 19 to 24 inches: gravelly clay loam
Bt2 - 24 to 33 inches: gravelly clay
Bt3 - 33 to 60 inches: gravelly clay

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R047XA430UT - Mountain Loam (mountain big sagebrush)
Hydric soil rating: No

Minor Components

Yeates hollow

Percent of map unit: 5 percent
Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA461UT - Mountain Stony Loam (mountain big sagebrush)
Hydric soil rating: No

Ant flat

Percent of map unit: 4 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA430UT - Mountain Loam (mountain big sagebrush)
Hydric soil rating: No

Henefer

Percent of map unit: 3 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R047XA432UT - Mountain Loam (oak)
Hydric soil rating: No

Snyderville

Percent of map unit: 3 percent
Landform: Outwash terraces, stream terraces
Down-slope shape: Linear

Across-slope shape: Convex
Ecological site: R047XA406UT - Mountain Gravelly Loam (mountain big sagebrush)
Hydric soil rating: No

154—Manila-Ant Flat loams, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: k1tk
Elevation: 6,200 to 7,800 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Manila and similar soils: 50 percent
Ant flat and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manila

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Slope alluvium derived from conglomerate, sandstone and shale

Typical profile

A1 - 0 to 4 inches: loam
A2 - 4 to 15 inches: loam
Bt1 - 15 to 22 inches: clay loam
Bt2 - 22 to 40 inches: clay
Bt3 - 40 to 46 inches: gravelly clay
Bt4 - 46 to 60 inches: clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R047XA430UT - Mountain Loam (mountain big sagebrush)
Hydric soil rating: No

Description of Ant Flat

Setting

Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from conglomerate, sandstone and shale

Typical profile

A - 0 to 13 inches: loam
Bt1 - 13 to 19 inches: clay loam
Bt2 - 19 to 30 inches: clay
Bk1 - 30 to 45 inches: clay loam
Bk2 - 45 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R047XA430UT - Mountain Loam (mountain big sagebrush)
Hydric soil rating: No

Minor Components

Henefer

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R047XA432UT - Mountain Loam (oak)
Hydric soil rating: No

Horrocks

Percent of map unit: 5 percent
Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA461UT - Mountain Stony Loam (mountain big sagebrush)

Hydric soil rating: No

178—Wanship loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: k1v7
Elevation: 6,300 to 7,200 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 40 to 45 degrees F
Frost-free period: 60 to 90 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wanship and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wanship

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and conglomerate

Typical profile

A1 - 0 to 8 inches: loam
A2 - 8 to 14 inches: loam
A3 - 14 to 24 inches: loam
2C1 - 24 to 26 inches: extremely cobbly loamy sand
2C2 - 26 to 60 inches: extremely cobbly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 20 to 30 inches
Frequency of flooding: NoneRareVery rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B

Ecological site: R047XA004UT - Interzonal Cold Semi-wet Fresh Meadow (meadow sedge/tufted hairgrass)
Hydric soil rating: No

Minor Components

Snyderville
Percent of map unit: 5 percent
Landform: Outwash terraces, stream terraces
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R047XA406UT - Mountain Gravelly Loam (mountain big sagebrush)
Hydric soil rating: No

Kovich
Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R047XA008UT - Interzonal Wet Fresh Meadow (sedge)
Hydric soil rating: Yes

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MEMORANDUM

Date: Monday, February 3, 2025

To: Carissa Watanabe
UDOT Environmental Program Manager

From: Rod Hess
UDOT Senior Landscape Architect 2025.02.03 07:47:49 -07'00'

RE: **ENVIRONMENTAL REVIEW FOR AQUATIC RESOURCES**
Environmental Impact Statement (EIS)

PROJECT PURPOSE, DESCRIPTION AND SCOPE OF WORK

The Utah Department of Transportation (UDOT) is preparing an Environmental Impact Statement (EIS) to evaluate proposed transportation improvements at the Interstate 80 (I-80) and State Route 224 (SR-224) interchange at Kimball Junction in Summit County, Utah. The EIS will be prepared according to the provisions of the National Environmental Policy Act (NEPA) and other laws, regulations, and guidelines of the Federal Highway Administration (FHWA). This document conforms to the requirements of UDOT, the project sponsor and lead agency.

The purpose of the Kimball Junction Project is to address transportation-related safety and mobility issues for all users of the Kimball Junction area by:

- Improving operations and travel times on SR-224 from the I-80 interchange through Olympic Parkway;
- Improving safety by reducing vehicle queue lengths on I-80 off-ramps;
- Improving pedestrian and bicyclist mobility and accessibility throughout the needs assessment evaluation area; and
- Maintaining or improving transit travel times throughout the evaluation area.

Through the Draft EIS Alternatives Analysis, the project has considered and studied many different alternatives that would meet the project's purpose and need. To determine the potential alternatives, UDOT conducted a four-level screening evaluation that spanned the Area Plan and EIS process. As a result of this Alternatives Development and Screening process, UDOT has selected Alternative C as its preferred alternative.

Alternative C includes spot improvements and widening areas of existing pavement while keeping most of the existing Kimball Junction area layout and pavement in place.

HDR has completed an Aquatic Resources Delineation Report (2023) within the environmental study area footprint to complete aquatic resource impact analysis as part of the Kimball Junction EIS. UDOT has reviewed the delineation report and provides the following summary and mitigation recommendations.

Aquatic Resources and Wetlands:

Within EIS environmental study limits, HDR did identify and map any potential aquatic resources including wetlands, streams, open-water, ponds, seeps and ditches that may be considered either waters of the U.S. (WOTUS), including wetlands, subject to Clean Water Act (CWA) jurisdiction by the U.S. Army Corps of Engineers (Army Corps), and natural streams regulated by the State of Utah as part of the State Alteration Permit Program.

Results of the Aquatic Resource Delineation Report shows a total of 1.08 acres of aquatic resources occurring within the EIS study boundary which include 0.71 acres of palustrine emergent (PEM) wetland habitat, 0.04 acres (199 linear feet) of perennial streams, 0.18 acres of open-water ponds, 0.01 acre of seeps, and 0.14 acres (1,842 linear feet) of ditches.

Many of these mapped aquatic resources are likely jurisdictional WOTUS and regulated by the Army Corps. The project must obtain an appropriate Department of Army Permit based on the total acreage of impacts to jurisdictional aquatic resources. As part of the Army Corps permit application, UDOT may prepare and submit an Approved Jurisdictional Determination (AJD) to the Army Corps. By completing an AJD, the Army Corps would definitively determine which of all the mapped aquatic resources are considered jurisdictional WOTUS and the finalized Army Corps permit type will be determined based on total permanent impacts to those aquatic resources identified in the AJD as jurisdictional.

Based on the Draft EIS analysis of the Alternative C, preferred alternative, very minor impacts of approximately 0.004 acres to existing drainage ditches (Ditch 5 and Ditch 6) would occur. Alternative C would not impact any of the mapped wetland habitats, perennial streams or seeps.

Since the only aquatic resource impact associated with the design and construction of Alternative C would occur to existing drainage ditches, the project may or may not be required to obtain any type of Department of Army Permit. During the design phase of Alternative C, the project must compare the 0.004 acres of existing drainage ditch impacts to the current Army Corps regulations to determine if a Department of Army Permit would be required, including the potential for these ditches to meet the regulatory definition of a WOTUS. If required, the project must apply for and obtain a Department of Army Permit.

Mitigation Commitments:

1. **During the design phase of Alternative C, complete a thorough review of current Army Corps regulation, if it is determined that a Department of Army Permit would be required to impact the 0.004 acres of existing ditch, the project must apply for and obtain an appropriate Department of Army Permit. (UDOT)**
2. **If a Department of Army Permit is required and obtained, the awarded contractor must follow the requirements and special conditions of the Army Corps permit. (Awarded Contractor).**

Utah Pollutant Discharge Elimination System (UPDES):

The construction of Alternative C will disturb more than one (1) acre of earth and is required to comply with the Utah Pollutant Discharge Elimination System (UPDES) Utah Construction General Permit (CGP).

Mitigation Commitments:

1. **Comply with CGP, by preparing the Stormwater Pollution Prevention Plan (SWPPP) during project design; provide SWPPP to the project awarded contractor before Notice to Proceed. (UDOT)**
2. **Comply with CGP, by finalizing the SWPPP before beginning any earth disturbing activities and submit Notice of Intent (NOI); implement and maintain the project SWPPP according to CGP requirements throughout project construction. (Awarded Contractor)**

Federal Emergency Management Agency (FEMA) Floodplains:

Based on the Draft EIS analysis, Alternative D would not impact any FEMA floodplains and therefore would not be required to obtain a Floodplain Development Permit from the Local Floodplain Authority.

Mitigation Commitments:

None

Invasive and Noxious Weeds:

To reduce the introduction and spread of noxious weed species and to comply with Utah Noxious Weed Act (Utah Administrative Code, Rule R68-9), the project is required to: (1) properly clean earthmoving construction equipment before mobilizing onto site as required in UDOT General Provision Section 01355 (ENVIRONMENTAL COMPLIANCE) and (2) treat any noxious weeds found on the project as as required in UDOT Standard Section 02924 (NOXIOUS WEED CONTROL).

Mitigation Commitments:

1. **Include UDOT Standard Section 02924 (NOXIOUS WEED CONTROL) in the contract documents to require identify and treat all noxious weeds found on the project site. (UDOT)**
2. **Comply with UDOT General Provision Section 01355 (ENVIRONMENTAL COMPLIANCE) and Standard Section 02924 (NOXIOUS WEED CONTROL). (Awarded Contractor)**

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