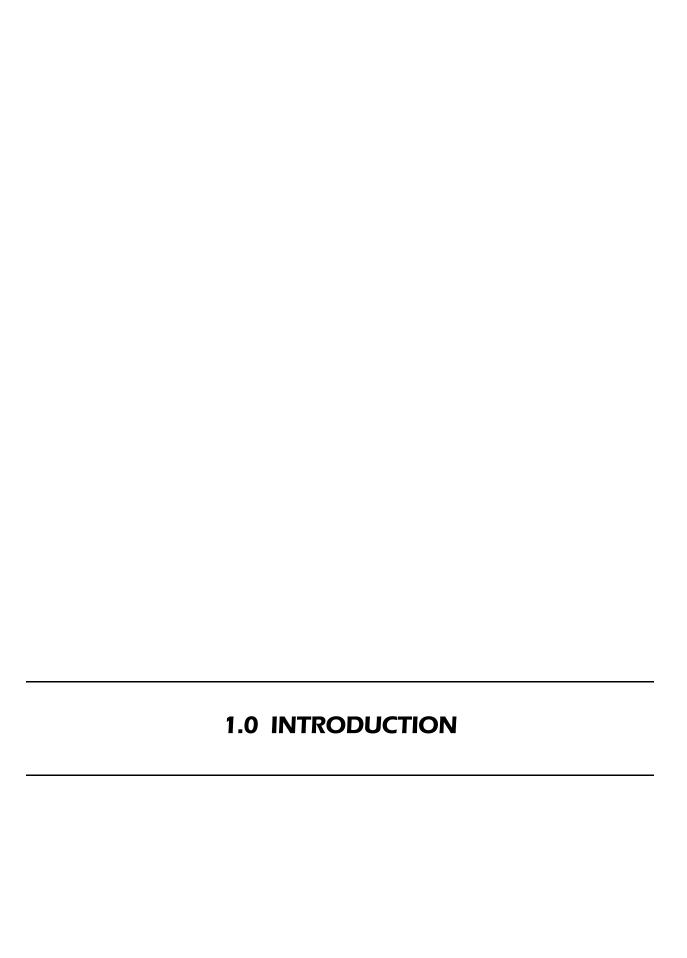


# **APPENDIX E-1** WETLAND DELINEATION REPORT AND REQUEST FOR JURISDICTIONAL VERIFICATION **AUGUST 2011**



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# 1.0 INTRODUCTION

The U.S Department of Justice, Federal Bureau of Prisons (BOP) is considering the development of a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) within two alternative development sites located within the existing Leavenworth United States Penitentiary (USP) property in Leavenworth, Kansas. The USP property and proposed development sites are situated in east-central Leavenworth County (Exhibit 1), west of the Missouri River and east of the Santa Fe Trail. The southern limit of the property is US Highway 73. Using the North American Datum, Universal Transverse Mercator (UTM) 15, the project area centers on Latitude: 39.3349° N and Longitude: -94.9274° W.

Development of the FCI and FPC is proposed as a means of better managing the present crowding within the federal prison system and meeting anticipated growth in the federal inmate population. A 382-acre project study area was investigated for jurisdictional features. The project study area, known as the East and West sites, is located east and west of the existing institution. The BOP property is generally bordered by Corral Creek to the north, Grant Avenue to the east, Metropolitan Avenue with commercial and residential area to the south, and the newly realigned Santa Fe Trail to the west.

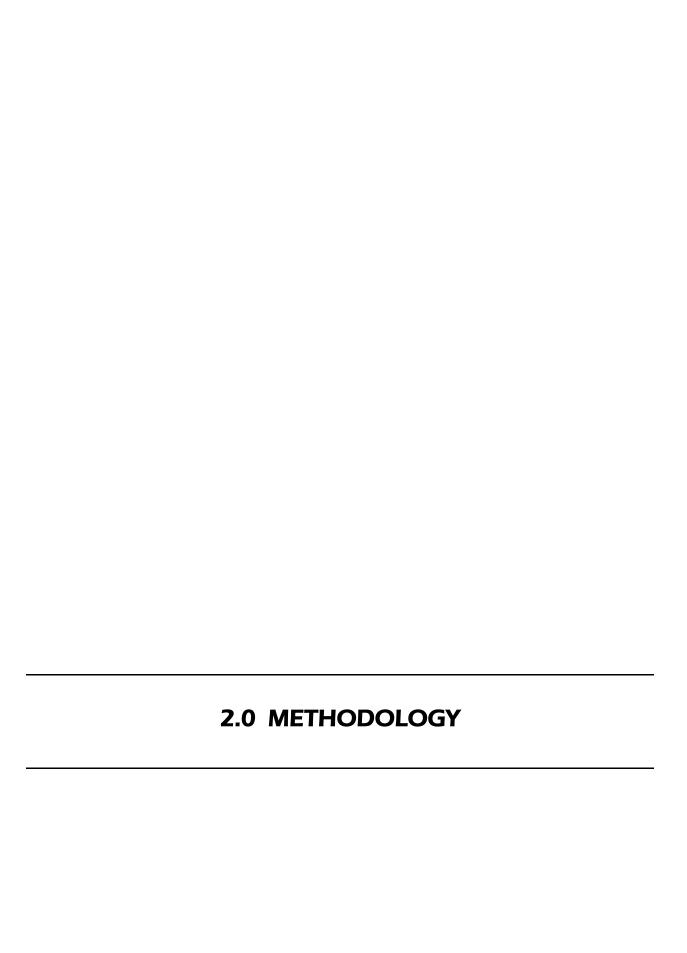
The project study area contains a complex of upland communities, freshwater wetlands, open water systems, and riparian corridors. Topography of the project study area ranges from nearly level to gently sloping. Land use within the project study area consists primarily of mowed/maintained pasture land and grassland that were once in agricultural production.

The BOP contracted with The Louis Berger Group, Inc. (LBG) to survey the site for jurisdictional waters. Field surveys took place the week of March 21, 2011. Approximately 20,182 linear feet (1.311 acres) of tributary, 0.746 acre of wetlands, and 2.990 acres of open water impoundments were identified within the project study area boundaries.

This report includes the following documentation:

- Wetland delineation report;
- Site vicinity map (Exhibit 1);
- Leavenworth County USGS Topographic map (Exhibit 2);
- Leavenworth County Soil Survey map (Exhibit 3);
- National Wetland Inventory map (Exhibit 4);
- Aerial map indicating the surveyed aquatic resources (Exhibits 5A and 5B);
- Field Data Sheets (Appendix A);
- Photographs of the site (Appendix B).





# 2.0 METHODOLOGY

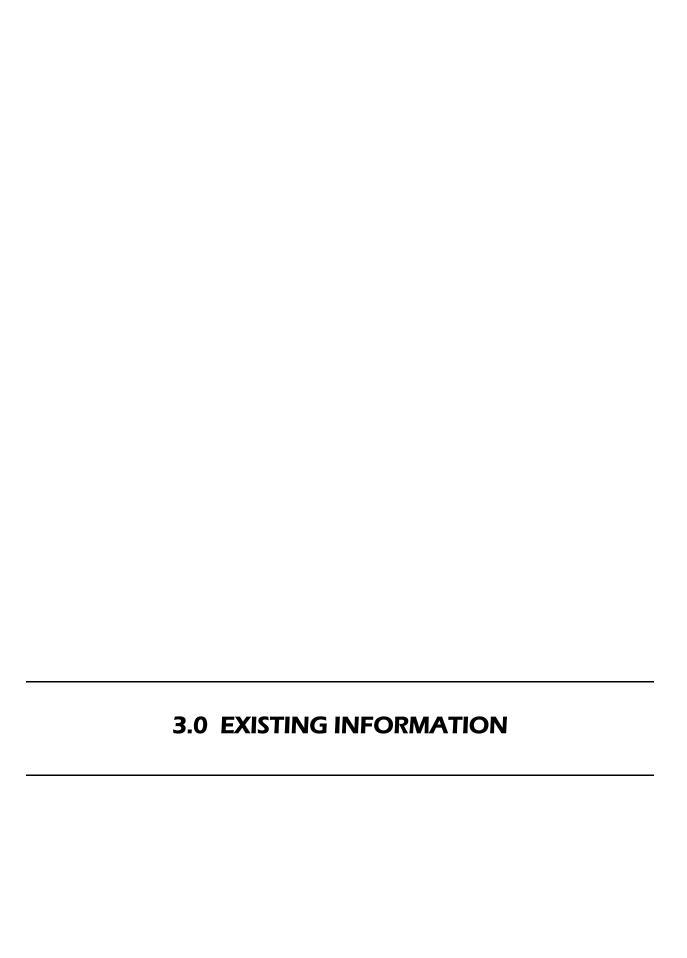
LBG conducted a field survey and jurisdictional waters identification of two study areas at USP Leavenworth. The wetland identification was conducted using the methodology outlined in the 1987 Corps of Engineers Wetland Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE, 2007a). The project study area is located in Sections 22, 23, 26 and 27, Township 8 South, Range 22 East in Leavenworth County, Kansas. The determination included an office review of resource maps, on-site vegetation identification, soil interpretation, site photography, and general observations of topographic and hydrologic conditions. Tributaries were identified by observing the presence of a defined bed and bank, as well as a discernible ordinary high water mark (OHWM). The jurisdictional status of aquatic resources is based on the U.S. Army Corps of Engineers (USACE) Jurisdictional Determination Form Instructional Guidebook (USACE, 2007b). This report includes a discussion of the aquatic resources within the project study area.

As an initial guide to the extent and nature of the project area wetlands, existing federal and state documentation was reviewed. Agency resources included: U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle of Leavenworth, Kansas (USGS, 2009); U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) soils data for Leavenworth County, Kansas through the Soil Data Mart (USDA NRCS, 2011b); and aerial photography available from the USDA National Agriculture Imagery Program (NAIP).

The wetlands were delineated in accordance with the procedures outlined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE, 1987) and in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0 (USACE, 2007). Wetlands, as defined in the manual are: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands possess three characteristics: 1) hydric soils; 2) wetland hydrology; and 3) hydrophytic vegetation.

The wetland delineation was performed to determine the probable federal jurisdictional boundaries of all wetlands, streams, and open waters identified within the project study areas. The boundaries of the wetlands were surveyed in the field by LBG biologists using a Trimble Geo XH Global Positioning System (GPS) unit.

Data points for all aquatic resources were taken and field data sheets documenting the vegetative, soils, and hydrologic characteristics of potential jurisdictional features were completed and are included as Appendix A. Photographs taken at representative points along the delineation are included as Appendix B.



# 3.0 EXISTING INFORMATION

The following section summarizes the review of various resources including U.S. Geological Survey (USGS) topographic survey, NRCS soil survey, National Wetlands Inventory (NWI) maps, aerial imagery, hydrology and vegetation.

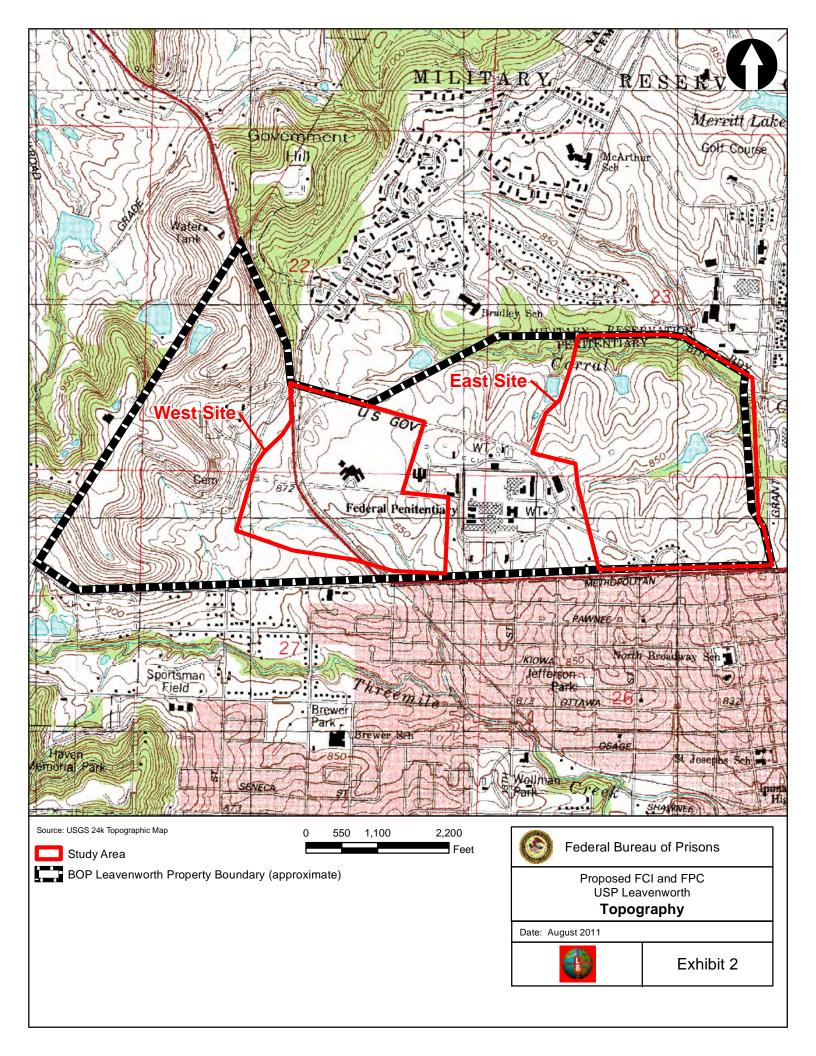
# 3.1 TOPOGRAPHY

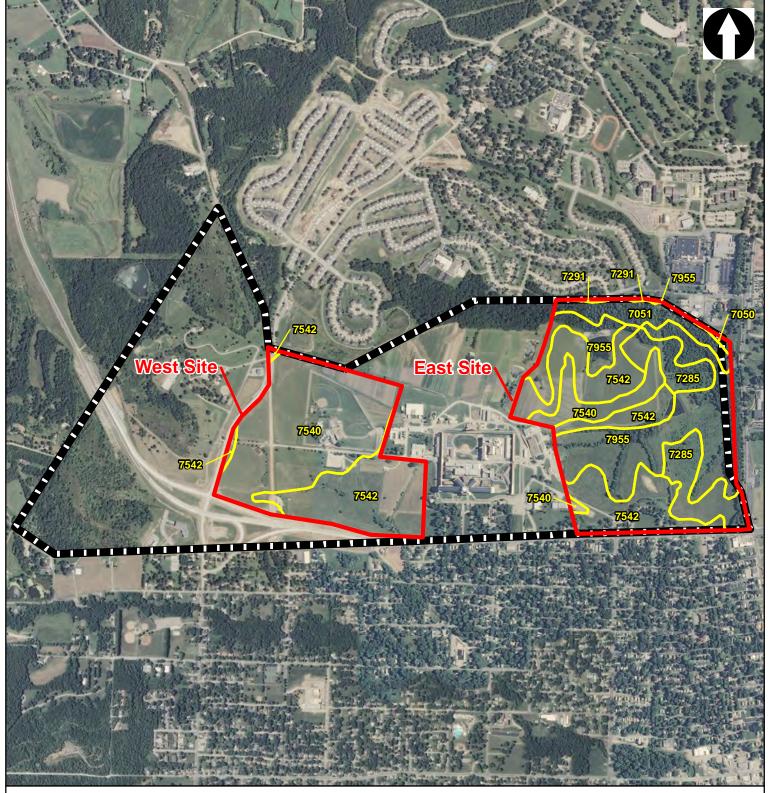
The USGS topographic survey for the Leavenworth, Kansas, Quadrangle (USGS, 2009) shows that three tributaries are located in the project area (Exhibit 2). The property is located in the Missouri River Basin in the Independence-Sugar Watershed. The topography consists of gently rolling terrain that slopes from west to east on the eastern portion of the project study area, with relatively level terrain in the western portion sloping to the southeast. Runoff from the eastern portion of the project study area flows into Corral Creek and eventually to the Missouri River. Runoff from the western portion of the project study area flows south off-site into Threemile Creek. Runoff from the contributing watershed flows into the Missouri River, located approximately one mile east of the project study area. Surface drainage patterns were identified by conducting a thorough survey of the project area and by reviewing topographic maps.

# 3.2 SOILS

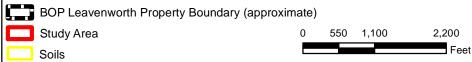
The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey map (USDA NRCS, 2011b) was used to determine the soil information for the project area (Exhibit 3). Mapped soil types for the project study area were compared to the Hydric Rating by Map Unit on the web soil survey map site and the Hydric Soils list for Leavenworth County (NRCS, 2011c). None of the soils mapped on the project study area are hydric soils. The project area contains the following soil types:

- 7050—Kennebec silt loam, occasionally flooded: The Kennebec component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on river valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrinkswell potential is moderate. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during February, March, April and May. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).
- **7051**—**Kennebec silt loam, frequently flooded:** The Kennebec component makes up 95 percent of the map unit. Slopes are 0 to 1 percent. This component is on flood plains on river valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrinkswell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during February, March, April and May. Organic matter content





Source: National Agriculture Imagery Program (NAIP) 2010, USDA NRCS Leavenworth County, KS Soil Survey 2010



7050 - Kennebec silt loam, occasionally flooded

7051 - Kennebec silt loam, frequently flooded

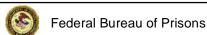
7285 - Ladoga silt loam, 3 to 8 percent slopes

7291 - Marshall silt loam, 5 to 9 percent slopes

7540 - Sharpsburg silty clay loam, 1 to 4 percent slopes

7542 - Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded

7955 - Knox silt loam, 7 to 12 percent slopes



Proposed FCI and FPC USP Leavenworth

Soil Survey of Leavenworth County

Date: August 2011



Exhibit 3

in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).

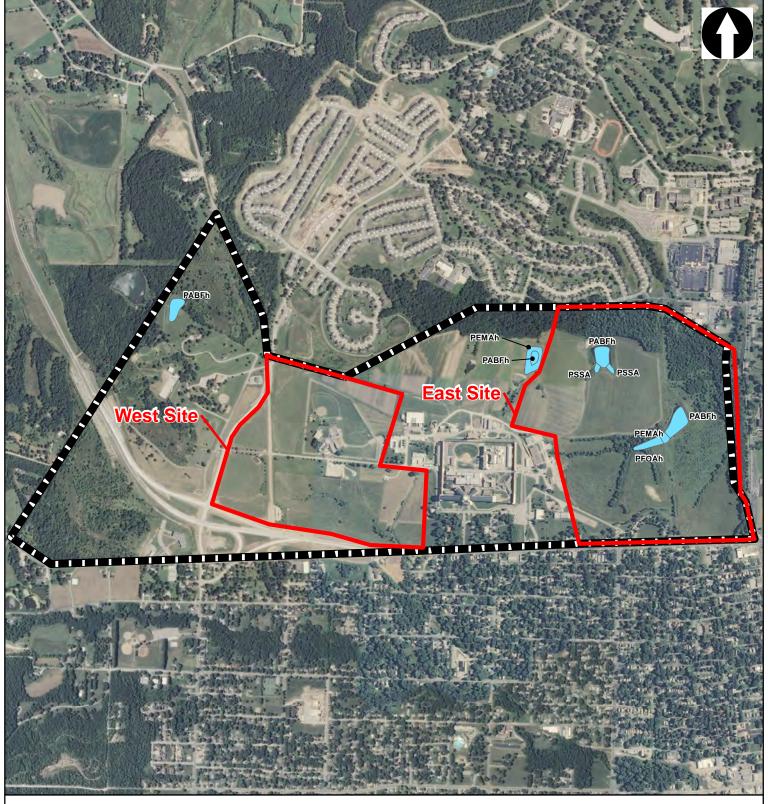
- 7285—Ladoga silt loam, 3 to 8 percent slopes: The Ladoga component makes up 80 percent of the map unit. Slopes are 4 to 7 percent. This component is on hillslopes on uplands. The parent material consists of silty and clayey loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).
- 7291—Marshall silt loam, 5 to 9 percent slopes: The Marshall component makes up 90 percent of the map unit. Slopes are 4 to 9 percent. This component is on hillslopes on uplands. The parent material consists of fine-silty loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).
- **7540—Sharpsburg silty clay loam, 1 to 4 percent slopes:** The Sharpsburg component makes up 94 percent of the map unit. Slopes are 1 to 4 percent. This component is on hillslopes on uplands. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 47 inches during February, March, April, May. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).
- 7542—Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded: The Sharpsburg, eroded component makes up 85 percent of the map unit. Slopes are 4 to 8 percent. This component is on hillslopes on uplands. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 47 inches during February, March, April, and May. Organic matter content in the surface horizon is about 3 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).
- 7955—Knox silt loam, 7 to 12 percent slopes: The Knox component makes up 80 percent of the map unit. Slopes are 7 to 12 percent. This component is on hillslopes on uplands. The parent material consists of fine-silty loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This soil does not meet hydric criteria (USDA NRCS 2011c).

# 3.3 NATIONAL WETLANDS INVENTORY

The NWI map for the Leavenworth, Kansas, quadrangle (U.S. Department of the Interior [USDOI, 2009]) was reviewed to identify the location of potential wetlands (Exhibit 4). Six NWI features were identified in the project boundary: one palustrine, emergent, temporarily flooded, diked/impounded (PEMAh); two palustrine, scrub-shrub, temporarily flooded (PSSA); one palustrine, forested, temporarily flooded, diked/impounded (PFOAh); and two palustrine, aquatic bed, semipermanently flooded, diked/impounded (PABFh).

# 3.4 VEGETATION

Field investigations indicate habitat diversity is limited on the project study area and the surrounding vicinity due to the dominance of maintained fields and retired cropland. Most of the upland areas are regularly mowed and maintained. Mostly pasture land herbaceous species were identified in these areas. The remaining land includes riparian corridors along the non-perennial tributaries. The riparian corridors are dominated by white oak (*Quercus alba*), American elm (*Ulmus americana*), hackberry (*Celtis occidentalis*), honey locust (*Gleditsia triacanthos*), sycamore (*Platanus occidentalis*), Osage orange (*Maclura pomifera*), grape species (*Vitis* spp.), and buckbrush (*Symphoricarpos orbiculatus*). The understory is mostly dominated by non-native shrub species including bush honeysuckle (*Lonicera mackii*) and multiflora rose (*Rosa multiflora*). The most significant riparian corridor is on the northern portion of the East site adjacent to Corral Creek.



Source: National Agriculture Imagery Program (NAIP) 2010, USFW, National Wetlands Inventory



**NWI Wetlands** 



Study Area



BOP Leavenworth Property Boundary (approximate)

PABFh - Palustrine, Aquatic Bed, Semipermanently Flooded, Diked/Impounded PEMAh - Palustrine, Emergent, Temporarily Flooded, Diked/Impounded

PFOAh - Palustrine, Forested, Temporarily Flooded, Diked/Impounded

PSSA - Palustrine, Scrub-Shrub, Temporarily Flooded

750 1,500 3,000 Feet



Federal Bureau of Prisons

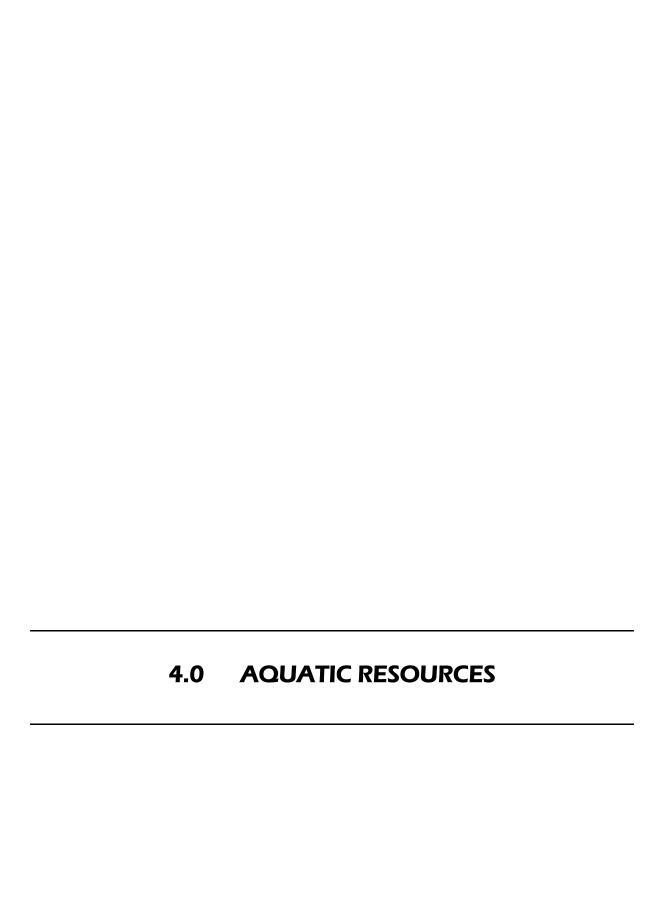
Proposed FCI and FPC **USP** Leavenworth

**National Wetlands Inventory** 

Date: August 2011



Exhibit 4



# 4.0 AQUATIC RESOURCES

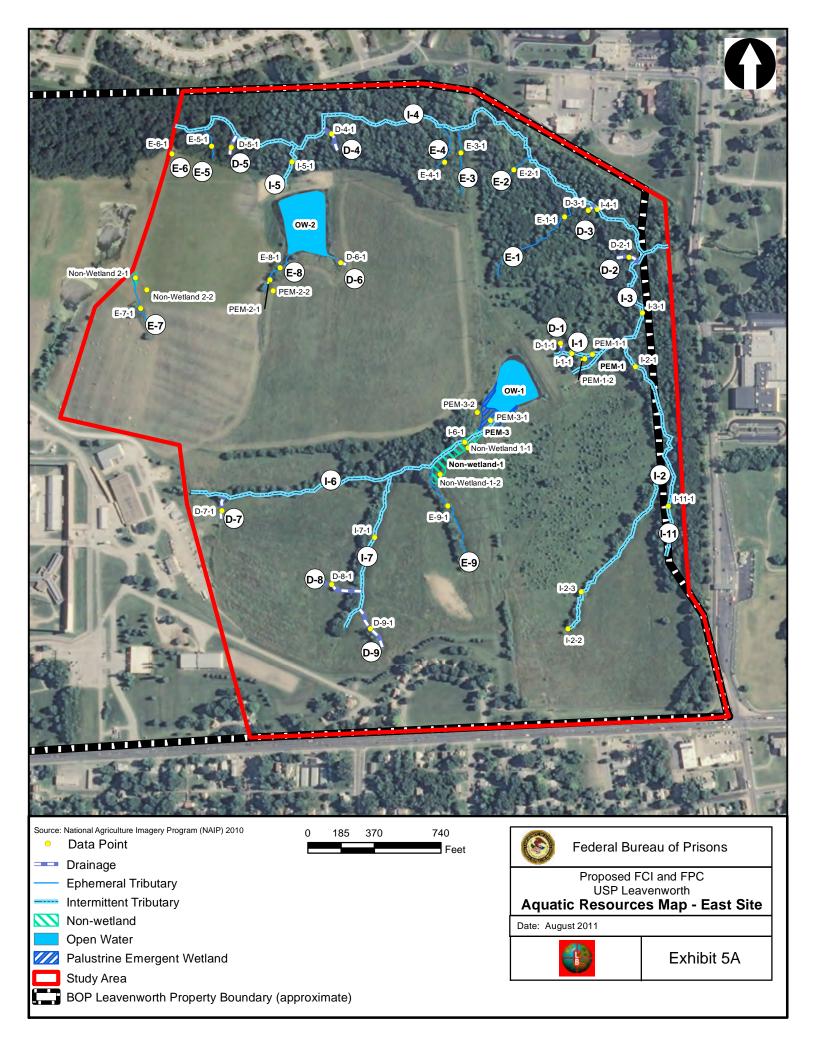
The project study area is located within the watershed of the Missouri River. Most of the study area drains via intermittent and ephemeral streams and non-jurisdictional drainages. Aquatic resources on the two alternative project sites include ten ephemeral tributaries (4,663 linear feet, 0.235 acres), 11 intermittent tributaries (15,519 linear feet, 1.076 acres), five palustrine emergent (PEM) wetlands (0.746 acres), and two open waters (2.990 acres). Data sheets and photographs for these features can be found in Appendix A and Appendix B, respectively. Table 1 summarizes the aquatic resources in the project study area.

The USACE places tributaries into one of three categories: Traditional Navigable Waters (TNW), Relatively Permanent Waters (RPW), or Non-Relatively Permanent Waters (Non-RPW). This report describes the tributaries on-site. The USACE will make the final determination whether the tributaries are TNW, RPW, or Non-RPW. Wetlands are classified as abutting a tributary, adjacent to a tributary, or isolated. A wetland that abuts a tributary has no distinction between the immediate edge of the tributary and the wetland itself. An adjacent wetland has a barrier between itself and the tributary, but is connected by surface flow. Isolated wetlands may or may not be jurisdictional WOUS. There are four abutting wetlands and one adjacent wetland on the project study area (Exhibits 5A and 5B).

# 4.1 TRIBUTARIES

The project study area includes six RPW intermittent tributaries (12,054 linear feet, 0.981 acre), four intermittent Non-RPW tributaries (3,465 linear feet, 0.095 acre), and ten Non-RPW ephemeral tributaries (4,663 linear feet, 0.235 acre). For intermittent tributaries, groundwater and rainfall runoff are both sources of hydrology. Ephemeral tributaries are only supplied hydrology by rainfall runoff. Twenty non-perennial tributaries are found within the project study area (see Exhibits 5A and 5B).

- **Ephemeral-1 (E-1):** E-1 is an unnamed meandering tributary with a silt bed with 10 percent cover by herbaceous vegetation and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 719 linear feet (0.025 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows northeast through the project study area, and discharges within the project study area into I-4.
- Ephemeral-2 (E-2): E-2 is an unnamed relatively straight tributary with a silt bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 154 linear feet (0.007 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows northeast through the project study area, and discharges within the project study area into I-4.
- Ephemeral-3 (E-3): E-3 is an unnamed meandering tributary with a silt bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 367 linear feet (0.042 acre) and is four feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows north through the project study area, and discharges within the project study area into I-4.



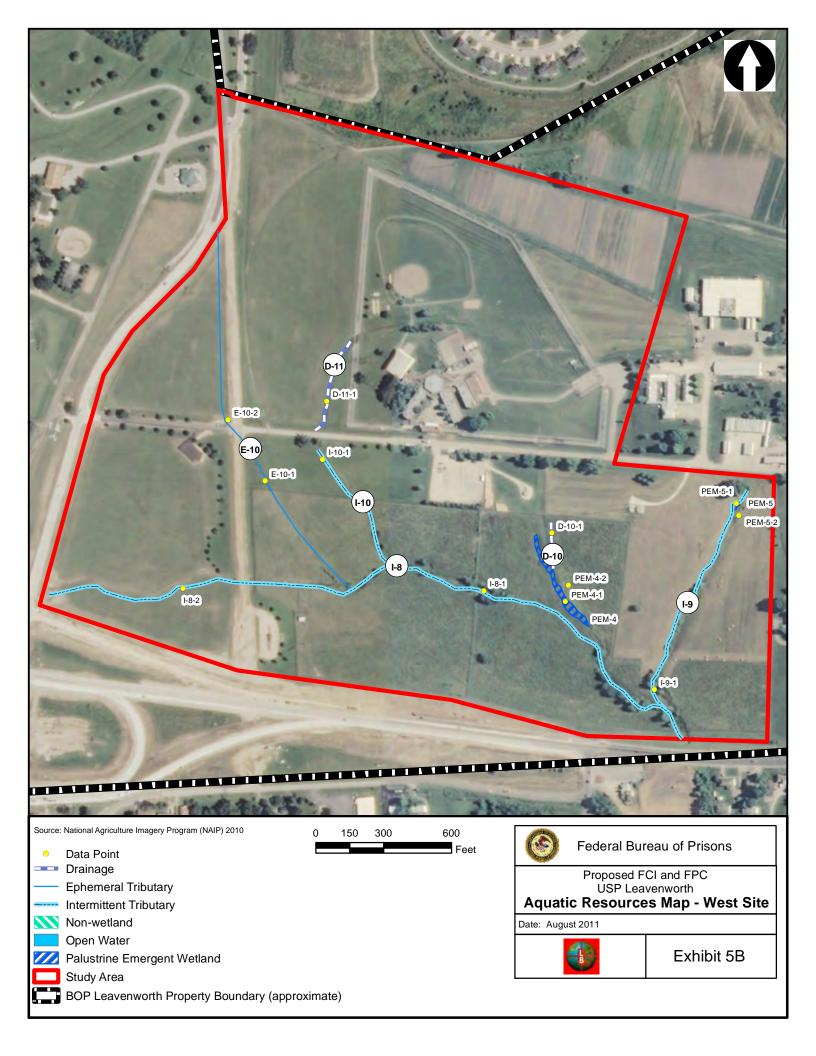


TABLE 1
AQUATIC RESOURCES WITHIN THE PROJECT STUDY AREA

Feature ID	Resource Type	Classification	Length (linear feet)	Area* (acres)				
		(iiiieai ieet)	(acres)					
E-1	Ephemeral Tributary	Tributaries  Non-RPW	719	0.025				
E-2	Ephemeral Tributary	Non-RPW	154	0.007				
E-3	Ephemeral Tributary	Non-RPW	367	0.042				
E-4	Ephemeral Tributary	Non-RPW	271	0.019				
E-5	Ephemeral Tributary	Non-RPW	183	0.002				
E-6	Ephemeral Tributary	Non-RPW	34	0.002				
E-7	Ephemeral Tributary	Non-RPW	302	0.001				
E-8	Ephemeral Tributary	Non-RPW	252	0.003				
E-9	Ephemeral Tributary	Non-RPW	594	0.006				
E-10	Ephemeral Tributary	Non-RPW	1,787	0.007				
	Intermittent Tributary	Non-RPW						
I-1		Non-RPW	268	0.006				
I-2	Intermittent Tributary	RPW	2,018	0.069				
I-3	Intermittent Tributary		991	0.114				
1-4	Intermittent Tributary	RPW	3,644	0.585				
I-5	Intermittent Tributary	Non-RPW	253	0.009				
I-6	Intermittent Tributary	RPW	1,913	0.088				
I-7	Intermittent Tributary	Non-RPW	926	0.011				
1-8	Intermittent Tributary	RPW	3,236	0.111				
I-9 I-10	Intermittent Tributary Intermittent Tributary	RPW RPW	1,125 625	0.052 0.007				
I-10	Intermittent Tributary	RPW	520	0.007				
1-11	Intermittent moutary	Wetlands	320	0.024				
	Palustrine Emergent		T					
PEM-1	Wetland	Abutting I-1	-	0.047				
PEM-2	Palustrine Emergent Wetland	Abutting E-8	-	0.012				
PEM-3	Palustrine Emergent Wetland	Abutting I-6	-	0.431				
PEM-4	Palustrine Emergent Wetland	Adjacent to I-8	-	0.236				
PEM-5	Palustrine Emergent Wetland	Abutting to I-9	-	0.020				
Open Waters								
OW-1	Open Water	Impoundment	-	1.203				
OW-2	Open Water	Impoundment	- 1	1.787				
Total: Waters of	·		20,182	5.047				

<sup>\*</sup> Area is calculated by multiplying the length by the OHWM and converting to acres.

- **Ephemeral-4 (E-4):** E-4 is an unnamed meandering tributary with a silt and sand bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 271 linear feet (0.019 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested land. The tributary flows north through the project study area, and discharges within the project study area into I-4.
- Ephemeral-5 (E-5): E-5 is an unnamed meandering tributary with a silt, sand, and gravel bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 183 linear feet (0.002 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows north through the project study area, and discharges within the project study area into I-4.
- Ephemeral-6 (E-6): E-6 is an unnamed meandering tributary with a silt and sand bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 34 linear feet (0.001 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows northwest through the project area, and discharges offsite into I-4.
- Ephemeral-7 (E-7): E-7 is an unnamed meandering tributary with a silt bed and is bounded by pasture land. The portion of the tributary that lies within the project area is approximately 302 linear feet (0.003 acre) and is one foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding pasture land. The tributary flows northwest through the project study area, and discharges offsite into an open water.
- Ephemeral-8 (E-8): E-8 is an unnamed meandering tributary with a silt bed and is bounded by pasture land. The portion of the tributary that lies within the project area is approximately 252 linear feet (0.006 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding pasture land. The tributary flows northeast through the project study area, and discharges within the project study area into PEM-2 and then into OW-2.
- Ephemeral-9 (E-9): E-9 is an unnamed meandering tributary with a silt bed and is bounded by a forested riparian buffer and pasture land. The portion of the tributary that lies within the project area is approximately 594 linear feet (0.007 acre) and is one-half foot wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows north through the project study area, and discharges within the project study area into I-6.
- Ephemeral-10 (E-10): E-10 is an unnamed relatively straight tributary with a silt and sand bed and is bounded by a managed grassland and pasture land. The portion of the tributary that lies within the project area is approximately 1,787 linear feet (0.123 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding grassland and pasture land. The tributary flows south, enters a culvert under the roadway, and flows southeast through the project study area, and discharges within the project study area into I-8. The portion of the tributary above the roadway has a discontinuous OHWM and has been straightened and stabilized with sod.
- Intermittent-1 (I-1): I-1 is an unnamed relatively straight tributary with a silt bed and is bounded by grassland with scattered tree species. The portion of the tributary that lies within the project area is approximately 268 linear feet (0.006 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding pasture land. The tributary flows southeast through the project study area and discharges within the project study area into PEM-1 and ultimately into I-3.

- Intermittent-2 (I-2): I-2 is an unnamed meandering tributary with a silt, sand, and gravel bed and is bounded by a narrow forested riparian buffer surrounded by pastureland. The portion of the tributary that lies within the project area is approximately 2,018 linear feet (0.069 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding pasture land. The tributary flows northeast through the project study area, discharges from the project area for a short distance, and reenters the project study area flowing northwest, discharging within the project study area into I-3.
- Intermittent-3 (I-3): I-3 is an unnamed meandering tributary with a silt bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 991 linear feet (0.114 acre) and is four feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows northeast through the project study area, and discharges within the project study area into I-4.
- Intermittent-4 (I-4): I-4 (Corral Creek) is a meandering tributary with a silt, sand, gravel, cobble, and bedrock bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 3,644 linear feet (0.585 acre) and is eight feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and agricultural land. The tributary flows east through the project study area and discharges offsite to the east into the Missouri River, approximately one mile from the project study area.
- Intermittent-5 (I-5): T-5 is an unnamed meandering tributary with a silt, sand, gravel, and cobble bed and is bounded by a forested riparian buffer. The portion of the tributary that lies within the project area is approximately 253 linear feet (0.009 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows north through the project study area and discharges within the project area into I-4.
- Intermittent-6 (I-6): I-6 is an unnamed meandering tributary with a silt, sand, and gravel bed and is bounded by a forested riparian buffer surrounded by pasture land. The portion of the tributary that lies within the project area is approximately 1,913 linear feet (0.088 acre) and is three feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows east-northeast through the project study area and discharges within the project area into PEM-3.
- Intermittent-7 (I-7): I-7 is an unnamed meandering tributary with a silt bed and is bounded by a narrow forested riparian buffer surrounded by pasture land. The portion of the tributary that lies within the project area is approximately 926 linear feet (0.011 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding forested and pasture land. The tributary flows north-northeast through the project study area, and discharges within the project study area into I-6.
- Intermittent-8 (I-8): I-8 is an unnamed meandering tributary with a silt, sand, and gravel bed that is periodically vegetated by herbaceous vegetation with a discontinuous OHWM. The downstream portion of the tributary is partially diverted underground through a brick drainage pipe with the remainder flowing aboveground bounded by pasture land. The portion of the tributary that lies within the project area is approximately 3,236 linear feet (0.111 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding managed grassland and pasture land. The tributary flows east-southeast through the project study area and discharges offsite to the south into Threemile Creek, approximately one-third of a mile from the project study area.
- Intermittent-9 (I-9): I-9 is an unnamed meandering tributary with a silt, sand, and gravel bed and is bounded by a managed grassland. The portion of the tributary that lies within the project

area is approximately 1,125 linear feet (0.052 acre) and is two feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding grassland and stormwater runoff from the existing facilities. The tributary flows southwest through the project study area and discharges within the project area into I-8.

- Intermittent-10 (I-10): I-10 is an unnamed relatively straight to meandering tributary that is partially enclosed in a brick drainage pipe in the upstream portion, with a silt bed in the downstream portion and is bounded by a managed grassland and pasture land. The portion of the tributary that lies within the project area is approximately 625 linear feet (0.007 acre) and is one and one-half feet wide on average at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding grassland and pasture land. The tributary flows southeast through the project area, discharges from the project area for a short distance, flows into the project area and discharges within the project area into I-8.
- Intermittent-11 (I-11): I-10 is an unnamed meandering tributary with a silt, sand, gravel and cobble bed and is bounded by a narrow forested riparian buffer surrounded by pastureland. The portion of the tributary that lies within the project area is approximately 520 linear feet (0.024 acre) and averages two feet wide at the OHWM (USACE, 2005). Drainage through the tributary comes from runoff from the surrounding grassland and pasture land. The tributary flows southeast through the project area and discharges within the project area into I-2.

# 4.2 WETLANDS

As stated previously, wetlands are defined as those areas "...inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands on the project study area were identified through review of USGS topographic quadrangles, soil survey information for Leavenworth County, Kansas, aerial photography, and field reconnaissance in March 2011.

The project study area includes five PEM wetlands (0.746 acre) (Cowardin *et al.*, 1979). Palustrine emergent wetlands include predominantly herbaceous vegetation. A summary of wetland vegetation can be found in Table 2. Dominant upland vegetation observed within the project study area is included on data sheets found in Appendix A. Corresponding upland data sheets were completed for each wetland data point.

- Palustrine Emergent Wetland-1 (PEM-1): PEM-1 is adjacent to I-1 and I-2. Hydrology flows into the wetland from the surrounding uplands. The vegetation was a mixture of emergent wetland species. The vegetation was predominantly hydrophytic and dominated by scouringrush horsetail (Equisetum hyemale) and yellow nutsedge (Cyperus esculentus). Hydrology indicators included surface water, high water table, saturation, an algal mat or crust, oxidized rhizospheres on living roots, and the FAC-neutral test. Soils sampled at the wetland displayed morphological features of a depleted matrix hydric soil indicator. PEM-1 is a palustrine emergent wetland that has developed in a wet depression near the confluence of I-1 and I-2. The wetland has an area of approximately 0.047 acre.
- Palustrine Emergent Wetland-2 (PEM-2): PEM-2 is abutting to E-8. Hydrology flows into the
  wetland from the surrounding uplands. The vegetation was a mixture of emergent wetland
  species. The vegetation was predominantly hydrophytic and dominated by broadleaf cattail
  (Typha latifolia) and yellow nutsedge (Cyperus esculentus). Hydrology indicators included
  surface water, water stained leaves, and the FAC-neutral test. Soils sampled at the wetland

displayed morphological features of a depleted matrix hydric soil indicator. PEM-2 is a palustrine emergent wetland that has developed in a low area in the floodplain of E-8 above OW-2. The wetland has an area of approximately 0.012 acre.

# TABLE 2 WETLAND VEGETATION OBSERVED IN THE PROJECT STUDY AREA DURING FIELD INVESTIGATIONS

Forbs									
Scientific Name	Common Name	Indicator Status*	Scientific Name	Common Name	Indicator Status*				
Alliaria petiolata	garlic mustard	FACW	Polygonum penslyvanicum	Pennsylvania knotweed	FACW				
Galium aparine	stickwilly	FACU	Ranunculus sceleratus	cursed buttercup	OBL				
Osmorhiza claytonii	Clayton's sweetroot	FACU	Typha latifolia	broadleaf cattail	OBL				
Polygonum hydropiper	marshpepper knotweed	OBL							
	G	irasses, Sedge	s, and Rushes						
Cyperus esculentus	yellow nutsedge	FACW	Leersia oryzoides	rice cutgrass	OBL				
Elymus virginicus	Virginia wildrye	FAC	Phalaris arundinacea	reed canarygrass	FACW				
Equisetum hyemale	scouringrush horsetail	FACW	Schoenoplectus fluviatilis	river bulrush	OBL				
Trees, Shrubs, and Woody Vines									
Acer negundo	box elder	FAC	Salix amygdaloides	peachleaf willow	FACW				
Gleditsia triacanthos	honey locust	FAC	Ulmus americana	American elm	FACW				
Lonicera mackii	Amur honeysuckle	NL	Vitis riparia	riverbank grape	FAC				

\*Source: USDA Plants Database, 2011.

### Key to indicator categories:

OBL: Obligate Wetland, occur almost always (estimated probability >99%) under natural conditions in wetlands.

FACW: Facultative Wetland, usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

FAC: Facultative, equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

FACU: Facultative Upland, usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated

probability 1%-33%).

NL: Not listed.

- Palustrine Emergent Wetland-3 (PEM-3): PEM-3 is abutting to I-6. Hydrology flows into the wetland from the surrounding uplands. The vegetation was a mixture of emergent wetland species. The vegetation was predominantly hydrophytic and dominated by river bulrush (Schoenoplectus fluviatilis). Hydrology indicators included surface water, saturation, an algal mat or crust, water stained leaves, aquatic fauna, true aquatic plants, oxidized rhizospheres in living roots, drainage patterns, and the FAC-neutral test. Soils sampled at the wetland displayed morphological features of a depleted matrix hydric soil indicator. PEM-3 is a palustrine emergent wetland that has developed in a depression at the discharge point of I-6 into OW-1. The wetland has an area of approximately 0.431 acre.
- Palustrine Emergent Wetland-4 (PEM-4): PEM-4 is adjacent to I-8. Hydrology flows into the
  wetland from the surrounding uplands and outfall from pump station located to the north of the
  wetland. The vegetation was a mixture of emergent wetland species. The vegetation was
  predominantly hydrophytic and dominated by reed canarygrass (*Phalaris arundinacea*).
  Hydrology indicators included surface water, saturation, an algal mat or crust, and the FAC-

- neutral test. Soils sampled at the wetland displayed morphological features of a depleted matrix hydric soil indicator. PEM-4 is a palustrine emergent wetland that has developed in a low linear swale area. The wetland has an area of approximately 0.236 acre.
- Palustrine Emergent Wetland-5 (PEM-5): PEM-5 is adjacent to I-9. Hydrology flows into the wetland from stormwater runoff from the facilities to the north of the wetland. The vegetation was a mixture of emergent wetland species. The vegetation was predominantly hydrophytic and dominated by reed canarygrass (*Phalaris arundinacea*). Hydrology indicators included surface water, saturation, an algal mat or crust, the FAC-neutral test. Soils sampled at the wetland displayed morphological features of a depleted matrix hydric soil indicator. PEM-5 is a palustrine emergent wetland that has developed in a low area in an old pond that has a breached dam. The wetland has an area of approximately 0.020 acre.

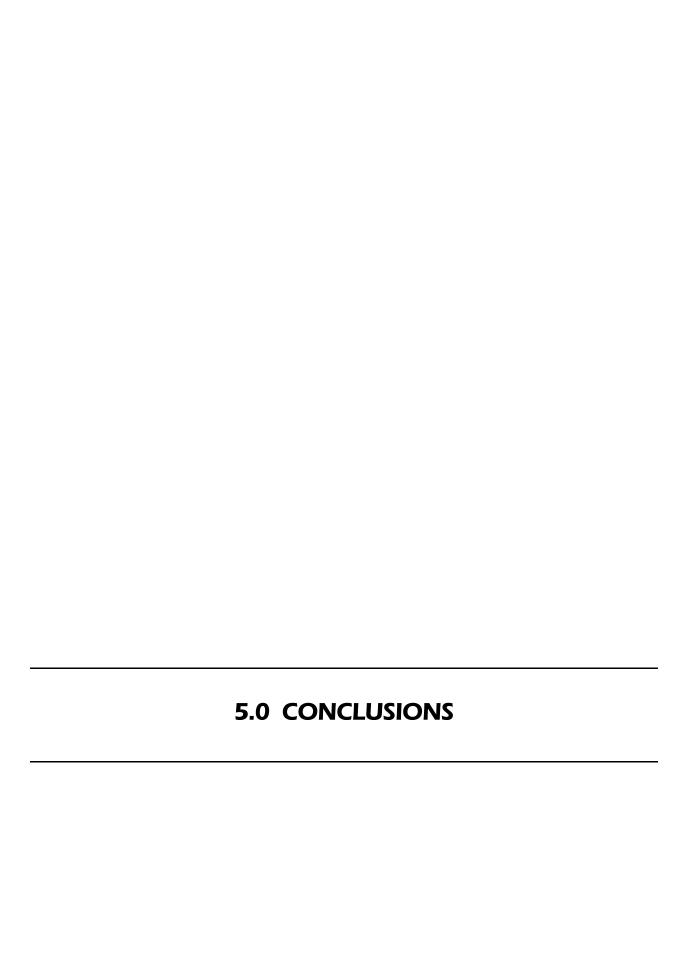
Two areas were located on the project study area that were evaluated to determine if they met the criteria outlined in the *Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1,* (January, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (2007). Non-wetland 1 did not exhibit any indicators of wetland hydrology at the time of the survey and non-wetland 2 did not meet the criteria for a dominance of hydrophytic vegetation. These findings are preliminary until a final jurisdictional determination of these two areas is made by the USACE.

# 4.3 OPEN WATERS

Two open water features were located on the project study area (2.990 acres). Both of the open water features (OW-1 and OW-2) are impoundments of a tributary and could be jurisdictional WOUS. Open water photographs are provided in Appendix B.

# 4.4 NON-JURISDICTIONAL DRAINAGES

Drainages include swales, erosional features, or small washes that are characterized by low-flow volume as well as by infrequent and short duration flow; ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water; and uplands transporting overland flow generated from precipitation (USACE, 2007). Drainages are non-jurisdictional. There are 11 drainages within the project study area (see Exhibits 5A and 5B).



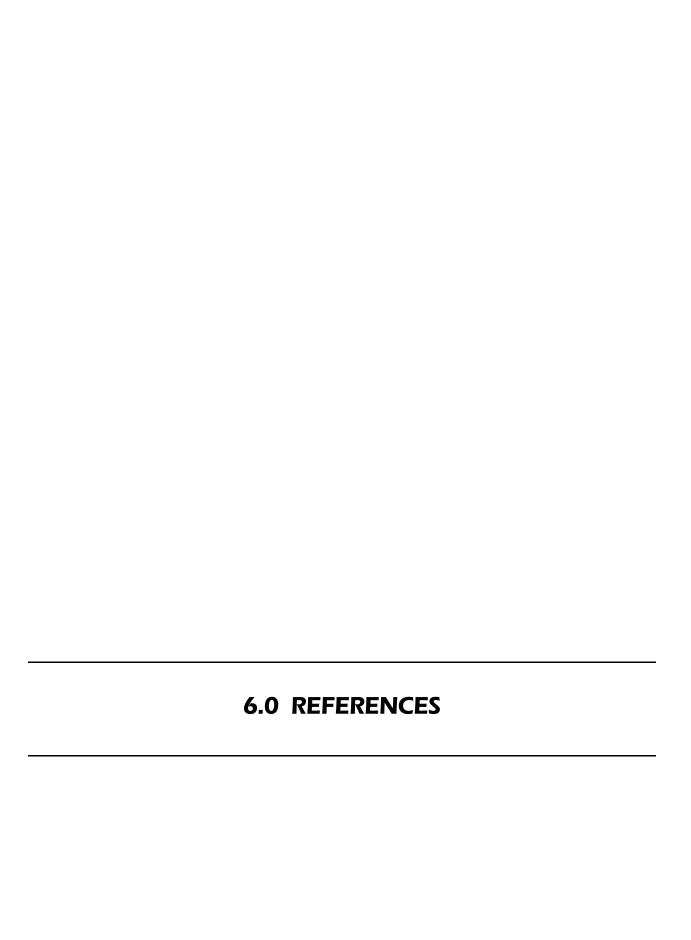
# 5.0 CONCLUSIONS

Based on a review of USGS maps, soil survey information for Leavenworth County, aerial photography, and a site survey undertaken the week of March 21, 2011, five PEM wetland areas totaling 0.746 acre were identified within the project study area boundaries. Each of the delineated wetlands is dominated by hydrophytic vegetation and contains hydric soils and evidence and/or presence of wetland hydrology.

Corral Creek (I-4), 16 unnamed tributaries to Corral Creek, and four unnamed tributaries to Threemile Creek were identified in the project study area, as well as two open water impoundments and 11 non-jurisdictional drainages. Approximately 20,182 linear feet of streams were delineated. The total area of all aquatic resources is 5.047 acres. The locations of aquatic resources are shown on Exhibits 5A and 5B. Field data sheets are presented in Appendix A. Site photographs are presented in Appendix B.

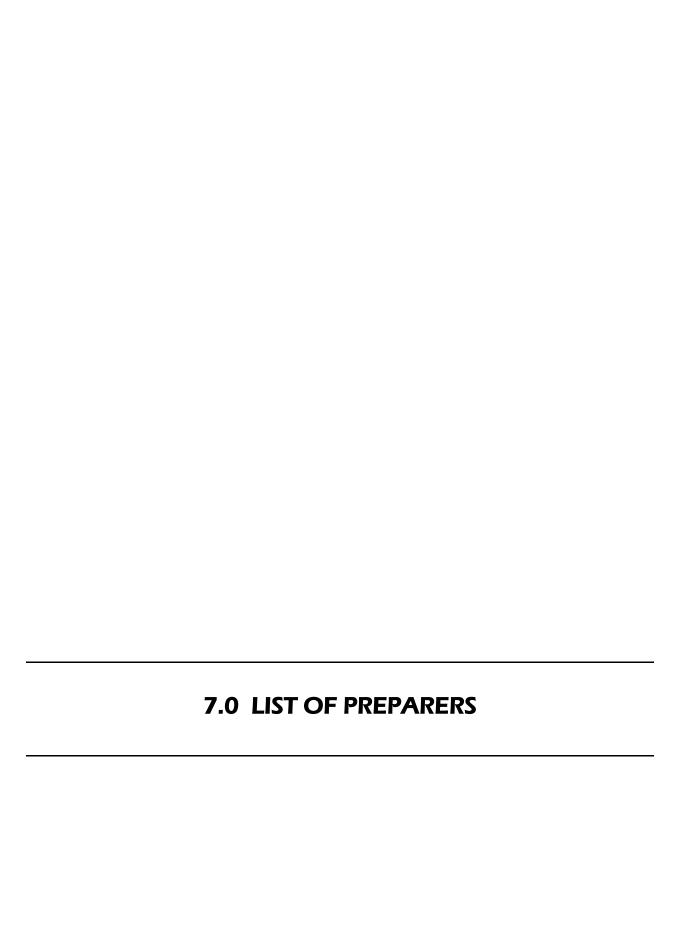
TABLE 3
SUMMARY OF AQUATIC RESOURCES IN THE PROJECT STUDY AREA

Feature	Linear Feet	Acreage		
Tributary	20,182	1.311		
Palustrine Emergent	-	0.746		
Wetlands				
Open Waters	-	2.990		
Total Aquatic Resources	20,182	5.047		



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# 7.0 LIST OF PREPARERS

# **U.S. DEPARTMENT OF JUSTICE**

Federal Bureau of Prisons 320 First Street, NW Washington, D.C. 20534

Richard A. Cohn - Chief, Capacity Planning and Site Selection Branch

Bridgette Lyles - Site Selection Specialist, COTR

# THE LOUIS BERGER GROUP, INC.

1250 23rd Street, NW Washington, D.C. 20037

Cristy L. Boyd – Project Manager / Principal Environmental Scientist B.A., Florida Atlantic University, 1993

Robert J. Nardi, PP – QA Specialist M.C.R.P., Rutgers University, 1978 B.A., Rutgers University, 1975

Laura A. Totten – Senior Ecologist M.S., Fort Hays State University, 2004 B.S., Fort Hays State University, 1997

Erin Hagan – Environmental Scientist M.E.M., Duke University, 2008 B.A., College of the Holy Cross, 1996

Christopher Thomas – Ecologist/GIS Specialist B.A., Avila University, 2002

Alex Rosenzweig – Senior Technical Editor M.L.S., Rutgers University, 1991 B.A., Rutgers University, 1989

# **APPENDIX A FIELD DATA SHEETS**

Date: 03/22/11 Delineators: Laura Totten/Chris Thomas

**Stream Survey Data Sheet** 

	Otream our	<u> </u>	Data Officet		
Feature ID: E-1		Unique Site ID:			
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	County: Leavenworth			
	Stream Ch	ara	ctoristics		
Otros des Tros de	Stream Ch				
Stream Type:		Str	eam Classificatio	n:	
☐Perennial ☐Intermittent ⊠Ephemer	al Drainage		TNW □Relat	ively Perr	manent Water ⊠Non-RPW
Stream Characteristics: ⊠Natural  ☐Arti	ficial Manipulate	ed	OHWM width:	1 ft.	OHWM depth: 1.5 ft.
Hydrology: ⊠Flowing □Standing □	None	Ap	oproximate water	velocity:	<0.5 fps
Top of bank to top of bank width: 15 ft.		Top of Bank height: 12 ft.			
Side Slopes: ⊠1:1  □2:1  □3:1  □	4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other:    vegetation (% cover, type): 10%, herbaceous			
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs ☑ s	⊠bank collapse steep side slopes	Tril	butary Geometry:	∷ ∏Relat	ively Straight ⊠Meandering
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5		rface Flow: Discrete and Con		⊠Confined □Overland Sheet Flow
Stream has:   Bed/Bank  OHWM has:  Clear, nat  shelving  veg. matt absent	ural line on bank		leaf litter disturber sediment deposits litter/debris water staining no terrestrial veg. sediment sorting	s []: []: []:	wrack line scour multiple flow events change in plant community other:
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film		_		
Riparian Type: ⊠Forested □Herbaced	us	Rip	oarian Buffer Widt	th:	100 ft.
Buffer (adjacent bank) vegetation: Foreste Quercus alba, Lonicera mackii, Rosa multi	flora, and Symphori	icarp	oos orbiculatus		
Adjacent and Abu Explain significant nexus (pollution filtration,		, feed	ding/nesting/spawni		
Adjacent Wetlands (list and draw):	priysical or chen	nicai	тенанопътпръј.		
☐Abutting Wetlands (list and draw):					
Topography undulating.					

Date: 03/22/11 Delineators: Laura Totten/Chris Thomas

**Stream Survey Data Sheet** 

Feature ID: E-2		Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas		County: L	eavenworth		
	Stream Ch	aracteristics				
Stream Type:		Stream Classification		_		
□Perennial □Intermittent ⊠Ephemer			tively Perma			
Stream Characteristics: Natural Arti	_ '			OHWM depth: 2 ft.		
, , , – , – , –	None	Approximate water		fps		
Top of bank to top of bank width: 25 ft.		Top of Bank height				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☑	4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other: Svegetation (% cover, type): 5%, shrubs				
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □ s	□bank collapse steep side slopes	Tributary Geometry	r: ⊠Relative	ely Straight		
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	]2-5 🖾6-10	Surface Flow: DDDiscrete and Cor		Confined Overland Sheet Flow		
□shelving ⊠veg. matt absent	ural line on bank ed down or	☐ leaf litter disturbed ☐ sediment deposited ☐ litter/debris ☐ water staining ☐ no terrestrial veg ☐ sediment sorting	ts	rack line our ultiple flow events ange in plant community ner:		
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film					
Riparian Type: Sorested Herbaceo	ous	Riparian Buffer Wic	dth:	100 ft. +		
Buffer (adjacent bank) vegetation: Foreste americana, Maclura pomifera with moderat	ely dense shrub cov	er mostly <i>Lonicera</i> i	mackii.			
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	ificant Nexus Analy feeding/nesting/spawn nical relationships):				
☐Adjacent Wetlands (list and draw):	priyologi er erren	nour relationerings).				
☐Abutting Wetlands (list and draw):						
Topography undulating. Flows northwest directly to Corral Creek (I-4).						

Date: 03/22/11 Delineators: Laura Totten/Chris Thomas

**Stream Survey Data Sheet** 

Feature ID: E-3			Unique Site ID:			
Project Name and #: Leavenworth USP/ CJA2875 State: Kansas			County: Leavenworth		Leavenworth	
	Stream Ch	ara	cteristics			
Stream Type:	Otream On		ream Classification	nn.		
	ol Droinogo				anant Water Man DDW	
☐Perennial ☐Intermittent ☐Ephemer					anent Water Non-RPW	
Stream Characteristics: ⊠Natural  ☐Arti			OHWM width:		OHWM depth: 5 ft.	
,	None	Approximate water velocity: 0 fps				
Top of bank to top of bank width: 20 ft.		Top of Bank height: 6 ft.				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	]4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other: vegetation (% cover, type):				
Stream Condition/Stability:	☐bank collapse steep side slopes	Tr	ibutary Geometry:	: □Relativ	rely Straight ⊠Meandering	
Estimated Flow Events per year: 1 = 11-20 = 20 or >	]2-5 🖾 6-10	Surface Flow: Discrete Confined Discrete and Confined Overland Sheet Flow				
□shelving ⊠veg. matt absent	ural line on bank ed down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg. sediment sorting	ts	vrack line cour ultiple flow events nange in plant community her:	
Water Color/Quality: □Clear □Discolo	red  Oily film					
Riparian Type: ⊠Forested ☐Herbaced	ous	Ri	parian Buffer Wid	lth:	100 ft. +	
Buffer (adjacent bank) vegetation: Forested buffer consisting of Gleditsia triacanthos, Quercus alba, Celtis occidentalis, and Ulmus americana with heavy to moderate shrub cover mostly Lonicera mackii and Rosa multiflora.						
Adjacent and Abu Explain significant nexus (pollution filtration,	tting Wetland/Sigr flood water retention, physical or cher	fee	ding/nesting/spawni	sis/Notes/ ing ground fo	Trawing or TNW species, other biological,	
☐Adjacent Wetlands (list and draw):			1 -7			
□Abutting Wetlands (list and draw):						
Topography undulating. Tributary drains directly to Corral Creek (I-4). Extremely heavy, large woody downfall in channel. May be from trees cleared for adjacent powerline easement.						

Feature ID: E-4			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: L	_eavenworth		
Stream Characteristics							
Stream Type:	00		ream Classification	n.			
☐Perennial ☐Intermittent ☐Epheme	ral Drainage				anent Water ⊠Non-RPW		
Stream Characteristics: Natural Art	ificial Manipulate	ed	OHWM width:	1 ft.	OHWM depth: 3 ft.		
Hydrology: ⊠Flowing □Standing □	]None	A	pproximate water	velocity: <	0.5 fps		
Top of bank to top of bank width: 30 ft.		To	p of Bank height:	15 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	]4:1 or >	Stream Bottom Composition: ⊠silt ⊠sand □gravel □cobble □bedrock □concrete □muck □other: □vegetation (% cover, type):					
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □	⊠bank collapse steep side slopes	Tr	ibutary Geometry	: □Relativ	ely Straight   Meandering		
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	<b>]</b> 2-5 <b>□</b> 6-10		urface Flow: □Di Discrete and Cor		Confined Overland Sheet Flow		
□shelving ⊠veg. mat absent	tural line on bank ted down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	s ⊠sc ⊠mi □ch	rack line cour ultiple flow events lange in plant community her:		
Water Color/Quality: ⊠Clear □Discol	ored  Oily film						
Riparian Type: ☐Forested ☐Herbace	_ •		parian Buffer Wid		100 ft.		
Buffer (adjacent bank) vegetation: Forested buffer consisting of <i>Ulmus Americana</i> , <i>Celtis occidentalis</i> , and <i>Quercus alba</i> with heavy shrub cover mostly <i>Lonicera mackii</i> .							
Explain significant nexus (pollution filtration	utting Wetland/Sigr n, flood water retention, physical or cher	, fee	ding/nesting/spawni	ing ground fo	or TNW species, other biological,		
☐Adjacent Wetlands (list and draw):							
☐Abutting Wetlands (list and draw):							
Topography undulating. Drains directly to into forested area. Also severe erosion do					on edge of hay field going		

Feature ID: E-5	eature ID: E-5			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth				
Stream Characteristics								
Stream Type:			ream Classification	nr.				
☐Perennial ☐Intermittent ☐Ephemen	al Drainage			tively Perma	nent Water ⊠Non-RPW			
Stream Characteristics: Natural Artif	ficial Manipulate	ed	OHWM width:	1 ft.	OHWM depth: 0.5 ft.			
Hydrology: □Flowing □Standing □	None	Α	pproximate water	velocity: 0	fps			
Top of bank to top of bank width: 8 ft.		To	p of Bank height:	7 ft.				
Side Slopes: ⊠1:1  □2:1  □3:1  □	4:1 or >	Stream Bottom Composition: Silt Sand Gravel Cobble Dedrock Concrete Dmuck Other: Dvegetation (% cover, type):						
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs ☒ s	⊠bank collapse teep side slopes	Tr	ibutary Geometry:	: □Relative	ly Straight  Meandering			
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5 <u></u> 6-10		ırface Flow: □Di Discrete and Con		Confined Overland Sheet Flow			
□shelving ⊠veg. matte absent	ural line on bank ed down or		ack line our Itiple flow events ange in plant community er:					
, — —								
Riparian Type: ⊠Forested □Herbaceo	_ •		parian Buffer Wid		100 ft. +			
Buffer (adjacent bank) vegetation: Forested buffer consisting of Ulmus americana, Quercus alba, Platanus occidentalis, and Juniperus virginiana with moderately dense shrub cover mostly Lonicera mackii.  Adjacent and Abutting Wetland/Significant Nexus Analysis/Notes/Drawing								
Explain significant nexus (pollution filtration,		fee	ding/nesting/spawni					
☐Adjacent Wetlands (list and draw):								
☐Abutting Wetlands (list and draw):								
Knick point at edge of forest with heavy erosion noted. Deep, narrow drainage with manhole located in drainage. Sewer line noted to the east of manhole that daylights in several locations. Drainage is to the north directly to Corral Creek (I-4). Topography is undulating.								

Feature ID: E-6			Unique Site ID:				
Project Name and #: Leavenworth USP/CJA2875	State: Kansas			County:	Leavenworth		
Stream Characteristics							
Stream Type:			ream Classification	n.			
	oral Drainage				nonent Water Non DDW		
☐Perennial ☐Intermittent ☐Ephem	<del>-</del>				nanent Water Non-RPW		
	rtificial Manipulate		OHWM width:		OHWM depth: 1 ft.		
, 8, – 8 – 8	⊠None		pproximate water		0 fps		
Top of bank to top of bank width: 3.5 ft.			p of Bank height:				
Side Slopes: ☐1:1 ☐2:1 ☐3:1	□4:1 or >		ream Bottom Con cobble bedr other: vegetation (% co	ock 🗀	concrete  muck		
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □	☐bank collapse  steep side slopes	Tr	ibutary Geometry	:	vely Straight  Meandering		
Estimated Flow Events per year: ☐1 ☐11-20 ☐20 or >	□2-5 ⊠6-10		urface Flow: □Di Discrete and Cor		⊠Confined □Overland Sheet Flow		
□shelvin ⊠veg. m absent	atural line on bank g atted down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	wrack line scour nultiple flow events change in plant community other:			
Water Color/Quality: ☐Clear ☐Disco	lored  Oily film						
Riparian Type: ⊠Forested ☐Herbac	eous	Ri	parian Buffer Wid	th:	100 ft.		
Buffer (adjacent bank) vegetation: Forested buffer consisting of <i>Celtis occidentalis, Ulmus Americana, Platanus occidentalis</i> with moderately dense shrub cover mostly <i>Lonicera mackii.</i>							
Adjacent and Al Explain significant nexus (pollution filtration)	outting Wetland/Sign on, flood water retention physical or cher	, fee	ding/nesting/spawni	ing ground	s/Drawing for TNW species, other biological,		
☐Adjacent Wetlands (list and draw):	<u> </u>		, , , , , , , , , , , , , , , , , , ,				
☐Abutting Wetlands (list and draw):							
Tributary deep but narrow with sparse to Topography undulating.	moderate bank erosi	on.	Drainage flows no	orth directl	y to Corral Creek (I-4).		

Feature ID: E-7			Unique Site ID:			
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	County: Leavenworth				enworth
	Stream Ch	ara	ecteristics			
Stream Type:			ream Classification	n:		
☐Perennial ☐Intermittent ⊠Ephemer	al □Drainage				Permanen	t Water ⊠Non-RPW
Stream Characteristics: ⊠Natural □Arti	_ '		OHWM width:			HWM depth: 0.5 ft.
,	None		pproximate water			
Top of bank to top of bank width: 3 ft.			op of Bank height:			
Side Slopes: □1:1 □2:1 □3:1 ⊠	4:1 or >		ream Bottom Con ]cobble ☐bedro ]other: ]vegetation (% co	ock	□concre	
Stream Condition/Stability:	□bank collapse steep side slopes	Tr	ibutary Geometry:	: □R€	elatively S	traight   Meandering
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	]2-5 🖾6-10		urface Flow: □Di ]Discrete and Con			fined erland Sheet Flow
Stream has:   Bed/Bank  OHWM has  clear, nat  shelving  veg. matt absent	ural line on bank		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg. sediment sorting	S		line e flow events e in plant community
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film					
Riparian Type: ☐Forested ☑Herbaced	ous	Ri	parian Buffer Wid	th:		100 ft. +
Buffer (adjacent bank) vegetation: Herbac single <i>Fraxinus americana, Vitis</i> spp., and	Lonicera mackii.				·	
Adjacent and Abu Explain significant nexus (pollution filtration,	tting Wetland/Sign flood water retention,					
	physical or chen	nica	l relationships):			
☐Adjacent Wetlands (list and draw):						
☐Abutting Wetlands (list and draw):						

Feature ID: E-8 Unique Site ID:								
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas				County: Leavenworth			
Stream Characteristics								
Stream Type:	Otream On		ream Classification	n:				
☐Perennial ☐Intermittent ⊠Ephemer	al □Drainage		TNW Rela	tively F	Permanent Water ⊠Non-RPW			
Stream Characteristics: ⊠Natural □Artif	icial Manipulate	ed	OHWM width:	2 ft.	OHWM depth: 1 ft.			
, 3 – 3 –	None		pproximate water		ty: 0 fps			
Top of bank to top of bank width: 6 ft.		To	p of Bank height:	3 ft.				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con cobble	ock	□concrete □muck			
	□bank collapse teep side slopes	Tr	butary Geometry	: □R€	elatively Straight  Meandering			
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	2-5 🖾 6-10		ırface Flow: □Di Discrete and Cor		⊠Confined ☐Overland Sheet Flow			
Stream has:   Bed/Bank  OHWM has:  Clear, nate  shelving  veg. matte absent	ural line on bank		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	wrack line     scour     multiple flow events     change in plant community     other:			
Water Color/Quality: ⊠Clear □Discolo	red  Oily film							
Riparian Type: Sorested Herbaceo	us	Ri	parian Buffer Wid	lth:	20 ft.			
Buffer (adjacent bank) vegetation: Foreste deltoides, and Celtis occidentalis with mode	erate amount of shr	ub (	cover and mixed f	forbs a	nd graminoids in the understory.			
Adjacent and Abur Explain significant nexus (pollution filtration,		fee	ding/nesting/spawn					
☐Adjacent Wetlands (list and draw):	priysical of cheri	iica	relationsnips).					
☑Abutting Wetlands (list and draw): PEM-	2							

Feature ID: E-9		Unique Site ID:					
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas		County: Leavenworth				
Stream Characteristics							
Stream Type:		Stream Classification	on:				
☐Perennial ☐Intermittent ☑Ephemer	-	□TNW □Rela	tively Permanent Water ⊠Non-RPW				
Stream Characteristics: ⊠Natural ☐Artif			·				
Hydrology: □Flowing □Standing □	None	Approximate water	r velocity: 0 fps				
Top of bank to top of bank width: 20 ft.		Top of Bank height	: 3 ft.				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other: vegetation (% cover, type):					
Stream Condition/Stability:	□bank collapse teep side slopes	Tributary Geometry	r: □Relatively Straight ⊠Meandering				
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	]2-5 ⊠6-10	Surface Flow: DDDDiscrete and Cor					
Stream has: Bed/Bank OHWM: OHWM has: Clear, nate shelving veg. matte absent  Water Color/Quality: Clear	ural line on bank ed down or	☐ leaf litter disturbed	ts scour smultiple flow events change in plant community other:				
Riparian Type:     Forested   Herbaceo	<u> </u>	Riparian Buffer Wic	dth: 10-50 ft.				
Buffer (adjacent bank) vegetation: Forested buffer consisting of <i>Ulmus americana</i> , <i>Platanus occidentalis</i> , <i>Gleditsia triacanthos</i> , <i>Juniperus virginiana</i> , with sparse <i>Lonicera mackii</i> and <i>Symphoricarpos orbiculatus</i> .							
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	ificant Nexus Analy feeding/nesting/spawn nical relationships):	ysis/Notes/Drawing ning ground for TNW species, other biological,				
☐Adjacent Wetlands (list and draw):	py 0.00. 01 01/011						
☐Abutting Wetlands (list and draw):							
Tributary flows north into I-6 from upland area. The tributary on the upstream end is buffered by a narrow forested buffer that is surrounded by managed pasture land.							

Feature ID: E-10				Unique Site ID: E-10-1			
Project Name and #: Leavenwo CJA2875	rth USP/	State: Kansas			Coun	ty: Leavenworth	
Stream Characteristics							
Stream Type:			Str	eam Classificatio	n:		
□Perennial □Intermittent □	Ephemer					Permanent Water Non-RPW	
Stream Characteristics: Natur				OHWM width: 3		OHWM depth: 3 ft.	
Hydrology: ⊠Flowing □Star		None		proximate water		ty: <0.5 fps	
Top of bank to top of bank width				o of Bank height:			
Side Slopes: ☐1:1 ☐2:1 [	□3:1 🛚	4:1 or >	Stream Bottom Composition: Silt Sand gravel cobble bedrock concrete muck other: vegetation (% cover, type):				
Stream Condition/Stability:   Cut-off channels   riffles/r	derosion uns ☐ s	⊠bank collapse teep side slopes	Trik	outary Geometry:	: ⊠Re	elatively Straight	
Estimated Flow Events per year ⊠11-20	: 🔲 1	2-5		rface Flow: □Dis Discrete and Con		⊠Confined ☐Overland Sheet Flow	
	∃shelving ⊴veg. matto bsent	ural line on bank ed down or		eaf litter disturber sediment deposits itter/debris water staining no terrestrial veg. sediment sorting	s [ [ [	wrack line     scour     multiple flow events     change in plant community     other:	
Water Color/Quality: ⊠Clear	Discolo	red ☐Oily film					
	Herbaceo	_ •	Rip	parian Buffer Widt	th:	100 ft. +	
Buffer (adjacent bank) vegetatio							
			, feea	ling/nesting/spawni		otes/Drawing and for TNW species, other biological,	
☐Adjacent Wetlands (list and d	raw).	physical or cher	IIICai	тетанопъпіръ).			
☐Abutting Wetlands (list and dr							
Data taken in portion of the tribu	tary downs	tream of the culver	t.				

Feature ID: E-10		Unique Site ID: E-10-2						
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas		County: Leavenworth					
	Stream Cha	aracteristics						
Stream Type:		Stream Classification	on:					
□Perennial □Intermittent ⊠Ephemer	-		tively Permanent Water ⊠Non-RPW					
Stream Characteristics: ⊠Natural □Arti			·					
, , , – , –	None	Approximate water	•					
Top of bank to top of bank width: 20 ft.		Top of Bank height:	6 ft.					
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >	Stream Bottom Con  cobble bedr  other:  vegetation (% co	ock					
Stream Condition/Stability:	□bank collapse steep side slopes	Tributary Geometry	: ⊠Relatively Straight ☐Meandering					
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5	Surface Flow: Discrete and Cor						
□shelving ⊠veg. matt absent	ural line on bank ed down or	☐ leaf litter disturbe ☐ sediment deposit ☐ litter/debris ☐ water staining ☑ no terrestrial veg ☐ sediment sorting	ts Scour  multiple flow events change in plant community dother:					
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film							
Riparian Type: ☐Forested ☐Herbaced	_ •	Riparian Buffer Wid	lth: 100 ft. +					
	Buffer (adjacent bank) vegetation: Managed grassland.							
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	feeding/nesting/spawn	ysis/Notes/Drawing ing ground for TNW species, other biological,					
Adjacent Wetlands (list and draw):	physical or chem	ical relationships):						
☐ Abutting Wetlands (list and draw):								
This is portion of tributary above road culvert that has been straightened and banks stabilized with sod. No OHWM for much of this section.								

Feature ID: I-1 Unique Site ID:							
Project Name and #: Leavenworth USP/ CJA2875 State: Kansas	County: Leavenworth						
Stream Characteristics							
Stream Type:	Stream Classification:						
☐Perennial ☐Intermittent ☐Ephemeral ☐Drainage	☐TNW ☐Relatively Permanent Water ⊠Non-RPW						
Stream Characteristics: ⊠Natural □Artificial □Manipulate	<u>-</u>						
Hydrology: ⊠Flowing □Standing □None	Approximate water velocity: <0.5 fps						
Top of bank to top of bank width: 50 ft.	Top of Bank height: 25 ft.						
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other: Svegetation (% cover, type): 75%, herbaceous						
Stream Condition/Stability: ☐erosion ☐bank collapse ☐cut-off channels ☐riffles/runs ☐ steep side slopes	Tributary Geometry: ⊠Relatively Straight ☐Meandering						
Estimated Flow Events per year: ☐1 ☐2-5 ☐6-10 ☐11-20 ☐20 or >	Surface Flow: Discrete Confined Discrete and Confined Overland Sheet Flow						
Stream has:   Bed/Bank  OHWM has:  Clear, natural line on bank  shelving  veg. matted down or absent	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting						
Water Color/Quality: ⊠Clear □Discolored □Oily film							
Riparian Type: ☐Forested ☐Herbaceous ☐Ag. field	Riparian Buffer Width: 100 ft. +						
Buffer (adjacent bank) vegetation: Few scattered trees including <i>Ulmus americana, Maclura pomifera, Juniperus virginiana, Juglans nigra,</i> with herbaceous understory consisting of <i>Bromus inermis, Panicum virgatum,</i> and <i>Schizachyrium scoparium.</i> Invasives noted include <i>Rosa multiflora, Lonicera japonicus, and Lespedeza cuneata.</i>							
	nificant Nexus Analysis/Notes/Drawing , feeding/nesting/spawning ground for TNW species, other biological,						
	nical relationships):						
☐Adjacent Wetlands (list and draw):							
⊠Abutting Wetlands (list and draw): PEM-1							
Hillside south of tributary was wet at time of survey. Tributary flowing at time of survey with dry upland above. Suspect groundwater source for flow at time of survey.							

Feature ID: I-2	Unique Site ID: I-2-1							
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth				
Stream Characteristics								
Stream Type:	Otroum On		ream Classification	n.				
☐Perennial ☐Intermittent ☐Ephemer	al Drainage			tively Perma	anent Water ⊠Non-RPW			
Stream Characteristics: Natural Artif			OHWM width:		OHWM depth: 3 ft.			
	•				•			
, 3 – 3 – 3 –	None		pproximate water		fps			
Top of bank to top of bank width: 50 ft.			p of Bank height:					
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con cobble ☐bedr lother: lvegetation (% co	ock Co	☑silt ☑sand ☑gravel ncrete ☐muck			
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □ s	□bank collapse steep side slopes	Tr	ibutary Geometry	:	ely Straight   Meandering			
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	]2-5		urface Flow: □Di Discrete and Cor		Confined Overland Sheet Flow			
Stream has: Bed/Bank  OHWM has: Clear, nat shelving veg. matt absent  Water Color/Quality: Clear	ural line on bank ed down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts ⊟sco ⊠mu ⊟cha	ultiple flow events ange in plant community			
Riparian Type: Sprested Herbaced		Di	parian Buffer Wid	lth:	100 ft. +			
Ripalian Type. Mrolested Mneibaced	lus Mg. lielu	KI	panan buner wid	iui.	100 11. +			
Buffer (adjacent bank) vegetation: Upper end is herbaceous vegetation consisting of mixed graminoids including <i>Bromus inermis</i> , <i>Schizachyrium scoparium</i> , and <i>Panicum virgatum</i> . Downstream end is a buffer with forested species including <i>Ulmus americana</i> , <i>Juniperus virginiana</i> , <i>Quercus palustris</i> , and <i>Quercus alba</i> , with shrubs and herbaceous ground cover.								
Adjacent and Abu	tting Wetland/Sign	nific	ant Nexus Analy	ysis/Notes/[	Drawing			
Explain significant nexus (pollution filtration,	physical or cher			irig ground ioi	TIVV species, other biological,			
☐Adjacent Wetlands (list and draw):	<u> </u>							
☐Abutting Wetlands (list and draw):								
No rainfall within the past week but flowing groundwater source.	fairly swiftly at time	e of	survey with dry up	plands above	e. Suspect flow is from			

Feature ID: I-2			Unique Site ID: I-2-2				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas				County: Leavenworth		
	Stream Ch	ara	cteristics				
Stream Type:	00		ream Classificatio	n.			
☐ Perennial ☐ Intermittent ☐ Ephemer	al Drainage				y Perma	nent Water ⊠Non-RPW	
Stream Characteristics: Natural Arti	ficial Manipulate	ed	OHWM width:	0.5	ft.	OHWM depth: <0.5 ft.	
Hydrology: ☐Flowing ☐Standing ☐	None	A	pproximate water	velo	ocity: 0	fps	
Top of bank to top of bank width: 8 ft.		To	pp of Bank height:	5	ft.		
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Com  cobble	ock	□cor		
Stream Condition/Stability:	☐bank collapse steep side slopes	Tr	ibutary Geometry:	: 🗆	Relative	ly Straight ⊠Meandering	
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5		urface Flow: ⊠Di: ]Discrete and Con			Confined Overland Sheet Flow	
□shelving □veg. matt absent	ural line on bank ed down or		leaf litter disturbe sediment deposits litter/debris water staining no terrestrial veg. sediment sorting	S	□scc □mu	Itiple flow events ange in plant community	
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film						
Riparian Type: Sorested Herbaced	ous	Ri	parian Buffer Widt	th:		15 ft.	
Buffer (adjacent bank) vegetation: Narrow forested buffer surrounded by managed pasture land.							
Adjacent and Abu Explain significant nexus (pollution filtration,		fee	ding/nesting/spawni				
☐Adjacent Wetlands (list and draw):	, , , , , , , , , , , , , , , , , , , ,						
☐Abutting Wetlands (list and draw):							
No noticeable groundwater flow at data poi	nt taken at the head	dwa	iter.				

Feature ID: I-2			Unique Site ID:	I-2-3			
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	[		County: Leavenworth			
	Stream Ch	ara	cteristics				
Stream Type:	Otream on		ream Classificatio	n:			
☐Perennial ☑Intermittent ☐Ephemer	al □Drainage		TNW ⊠Relat	tively Perma	anent Water  Non-RPW		
Stream Characteristics: ⊠Natural	ficial Manipulate	ed	OHWM width:	1 ft.	OHWM depth: <0.5 ft.		
	None		pproximate water		fps		
Top of bank to top of bank width: 15 ft.		То	p of Bank height:	4 ft.			
Side Slopes: □1:1 □2:1 ⊠3:1 □	]4:1 or >	Stream Bottom Composition: ⊠silt ⊠sand ⊠gravel □cobble □bedrock □concrete □muck □other: □vegetation (% cover, type):10%, herbaceous and forested					
Stream Condition/Stability: Serosion Cut-off channels Triffles/runs Stream Stream Condition/Stability: Stream Condition/Stream Conditio	⊠bank collapse steep side slopes	Tri	butary Geometry:	: □Relativ	ely Straight   Meandering		
Estimated Flow Events per year:  1  11-20  20 or >20	]2-5		ırface Flow: □Di Discrete and Con		Confined Overland Sheet Flow		
Stream has:   Bed/Bank  OHWM has  clear, nat  shelving  veg. matt  absent  Water Color/Quality:  Clear  Discolor	ural line on bank	<ul><li>☐water staining</li><li>☐no terrestrial veg.</li><li>☐sediment sorting</li><li>☐change in plant community</li><li>☐other:</li></ul>					
Riparian Type: Sorested Herbaced	ous	Ri	parian Buffer Wid	th: 10-20	ft.		
Buffer (adjacent bank) vegetation: Narrow forested buffer surrounded by managed pasture land.							
Adjacent and Abu Explain significant nexus (pollution filtration,		, fee	ding/nesting/spawni				
Adjacent Wetlands (list and draw):	priysical or cricin	moai	тскионатра).				
☐Abutting Wetlands (list and draw):							
Relatively good flow at time of survey and no rainfall for at least the past week.							

Feature ID: I-3			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County	v: Leavenworth		
	Stream Ch	ara	cteristics				
Stream Type:			ream Classificatio	n·			
☐Perennial ☐Intermittent ☐Ephemer	al Drainage				rmanent Water  Non-RPW		
Stream Characteristics: Natural Artif	ficial Manipulate	ed	OHWM width:	4 ft.	OHWM depth: 5 ft.		
Hydrology: ⊠Flowing □Standing □	None	A	pproximate water	velocity	: 1 fps		
Top of bank to top of bank width: 25 ft.		To	pp of Bank height:	10 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >	$\boxtimes \sqcup$	ream Bottom Com cobble ⊠bedro lother: vegetation (% cov	ock [	concrete muck		
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □ s	⊠bank collapse steep side slopes	Tr	ibutary Geometry:	Rela	atively Straight   Meandering		
Estimated Flow Events per year:  1  11-20  20 or >20	]2-5		urface Flow: □Di: Discrete and Con		⊠Confined □Overland Sheet Flow		
□shelving ⊠veg. matt absent	ural line on bank ed down or		leaf litter disturbe sediment deposits litter/debris water staining no terrestrial veg. sediment sorting	s 🗵	wrack line scour multiple flow events change in plant community other:		
Water Color/Quality: ⊠Clear □Discolo							
Riparian Type: ⊠Forested □Herbaceo	_ •		parian Buffer Widt		ft.		
pomifera, with shrubs including dense Loni includes mixed forbs and graminoids.	Buffer (adjacent bank) vegetation: Forest buffer consisting of <i>Quercus alba, Celtis occidentalis, Ulmus americana, Maclura pomifera,</i> with shrubs including dense <i>Lonicera mackii, Rosa multiflora,</i> and <i>Symphoricarpos orbiculatus</i> . Ground cover includes mixed forbs and graminoids.						
Adjacent and Abu Explain significant nexus (pollution filtration,		fee	ding/nesting/spawni				
Adjacent Wetlands (list and draw):			•				
☐Abutting Wetlands (list and draw):							

Feature ID: I-4 (Corral Creek)			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	•		County: Leavenworth			
Stream Characteristics							
Stream Type:			ream Classification	n.			
☐Perennial ☐Intermittent ☐Epheme	ral □Drainage				ermanent Water Non-RPW		
Stream Characteristics: Natural Art	-		OHWM width:		OHWM depth: 7 ft.		
Hydrology: ⊠Flowing □Standing □	]None	A	oproximate water	velocity	y: 1 fps		
Top of bank to top of bank width: 50 ft.		То	p of Bank height:	20 ft	t.		
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	]4:1 or >	Stream Bottom Composition: Silt Sand Gravel Cobble Bedrock Concrete muck Other: Vegetation (% cover, type):					
Stream Condition/Stability: Serosion Cut-off channels Triffles/runs	⊠bank collapse steep side slopes	Tri	butary Geometry:	: □Re	latively Straight   Meandering		
Estimated Flow Events per year:  1 [11-20 20 or >20	<u>]</u> 2-5 <u></u>  6-10		ırface Flow: □Di Discrete and Con		⊠Confined ☐Overland Sheet Flow		
□shelving	s: tural line on bank ted down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg- sediment sorting	s [	⊠ wrack line ⊠scour ⊠multiple flow events ⊒change in plant community ⊒other:		
Water Color/Quality: ⊠Clear □Discolo	ored Oily film		<u> </u>				
Riparian Type: ⊠Forested □Herbace	ous	Rip	parian Buffer Wid	th: 50	0-100 ft.		
Buffer (adjacent bank) vegetation: Forest buffer consisting of <i>Ulmus americana, Maclura pomifera, Celtis occidentalis, Quercus alba, Gleditsia triacanthos</i> , with moderately dense shrub layer consisting of <i>Lonicera mackii, Rosa multiflora</i> , and <i>Symphoricarpos orbiculatus</i> .							
Adjacent and Abu Explain significant nexus (pollution filtration	utting Wetland/Sign	ific	ant Nexus Analy	/sis/No	tes/Drawing		
Explain significant flexus (politilon illitation	physical or chem			ing groui	nd for Trviv species, other biological,		
☐Adjacent Wetlands (list and draw):							
☐Abutting Wetlands (list and draw):							
Topography undulating. Sparse herbaceon	us cover at time of su	urve	ey with moderate	leaf litte	er and some down woody debris.		

Feature ID: I-5		Unique Site ID:					
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth			
Stream Characteristics							
Stream Type:	00		ream Classification	n:			
☐Perennial ☐Intermittent ☐Ephemer	al Drainage				Permanent Water ⊠Non-RPW		
Stream Characteristics: Natural Arti	-		OHWM width:		OHWM depth: 1.5 ft.		
	•				·		
, 3 – 3 –	None		pproximate water				
Top of bank to top of bank width: 20 ft.		To	p of Bank height:	8 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >	$\boxtimes$	ream Bottom Con cobble ☐bedr other: vegetation (% co	ock	□concrete □muck		
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □ s	⊠bank collapse steep side slopes	Tr	ibutary Geometry	:	elatively Straight   Meandering		
Estimated Flow Events per year:  1	]2-5		urface Flow: □Di Discrete and Cor		⊠Confined ☐Overland Sheet Flow		
Stream has:   Bed/Bank  OHWM has:  Clear, nat  shelving  veg. matt absent	ural line on bank		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	<ul><li>□ wrack line</li><li>☑ scour</li><li>☑ multiple flow events</li><li>☐ change in plant community</li><li>☐ other:</li></ul>		
Water Color/Quality: ⊠Clear □Discolo	red ☐Oily film	<del></del>					
Riparian Type: ⊠Forested ☐Herbaced	us	Ri	parian Buffer Wid	lth: 1	00 ft. +		
Buffer (adjacent bank) vegetation: Forest buffer consisting of <i>Platanus occidentalis, Gleditsia triacanthos, Celtis occidentalis, Juniperus virginiana, Quercus alba</i> with moderately dense shrub cover mostly <i>Lonicera mackii.</i>							
Adjacent and Abu Explain significant nexus (pollution filtration,		fee	ding/nesting/spawn				
Adjacent Wetlands (list and draw):	priyalar or orien	. noa	roidiononipo).				
☐Abutting Wetlands (list and draw):							
Tributary flowing at time of survey with ove point at edge of forested area with erosion							

Feature ID: I-6			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			Count	y: Leavenworth		
Stream Characteristics							
Stream Type:			ream Classification	n:			
☐Perennial ☐Intermittent ☐Epheme	ral Drainage		TNW ⊠Relat	tivelv Pe	ermanent Water		
-	ificial Manipulate		OHWM width:		OHWM depth: 2 ft.		
Hydrology: ⊠Flowing □Standing □	None	Α	pproximate water	velocity	r: <0.5 fps		
Top of bank to top of bank width: 35 ft.		Тс	p of Bank height:	5 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	]4:1 or >		ream Bottom Com cobble	ock [	□concrete □muck		
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □	□bank collapse steep side slopes	Tr	ibutary Geometry:	: □Rel	atively Straight ⊠Meandering		
Estimated Flow Events per year: ☐1 ☐ 11-20 ☐ 20 or >20	<b>□</b> 2-5 <b>□</b> 6-10		ırface Flow: □Di Discrete and Con		⊠Confined ☐Overland Sheet Flow		
□shelving	s: tural line on bank ted down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg- sediment sorting	s [ [ [	☐ wrack line ☐scour ☑multiple flow events ☐change in plant community ☐other:		
Water Color/Quality: ⊠Clear □Discol	ored Oily film		<u> </u>				
Riparian Type: ⊠Forested ⊠Herbace	ous	Ri	parian Buffer Wid	th: 40	) ft.		
Buffer (adjacent bank) vegetation: Forest buffer consisting of <i>Gleditsia triacanthos, Acer negundo, Salix nigra, Ulmus americana, Populus deltoides, Platanus occidentalis</i> with sparse shrub cover, vines, and good ground cover of mixed forbs and graminoids.							
Adjacent and Ab Explain significant nexus (pollution filtration	utting Wetland/Sigr n, flood water retention, physical or cher	, fee	ding/nesting/spawni	/sis/Not ing grour	tes/Drawing and for TNW species, other biological,		
Adjacent Wetlands (list and draw):	priyolodi or orier		Jianorioriipo).				
☑Abutting Wetlands (list and draw): PEN	1-3						
Tributary flows through forested area to tharea.	e east into PEM-3 a	t the	e mouth of OW-1.	Tributa	ry in broad mostly flat swale		

Feature ID: I-7		Unique Site ID:					
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth			
Stream Characteristics							
Stream Type:	Stream Ci	-	ream Classification	n.			
☐Perennial ☐Intermittent ☐Epheme	ral Drainage				Permanent Water Non-RPW		
Stream Characteristics:   Natural   Arti			OHWM width:		OHWM depth: 0.5 ft.		
					·		
	None		pproximate water				
Top of bank to top of bank width: 20 ft.		To	p of Bank height:	6 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	]4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other:					
Stream Condition/Stability:	□bank collapse steep side slopes	Tr	ibutary Geometry	: □R€	elatively Straight   Meandering		
Estimated Flow Events per year:  1	]2-5 🖾6-10		urface Flow: □Di Discrete and Cor		⊠Confined ☐Overland Sheet Flow		
Stream has: Bed/Bank  OHWM has  clear, nat  shelving  veg. matt absent	ural line on bank	_	leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	wrack line     scour     multiple flow events     change in plant community     other:		
Water Color/Quality: ⊠Clear □Discolo	red Oily film		<u>,</u>				
Riparian Type: ⊠Forested ⊠Herbaced	ous	Ri	parian Buffer Wid	lth: 1	10-50 ft.		
Buffer (adjacent bank) vegetation: Forest buffer consisting of <i>Ulmus americana, Acer negundo, Lonicera mackii, Vitis</i> sp. Sparse herbaceous ground cover with moderate leaf litter and down woody debris.							
Adjacent and Abu Explain significant nexus (pollution filtration)	tting Wetland/Sigr						
	physical or cher				-		
☐Adjacent Wetlands (list and draw):							
☐Abutting Wetlands (list and draw):							
Tributary flows north into I-6 from uplands. pasture land. Small linear backwater to the Assume continues underground into I-6.							

Feature ID: I-8		Unique Site	ID: I-8-1				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas		County: Leavenworth				
	Stroam Ch	aracteristics					
Stream Type:	Stream On	Stream Classific	cation:				
☐Perennial ☐Intermittent ☐Epheme	ral Drainage		Relatively Permanent Water   Non-RPW				
Stream Characteristics: Natural Art			-				
Hydrology: ⊠Flowing □Standing □	]None	Approximate w	ater velocity: 1.5 fps				
Top of bank to top of bank width: 40 ft.		Top of Bank hei	ight: 7 ft.				
Side Slopes: □1:1 □2:1 □3:1 □	]4:1 or >	Stream Bottom Composition: ⊠silt ⊠sand ⊠gravel □cobble □bedrock □concrete □muck □other: □vegetation (% cover, type):					
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □	⊠bank collapse steep side slopes	Tributary Geom	etry: ☐Relatively Straight ☐Meandering				
Estimated Flow Events per year: 1 [ 11-20 20 or >20	<b>]</b> 2-5 <b>□</b> 6-10	Surface Flow: [	<del></del>				
□shelving	s: tural line on bank ted down or	☐ leaf litter districted in the control of the con	oosits Scour Smultiple flow events g Schange in plant community veg. Sother:				
Water Color/Quality: ⊠Clear □Discolo	ored  Oily film						
Riparian Type: ☐Forested ☐Herbace	ous	Riparian Buffer	Width: 100 ft. +				
Buffer (adjacent bank) vegetation: Buffer nigra, Ulmus americana, Salix nigra, and n	Acer negundo.						
	, flood water retention,		nalysis/Notes/Drawing awning ground for TNW species, other biological,				
⊠Adjacent Wetlands (list and draw): PEN		nicai reialioristiips).					
☐Abutting Wetlands (list and draw):							
Piped partially in large diameter brick pipe							

Feature ID: I-8			Unique Site ID:	I-8-2			
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth			
Stream Characteristics							
Stream Type: Stream Classification:							
☐Perennial ☑Intermittent ☐Ephemer	al Drainage		]TNW □Rela	tively F	Permanent Water ⊠Non-RPW		
Stream Characteristics: Natural Artif	ficial Manipulate	ed	OHWM width:	1.5 ft.	. OHWM depth: <0.5 ft.		
	None		pproximate water				
Top of bank to top of bank width: 2-5 ft.		To	p of Bank height:	2-4	ft.		
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con ]cobble □bedr ]other: ]vegetation (% co	rock	ion: ⊠silt □sand □gravel □concrete □muck pe): 95%, herbaceous		
	□bank collapse teep side slopes	Tr	ibutary Geometry	′:	elatively Straight   Meandering		
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5 <u></u> 6-10		urface Flow: □Di Discrete and Cor		Confined Overland Sheet Flow		
Stream has: Bed/Bank  OHWM: OHWM has: Clear, nat clear, nat clear belowing veg. matt absent	ural line on bank		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	wrack line scour multiple flow events change in plant community other:		
Water Color/Quality: ⊠Clear □Discolo	red  Oily film		, <u>-</u>				
Riparian Type: Forested Merbaced	us	Ri	parian Buffer Wid	lth: 1	100 ft. +		
Buffer (adjacent bank) vegetation: Managed grassland.							
Adjacent and Abu Explain significant nexus (pollution filtration,							
	physical or cher						
	-4						
☐Abutting Wetlands (list and draw):							
Mowed grassy area. No OHWM below culvert at old road bed. Bottom of drainage vegetated with no evident scouring. Approximately 80 yards upstream OHWM appears and continues until offsite on the west boundary. Drainage is to the southeast.							

Feature ID: I-9 Unique Site ID:								
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	s			County: Leavenworth			
Stream Characteristics								
Stream Type:	Stream Ci		ream Classification	n:				
☐Perennial ☐Intermittent ☐Epheme	ral Drainage				Permanent W	/ater □Non-RPW		
Stream Characteristics:   Natural   Arti			OHWM width:			M depth: 2 ft.		
						W doptii. Z it.		
	]None		pproximate water		ty: 1 tps			
Top of bank to top of bank width: 15 ft.			p of Bank height:					
Side Slopes: □1:1 □2:1 ⊠3:1 □	]4:1 or >		ream Bottom Con  cobble  □bedr  other:  vegetation (% co	rock	□concrete	⊠sand ⊠gravel □muck		
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs □	□bank collapse steep side slopes	Tr	ibutary Geometry	:	elatively Stra	ight ⊠Meandering		
Estimated Flow Events per year: 1 1 11-20 20 or > 20	]2-5		urface Flow: □Di Discrete and Cor			ed and Sheet Flow		
□shelving	: tural line on bank ted down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	wrack line     wrack line			
Water Color/Quality: ⊠Clear □Discolo	ored  Oily film		jacannent sorting					
Riparian Type: ☐Forested ☑Herbaced	ous	Ri	parian Buffer Wid	lth:	00 ft. +			
Buffer (adjacent bank) vegetation: Manag	·							
Adjacent and Abu Explain significant nexus (pollution filtration	itting Wetland/Sigr , flood water retention,							
	physical or cher							
☐Adjacent Wetlands (list and draw):								
⊠Abutting Wetlands (list and draw): PEM	1-5							
Upper end of tributary flow coming from pipe under road. Good flow from pipe at time of survey. Below pipe is old pond and dam. Dam has been breached and flow has been diverted on the west side of old dam in highly eroded channel. PEM-5 is on old pond site.								

Feature ID: I-10	ature ID: I-10			Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth				
Stream Characteristics								
Stream Type:	Otrouii Or		ream Classification	n:				
☐Perennial ☐Intermittent ☐Ephemer	al Drainage				manent Water  Non-RPW			
Stream Characteristics: Natural Artif			OHWM width:	-	OHWM depth: <0.5 ft.			
	•				·			
, 3 – 3 – 3 –	None		pproximate water		1.5 fps			
Top of bank to top of bank width: 20 ft.			p of Bank height:					
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con cobble ☐bedr other: vegetation (% co	ock	concrete muck			
Stream Condition/Stability:	□bank collapse steep side slopes	Tr	ibutary Geometry	: □Relat	tively Straight   Meandering			
Estimated Flow Events per year: 1 1 11-20 20 or > 20	]2-5		urface Flow: □Di Discrete and Cor		⊠Confined ☐Overland Sheet Flow			
Stream has:   Bed/Bank  OHWM has:  clear, nat  shelving  veg. matt absent  Water Color/Quality:  Clear  Discolo	ural line on bank ed down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts 🔲	wrack line scour multiple flow events change in plant community other:			
Riparian Type: ☐Forested ☑Herbaced	us	Ri	parian Buffer Wid	lth: 100	ft. +			
Buffer (adjacent bank) vegetation: Manage	ed grassland.							
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	, fee	ding/nesting/spawn	sis/Note ing ground	s/Drawing for TNW species, other biological,			
Adjacent Wetlands (list and draw):	physical or cher	nıca	ı relationships):		1			
ப் பிரும்போர் wellands (list and draw).								
⊠Abutting Wetlands (list and draw): PEM-	-5							
Flow visible at fenceline but piped above fed drainage above and intermittent from fence				so road no	o OHWM so recorded as			

Feature ID: I-11	Unique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875 State: Ka	ansas	County: Leavenworth			
Stre	am Chara	acteristics			
Stream Type:		ream Classification:			
☐Perennial ☑Intermittent ☐Ephemeral ☐Drain	nage 🗀	TNW ⊠Relatively Permanent Water □Non-RPW			
Stream Characteristics: Natural Artificial Mar	nipulated	OHWM width: 2 ft. OHWM depth: <0.5 ft.			
Hydrology: ⊠Flowing □Standing □None	А	pproximate water velocity: 1.5 fps			
Top of bank to top of bank width: 25 ft.	To	op of Bank height: 6.5 ft.			
Side Slopes: ☐1:1		ream Bottom Composition: Silt Sand Sgravel cobble bedrock concrete muck other: vegetation (% cover, type):			
Stream Condition/Stability: ☐erosion ☐bank coll ☐cut-off channels ☐riffles/runs ☐ steep side slo		ibutary Geometry: ☐Relatively Straight ☐Meandering			
Estimated Flow Events per year:  1 2-5 6-1		urface Flow: ☐Discrete ☐Confined ☐Discrete and Confined ☐Overland Sheet Flow			
Stream has:   Bed/Bank  OHWM has:  Clear, natural line on be shelving  veg. matted down or absent	oank ⊠ □ □	leaf litter disturbed			
Water Color/Quality: ⊠Clear □Discolored □Oily	y film				
Riparian Type: ⊠Forested ⊠Herbaceous □Ag.	field Ri	parian Buffer Width: 25 ft. +			
Buffer (adjacent bank) vegetation: Narrow forested buf	fer surroui	nded by managed pasture land.			
Explain significant nexus (pollution filtration, flood water re	etention, fee	cant Nexus Analysis/Notes/Drawing  ding/nesting/spawning ground for TNW species, other biological,			
physical  ☐Adjacent Wetlands (list and draw):	l or chemica	I relationships):			
☐Abutting Wetlands (list and draw):					

Feature ID: D-1 Unique Site ID					Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	s			County: Leavenworth				
Stream Characteristics									
Stream Type:	Otream on		ream Classifica	tion:					
☐Perennial ☐Intermittent ☐Ephemer	al ⊠Drainage		]TNW □Re	lativ	elv Per	manent Water Non-RPW			
Stream Characteristics: Natural Artif	-		OHWM width			OHWM depth: ft.			
Hydrology: ☐Flowing ☐Standing ☐	None	A	pproximate wat	er ve	elocity:	fps			
Top of bank to top of bank width: 4 ft.		To	op of Bank heigh	ht: 7	ft.				
Side Slopes: ⊠1:1			Stream Bottom Composition: silt sand gravel cobble bedrock concrete muck other: vegetation (% cover, type): 100%, herbaceous with scattered trees						
Stream Condition/Stability: ☐erosion ☐cut-off channels ☐riffles/runs ☒ s	□bank collapse teep side slopes	Tr	ibutary Geomet	ry: [	⊠Rela	tively Straight			
Estimated Flow Events per year: 1 1 11-20 20 or >	]2-5 ⊠6-10		urface Flow:  Discrete and C			⊠Confined ☐Overland Sheet Flow			
Stream has: Bed/Bank  OHWM: OHWM has:  clear, nate shelving veg. matte	ural line on bank		leaf litter disturt sediment depos litter/debris water staining no terrestrial ve sediment sortin	sits eg.		wrack line scour multiple flow events change in plant community other:			
Water Color/Quality: Clear Discolo	red Oily film		1000	· <u>9</u>					
Riparian Type: ☐Forested ☑Herbaceo	us	Ri	parian Buffer W	idth:	: 100	) ft. +			
Buffer (adjacent bank) vegetation: Few scattered trees, including <i>Juniperus virginiana</i> , <i>Maclura pomifera</i> , <i>Acer negundo</i> , with <i>Rosa</i> spp. Ground cover <i>Bromus inermis</i> , <i>Trifolium repens</i> , and <i>Schizachyrium scoparium</i> .									
Adjacent and Abur Explain significant nexus (pollution filtration,		fee	ding/nesting/spav						
☐Adjacent Wetlands (list and draw):	p, ccar or orion		s.ausompoj.						
☐Abutting Wetlands (list and draw):									

Feature ID: D-2			Unique Site ID:	nique Site ID:				
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas				County: Leavenworth			
	Stream Ch	ara	cteristics					
Stream Type:	00		ream Classification	on:				
☐Perennial ☐Intermittent ☐Ephemer	al ⊠Drainage				v Perma	anent Water ⊠Non-RPW		
	-				y i Cillic			
Stream Characteristics: ⊠Natural □Arti			OHWM width:			OHWM depth: ft.		
, 6, – 6 – 6 –	None		pproximate water			fps		
Top of bank to top of bank width: 15 ft.			p of Bank height:					
Side Slopes: ⊠1:1  □2:1  □3:1  □	4:1 or >	Stream Bottom Composition: Silt Sand Gravel Cobble Shedrock Concrete Muck Other: Stream Bottom Composition: Silt Sand Gravel Shedrock Cobble Shedrock Shedrock Cobble Shedrock						
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs ☑ s	□bank collapse steep side slopes	Tr	ibutary Geometry	/: X	Relativo	ely Straight		
Estimated Flow Events per year: 1 = 11-20 = 20 or >	]2-5 🖾 6-10		urface Flow: □Di Discrete and Cor			Confined Overland Sheet Flow		
Stream has: Bed/Bank OHWM: OHWM has Clear, nat Shelving veg. matt absent  Water Color/Quality: Clear	ural line on bank ed down or		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts J.	⊟sc ⊟mu	rack line our ultiple flow events ange in plant community ner:		
Riparian Type:     Forested	ous \_Ag. field	Ri	parian Buffer Wid	lth:	25 ft.			
Buffer (adjacent bank) vegetation: Forested buffer with <i>Ulmus americana, Fraxinus pennsylvanica, Maclura pomifera</i> , and <i>Gleditsia triacanthos</i> . Moderate amount of shrub cover mostly <i>Lonicera mackii</i> and <i>Rosa multiflora</i> .								
Adjacent and Abu Explain significant nexus (pollution filtration,								
Explain signineant nexus (pollution ilitration,	physical or cher			mig ç	ground 10	Triviv species, other biological,		
☐Adjacent Wetlands (list and draw):			, ,					
☐Abutting Wetlands (list and draw):								

Feature ID: D-3		Unique Site ID:						
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County:	Leavenworth			
Stream Characteristics								
Stream Type: Stream Classification:								
☐ Perennial ☐ Intermittent ☐ Ephemer	al ⊠Drainage				manent Water Non-RPW			
•								
Stream Characteristics: ⊠Natural □Arti			OHWM width:		OHWM depth: ft.			
, 6, – 6 – 6 –	None		pproximate water	_	fps			
Top of bank to top of bank width: 6 ft.			p of Bank height:					
Side Slopes: ⊠1:1  □2:1  □3:1  □	4:1 or >		ream Bottom Con cobble bedr other: vegetation (% co	ock 🔲	concrete muck			
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs ⊠ s	□bank collapse teep side slopes	Tr	ibutary Geometry	: □Relat	ively Straight   Meandering			
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	]2-5 <u></u> 6-10		urface Flow: □Di Discrete and Cor		⊠Confined □Overland Sheet Flow			
Stream has: Bed/Bank OHWM: OHWM has: Clear, nat Shelving veg. matt absent  Water Color/Quality: Clear	ural line on bank ed down or	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting						
Riparian Type: ⊠Forested □Herbaced	us Ag. field	Ri	parian Buffer Wid	th: 50	ft.			
Buffer (adjacent bank) vegetation: Forest by Quercus alba, Gleditsia triacanthos, with me Symphoricarpos orbiculatus.								
Adjacent and Abu Explain significant nexus (pollution filtration,								
Explain digilillount noxud (pollution mauton,	physical or cher			ing ground	Tot TTVV species, ether biological,			
Adjacent Wetlands (list and draw):								
☐Abutting Wetlands (list and draw):								

Feature ID: D-4		Unique Site ID:						
Project Name and #: Leavenworth USP/ CJA2875					County: Leavenworth			
	Stream Ch	nara	cteristics	_				
Stream Type: Stream Classification:								
☐Perennial ☐Intermittent ☐Epheme	ral ⊠Drainage				Permanent Water Non	-RPW		
Stream Characteristics: ⊠Natural □Art			OHWM width:		OHWM depth: ft.			
Libratura la sur a Chanadina a N	None				to a fine			
, 6, – 6 – 6 –	Inone		pproximate water					
Top of bank to top of bank width: 15 ft.			p of Bank height:					
Side Slopes: ⊠1:1  □2:1  □3:1  □	]4:1 or >		ream Bottom Con cobble	rock	on: silt sand grace sand grace sand series.  be: 80%, forested	avel		
Stream Condition/Stability:	□bank collapse steep side slopes	Tri	butary Geometry	: ⊠R€	elatively Straight    Meand	ering		
Estimated Flow Events per year: 1 5	<b>⊴</b> 2-5 □6-10		ırface Flow: □Di Discrete and Cor		⊠Confined □Overland Sheet Flow			
Stream has: Bed/Bank  OHWM has  clear, na  shelving  veg. mat  absent  Water Color/Quality: Clear		leaf litter disturbe sediment deposit litter/debris water staining no terrestrial veg sediment sorting	ts	wrack line     scour     multiple flow events     change in plant communi     other:	ty			
Riparian Type: Sorested Herbace		Di	parian Buffer Wid	lth: 1	100 ft. +			
	· ·		•					
Buffer (adjacent bank) vegetation: Forestoccidentalis. Moderately heavy shrub coverage of the street				Glean	sia inacaminos, and Piatanus	5		
Adjacent and Abu Explain significant nexus (pollution filtration	utting Wetland/Sign , flood water retention, physical or cher	, fee	ding/nesting/spawn			ogical,		
Adjacent Wetlands (list and draw):	priysical of crief	nica	relationships).					
_ ,								
☐Abutting Wetlands (list and draw):								
Steep-sided drainage to Corral Creek (I-4)								

Feature ID: D-5		Unique Site ID:						
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	Kansas			County: Leavenworth			
Stream Characteristics								
Stream Type:	230		ream Classificatio	n.				
☐ Perennial ☐ Intermittent ☐ Ephemer	al ⊠Drainage				Permanent Water Non-RPW			
Stream Characteristics: Natural Artif	-		OHWM width:		OHWM depth: ft.			
	•				·			
, 6, – 6 – 6 –	None		pproximate water		y: fps			
Top of bank to top of bank width: 15 ft.			p of Bank height:					
Side Slopes: ⊠1:1  □2:1  □3:1  □	4:1 or >		ream Bottom Con cobble	ock [	□concrete □muck			
Stream Condition/Stability: ⊠erosion □cut-off channels □riffles/runs ☑ s	⊠bank collapse teep side slopes	Tr	ibutary Geometry:	: □Re	elatively Straight   Meandering			
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	]2-5		urface Flow: □Di Discrete and Con		⊠Confined ☐Overland Sheet Flow			
Stream has: Bed/Bank OHWM: OHWM has: Clear, nate Shelving Veg. matte absent  Water Color/Quality: Clear	ural line on bank ed down or	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting						
Riparian Type: ⊠Forested □Herbaceo	us	Ri	parian Buffer Wid	th: 1	00 ft.			
	Buffer (adjacent bank) vegetation: Forested buffer consisting of Ulmus americana, Fraxinus pennsylanicum, Quercus alba with dense shrub cover mostly Lonicera mackii							
Adjacent and Abur Explain significant nexus (pollution filtration,								
pa ogoan noxao (ponanon muanon,	physical or cher			g grou				
☐Adjacent Wetlands (list and draw):			. ,					
□ Abutting Wetlands (list and draw):								
Knick point with severe bank collapse and a Topography undulating.	erosion on edge of	fore	ested area. Draina	ige runs	s north to Corral Creek (I-4).			

Feature ID: D-6		Unique Site ID:					
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth			
	Stream Ch	ara	cteristics				
Stream Type:	2		ream Classification	n.			
☐ Perennial ☐ Intermittent ☐ Ephemer	al ⊠Drainage				Permanent Water Non-RPW		
Stream Characteristics: Natural Artif	ficial Manipulate	ed	OHWM width:	ft.	OHWM depth: ft.		
Hydrology: □Flowing □Standing □	None	A	pproximate water	veloci	ity: fps		
Top of bank to top of bank width: 4 ft.		To	p of Bank height:	2 ft.			
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >	Stream Bottom Composition: Silt sand gravel cobble bedrock concrete muck other: vegetation (% cover, type):					
Stream Condition/Stability:	□bank collapse steep side slopes	Tr	ibutary Geometry	: □R€	elatively Straight   Meandering		
Estimated Flow Events per year: ☐1	]2-5		urface Flow: □Di Discrete and Cor		e ☐Confined ☐Overland Sheet Flow		
Stream has: Bed/Bank  OHWM has: Clear, nat Shelving veg. matt absent  Water Color/Quality: Clear	ural line on bank ed down or	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting					
Riparian Type: ☐Forested ☑Herbaced	ous	Ri	Riparian Buffer Width: 100 ft.				
Buffer (adjacent bank) vegetation: Buffer of	onsists of common	pas	sture land species	S.			
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	fee	ding/nesting/spawni				
Madianant Matter de (liet   1   1   1   1   1   1   1   1   1	physical or cher	nica	I relationships):				
☐Adjacent Wetlands (list and draw):							
☐Abutting Wetlands (list and draw):							
Broad swale that comes from surrounding drainage area.	uplands that narrow	vs in	nmediately above	OW-1	1 into a slightly more confined		

Feature ID: D-7		Unique Site ID:					
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			С	ounty: L	Leavenworth	
Stream Characteristics							
Stream Type:			ream Classificatio	on:			
☐Perennial ☐Intermittent ☐Ephemer	-				-	anent Water ⊠Non-RPW	
Stream Characteristics: Natural Arti		ed	OHWM width:	ft.		OHWM depth: ft.	
Hydrology: □Flowing □Standing □	None	A	pproximate water	ve	locity:	fps	
Top of bank to top of bank width: 20 ft.			pp of Bank height:				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Com cobble bedro other: vegetation (% cov	ock	: □cc	_silt	
Stream Condition/Stability:	□bank collapse steep side slopes	Tr	ibutary Geometry:	⁄: [∑	Relativ	ely Straight	
Estimated Flow Events per year:  1  \( \sum 11-20 \subseteq 20 \text{ or } >	<b>]</b> 2-5 □6-10		urface Flow: □Dis Discrete and Con			Confined Overland Sheet Flow	
Stream has: Bed/Bank OHWM has: Clear, nat Shelving veg. matt absent  Water Color/Quality: Clear	ural line on bank ed down or	□leaf litter disturbed       □ wrack line         □sediment deposits       □ scour         □litter/debris       □ multiple flow events         □water staining       □ change in plant community         □no terrestrial veg.       □ other:         □sediment sorting					
Riparian Type:  Forested Herbaced	ous	Ri	parian Buffer Widt	lth:	100 f	t.	
Buffer (adjacent bank) vegetation: Buffer confluence with I-6.							
Adjacent and Abu Explain significant nexus (pollution filtration,		fee	ding/nesting/spawni				
Doding and Mathematical district	physical or chen	nica	l relationships):				
Adjacent Wetlands (list and draw):							
☐Abutting Wetlands (list and draw):	☐Abutting Wetlands (list and draw):						
Drainage runs north into I-6 from uplands.							

Feature ID: D-8	Unique Site ID:							
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas	<u>'</u>		Co	unty: L	eavenworth		
	Stream Ch	ara	cteristics					
Stream Type: Stream Classification:								
☐Perennial ☐Intermittent ☐Ephemer	al ⊠Drainage				Perma	anent Water ⊠Non-RPW		
Stream Characteristics: Natural Artif			OHWM width:			OHWM depth: ft.		
Hydrology: ☐Flowing ☐Standing ☒	None	Α	pproximate water	velo	city:	l fps		
Top of bank to top of bank width: 5 ft.		Тс	p of Bank height:	: 1 1	t.			
Side Slopes: □1:1 □2:1 □3:1 ⊠	4:1 or >		Stream Bottom Composition: silt sand gravel cobble bedrock concrete muck other: vegetation (% cover, type): 100%, herbaceous with a few scattered trees					
Stream Condition/Stability:	□bank collapse teep side slopes	Tr	ibutary Geometry:	ː ⊠I	Relativ	ely Straight		
Estimated Flow Events per year: ☐1 ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	2-5		ırface Flow: □Di Discrete and Con			Confined Overland Sheet Flow		
Stream has: Bed/Bank  OHWM has: clear, nate shelving veg. matte absent  Water Color/Quality: Clear Discolor	□leaf litter disturbed       □ wrack line         □sediment deposits       □ scour         □litter/debris       □ multiple flow events         □water staining       □ change in plant community         □no terrestrial veg.       □ other:         □sediment sorting							
Riparian Type: ☐Forested ☑Herbaceo	us	Ri	parian Buffer Wid	lth:	100 f	t. +		
Buffer (adjacent bank) vegetation: Manage								
Adjacent and Abu Explain significant nexus (pollution filtration,	flood water retention,	, fee	ding/nesting/spawni					
☐Adjacent Wetlands (list and draw):	physical or cher	nıca	i reiationsnips):					
□Abutting Wetlands (list and draw):								

Feature ID: D-9	Unique Site ID:							
Project Name and #: Leavenworth USP/ CJA2875					County: Leavenworth			
Stream Characteristics								
Stream Type:	000		ream Classification	on:				
☐Perennial ☐Intermittent ☐Ephemen	al ⊠Drainage		]TNW	tivel	v Perma	anent Water ⊠Non-RPW		
Stream Characteristics: Natural Artif			OHWM width:			OHWM depth: <0.5 ft.		
	•					·		
, 3; – 3 – 3	None		pproximate water			fps		
Top of bank to top of bank width: 5-15 ft.			p of Bank height:					
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con cobble bedr bedr betr: vegetation (% co attered trees and	rock over,	□co type): 1	ncrete		
Stream Condition/Stability:	□bank collapse teep side slopes	Tr	ibutary Geometry	/: X	Relativ	ely Straight		
Estimated Flow Events per year:  1	2-5		urface Flow: □Di Discrete and Cor			Confined Overland Sheet Flow		
Stream has: Bed/Bank  OHWM: OHWM has:  I clear, nate I shelving I veg. matte absent  Water Color/Quality: Clear	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting							
·								
Riparian Type: Sorested Herbaceo			parian Buffer Wid		100 f			
Buffer (adjacent bank) vegetation: Buffer c buffer consisting of Populus deltoides, Salix triacanthos.								
Adjacent and Abur Explain significant nexus (pollution filtration,	flood water retention,	fee	ding/nesting/spawn					
Adjacent Wetlands (list and draw):	physical or cher	nıca	ı relatıonships):					
ட்ர வுக்காட் wetianus (nscand draw).								
☐Abutting Wetlands (list and draw):								
Upper end in forest area has OHWM 1 foot water in upper end. Sheet flow once out of confluence with I-7.								

Feature ID: D-10	Unique Site ID:							
Project Name and #: Leavenworth USP/ CJA2875	State: Kansas			County: Leavenworth				
Stream Characteristics								
Stream Type: Stream Classification:								
	ol MDroinago				dy Dorm	anent Water Man RDW		
□Perennial □Intermittent □Ephemer	-				-	anent Water ⊠Non-RPW		
Stream Characteristics: ⊠Natural ☐Artif	_ ,	ed	OHWM width:	f	t.	OHWM depth: ft.		
, 6, – 6 – 6 –	None		pproximate water			fps		
Top of bank to top of bank width: 10 ft.			p of Bank height:					
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐	4:1 or >		ream Bottom Con cobble	rocl	< □cc	□silt □sand □gravel oncrete □muck 100%, herbaceous		
Stream Condition/Stability:	☐bank collapse teep side slopes	Tr	ibutary Geometry	/: [2	☑Relativ	ely Straight		
Estimated Flow Events per year: ☐1 ☐ ☐ 11-20 ☐ 20 or >	2-5 🖾 6-10		urface Flow: □Di Discrete and Cor			Confined Overland Sheet Flow		
Stream has: Bed/Bank  OHWM has: clear, nate shelving veg. matte absent  Water Color/Quality: Clear	□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting							
Riparian Type: ☐Forested ☑Herbaceo	us	Ri	parian Buffer Wid	dth:	100 f	t. +		
Buffer (adjacent bank) vegetation: Manage								
Adjacent and Abur Explain significant nexus (pollution filtration,	flood water retention,	fee	ding/nesting/spawni					
Adia cont Matlande (Est. sed deser)	physical or chen	nica	I relationships):					
☐Adjacent Wetlands (list and draw):								
□Abutting Wetlands (list and draw):								
Drain runs from culvert south to fenceline a	nd past fenceline to	) PI	EM-4.					

Feature ID: D-11 Unique Site ID:							
Project Name and #: Leavenworth USP/ CJA2875 State	e: Kansas		County: Leavenworth				
	Stream Chara	acteristics					
Stream Type:	tream Classificatio	n:					
☐Perennial ☐Intermittent ☐Ephemeral ☐	☑Drainage ☐	]TNW □Relat	ively Permanent Water ⊠Non-RPW				
Stream Characteristics: Natural Artificial	⊠Manipulated	OHWM width:	ft. OHWM depth: ft.				
Hydrology: □Flowing □Standing □None		Approximate water					
Top of bank to top of bank width: 10 ft.	Т	op of Bank height:	3 ft.				
Side Slopes: ☐1:1 ☐2:1 ☐3:1 ☐4:1 or		tream Bottom Con ]cobble □bedro ]other: ]vegetation (% co					
	nk collapse T ide slopes	ributary Geometry:	Relatively Straight ☐ Meandering				
Estimated Flow Events per year: ☐1 ☐2-5 ☐11-20 ☐20 or >		urface Flow: □Di ]Discrete and Con					
Stream has: Bed/Bank  OHWM has:  clear, natural lin  shelving  veg. matted dow absent		□ leaf litter disturbed       □ wrack line         □ sediment deposits       □ scour         □ litter/debris       □ multiple flow events         □ water staining       □ change in plant community         □ no terrestrial veg.       □ other:         □ sediment sorting					
Water Color/Quality: Clear Discolored	☐Oily film						
	-	Riparian Buffer Width: ft.					
Buffer (adjacent bank) vegetation: Managed gras							
Adjacent and Abutting V Explain significant nexus (pollution filtration, flood w pl		eding/nesting/spawni					
Adjacent Wetlands (list and draw):		. ,					
☐Abutting Wetlands (list and draw):							

## WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Leavenworth USP/CJA2875		(	City/County	Leavenwo	orth/Leavenworth	Sampling Date: 03/22/1	11
Applicant/Owner: Bureau of Prisons			State: KS Sampling Point: PEM-1-1				
Investigator(s): Laura Totten/Chris Thomas Section, Township, Range: Sec. 23, T8S, R22E							
Landform (hillslope, terrace, etc.): Drainage	ge		I	Local relief	(concave, convex, none):	Concave	
Slope (%): 40 Lat:			Long:			Datum:	
Soil Map Unit Name: Knox Silt Loam			_		NWI or WWI cl	assification: NA	
Are climatic / hydrologic conditions on the							
Are Vegetation, Soil, or Hy					Normal Circumstances" p		lo
Are Vegetation, Soil, or Hy					eded, explain any answe		
SUMMARY OF FINDINGS - Atta	ach site map	showing	samplin	g point le	ocations, transects	, important feature	s, etc.
Hydrophytic Vegetation Present?	Yes X	No					
Hydric Soil Present?	Yes X			e Sampled		No	
Wetland Hydrology Present?	Yes	No	with	in a Wetlan	id? fes	No	
Remarks:			•				
VECETATION Line exicutific no	maa of planta						
<b>VEGETATION</b> – Use scientific na	mes or plants		Dominant	Indicator	Dominanaa Taat wark	abooti	
Tree Stratum (Plot size:	)	% Cover	Dominant Species?		Dominance Test work  Number of Dominant Si		
1						or FAC: 2	(A)
2. 2					Total Number of Domin	ant	
3					Species Across All Stra		(B)
4					Percent of Dominant Sp	pecies	
5					That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size:	)		= Total Cov	/er	Prevalence Index wor	ksheet:	
1					Total % Cover of:	Multiply by:	
2.					OBL species	x 1 =0	
3					FACW species	x 2 =0	_
4						x 3 =0	
5						x 4 =0	
Herb Stratum (Plot size:	,		= Total Cov	/er		x 5 = 0	
	/	80	Υ	FACW	Column Totals:	(A) 0	(B)
O Companie appulantus			Y	FACW	Prevalence Index	= B/A =0	
3.					Hydrophytic Vegetation	on Indicators:	
4.					X Dominance Test is	>50%	
5					Prevalence Index is		
6					Morphological Ada	ptations <sup>1</sup> (Provide suppor s or on a separate sheet)	rting
7						phytic Vegetation <sup>1</sup> (Expla	
8					1 Toblematic Trydrop	onytic vegetation (Expla	)
9					<sup>1</sup> Indicators of hydric soi	l and wetland hydrology r	must
10					be present, unless distu		
Woody Vine Stratum (Plot size:	)	120	= Total Cov	/er			
1.					Hydrophytic		
2.					Vegetation Yes	s_X_ No	
			= Total Cov		100		
Remarks: (Include photo numbers here	or on a separate	sheet.)					
	•	,					

SOIL Sampling Point: PEM-1-1

Profile Des	cription: (Describe	to the depth	needed to docur	ment the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix			x Feature		. 2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-4	10YR4/1	70	10YR4/4	30	C	M	CL	
4-8	10YR5/1	70	10YR5/4	30	C	M	CL	
8-14	2.5Y4/1	80	10YR4/4	20	С	М	CL	
-							<u></u>	
<sup>1</sup> Type: C=C	Concentration, D=Dep	letion. RM=R	Reduced Matrix. CS	S=Covere	d or Coate	d Sand G	Grains. <sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.
	Indicators:	,	,					for Problematic Hydric Soils <sup>3</sup> :
Histoso	l (A1)		Sandy (	Gleyed Ma	atrix (S4)		Coast	Prairie Redox (A16)
	pipedon (A2)			Redox (S5				anganese Masses (F12)
	listic (A3)			d Matrix (S			Other	(Explain in Remarks)
	en Sulfide (A4) ed Layers (A5)			Mucky Mi Gleyed M				
	uck (A10)			ed Matrix (				
	ed Below Dark Surfac	e (A11)		Dark Surfa	,			
	ark Surface (A12)				urface (F7)			s of hydrophytic vegetation and
	Mucky Mineral (S1)	2)	Redox I	Depressio	ns (F8)			d hydrology must be present,
	ucky Peat or Peat (S: Layer (if observed):	,					uniess	disturbed or problematic.
Type:	Layer (II Observed).							
	nches):						Hydric Soil	Present? Yes X No No
Remarks:							Tiyano con	1100m: 103 <u>77</u> NO
HYDROLC	OGY							
Wetland Hy	drology Indicators:							
Primary Indi	icators (minimum of c	ne is required	d; check all that ap	ply)			Seconda	ary Indicators (minimum of two required)
	Water (A1)		Water-Sta		` '			face Soil Cracks (B6)
	ater Table (A2)		Aquatic Fa					inage Patterns (B10)
X Saturat	,		True Aqua		. ,			-Season Water Table (C2)
	Marks (B1)		Hydrogen			D (.		yfish Burrows (C8)
	ent Deposits (B2)		X Oxidized F	•		-	—	uration Visible on Aerial Imagery (C9)
	posits (B3) at or Crust (B4)		Presence Recent Iro		,	,		nted or Stressed Plants (D1) pmorphic Position (D2)
Iron De			Thin Muck			2 00113 (0		C-Neutral Test (D5)
	ion Visible on Aerial I	magery (B7)						7
	ly Vegetated Concave		_		` '			
Field Obser	rvations:							
Surface Wa	ter Present? Y	es X No	Depth (in	ches):	5	_		
Water Table	Present? Y	es No	Depth (in	ches):				
Saturation F	Present? Y	es X No	Depth (in	ches):	0	Wet	land Hydrolog	y Present? Yes <u>X</u> No
	pillary fringe) ecorded Data (stream	nauna moni	itoring well aerial	nhotos nr	avious ins	nections)	if available:	
Describe No	corded Data (Stream	gauge, mom	itoring well, aerial	priotos, pi	CVIOUS IIIS	pections)	, ii avallabic.	
Remarks:								
Abutting to	I-1							

## WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Leavenworth USP/CJA2875	City/County: Leavenworth/Leavenworth Sampling Date: 03/22/11							
Applicant/Owner: Bureau of Prisons		State: KS Sampling Point: PEM-1-2						
Investigator(s): Laura Totten/Chris Thomas	estigator(s): Laura Totten/Chris Thomas Section, Township, Range: Sec. 23, T8S, R22E							
Landform (hillslope, terrace, etc.): Hillslope		Local relie	f (concave, convex, none):	Convex				
Slope (%): <u>80</u> Lat:								
		_		lassification: NA				
Are climatic / hydrologic conditions on the site typical for tl								
Are Vegetation, Soil, or Hydrology				present? Yes X No				
Are Vegetation, Soil, or Hydrology			needed, explain any answe					
SUMMARY OF FINDINGS – Attach site map		,						
	×							
Hydrophytic Vegetation Present?  Hydric Soil Present?  Yes  Yes		Is the Sample						
Wetland Hydrology Present? Yes		within a Wetla	and? Yes	No <u>X</u>				
Remarks:								
Out point on hillslope to the south of PEM-1.								
VEGETATION – Use scientific names of plant	S.							
		Dominant Indicator	Dominance Test work	sheet:				
Tree Stratum (Plot size:)	<u> </u>	Species? Status	- Number of Dominant S	pecies				
1			That Are OBL, FACW,	or FAC:0 (A)				
2. 2			Total Number of Domir					
3			Species Across All Stra	ata: <u>4</u> (B)				
4			Percent of Dominant S					
5			That Are OBL, FACW,	or FAC:0 (A/B)				
Sapling/Shrub Stratum (Plot size:30m sq)		= Total Cover	Prevalence Index wor	ksheet:				
1. Rosa multiflora	11	Y UPL	Total % Cover of:	Multiply by:				
2. Symphoricarpos orbiculatus		Y FACU	OBL species	x 1 =0				
3. Maclura pomifera	1	Y UPL	FACW species	x 2 =0				
4			FAC species	x 3 =0				
5			=	x 4 =0				
Harb Chratima (Blataina) 20m sq	4	= Total Cover		x 5 =0				
Herb Stratum (Plot size:20m sq)  1. Bromus inermis	90	Y NA	Column Totals:	(A) (B)				
Bromus inermis     2			- Prevalence Index	c = B/A =0				
3			Hydrophytic Vegetation					
4			Dominance Test is					
5			Prevalence Index i					
6			Morphological Ada	aptations <sup>1</sup> (Provide supporting as or on a separate sheet)				
7				phytic Vegetation <sup>1</sup> (Explain)				
8			-	p.,, (p,				
9			Indicators of hydric so	il and wetland hydrology must				
10			be present, unless dist					
Woody Vine Stratum (Plot size:)	90	= Total Cover						
1			Hydrophytic					
2			Vegetation Present? Ye	es No _X				
		= Total Cover	1.000///.					
Remarks: (Include photo numbers here or on a separate	e sheet.)							
	- /							
Predominantly upland species present.								

SOIL Sampling Point: PEM-1-2

Profile Des	cription: (Describe	to the depth r	needed to docu	ment the i	ndicator	or confi	rm the absence	of indicators.)
Depth	Matrix		Redo	x Feature	s		_	
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-10	10YR3/2	95	10YR4/4	<5	С	M	SCL	
10-14	10YR4/1	95	10YR5/6	5	С	М	CL	
		·						
		·					_	
	-	<u> </u>						
				_				
<sup>1</sup> Type: C=C	concentration, D=Dep	letion RM=Re	duced Matrix C	S=Covered	d or Coate	d Sand	Grains <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil		iodon, raw rac	dadea Matrix, O	0000100	a or oodio	a Oana		for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy	Gleyed Ma	trix (S4)			Prairie Redox (A16)
	pipedon (A2)			Redox (S5				langanese Masses (F12)
	istic (A3)			d Matrix (S				(Explain in Remarks)
	en Sulfide (A4)			Mucky Mir	. ,			
	d Layers (A5)			Gleyed Ma				
	uck (A10)	(8.4.4)		ed Matrix (I				
	d Below Dark Surfac	e (A11)	· · · · · · · · · · · · · · · · · · ·	Dark Surfa	, ,		3Indicators	a of budges budge varieties and
	ark Surface (A12) Mucky Mineral (S1)			ed Dark Su Depression				s of hydrophytic vegetation and d hydrology must be present,
	ucky Peat or Peat (S	3)	Redux	Depression	115 (1-0)			s disturbed or problematic.
	Layer (if observed):							, aletaizea el presionado.
Type:	,							
Depth (in			_				Hydric Soil	Present? Yes X No
Remarks:			_				11,4	
HYDROLC	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	ne is required;	check all that ap	oply)			Seconda	ary Indicators (minimum of two required)
	Water (A1)		Water-Sta		` '		_	face Soil Cracks (B6)
	ater Table (A2)		Aquatic Fa					inage Patterns (B10)
Saturati	, ,		True Aqua		` '			-Season Water Table (C2)
	/larks (B1)		Hydrogen					yfish Burrows (C8)
	nt Deposits (B2)		Oxidized I			-	· /	uration Visible on Aerial Imagery (C9)
	posits (B3)		Presence				· · · · · · · · · · · · · · · · · · ·	nted or Stressed Plants (D1)
_	at or Crust (B4)		Recent Iro			Soils (	· —	omorphic Position (D2)
	posits (B5)	magan (D7)	Thin Muck	,			FAC	C-Neutral Test (D5)
	ion Visible on Aerial l y Vegetated Concave		Gauge or					
Field Obser	, ,	e Surface (Bo)	Other (Ex	piaiii iii Ke	illaiks)			
		a. Na	Y Daniel (in	-h \·				
		· · · · · · · · · · · · · · · · · · ·	X Depth (in					
Water Table			X Depth (in					
Saturation F	'resent'?	es No	X Depth (in	iches):		_   We	etland Hydrolog	y Present? Yes No _X
	ecorded Data (stream	gauge, monito	oring well, aerial	photos, pr	evious ins	pections	s), if available:	
Remarks:								
No visible fla	ow, signs of past flow	or prolonged	saturation at tim	e of surve	V.			
. 10 1/0/0/0	e, eigile of past flow	, or prolongou	cataration at tim	01 341 40	<i>,</i> .			

Project/Site: Leavenworth USP/CJA2875	c	ity/County:	Leavenwo	orth/Leavenworth	Sampling Date: <u>03/23/11</u>
Applicant/Owner: Bureau of Prisons				State: KS	Sampling Point: PEM-2-1
Investigator(s): Laura Totten/Chris Thomas	s	ection, Tow	nship, Ran	nge: Sec. 23, T8S, R22E	<u> </u>
Landform (hillslope, terrace, etc.): Swale		L	ocal relief (	(concave, convex, none):	Concave-Linear
Slope (%): <u>10</u> Lat:	L	ong:			Datum:
Soil Map Unit Name: Knox Silt Loam				NWI or WWI c	lassification: PSSA
Are climatic / hydrologic conditions on the site typical for this time	e of year	? Yes>	< No	(If no, explain in R	temarks.)
Are Vegetation, Soil, or Hydrology signific	cantly d	isturbed?	Are "I	Normal Circumstances" p	oresent? Yes X No
Are Vegetation, Soil, or Hydrology natura	ally prob	lematic?	(If ne	eded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map show	wing	sampling	point lo	ocations, transects	s, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes X No Yes X No Remarks:			Sampled n a Wetlan		(
Small emergent wetland in low depression abutting E-8.					
<b>VEGETATION</b> – Use scientific names of plants.					
	Cover	Dominant Species?	Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	pecies
3				Total Number of Domin Species Across All Stra	_
4.       5.				Percent of Dominant Sport That Are OBL, FACW,	pecies or FAC: 100 (A/B)
Sapling/Shrub Stratum         (Plot size:	 			OBL species	Multiply by:
5.					x 4 =0
		Total Cove		UPL species	x 5 =0
Herb Stratum (Plot size: 20m sq )	00		0.01	Column Totals:	(A) (B)
	30 60	Y Y	OBL FACW	Prevalence Index	x = B/A = 0
	20	 N	OBL	Hydrophytic Vegetation	
4			-	X Dominance Test is	
5				Prevalence Index i	
6				Morphological Ada	ptations <sup>1</sup> (Provide supporting s or on a separate sheet)
7					s or on a separate sneet) phytic Vegetation <sup>1</sup> (Explain)
8				1 Toblematic Hydro	priyito vegetation (Explain)
9				<sup>1</sup> Indicators of hydric soi	il and wetland hydrology must
10				be present, unless distr	
Woody Vine Stratum (Plot size:)	=	Total Cove	er		
1				Hydrophytic	
2				Vegetation Present? Ye	es <u>X</u> No
_	=	Total Cove	er		
Remarks: (Include photo numbers here or on a separate sheet	i.)			<u> </u>	
2 pole size sycamore directly above wetland in stream bottom w	vith 3 sa	pling Salix	sp.		

**SOIL** Sampling Point: PEM-2-1

	(		needed to docum	ilenit tile i	ilaicatoi (	JI COIIIIIII	i the absence	e of indicators.)
Depth	Matrix			x Feature		2		
(inches)	Color (moist)	<u> </u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR3/1	100					SCL	
6-10	10YR3/2	65	10YR4/4	5	C	M	SCL	
			10YR5/2	30	RM			
10-14	10YR5/1	60	10YR5/4	40	С	М	CL	
		· — — —						
-				-				
1		· <del></del> -		·			. 2.	
	Concentration, D=Dep	letion, RM=Re	educed Matrix, CS	S=Covered	d or Coate	d Sand Gr		cation: PL=Pore Lining, M=Matrix.
•	Indicators:		0 1 - 0	N	(O.4)			s for Problematic Hydric Soils <sup>3</sup> :
Histoso	Epipedon (A2)			Gleyed Ma Redox (S5				Prairie Redox (A16) 1anganese Masses (F12)
	listic (A3)			l Matrix (S				(Explain in Remarks)
	en Sulfide (A4)			Mucky Mir			01101	(Explain in Remarks)
	ed Layers (A5)			Gleyed Ma				
	luck (A10)		X Deplete					
	ed Below Dark Surface	e (A11)		Dark Surfa	,			
	ark Surface (A12)	, ,			rface (F7)		<sup>3</sup> Indicator	s of hydrophytic vegetation and
Sandy	Mucky Mineral (S1)		Redox [	Depressio	ns (F8)		wetlan	d hydrology must be present,
	ucky Peat or Peat (S3						unless	s disturbed or problematic.
Restrictive	Layer (if observed):							
Type:								
Depth (ir	nches):		<u> </u>				Hydric Soi	Present? Yes X No
Remarks:							•	
HYDROLO	OGY							
Wetland Hy	ydrology Indicators:		: check all that an	ınlv)			Second	ary Indicators (minimum of two required)
Wetland Hy	drology Indicators:				as (B0)			ary Indicators (minimum of two required)
Wetland Hy Primary Ind X Surface	ydrology Indicators: icators (minimum of o e Water (A1)		X Water-Stai	ned Leav	` '		Sur	face Soil Cracks (B6)
Wetland Hy Primary Ind X Surface High W	ydrology Indicators: icators (minimum of o water (A1) vater Table (A2)		X Water-Stai Aquatic Fa	ined Leav iuna (B13	)		Sur Dra	face Soil Cracks (B6) inage Patterns (B10)
Wetland Hy Primary Ind X Surface High W Saturat	ydrology Indicators: icators (minimum of o e Water (A1) vater Table (A2) ion (A3)		X Water-Stai Aquatic Fa True Aqua	ned Leav luna (B13 tic Plants	) (B14)		Sur Dra Dry	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
Wetland Hy Primary Ind X Surface High W Saturat Water N	ydrology Indicators: icators (minimum of o e Water (A1) 'ater Table (A2) ion (A3) Warks (B1)		X Water-Stai Aquatic Fa True Aqua Hydrogen	ined Leav luna (B13 tic Plants Sulfide O	) (B14) dor (C1)	ng Poots	Sur Dra Dry Cra	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime	ydrology Indicators: icators (minimum of o e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ined Leav iuna (B13 tic Plants Sulfide O Rhizosphe	) (B14) dor (C1) res on Livi	-	Sur Dra Dry Cra (C3) Sat	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime	ydrology Indicators: icators (minimum of o water (A1) /ater Table (A2) /ion (A3) /Marks (B1) /ent Deposits (B2)		X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of	ined Leav iuna (B13 tic Plants Sulfide O Rhizosphe of Reduce	(B14) dor (C1) res on Livi	)	Sur Dra Dry Cra (C3) Sat Stu	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De	ydrology Indicators: icators (minimum of o e Water (A1) /ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4)		X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence o Recent Iro	ined Leav luna (B13 tic Plants Sulfide Oo Rhizosphe of Reduce n Reducti	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled	)	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5)	ne is required	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck	ined Leav iuna (B13 tic Plants Sulfide Oo Rhizosphe of Reduce n Reducti Surface (	(B14) (dor (C1) res on Livi d Iron (C4 on in Tilled	)	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundar	ydrology Indicators: icators (minimum of o e Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I	ne is required	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence o Recent Iro Thin Muck Gauge or N	ined Leavaluna (B13) tic Plants Sulfide Ochicosphe of Reductin Reductin Surface (Well Data	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	)	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse	ydrology Indicators: icators (minimum of o e Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave	ne is required	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or N	ined Leavaluna (B13) tic Plants Sulfide Ochicosphe of Reductin Reductin Surface (Well Data	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	)	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse	ydrology Indicators: icators (minimum of o e Water (A1) fater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations:	magery (B7)	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leavaluna (B13 tic Plants Sulfide October Sulfide October Sulface (Sulface (Well Data blain in Resultin Re	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	)	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: iter Present?	magery (B7) e Surface (B8)	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leaviuna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled C7) (D9) marks)	) I Soils (C6	Sur Dra Dry Cra Stat Stu Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? Y	magery (B7) e Surface (B8) es No es No	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leaviuma (B13 tic Plants Sulfide Ochicosphe of Reduce n Reducti Surface (Well Data plain in Reducti ches):ches):ches):ches):ches):ches):ches	(B14) (B14) dor (C1) res on Livi ed Iron (C4 on in Tilled (C7) (D9) marks)	) I Soils (C6	Sur Dra Cra Stat Stu Stu Ste	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Primary Ind  X Surface High W Saturat Water N Sedime Drift De Iron De Inundat Sparse Field Obse Surface Water Table Saturation F	ydrology Indicators: icators (minimum of o e Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: iter Present? Present? Y	magery (B7) e Surface (B8) es No es No	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leaviuma (B13 tic Plants Sulfide Ochicosphe of Reduce n Reducti Surface (Well Data plain in Reducti ches):ches):ches):ches):ches):ches):ches	(B14) (B14) dor (C1) res on Livi ed Iron (C4 on in Tilled (C7) (D9) marks)	) I Soils (C6	Sur Dra Cra Stat Stu Stu Ste	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2)
Wetland Hy Primary Ind X Surface High W Saturat Water I Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? e Present? Present? y epillary fringe)	magery (B7) e Surface (B8) es No es No es No	X Water-Stai  Aquatic Fa True Aqua  Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp  Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	ydrology Indicators: icators (minimum of o e Water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: iter Present? Present? Y	magery (B7) e Surface (B8) es No es No es No	X Water-Stai  Aquatic Fa True Aqua  Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp  Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? e Present? Present? y epillary fringe)	magery (B7) e Surface (B8) es No es No es No	X Water-Stai  Aquatic Fa True Aqua  Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp  Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? e Present? Present? y epillary fringe)	magery (B7) e Surface (B8) es No es No es No	X Water-Stai  Aquatic Fa True Aqua  Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp  Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? e Present? Present? y epillary fringe)	magery (B7) e Surface (B8) es No es No es No	X Water-Stai  Aquatic Fa True Aqua  Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp  Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)
Wetland Hy Primary Ind X Surface High W Saturat Water N Sedime Drift De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	ydrology Indicators: icators (minimum of o e Water (A1) rater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) tion Visible on Aerial I ly Vegetated Concave rvations: ter Present? e Present? Present? y epillary fringe)	magery (B7) e Surface (B8) es No es No gauge, monit	X Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence of Recent Iro Thin Muck Gauge or V Other (Exp Depth (inc	ined Leaviluna (B13 tic Plants Sulfide Och Rhizosphe of Reduce n Reducti Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  2	) I Soils (C6	Sur Dry Cra Stu Stu Ger X FAG	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) byfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) bomorphic Position (D2) C-Neutral Test (D5)

Project/Site: Leavenworth USP/CJA2875	City	//County:	Leavenwo	rth/Leavenworth	Sampling Da	ite: 03/23/1	1
Applicant/Owner: Bureau of Prisons				State: KS	Sampling Po	int: PEM-2-	2
Investigator(s): Laura Totten/Chris Thomas	Sec	ction, Tow	nship, Ran	ge: Sec. 23, T8S, R22E			
Landform (hillslope, terrace, etc.): Hillslope		L	ocal relief (	concave, convex, none):	Convex		
Slope (%): <u>20</u> Lat:	Lor	ng:			Datum:		
Soil Map Unit Name: Knox Silt Loam							
Are climatic / hydrologic conditions on the site typical for this time							
Are Vegetation, Soil, or Hydrology signific	•			Normal Circumstances" p	,	× No	)
Are Vegetation, Soil, or Hydrology natura				eded, explain any answer			
SUMMARY OF FINDINGS – Attach site map show							s, etc.
Hydrophytic Vegetation Present? Yes No		Is the	Sampled				
Wetland Hydrology Present? Yes No		withi	n a Wetland	d? Yes	No	<u>×_</u>	
Remarks:							
Out point on hillslope to the south of wetland in managed hay pa	asture lan	d.					
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size:)	Cover S		Status	Number of Dominant Sp That Are OBL, FACW, of	ecies	0	(A)
1				Total Number of Domina	ant		, ,
3				Species Across All Strat	:a:	1	(B)
4       5				Percent of Dominant Sp That Are OBL, FACW, o		0	(A/B)
Sapling/Shrub Stratum (Plot size:)	= 7	Total Cove	er _	Prevalence Index work	sheet.		
1				Total % Cover of:		ultiply by:	
2.				OBL species			
3.				FACW species			
4				FAC species	x 3 = ,	0	_
5				FACU species	x 4 =	0	_
2000 00	= 7	Total Cove	er	UPL species			_
Herb Stratum (Plot size: 20m sq )	100	Υ	FACU	Column Totals:	(A)	0	_ (B)
-	20			Prevalence Index	= B/A =	0	
3			F	Hydrophytic Vegetatio			_
4				Dominance Test is			
5.				Prevalence Index is	i ≤3.0 <sup>1</sup>		
6				Morphological Adap data in Remarks	otations <sup>1</sup> (Pro-	vide support rate sheet)	ing
7				Problematic Hydrop	hytic Vegeta	tion¹ (Explai	n)
9.							
10				<sup>1</sup> Indicators of hydric soil be present, unless distu			nust
Woody Vine Stratum (Plot size:)	120 = 1	Total Cove	er				
1				Hydrophytic			
2.				Vegetation Present? Yes	. NI		
	= 7	Total Cove		riesent: 168	S No		
Remarks: (Include photo numbers here or on a separate sheet	t.)						
Predominantly upland species present.	,						

SOIL Sampling Point: PEM-2-2

Profile Des	cription: (Describe	to the depth	needed to docur	ment the i	ndicator	or conf	firm th	e absence	of indicators.)
Depth	Matrix			x Features		2			
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type'	Loc <sup>2</sup>		Texture	Remarks
0-10	10YR3/2	100						SCL	
10-14	10YR3/2	50	10YR4/3	50	С	М		SCL	
								<u> </u>	
		·							
	-	· — —							
		·							
<sup>1</sup> Type: C=C	Concentration, D=Dep	letion RM=Re	educed Matrix CS	S=Covered	d or Coate	d Sand	d Grain	s <sup>2</sup> l oc	cation: PL=Pore Lining, M=Matrix.
	Indicators:	100011, 1001 100	radou manix, oc	0010100	a or ooalo	a Garia			for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy (	Gleyed Ma	trix (S4)				Prairie Redox (A16)
	pipedon (A2)			Redox (S5					anganese Masses (F12)
	listic (A3)			d Matrix (S					(Explain in Remarks)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mir	neral (F1)				
	ed Layers (A5)			Gleyed Ma					
	uck (A10)			ed Matrix (I					
	ed Below Dark Surfac	e (A11)		Dark Surfa	. ,			3	
	Park Surface (A12)			ed Dark Su	, ,	)			of hydrophytic vegetation and
	Mucky Mineral (S1) ucky Peat or Peat (S3	3/	Redox I	Depressio	ns (F8)				d hydrology must be present, disturbed or problematic.
	Layer (if observed):							uilless	disturbed of problematic.
Type:	Layer (ii observed).								
			_				١.	Judela Call	Dragont? Vac V Na
Depth (in Remarks:	icnes):		_				r	Hydric Soil	Present? Yes X No No
HYDROLC	OGY								
Wetland Hy	drology Indicators:								
Primary Indi	icators (minimum of o	ne is required	; check all that ap	oply)				Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)			Surf	face Soil Cracks (B6)
High W	ater Table (A2)		Aquatic Fa	auna (B13)	)			Drai	nage Patterns (B10)
Saturati	ion (A3)		True Aqua	atic Plants	(B14)			Dry-	Season Water Table (C2)
Water N	Marks (B1)		Hydrogen	Sulfide O	dor (C1)			Cray	yfish Burrows (C8)
Sedime	ent Deposits (B2)		Oxidized F	Rhizosphe	res on Liv	ing Roc	ots (C3	) Satu	uration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	1)		Stur	nted or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent Iro	n Reducti	on in Tille	d Soils	(C6)	Geo	emorphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface (	C7)			FAC	C-Neutral Test (D5)
Inundat	ion Visible on Aerial I	magery (B7)	Gauge or	Well Data	(D9)				
Sparsel	ly Vegetated Concave	e Surface (B8)	Other (Exp	plain in Re	marks)				
Field Obser	rvations:								
Surface Wa	ter Present? Y	es No	X Depth (in	ches):		_			
Water Table	Present? Y	es No	Depth (in	ches):					
Saturation F	Present? Y	es No	X Depth (in	ches):		_ w	Vetland	l Hydrolog	y Present? Yes No _X_
	pillary fringe)								
Describe Re	ecorded Data (stream	gauge, monit	oring well, aerial	photos, pr	evious ins	pection	ns), if a	vailable:	
Remarks:									
No visible flo	ow, signs of past flow	, or prolonged	saturation at tim	e of surve	y.				
	- •	. •							

Project/Site: Leavenworth USP/CJA2875	c	City/County:	Leavenwo	orth/Leavenworth	Sampling Date: 03/23/11		
Applicant/Owner: Bureau of Prisons				State: KS Sampling Point: PEM-3-1			
Investigator(s): Laura Totten/Chris Thomas	5	Section, To	wnship, Rar	nge: <u>Sec. 23, T8S, R22E</u>			
Landform (hillslope, terrace, etc.): Valley		L	ocal relief	(concave, convex, none):	Concave		
Slope (%): <u>30</u> Lat:	L	_ong:			Datum:		
Soil Map Unit Name: Sharpsburg Silty Clay Loam		_		NWI or WWI cl	assification: PEMAh		
Are climatic / hydrologic conditions on the site typical for this tir	me of yea	r? Yes	X No	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrology sign					oresent? Yes X No		
Are Vegetation, Soil, or Hydrology natu				eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map sh	owing	samplin					
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes X No Yes X No Remarks:			e Sampled in a Wetlan		No		
Intermittent tributary I-6 abutting wetland.							
VEGETATION – Use scientific names of plants.							
	6 Cover	Dominant Species?	Status	Number of Dominant S That Are OBL, FACW,			
2				Total Number of Domin Species Across All Stra			
4			rer	Percent of Dominant Sp That Are OBL, FACW,	or FAC:100 (A/B)		
Sapling/Shrub Stratum (Plot size:)  1				Prevalence Index wor  Total % Cover of:	ksheet:  Multiply by:		
2.				OBL species	x 1 =0		
3				FACW species	x 2 =0		
4				FAC species	x 3 =0		
5					x 4 =0		
Hart Otatan (Platains 20m og	=	= Total Cov	er		x 5 =0		
Herb Stratum (Plot size:20m sq)  1. Schoenoplectus fluviatilis	20	N	OBL	Column Totals:	(A) (B)		
Leersia oryzoides	00		OBL	Prevalence Index	= B/A =0		
3. Phalaris arundinacea	0.5		FACW	Hydrophytic Vegetation			
4.				X Dominance Test is	>50%		
5				Prevalence Index is	s ≤3.0 <sup>1</sup>		
6				Morphological Ada	ptations <sup>1</sup> (Provide supporting s or on a separate sheet)		
7					phytic Vegetation <sup>1</sup> (Explain)		
8				170510111410119410	sily to vogotation (Explain)		
9				<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetland hydrology must		
_		= Total Cov					
Woody Vine Stratum (Plot size:)				Hydrophytic			
1				Vegetation			
2		= Total Cov		Present? Ye	s_X_ No		
Remarks: (Include photo numbers here or on a separate she							
Tremains. (include prioto numbers here or on a separate she	)						

SOIL Sampling Point: PEM-3-1

Depth   Matrix   Geloix Features   Color (moist)   %   Color (moist)   %   Type   Loc   Cl.		cription: (Describe	ro me aebu					Tine absence	or managerory
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	Depth (inches)	Matrix Color (moist)	%				Loc <sup>2</sup>	Texture	Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.				Color (moloc)					TOMANO
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. "Location: PL=Pore Lining, M=Matrix, Ptydric Soil Indicators: Indicators for Problematic Hydric Soils*: Indicators of Hydrophytic vegetation in Remarks)    Hydrogen Sulfice (A4)				7. F.V.D.4/0	40				
Histos (A1)	10-14	5Y5/1	60	7.5YR4/6	40		IVI	CL	
Histosol (A1)									
Mydric Soil Indicators:									
Microsof   Arthogogy   Marins   Microsof   Matrix   Marins   Mar									
Microsof   Arthogogy   Marins   Microsof   Matrix   Marins   Mar									
Microsof   Arthogogy   Marins   Microsof   Matrix   Marins   Mar		-							
Microsof   Arthogogy   Marins   Microsof   Matrix   Marins   Mar			<del></del> -						
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histos Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Charles (A4) Coard Matrix (S6) Cother (Explain in Remarks) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A11) Redox Dark Surface (F2) Sandy Mucky Mineral (S1) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Part (Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sestrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes X No Persence (F7) High Water Table (A2) Aquatic Flants (B14) Drainage Patterns (B10) Saturation (A3) True Aquatic Flants (B14) Drainage Patterns (B10) Sediment Deposits (B2) Avaitic Patterns (B10) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (Galpanery (B7) Iron Deposits (B3) Presence of Reduced Iron (C4) Saturation (C2) Iron Deposits (B3) Presence of Reduced Iron (C4) Sparsed Plants (D1) Iron Deposits (B3) Thin Muck Surface (C7) Sparsed Vegetated Concave Surface (B8) Other (Explain in Remarks)  Wetland Hydrology Present? Yes X No Depth (inches): Do Wetland Hydrology Present? Yes X No Includes Capillary Frigor)  Wetland Hydrology Present? Yes X No Depth (inches): Do Wetland Hydrology Present? Yes X No Includes Capillary Frigor)  Wetland Hydrology Present? Yes X No Depth (inches): Do Wetland Hydrology Present? Yes X No Includes Capillary Frigor)  Wetland Hydrology Present? Yes X No Depth (inches): Do Wetland Hydrology Present? Yes X No Includes Capillary Frigor)  Wetland Hydrology Present? Yes X No Depth (inches): Do Wetland Hydrology Present? Yes X No Includes Capillary Frigor)			letion, RM=	Reduced Matrix, CS	S=Covered	d or Coate	d Sand Gi		•
Histic Epipedon (A2)	-								•
Black Histic (A3)		` '							
Hydrogen Sulfide (A49) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Mucky Mineral (F1) Loamy Mucky Mineral (F1) Loamy Mucky Mineral (F2)  Z cm Muck (A10) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Sendy Mucky Mineral (S1) Sendy Mucky Mineral (S1) Seminucky Peat or Peat (S3) Redox Depressions (F8) Wetland Hydrology must be present, unless disturbed or problematic.  Retrictive Layer (if observed): Type: Depth (inches): Depth (inches): Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) High Water Table (A2) X Aquatic Fauna (B13) X Saturation (A3) X Startanton (A3) X Surface Water (A1) Deposits (B3) Presence of Reduced fron (C4) Sediment Deposits (B2) Dorift Deposits (B3) Presence of Reduced fron (C4) Sediment Deposits (B3) Recent Iron Reduction in Titled Soils (C6) In Deposits (B5) J Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Doth (Explain in Remarks) Surface Water Present? Yes X No Depth (inches): Depth (inches): Unless disturbed or hydrophytic vegetation and wetland hydrology Present? Yes X No Depth (inches): Depth (proposits (B4) Wetland Hydrology Present? Yes X No Depth (inches): Depth (proposits (B5) Wetland Hydrology Present? Yes X No Depth (inches): Depth (proposits (B5) Wetland Hydrology Present? Yes X No Depth (inches): Depth (proposits (B5) Wetland Hydrology Present? Yes X No Depth (inches): Depth (proposition in specifions), if available:									
								Other	(Explain in Remarks)
2 cm Muck (A10)									
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Type: Depth (Inches): Type: Depth (Inches): Waterards:    Wetland Hydrology Indicators:   Water Table (A2)   Hydric Soil Present?   Yes X   No_   High Water Table (A2)   Water Marks (B1)   Sediment Deposits (B2)   Drift Deposits (B3)   Presence of Reduced Iron (C4)   Drift Deposits (B3)   Presence of Reduced Iron (C4)   Drift Deposits (B3)   Presence of Reduced Iron (C4)   Iron Deposits (B4)   Recent Iron Reduction in Tilled Soils (C6)   Iron Deposits (B8)   Other (Explain in Remarks)    Water Table (D2)   Drift Deposits (B4)   Recent Iron Reduction in Tilled Soils (C6)   Iron Deposits (B8)   A Quager of Well Data (D9)   Sparsely Vegetated Concave Surface (B8)   Other (Explain in Remarks)   Other (Explain in Remarks)   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Present?   Yes X   No_   Depth (inches):   0   Wetland Hydrology Pr									
Sandy Mucky Mineral (S1) Redox Depressions (F8) wetland hydrology must be present, unless disturbed or problematic.   Type: Depth (inches): Hydric Soil Present? YesX No Remarks:    Hydric Soil Present? YesX No Remarks:   Hydric Soil Present? YesX No Remarks:   Hydric Soil Present? YesX No Remarks:   Hydric Soil Present? YesX No Remarks:   Hydric Soil Present? Yes No Remarks:   Hydric Soil Present? YesX No Remarks:   Hydric Soil Present? Yes No Remarks:   Hydric Soil Remarks:   Hydric Soil Remarks:   Hydric Soil Remarks:   Hydric Soil Present? Yes No Remarks:   Hydric Soil Remarks:			e (A11)		,	,			
	Thick D	ark Surface (A12)		Deplete	d Dark Su	rface (F7)		<sup>3</sup> Indicators	s of hydrophytic vegetation and
POROLOGY  Wetland Hydrology Indicators:  Trimary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  X Aquatic Fauna (B13)  X Saturation (A3)  X True Aquatic Plants (B14)  Sediment Deposits (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Vater Table (Pasent?  A Gauge or Well Data (D9)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Vescribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		• , ,		Redox I	Depression	ns (F8)			
Type:								unless	disturbed or problematic.
Permarks:    Property   Petrand Hydrology Indicators:	estrictive	Layer (if observed)	:						
Vertland Hydrology Indicators:   Vertland Hydrology Indicators:   Vertland Hydrology Indicators (minimum of one is required; check all that apply)   Secondary Indicators (minimum of two required; check all that apply)   Surface Soil Cracks (B6)	Type:								
Vetland Hydrology Indicators:  rrimary Indicators (minimum of one is required; check all that apply)  Secondary Indicators (minimum of two required; check all that apply)  Surface Water (A1)  High Water Table (A2)  X Aquatic Fauna (B13)  X Drainage Patterns (B10)  X Saturation (A3)  X True Aquatic Plants (B14)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Iron Deposits (B3)  Recent Iron Reduction in Tilled Soils (C6)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Ield Observations:  urface Water Present?  Yes X No Depth (inches):  Depth (inches):  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Depth (ir	nches):							Brocont? Voc Y No
Vetland Hydrology Indicators:  Varimary Indicators (minimum of one is required; check all that apply)  X Surface Water (A1)  High Water Table (A2)  X Aquatic Fauna (B13)  X True Aquatic Plants (B14)  Water Marks (B1)  Secondary Indicators (minimum of two required; check all that apply)  X Saturation (A3)  X True Aquatic Plants (B14)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Inon Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Secondary Indicators (minimum of two required; check all that apply)  Secondary Indicators (minimum of two required; check all that apply)  Secondary Indicators (minimum of two required; check all that apply)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Y Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C1)  Suntage Patterns (B10)  Y Dry-Season Water Table (C2)  Crayfish Burrows (C8)	Remarks:							Hydric Soil	riesent? Tes 🔨 No
Secondary Indicators (minimum of two required; check all that apply)  Secondary Indicators (minimum of two required; check all that apply)  Surface Water (A1)  High Water Table (A2)  X Aquatic Fauna (B13)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Vater (B8)  Other (Explain in Remarks)  Sediment Present?  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C3)  Saturation Visible on Aerial Imagery (C4)  Recent Iron Reduction in Tilled Soils (C6)  Geomorphic Position (D2)  FAC-Neutral Test (D5)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Selected Plants (B10)  Surface Soil Cracks (B6)  X Drainage Patterns (B10)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C4)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  FAC-Neutral Test (D5)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Selected Observations:  Surface Water Present?  Yes X No Depth (inches): 0-3  Vater Table Present? Yes X No Depth (inches): 0  Wetland Hydrology Present? Yes X No Includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		nev.						Hydric Soil	riesent? Tes 🔨 No
X Surface Water (A1) X Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) X Aquatic Fauna (B13) X Drainage Patterns (B10) X Saturation (A3) X True Aquatic Plants (B14) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C4) In Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) X Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes X No Depth (inches): 0-3 Vater Table Present? Yes X No Depth (inches): 0 Wetland Hydrology Present? Yes X No Depth (inches): 0 Wetland Hydrology Present? Yes X No Depth (inches): 14 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLO							Hydric Soil	rieseitt? Tes 🔨 NO
High Water Table (A2)  X Aquatic Fauna (B13)  X Drainage Patterns (B10)  X Saturation (A3)  X True Aquatic Plants (B14)  Dry-Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  X Oxidized Rhizospheres on Living Roots (C3)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Water Table Present?  Yes X No Depth (inches): 0-3  Water Table Present?  Yes X No Depth (inches): 0  Wetland Hydrology Present? Yes X No Depth (inches):	YDROLO	drology Indicators:		ed: check all that an	(Vlac				
X Saturation (A3) X True Aquatic Plants (B14) Dry-Season Water Table (C2)  Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)  Sediment Deposits (B2) X Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C3)  Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)  X Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)  Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5)  Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)  Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)  Field Observations:  Furface Water Present? Yes X No Depth (inches): 0-3  Water Table Present? Yes X No Depth (inches): 0  Wetland Hydrology Present? Yes X No Depth (inches): 14  Esturation Present? Yes X No Depth (inches): 0  Wetland Hydrology Present? Yes X No Depth (inches): 14  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLO Vetland Hy Primary Indi	vdrology Indicators:				es (B9)		Seconda	ary Indicators (minimum of two require
Water Marks (B1)	YDROLO Vetland Hy Primary Indi  X Surface	drology Indicators: icators (minimum of c Water (A1)		× Water-Sta	ined Leave	` '		Seconda Sur	ary Indicators (minimum of two require face Soil Cracks (B6)
Sediment Deposits (B2)  Drift Deposits (B3)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)  Recent Iron Reduction in Tilled Soils (C6)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Field Observations:  Surface Water Present?  Yes X No Depth (inches): 0-3  Vater Table Present? Yes X No Depth (inches): 0  Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLO Vetland Hy Primary Indi  X Surface High W	rdrology Indicators: icators (minimum of control water (A1) ater Table (A2)		X Water-Sta X Aquatic Fa	ined Leave auna (B13)	)		Seconda Sur _X_ Dra	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10)
	YDROLO Vetland Hy Irimary Indi ✓ Surface — High W ✓ Saturati	rdrology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3)		X Water-Sta X Aquatic Fa X True Aqua	ined Leave auna (B13) itic Plants	) (B14)		Seconda Sur Dra Dry	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
Recent Iron Reduction in Tilled Soils (C6)	YDROLO Vetland Hy Irimary Indi  Surface High W Saturati Water M	rdrology Indicators: icators (minimum of c water (A1) ater Table (A2) ion (A3) Marks (B1)		X Water-Sta X Aquatic Fa X True Aqua Hydrogen	ined Leave auna (B13) itic Plants Sulfide Oc	) (B14) dor (C1)	ing Roots	Seconda Sur _X Dra Dry Cra	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8)
Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)    Geld Observations:	YDROLO Vetland Hy Primary Indi X Surface High W X Saturat Water M Sedime	rdrology Indicators: icators (minimum of co water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)		X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized F	ined Leave auna (B13) itic Plants Sulfide Oc Rhizospher	) (B14) dor (C1) res on Livi	-	<u>Second:</u> Sur Dray Cra (C3) Sat	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)  ield Observations:  surface Water Present?	YDROLO Vetland Hy Vrimary Indi  X Surface High W X Saturat Water M Sedime Drift De	icators (minimum of control water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized F Presence	ined Leave auna (B13) itic Plants Sulfide Oc Rhizosphel of Reduce	) (B14) dor (C1) res on Livi	·)	Seconda Sur Dry Cra Cra (C3) Sat Stu	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Gurface Water Present? Yes X No Depth (inches): 0-3 Water Table Present? Yes X No Depth (inches): 14 Saturation Present? Yes X No Depth (inches): 0 Wetland Hydrology Present? Yes X No Depth (inches): 0 Includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLC Vetland Hy Primary Indi X Surface High W X Saturat Water N Sedime Drift De X Algal M	rdrology Indicators: icators (minimum of control of the Water (A1) ater Table (A2) ion (A3) Marks (B1) ant Deposits (B2) aposits (B3) at or Crust (B4)		X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized F Presence Recent Iro	ined Leave auna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
Grield Observations:  Sourface Water Present? Yes X No Depth (inches): 0-3  Water Table Present? Yes X No Depth (inches): 14  Solution Present? Yes X No Depth (inches): 0  Wetland Hydrology Present? Yes X No Depth (inches): 14  Solution Present? Yes X No Depth (inches): 0  Solution Present? Yes X No Depth (inches): 14  Solution Present? Yes X No Depth (inches): 0  Solution Present? Yes X No Depth (inches): 14  Solution Present? Yes X No Depth (inches): 0  Solution Present? Yes X No Depth (inches): 14  Solution Present? Yes X No Depth (i	YDROLO Vetland Hy Primary Indi  Surface High W Saturati Water N Sedime Drift De Algal M Iron De	rdrology Indicators: icators (minimum of control of con	one is require	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized F Presence Recent Iro Thin Muck	ined Leave auna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction	) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
Water Table Present? Yes X No Depth (inches): 14  Paturation Present? Yes X No Depth (inches): 0  Reduction Present? Yes X No Depth (inches): 0  Reduction Present? Yes X No Depth (inches): 0  Reduction Present? Yes X No Depth (inches): 14  Reduction Present? Yes X No Depth (inches): 15  Reduction Present? Yes X No Depth (inches): 14  Reduction Present? Yes X No Depth (inches): 15  Reduction Present? Yes X No Depth (inches): 16  Reduction Present? Yes X No Depth (inches): 14  Reduction Present? Yes X No Depth (inches): 15  Reduction Present? Yes X No Depth (inches): 15  Reduction Present? Yes X No Depth (inches): 16  Reduction Present? Yes X No De	YDROLO Vetland Hy Irimary Indi  Surface High W Saturati Water N Sedime Drift De K Algal M Iron De Inundat	rdrology Indicators: icators (minimum of control of con	ne is require	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce in Reduction Surface (i	(B14) (dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
Vater Table Present? Yes X No Depth (inches): 14 Saturation Present? Yes X No Depth (inches): 0 Wetland Hydrology Present? Yes X No Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLO Vetland Hy Primary Indi X Surface High W X Saturat Water M Sedime Drift De X Algal M Iron De Inundat Sparsel	rdrology Indicators: icators (minimum of control of con	ne is require	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce in Reduction Surface (i	(B14) (dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
Saturation Present? Yes X No Depth (inches): 0 Wetland Hydrology Present? Yes X No Sincludes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLC Vetland Hy Primary Indi X Surface High W X Saturat Water N Sedime Drift De X Algal M Iron De Inundat Sparsel	rdrology Indicators: icators (minimum of control of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) int Deposits (B3) int or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavervations:	me is require	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized F Presence Recent Iro Thin Muck Gauge or Start Other (Exp	ined Leave auna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reductio Surface ( Well Data blain in Re	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	YDROLC Vetland Hy Primary Indi X Surface High W X Saturat Water N Sedime Drift De X Algal M Iron De Inundat Sparsel Field Obset	rdrology Indicators: icators (minimum of content of the Water (A1) ater Table (A2) ion (A3) Marks (B1) and Deposits (B2) and or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavervations: ter Present?	magery (B7 e Surface (B	X   Water-Sta   X   Aquatic Fa   X   True Aqua   Hydrogen   X   Oxidized Fa   Presence   Recent Iro   Thin Muck   Gauge or   Other (Exp.   Depth (inc.   D	ined Leave auna (B13) tic Plants Sulfide Oc Rhizosphel of Reduce in Reductic Surface ( Well Data blain in Re	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	·)	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) inted or Stressed Plants (D1) comorphic Position (D2)
	YDROLO  Wetland Hy Primary Indi X Surface High W X Saturat Water N Sedime Drift De X Algal M Iron De Inundat Sparsel  Field Obser  Water Table	rdrology Indicators: icators (minimum of control of the Water (A1) ater Table (A2) ion (A3) Marks (B1) at Deposits (B2) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concave rvations: ter Present?	Imagery (B7 e Surface (B	X   Water-Sta   X   Aquatic Fa   X   True Aqua   Hydrogen   X   Oxidized Fa   Presence   Recent Iro   Thin Muck   Gauge or	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductio Surface ( Well Data blain in Re ches): ches):	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled (C7) (D9) marks)  0-3	H) H Soils (C6	Seconda	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Remarks:	YDROLO Wetland Hy Primary Indi X Surface High W X Saturati Sedime Drift De X Algal M Iron De Inundati Sparsel Field Obsel Surface Wa Water Table Saturation Fincludes ca	rdrology Indicators: icators (minimum of control of con	Imagery (B7 e Surface (B es X N es X N	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or V S Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  0-3  14  0	d Soils (C6	Seconda  Sur  X Dra  Dry  Cra  (C3) Sat  Stu  Stu  FAC	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
Admino.	YDROLC Vetland Hy Primary Indi X Surface High W X Saturati Water N Sedime Drift De X Algal M Iron De Inundat Sparsel Field Obset Surface Wa Vater Table Saturation Fincludes ca	rdrology Indicators: icators (minimum of control of con	Imagery (B7 e Surface (B es X N es X N	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or V S Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  0-3  14  0	d Soils (C6	Seconda  Sur  X Dra  Dry  Cra  (C3) Sat  Stu  Stu  FAC	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
	YDROLC  Vetland Hy Primary Indi X Surface High W X Saturat Water N Sedime Drift De X Algal M Iron De Inundat Sparsel Field Obsel Surface Wa Vater Table Saturation F includes ca	rdrology Indicators: icators (minimum of control of con	Imagery (B7 e Surface (B es X N es X N	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or V S Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  0-3  14  0	d Soils (C6	Seconda  Sur  X Dra  Dry  Cra  (C3) Sat  Stu  Stu  FAC	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)
	YDROLC Vetland Hy Primary Indi X Surface High W X Saturati Water M Sedime Drift De X Algal M Iron De Inundat Sparsel Gurface Wa Vater Table Gaturation F includes ca	rdrology Indicators: icators (minimum of control of con	Imagery (B7 e Surface (B es X N es X N	X Water-Sta X Aquatic Fa X True Aqua Hydrogen X Oxidized Fa Presence Recent Iro Thin Muck Gauge or V S Other (Exp	ined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi red Iron (C4 on in Tilled (C7) (D9) marks)  0-3  14  0	d Soils (C6	Seconda  Sur  X Dra  Dry  Cra  (C3) Sat  Stu  Stu  FAC	ary Indicators (minimum of two require face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) omorphic Position (D2) C-Neutral Test (D5)

Project/Site: Leavenworth USP/CJA2875	(	City/Count	ty: <u>Leavenwo</u>	orth/Leavenworth	Sampling Date: 03/	23/11	
Applicant/Owner: Bureau of Prisons				State: KS Sampling Point: PEM-3-2			
Investigator(s): Laura Totten/Chris Thomas		Section, T	ownship, Rar	ange: Sec. 23, T8S, R22E			
Landform (hillslope, terrace, etc.): Hillslope			Local relief	(concave, convex, none):	Convex		
Slope (%): 20 Lat:	l	_ong:			Datum:		
Soil Map Unit Name: Sharpsburg Silty Clay Loam		_		NWI or WWI cla	assification: NA		
Are climatic / hydrologic conditions on the site typical for th	is time of yea	ar? Yes	X No	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrology				Normal Circumstances" p		No	
Are Vegetation, Soil, or Hydrology				eded, explain any answer	rs in Remarks.)		
SUMMARY OF FINDINGS – Attach site map				ocations, transects	, important feat	ures, etc.	
Hydrophytic Vegetation Present? Yes !	No X						
Hydric Soil Present? Yes X			the Sampled		No. Y		
Wetland Hydrology Present? Yes 1	No X	WIL	thin a Wetlan	iu! Tes	No <u>X</u> _		
Remarks:							
Out point on hillslope to the south of wetland in managed	hay pasture l	and.					
<b>VEGETATION</b> – Use scientific names of plants	S.						
			nt Indicator	Dominance Test works	sheet:		
Tree Stratum (Plot size:) 1			? Status	Number of Dominant Sp That Are OBL, FACW, o		(A)	
2. <u>2</u> 3				Total Number of Domina Species Across All Strat		(B)	
4				Percent of Dominant Sp	necies		
5				That Are OBL, FACW, of		(A/B)	
Sapling/Shrub Stratum (Plot size:)		= Total Co	over	Prevalence Index work	ksheet:		
1				Total % Cover of:	Multiply b	y:	
2.				OBL species	x 1 =0		
3				FACW species	x 2 =0		
4				FAC species	x 3 =0		
5				FACU species	x 4 =0		
		= Total Co	over	UPL species	x 5 =0		
Herb Stratum (Plot size: 20m sq )	400		FAOU	Column Totals:	(A)0	(B)	
Schedonorus phoenix     Setaria pumila	20	_	<u>FACU</u>	Prevalence Index	= B/A =0		
				Hydrophytic Vegetatio			
3 4				Dominance Test is			
5				Prevalence Index is			
6				Morphological Adap data in Remarks	ptations¹ (Provide su s or on a separate sh	pporting eet)	
7				Problematic Hydrop	ohytic Vegetation¹ (E	xplain)	
8 9							
10				<sup>1</sup> Indicators of hydric soil be present, unless distu			
Woody Vine Stratum (Plot size:)	120	= Total Co	over				
1				Hydrophytic			
2.				Vegetation Present? Yes	s No_X		
				riesent: 165	, NU <u>^</u>	_	
Remarks: (Include photo numbers here or on a separate	sheet.)			<u> </u>			
	,						
Predominantly upland species present.							

SOIL Sampling Point: PEM-3-2

Profile Des	cription: (Describe	to the depth	needed to docur	ment the i	ndicator	or conf	firm th	e absence	of indicators.)
Depth	Matrix			x Features		2			
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type'	Loc <sup>2</sup>		Texture	Remarks
0-10	10YR3/2	100						SCL	
10-14	10YR3/2	50	10YR4/3	50	С	М		SCL	
								<u> </u>	
		·							
	-	· — —							
		·							
<sup>1</sup> Type: C=C	Concentration, D=Dep	letion RM=Re	educed Matrix CS	S=Covered	d or Coate	d Sand	d Grain	s <sup>2</sup> l oc	cation: PL=Pore Lining, M=Matrix.
	Indicators:	100011, 1001 100	radou manix, oc	0010101	a or ooalo	a Garia			for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy (	Gleyed Ma	trix (S4)				Prairie Redox (A16)
	pipedon (A2)			Redox (S5					anganese Masses (F12)
	listic (A3)			d Matrix (S					(Explain in Remarks)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mir	neral (F1)				
	ed Layers (A5)			Gleyed Ma					
	uck (A10)			ed Matrix (I					
	ed Below Dark Surfac	e (A11)		Dark Surfa	. ,			3	
	Park Surface (A12)			ed Dark Su	, ,	)			of hydrophytic vegetation and
	Mucky Mineral (S1) ucky Peat or Peat (S3	3/	Redox I	Depressio	ns (F8)				d hydrology must be present, disturbed or problematic.
	Layer (if observed):							uilless	disturbed of problematic.
Type:	Layer (ii observed).								
			_				١.	Judela Call	Dragont? Vac V Na
Depth (in Remarks:	icnes):		_				r	Hydric Soil	Present? Yes X No No
HYDROLC	OGY								
Wetland Hy	drology Indicators:								
Primary Indi	icators (minimum of o	ne is required	; check all that ap	oply)				Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)			Surf	face Soil Cracks (B6)
High W	ater Table (A2)		Aquatic Fa	auna (B13)	)			Drai	nage Patterns (B10)
Saturati	ion (A3)		True Aqua	atic Plants	(B14)			Dry-	Season Water Table (C2)
Water N	Marks (B1)		Hydrogen	Sulfide O	dor (C1)			Cray	yfish Burrows (C8)
Sedime	ent Deposits (B2)		Oxidized F	Rhizosphe	res on Liv	ing Roc	ots (C3	) Satu	uration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	1)		Stur	nted or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent Iro	n Reducti	on in Tille	d Soils	(C6)	Geo	emorphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface (	C7)			FAC	C-Neutral Test (D5)
Inundat	ion Visible on Aerial I	magery (B7)	Gauge or	Well Data	(D9)				
Sparsel	ly Vegetated Concave	e Surface (B8)	Other (Exp	plain in Re	marks)				
Field Obser	rvations:								
Surface Wa	ter Present? Y	es No	X Depth (in	ches):		_			
Water Table	Present? Y	es No	Depth (in	ches):					
Saturation F	Present? Y	es No	X Depth (in	ches):		_ w	Vetland	l Hydrolog	y Present? Yes No _X_
	pillary fringe)								
Describe Re	ecorded Data (stream	gauge, monit	oring well, aerial	photos, pr	evious ins	pection	ns), if a	vailable:	
Remarks:									
No visible flo	ow, signs of past flow	, or prolonged	saturation at tim	e of surve	y.				
	- •	. •							

Project/Site: Leavenworth USP/CJA2875	City/County	City/County: Leavenworth/Leavenworth Sampling					
Applicant/Owner: Bureau of Prisons			State: KS	Sampling Point: PEM-4-1			
Investigator(s): Laura Totten/Chris Thomas	Section, To	_ Section, Township, Range: Sec. 27, T8S, R22E					
Landform (hillslope, terrace, etc.): Swale		Local relief (	(concave, convex, none)	: Concave-Linear			
Slope (%): <u>10</u> Lat:	Long:			Datum:			
Soil Map Unit Name: Sharpsburg Silty Clay Loam			NWI or WWI o	classification: NA			
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes	× No	(If no, explain in F	Remarks.)			
Are Vegetation, Soil, or Hydrology signification	antly disturbed?	Are "	Normal Circumstances" ¡	present? Yes X No			
Are Vegetation, Soil, or Hydrology naturall	y problematic?	(If ne	eded, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map show	ving samplin	g point lo	ocations, transects	s, important features, etc.			
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes X No  Yes X No  Remarks:	with	e Sampled in a Wetlan		<u> </u>			
Occurs in a wetland swale that runs southwest to I-8. Adjacent to	I-8.						
<b>VEGETATION</b> – Use scientific names of plants.							
	olute Dominant Species?	Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	Species			
2			Total Number of Domir Species Across All Stra				
4.       5.		/er	Percent of Dominant S That Are OBL, FACW,				
Sapling/Shrub Stratum (Plot size:)  1				rksheet: Multiply by: x 1 =0			
2				x 2 =0			
4.			-	x 3 =0			
5			FACU species	x 4 =0			
	= Total Cov	/er	UPL species	x 5 =0			
Herb Stratum (Plot size: 20m sq )	0 V	EA C\\\	Column Totals:	(A) 0 (B)			
O Polygonym bydroninor	0 Y 5 N	FACW OBL	Prevalence Index	ς = B/A =0			
	2 N		Hydrophytic Vegetati				
4			X Dominance Test is				
5.			Prevalence Index i	is ≤3.0 <sup>1</sup>			
6.			Morphological Ada	aptations <sup>1</sup> (Provide supporting			
7				(s or on a separate sheet)			
8			Problematic Hydro	pphytic Vegetation <sup>1</sup> (Explain)			
9			<sup>1</sup> Indicators of hydric so	il and wetland hydrology must			
10			be present, unless dist				
Woody Vine Stratum (Plot size:)	7 = Total Cov	/er					
1			Hydrophytic				
2.			Vegetation Present? Ye	es <u>X</u> No			
	= Total Cov						
Remarks: (Include photo numbers here or on a separate sheet.)			1				

SOIL Sampling Point: PEM-4-1

Profile Des	cription: (Describe	to the depth				r confir	m the absence	e of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	x Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
(inches) 0-3	10YR3/1	100	Color (moist)	- 70	<u>rype</u>	LOC	CL	Remarks
			40)/D4/0				-	
3-6	10YR4/2	95	10YR4/6	5	<u> </u>	M	CL	
6-10	2.5Y5/1	80	10YR4/6	20	C	M	CL	
				_				
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion RM=Re	educed Matrix, CS	S=Covere	d or Coate	d Sand G	Grains <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil				0010.0	<u> </u>			s for Problematic Hydric Soils <sup>3</sup> :
Histoso	I (A1)		Sandy (	Gleyed Ma	atrix (S4)		Coas	t Prairie Redox (A16)
	pipedon (A2)		Sandy F	Redox (S5	5)			Manganese Masses (F12)
Black H	istic (A3)		Stripped	d Matrix (S	86)		Other	(Explain in Remarks)
	en Sulfide (A4)			Mucky Mii				
	d Layers (A5)			Gleyed Ma				
	uck (A10)	- (044)	× Deplete					
	d Below Dark Surfac ark Surface (A12)	e (A11)		Dark Surfa	irface (F7)		3Indicator	s of hydrophytic vegetation and
	Mucky Mineral (S1)			Depressio				nd hydrology must be present,
	ucky Peat or Peat (S	3)	1\cdox 1	Depi essio	113 (1 0)			s disturbed or problematic.
	Layer (if observed):							
	,							
Depth (in			_				Hydric Soi	il Present? Yes X No
Remarks:	,							
IYDROLC	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of c	one is required	; check all that ap	ply)			Second	lary Indicators (minimum of two required
	Water (A1)		Water-Sta	ined Leav	es (B9)		Su	rface Soil Cracks (B6)
High W	ater Table (A2)		Aquatic Fa	auna (B13	)		Dra	ainage Patterns (B10)
X Saturati	on (A3)		True Aqua	itic Plants	(B14)		Dry	y-Season Water Table (C2)
Water N	/larks (B1)		Hydrogen	Sulfide O	dor (C1)		Cra	ayfish Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	res on Livi	ng Roots	s (C3) Sa	turation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	)		unted or Stressed Plants (D1)
X Algal M	at or Crust (B4)		Recent Iro	n Reducti	on in Tilled	Soils (C		omorphic Position (D2)
Iron De			Thin Muck	Surface (	(C7)		<u>×</u> FA	C-Neutral Test (D5)
Inundat	ion Visible on Aerial	Imagery (B7)	Gauge or	Well Data	(D9)			
	y Vegetated Concav	e Surface (B8)	Other (Exp	olain in Re	emarks)			
Field Obser					_			
Surface Wa	ter Present? Y	′es X No	Depth (in	ches):	3	_		
Water Table	Present? Y	'es No	Depth (in	ches):		_		
Saturation F		es X No	Depth (in	ches):	0	Wet	land Hydrolog	gy Present? Yes <u>X</u> No
	pillary fringe)	1 001100 mar!t	oring wall social	nhotos ==	ovious in-	nootions'	if available:	
Describe Re	ecorded Data (stream	i gauge, monit	oring well, aerial	pnotos, pr	evious insp	pections)	, it available:	
Domorto								
Remarks:								
Pipe noted a	at head of wetland be	elow pump stat	tion where hydrol	ogy sourc	e starts. Sı	ıspect ou	utfall from facili	ties.

Project/Site: Leavenworth USP/CJA2875	Cit	y/County: Leavenwor	th/Leavenworth S	Sampling Date: <u>03/24/11</u>		
Applicant/Owner: Bureau of Prisons			State: KS Sampling Point: PEM-4-2			
Investigator(s): Laura Totten/Chris Thomas	Se	ction, Township, Ran	ge: Sec. 27, T8S, R22E			
Landform (hillslope, terrace, etc.): Hillslope		Local relief (d	concave, convex, none): <u>(</u>	Convex		
Slope (%): <u>15</u> Lat:	Lo	ng:	[	)atum:		
Soil Map Unit Name: Sharpsburg Silty Clay Loam			NWI or WWI clas	ssification: NA		
Are climatic / hydrologic conditions on the site typical for th	is time of year?	Yes X No	(If no, explain in Rer	narks.)		
Are Vegetation, Soil, or Hydrology				esent? Yes X No		
Are Vegetation, Soil, or Hydrology			eded, explain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site map			cations, transects,	important features, etc.		
Hydrophytic Vegetation Present? YesN	No X					
Hydric Soil Present? Yes X		Is the Sampled		No. Y		
Wetland Hydrology Present? Yes N		within a Wetland	a? res	_ No <u>X</u> _		
Remarks:		•				
Out point on hillslope to the east of wetland in managed page	asture land.					
<b>VEGETATION</b> – Use scientific names of plants	<b>3.</b>					
		Oominant Indicator	Dominance Test worksh	neet:		
Tree Stratum (Plot size:) 1			Number of Dominant Spe That Are OBL, FACW, or	ecies FAC:0 (A)		
2. <u>2</u> 3			Total Number of Dominar Species Across All Strata			
4			Percent of Dominant Spe That Are OBL, FACW, or	cies FAC:0 (A/B)		
	=	Total Cover				
Sapling/Shrub Stratum (Plot size:)			Prevalence Index works	Multiply by:		
1 2			OBL species			
3.			FACW species			
4			FAC species			
5			FACU species			
	= .		UPL species			
Herb Stratum (Plot size: 20m sq )			Column Totals:	(A) (B)		
1. Schedonorus phoenix			Prevalence Index -	= B/A =0		
2			Hydrophytic Vegetation			
3			Dominance Test is >			
4			Prevalence Index is s			
5			Morphological Adapt	ations <sup>1</sup> (Provide supporting or on a separate sheet)		
7			Problematic Hydroph	ytic Vegetation¹ (Explain)		
8						
9 10			<sup>1</sup> Indicators of hydric soil a be present, unless disturb	and wetland hydrology must bed or problematic.		
Woody Vine Stratum (Plot size:)	100=	Total Cover				
1			Hydrophytic			
2.			Vegetation Present? Yes	No <u>×</u> _		
	= -		110301111 1105	110		
Remarks: (Include photo numbers here or on a separate	sheet.)					
	,					
Predominantly upland species present.						

SOIL Sampling Point: PEM-4-2

Profile Des		-						
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR4/2	100	,				SCL	
4-10	10YR3/2	95	7.5YR4/4	 5		M	SCL	
10-14	10YR3/2	85	7.5YR4/4	 15		M	SCL	
10-14	10113/2		7.511(4/4			IVI		
				_	·			
				_	· ——			
							<u> </u>	
	Concentration, D=Dep	oletion, RM=	Reduced Matrix, C	S=Covere	d or Coate	d Sand G		cation: PL=Pore Lining, M=Matrix.
•	Indicators:							s for Problematic Hydric Soils <sup>3</sup> :
Histoso	` '			Gleyed Ma				Prairie Redox (A16)
	pipedon (A2) listic (A3)			Redox (S5 d Matrix (\$				langanese Masses (F12) (Explain in Remarks)
	en Sulfide (A4)			Mucky Mi			01101	(Explain in Remarks)
	d Layers (A5)			Gleyed M				
	uck (A10)			ed Matrix (	,			
	ed Below Dark Surfac	e (A11)		Dark Surfa	. ,		3, ,, ,	
	ark Surface (A12) Mucky Mineral (S1)			ed Dark St Depressio	ırface (F7)			s of hydrophytic vegetation and did hydrology must be present,
	ucky Peat or Peat (S	3)	\\\	Depressio	113 (1 0)			s disturbed or problematic.
	Layer (if observed)							·
Type:								
Depth (ir	nches):						Hydric Soi	Present? Yes X No
Depth (ir Remarks:	nches):						Hydric Soi	I Present? Yes X No
Remarks:			<del></del>				Hydric Soi	I Present? Yes <u>X</u> No
Remarks:	<b>DGY</b>						Hydric Soi	I Present? Yes X No
Remarks:	DGY rdrology Indicators							
Remarks:  HYDROLO  Wetland Hy  Primary Indi	OGY rdrology Indicators cators (minimum of o						Second	ary Indicators (minimum of two required)
HYDROLO Wetland Hy Primary Indi	OGY ordrology Indicators cators (minimum of o		Water-Sta	ained Leav	` '		Second	ary Indicators (minimum of two required) face Soil Cracks (B6)
HYDROLO Wetland Hy Primary Indi Surface High W	OGY rdrology Indicators cators (minimum of of Water (A1) ater Table (A2)		Water-Sta Aquatic F	ained Leav auna (B13	)		Second Sur Dra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat	OGY rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3)		Water-Sta Aquatic F True Aqua	ained Leav auna (B13 atic Plants	(B14)		Second Sur Dra Dra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M	ody rdrology Indicators cators (minimum of o water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Sta Aquatic F True Aqua Hydrogen	ained Leav auna (B13 atic Plants Sulfide O	(B14) dor (C1)	na Roots	Second Sur Dra Dry Cra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime	ordrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe	(B14) dor (C1)	-	Second Sur Dra Dry Cra s (C3) Sat	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) iyfish Burrows (C8) uration Visible on Aerial Imagery (C9)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De	ordrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce	(B14) dor (C1) res on Livi	.)	Second Sur Dra Dry Cra (C3) Sat	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4)	one is require	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	(B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is require	Water-Sta Aquatic F Arue Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reducti k Surface Well Data	(B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9)	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse	order of the control	one is require Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ira Thin Mucl Gauge or  Other (Ex	nined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti k Surface Well Data plain in Re	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled (C7) (D9) emarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa	order of the control	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aquatic F Hydrogen Oxidized Presence Recent Iru Thin Mucl ) Gauge or 8) Other (Ex	nined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduction k Surface Well Data plain in Researches):	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 eon in Tilled (C7) (D9) emarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obset Surface Wa	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reduct k Surface Well Data plain in Re	(B14) dor (C1) dor (C1) dor (C1) dor (C4) don in Tilled (C7) (D9) demarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obset Surface Wa Water Table Saturation F	rdrology Indicators: cators (minimum of of etwater (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavervations: ter Present?	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aquatic F Hydrogen Oxidized Presence Recent Iru Thin Mucl ) Gauge or 8) Other (Ex	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reduct k Surface Well Data plain in Re	(B14) dor (C1) dor (C1) dor (C1) dor (C4) don in Tilled (C7) (D9) demarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B /es N /es N n gauge, moi	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iru Thin Mucl Gauge or Other (Ex	ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti k Surface Well Data plain in Re aches): nches): photos, pi	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)

Project/Site: Leavenworth USP/CJA2875	(	City/County	y/County: Leavenworth/Leavenworth Sampling Date: 03/24/11				
Applicant/Owner: Bureau of Prisons				State: KS	Sampling Point: PEM-5-1		
Investigator(s): Laura Totten/Chris Thomas		Section, To	wnship, Raı	nge: <u>Sec. 27, T8S, R22E</u>			
Landform (hillslope, terrace, etc.): Swale			Local relief	(concave, convex, none):	Concave		
Slope (%): <u>25</u> Lat:		Long:			Datum:		
Soil Map Unit Name: Sharpsburg Silty Clay Loam				NWI or WWI cl	assification: NA		
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	X No_	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrologysi	ignificantly	disturbed?	Are "	Normal Circumstances" p	oresent? Yes X No		
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eded, explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects	, important features, etc.		
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes X No Yes X No No	o		e Sampled in a Wetlar		No		
Abutting to intermittent tributary I-9 in old pond that has a bi	reached da	m.					
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size:) 1	% Cover		Status	Dominance Test work  Number of Dominant S  That Are OBL, FACW, 6			
2				Total Number of Domin Species Across All Stra			
4 5			/er	Percent of Dominant Sp That Are OBL, FACW, o			
Sapling/Shrub Stratum (Plot size:)  1)				Prevalence Index wor	ksheet:  Multiply by:		
2.				OBL species	x 1 =0		
3				FACW species	x 2 =0		
4					x 3 =0		
5					x 4 =0		
Herb Stratum (Plot size:20m sq)		= Total Co	ver .		x 5 =0		
1. Phalaris arundinacea	85	Υ	FACW	Column Totals:	(A) (B)		
2. Polygonum pensylvanicum	20	N	FACW	Prevalence Index	= B/A =0		
3. Ranunculus sceleratus	40		OBL	Hydrophytic Vegetation	on Indicators:		
4				X Dominance Test is			
5				Prevalence Index is			
6				Morphological Ada	ptations <sup>1</sup> (Provide supporting s or on a separate sheet)		
7					phytic Vegetation <sup>1</sup> (Explain)		
8				1 105101114101119410	mytto vogotation (Explain)		
9					l and wetland hydrology must		
10		= Total Co		be present, unless distu	irbed or problematic.		
Woody Vine Stratum (Plot size:)		rotal oo	701				
1				Hydrophytic			
2				Vegetation Present? Yes	s <u>X</u> No		
		= Total Co	ver .				
Remarks: (Include photo numbers here or on a separate s	sheet.)			I			

SOIL Sampling Point: PEM-5-1

Depth	Matrix		Redo	x Features	S		n the absence	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR3/1	100					CL	
4-7	10YR4/2	90	10YR4/6	10	С	M	CL	
7-14	2.5Y5/1	85	10YR4/6	15	С	M	CL	
ydric Soil Histoso Histic E Black H Hydrogo Stratifie 2 cm M Deplete Thick D	concentration, D=Dep Indicators: I (A1) pipedon (A2) iistic (A3) en Sulfide (A4) d Layers (A5) uck (A10) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1)		Sandy C Sandy F Stripped Loamy I Loamy ( X Deplete Redox I Deplete	Gleyed Ma Redox (S5 I Matrix (S Mucky Mir Gleyed Ma	trix (S4) ) 66) heral (F1) atrix (F2) F3) ce (F6) rface (F7)	d Sand Gi	Indicators  Coast Iron-Ma Other (	cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils³:  Prairie Redox (A16)  anganese Masses (F12)  (Explain in Remarks)  of hydrophytic vegetation and d hydrology must be present,
5 cm M	ucky Peat or Peat (S		Redox L	Depression	ns (F8)			d hydrology must be present, disturbed or problematic.
actrictiva							1	<del></del>
	Layer (if observed):							
Type:								- · · · · · · · · · · · · · · · · · · ·
Type: Depth (in							Hydric Soil	Present? Yes X No
Type: Depth (in emarks:	oches):						Hydric Soil	Present? Yes X No
Type: Depth (in emarks:	oches):						Hydric Soil	Present? Yes X No
Type: Depth (in emarks:  DROLO	OGY		ed; check all that ap	ply)				Present? Yes X No
Type: Depth (in emarks:  DROLC etland Hy eimary Indi C Surface	OGY rdrology Indicators: cators (minimum of o		Water-Stai	ned Leave	` '		Seconda	ary Indicators (minimum of two requir ace Soil Cracks (B6)
Type: Depth (in emarks:  DROLO etland Hy imary Indi Surface High W	OGY rdrology Indicators: cators (minimum of of the Water (A1) ater Table (A2)		Water-Stai	ined Leave iuna (B13)	)		Seconda Surf Drai	ary Indicators (minimum of two requir ace Soil Cracks (B6) nage Patterns (B10)
Type: Depth (in emarks:  **TDROLO **TOROLO ***TOROLO **TOROLO	order (A1) ater Table (A2) ion (A3)		Water-Stai Aquatic Fa True Aqua	ned Leave luna (B13) tic Plants	) (B14)		Seconda Surf Drai Dry-	ary Indicators (minimum of two requir face Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
Type: Depth (in emarks:  **TDROLC**  **TDROLC**  **Torontonic	order (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Stai Aquatic Fa True Aqua Hydrogen	ined Leave luna (B13) tic Plants Sulfide Oc	) (B14) dor (C1)		Seconda Surf Drai Dry Cray	ary Indicators (minimum of two requir face Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8)
Type: Depth (in emarks:  TDROLC  Tetland Hy rimary Indi Surface High W. Saturati Water M Sedime	ordes):		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ined Leave luna (B13) tic Plants Sulfide Oc Rhizosphe	(B14) dor (C1) res on Livi	_	Seconda Surf Drai Dry- Cray (C3) Satu	ary Indicators (minimum of two requir ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9
Type: Depth (in emarks:  TDROLC  Toronto	orches):		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ned Leave luna (B13) tic Plants Sulfide Oc Rhizosphel of Reduce	(B14) dor (C1) res on Livi d Iron (C4	)	Seconda Surf Drai Cray Cray (C3) Satu	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Type: Depth (in emarks:  TDROLO  Tetland Hy rimary Indi Surface High W. Saturati Water N Sedime Drift De Algal M	ordes):		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence G Recent Iro	ined Leave luna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Type: Depth (in emarks:  'DROLO 'etland Hy rimary Indi 'Surface High W. Saturati Water M Sedime Drift De Algal M Iron De	orches):	ne is require	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro	ined Leave iuna (B13) tic Plants Sulfide Oc Rhizosphe of Reduce n Reductio Surface (	(B14) dor (C1) res on Livi d Iron (C4 on in Tilleo	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9)
Type: Depth (in emarks:  /DROLO /etland Hy rimary Indi / Surface _ High W. / Saturati _ Water N _ Sedime _ Drift De / Algal M _ Iron De _ Inundat	order (A1) ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial I	ne is require	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence G Recent Iro Thin Muck Gauge or N	ined Leave iuna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction Surface ( Well Data	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Type: Depth (in emarks:  TDROLC  Toron Declaration  Water M Sedime Drift De Algal M Iron De Inundat Sparsel	ordes):	ne is require	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence G Recent Iro Thin Muck	ined Leave iuna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction Surface ( Well Data	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Type: Depth (in emarks:   **TOROLO**	ordes):	magery (B7)	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V 8) Other (Exp	ined Leave iuna (B13) tic Plants Sulfide Oc Rhizospher of Reduce n Reduction Surface ( Well Data blain in Re	(B14) (bor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Type: Depth (in emarks:  /DROLO /etland Hy rimary Indi / Surface _ High W. / Saturati _ Water M _ Sedime _ Drift De / Algal M _ Iron De _ Inundat _ Sparsel ield Obsel urface Wa	order (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial I y Vegetated Concave rvations:	magery (B7) e Surface (B	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave iuna (B13) tic Plants Sulfide Oc Rhizospher of Reduce in Reduction Surface ( Well Data blain in Re	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)	)	Seconda Surf Drai Cray Cray (C3) Satu Stur S) Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) r/fish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) morphic Position (D2)
Type: Depth (in emarks:  'DROLO 'etland Hy rimary Indi 'Surface High W. Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel eld Obsel urface Wa	OGY rdrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial I y Vegetated Concave rvations: ter Present? Y	magery (B7) e Surface (B	Water-Stai Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave una (B13) tic Plants Sulfide Oc Rhizospher of Reduce on Reductic Surface ( Well Data plain in Re ches): ches):	(B14) (B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9) marks)  2-10	) I Soils (C6	<u>Seconda</u> Surf Drai Dry Cray (C3) Satu Stur S) Geo X FAC	ary Indicators (minimum of two required ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Uration Visible on Aerial Imagery (C9) Anted or Stressed Plants (D1) Amorphic Position (D2) E-Neutral Test (D5)
Type: Depth (in emarks:  /DROLO /etland Hy rimary Indi  Surface High W. Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel ield Obsel urface Wa /ater Table aturation Faceludes ca	ordes):	magery (B7) e Surface (B es N es N es N	Water-Stai  Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave una (B13) tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi d Iron (C4 on in Tilled (C7) (D9) marks)  2-10	) Soils (C6	Seconda  Surf  Drai  Cray  (C3) Satu  Stur  FAC	ary Indicators (minimum of two required ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Uration Visible on Aerial Imagery (C9) Anted or Stressed Plants (D1) Amorphic Position (D2) E-Neutral Test (D5)
Type: Depth (in Remarks:  TOROLO  Toron Development	OGY  Ordrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) fon (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial I y Vegetated Concave rvations: ter Present? Present? Y	magery (B7) e Surface (B es N es N es N	Water-Stai  Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave una (B13) tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi d Iron (C4 on in Tilled (C7) (D9) marks)  2-10	) Soils (C6	Seconda  Surf  Drai  Cray  (C3) Satu  Stur  FAC	ary Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9 nted or Stressed Plants (D1) morphic Position (D2) c-Neutral Test (D5)
Type:	ordes):	magery (B7) e Surface (B es N es N es N	Water-Stai  Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave una (B13) tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi d Iron (C4 on in Tilled (C7) (D9) marks)  2-10	) Soils (C6	Seconda  Surf  Drai  Cray  (C3) Satu  Stur  FAC	ary Indicators (minimum of two required ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) Affish Burrows (C8) Uration Visible on Aerial Imagery (C9) Anted or Stressed Plants (D1) Amorphic Position (D2) E-Neutral Test (D5)
Type:	ordes):	magery (B7) e Surface (B es N es N es N	Water-Stai  Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V Other (Exp	ined Leave una (B13) tic Plants Sulfide Oc Rhizosphe of Reduce n Reductic Surface ( Well Data blain in Re ches): ches): ches):	(B14) (B14) (dor (C1) res on Livi d Iron (C4 on in Tilled (C7) (D9) marks)  2-10	) Soils (C6	Seconda  Surf  Drai  Cray  (C3) Satu  Stur  FAC	ary Indicators (minimum of two requir ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) atted or Stressed Plants (D1) morphic Position (D2)

Project/Site: Leavenworth USP/CJA28	75	(	City/County:	Leavenwo	worth/Leavenworth Sampling Date: 03/24/11				
Applicant/Owner: Bureau of Prisons					State: KS Sampling Point: PEM-5-2				
Investigator(s): Laura Totten/Chris Tho	omas	;	Section, Tow	vnship, Rar	nge: Sec. 27, T8S, R22E				
Landform (hillslope, terrace, etc.): Hills	lope		L	ocal relief (	concave, convex, none):	Convex			
Slope (%): <u>15</u> Lat:			Long:			Datum:			
Soil Map Unit Name: Sharpsburg Silty	Clay Loam		_	NWI or WWI classification: NA					
Are climatic / hydrologic conditions on t	the site typical for th	≺ No	(If no, explain in R	emarks.)					
Are Vegetation, Soil, or					Normal Circumstances" p		No		
Are Vegetation, Soil, or					eded, explain any answe				
SUMMARY OF FINDINGS - A	ttach site map	showing	sampling	point lo	ocations, transects	, important fea	itures, etc.		
Hydrophytic Vegetation Present?	Yes 1	No X	lo the	Sampled	Aron				
Hydric Soil Present?	Yes X	No		n a Wetlan		No <u>X</u> _			
Wetland Hydrology Present?	Yes 1	NoX	Within	ii a wellali	u: 163				
Remarks:									
Out point on hillslope to the east of we	tland in managed p	pasture land.							
<b>VEGETATION</b> – Use scientific	names of plants	<b>3</b> .							
Tree Stratum (Plot size:			Dominant Species?		Dominance Test work	sheet:			
1					Number of Dominant Sp That Are OBL, FACW, of		(A)		
2. <u>2</u> 3					Total Number of Domini Species Across All Stra		(B)		
4 5					Percent of Dominant Sp That Are OBL, FACW, o		(A/R)		
			= Total Cove	er			(//////		
Sapling/Shrub Stratum (Plot size:	,				Prevalence Index work  Total % Cover of:		bv:		
2.					OBL species				
3.					FACW species				
4.					FAC species	x 3 =	0		
5					FACU species	x 4 =	0		
			= Total Cove	er	UPL species	x 5 =	0		
Herb Stratum (Plot size: 20m s		400		FAOU	Column Totals:	(A)	0 (B)		
			Y	FACU	Prevalence Index	= B/A =0			
2. 3.					Hydrophytic Vegetation				
4.					Dominance Test is				
5					Prevalence Index is				
6					Morphological Ada <sub>l</sub> data in Remarks	otations <sup>1</sup> (Provide s s or on a separate s	supporting sheet)		
7					Problematic Hydrop	ohytic Vegetation <sup>1</sup> (	Explain)		
8 9									
10.					<sup>1</sup> Indicators of hydric soil be present, unless distu				
Woody Vine Stratum (Plot size:	)	100	= Total Cove	er					
1					Hydrophytic				
2.					Vegetation	. N. S	,		
			= Total Cove		Present? Yes	s No <u>&gt;</u>	<u>`</u>		
Remarks: (Include photo numbers he	ere or on a separate	sheet)							
	J. J. J. J. Goparato								
Predominantly upland species present	t.								

SOIL Sampling Point: PEM-5-2

Profile Des		-						
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR4/2	100	,				SCL	
4-10	10YR3/2	95	7.5YR4/4	 5		M	SCL	
10-14	10YR3/2	85	7.5YR4/4	 15		M	SCL	
10-14	10113/2		7.511(4/4			IVI		
				_	·			
				_	· ——			
							<u> </u>	
	Concentration, D=Dep	oletion, RM=	Reduced Matrix, C	S=Covere	d or Coate	d Sand G		cation: PL=Pore Lining, M=Matrix.
•	Indicators:							s for Problematic Hydric Soils <sup>3</sup> :
Histoso	` '			Gleyed Ma				Prairie Redox (A16)
	pipedon (A2) listic (A3)			Redox (S5 d Matrix (\$				langanese Masses (F12) (Explain in Remarks)
	en Sulfide (A4)			Mucky Mi			01101	(Explain in Remarks)
	d Layers (A5)			Gleyed M				
	uck (A10)			ed Matrix (	,			
	ed Below Dark Surfac	e (A11)		Dark Surfa	. ,		3, ,, ,	
	ark Surface (A12) Mucky Mineral (S1)			ed Dark St Depressio	ırface (F7)			s of hydrophytic vegetation and did hydrology must be present,
	ucky Peat or Peat (S	3)	\\\	Depressio	113 (1 0)			s disturbed or problematic.
	Layer (if observed)							·
Type:								
Depth (ir	nches):						Hydric Soi	Present? Yes X No
Depth (ir Remarks:	nches):						Hydric Soi	I Present? Yes X No
Remarks:			<del></del>				Hydric Soi	I Present? Yes <u>X</u> No
Remarks:	<b>DGY</b>						Hydric Soi	I Present? Yes X No
Remarks:	DGY rdrology Indicators							
Remarks:  HYDROLO  Wetland Hy  Primary Indi	OGY rdrology Indicators cators (minimum of o						Second	ary Indicators (minimum of two required)
HYDROLO Wetland Hy Primary Indi	OGY ordrology Indicators cators (minimum of o		Water-Sta	ained Leav	` '		Second	ary Indicators (minimum of two required) face Soil Cracks (B6)
HYDROLO Wetland Hy Primary Indi Surface High W	OGY rdrology Indicators cators (minimum of of Water (A1) ater Table (A2)		Water-Sta Aquatic F	ained Leav auna (B13	)		Second Sur Dra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat	OGY rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3)		Water-Sta Aquatic F True Aqua	ained Leav auna (B13 atic Plants	(B14)		Second Sur Dra Dra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M	ody rdrology Indicators cators (minimum of o water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Sta Aquatic F True Aqua Hydrogen	ained Leav auna (B13 atic Plants Sulfide O	(B14) dor (C1)	na Roots	Second Sur Dra Dry Cra	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime	ordrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe	(B14) dor (C1)	-	Second Sur Dra Dry Cra s (C3) Sat	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) iyfish Burrows (C8) uration Visible on Aerial Imagery (C9)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De	ordrology Indicators: cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce	(B14) dor (C1) res on Livi	.)	Second Sur Dra Dry Cra (C3) Sat	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4)		Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) lyfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) iposits (B3) at or Crust (B4)	one is require	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro	ained Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti	(B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De	rdrology Indicators cators (minimum of of the Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is require	Water-Sta Aquatic F Arue Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reducti k Surface Well Data	(B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9)	.)	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse	order of the control	one is require Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ira Thin Mucl Gauge or  Other (Ex	nined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reducti k Surface Well Data plain in Re	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled (C7) (D9) emarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa	order of the control	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aquatic F Hydrogen Oxidized Presence Recent Iru Thin Mucl ) Gauge or 8) Other (Ex	nined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduction k Surface Well Data plain in Researches):	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 eon in Tilled (C7) (D9) emarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse Field Obset Surface Wa	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reduct k Surface Well Data plain in Re	(B14) dor (C1) dor (C1) dor (C1) dor (C4) don in Tilled (C7) (D9) demarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obset Surface Wa Water Table Saturation F	rdrology Indicators: cators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial by Vegetated Concavervations: ter Present?	Imagery (B7 e Surface (B	Water-Sta Aquatic F True Aquatic F Hydrogen Oxidized Presence Recent Iru Thin Mucl ) Gauge or 8) Other (Ex	nined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce on Reduct k Surface Well Data plain in Re	(B14) dor (C1) dor (C1) dor (C1) dor (C4) don in Tilled (C7) (D9) demarks)	d Soils (C	Second	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO Wetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De Algal M Iron De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi  Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Sparse  Field Obse Surface Wa Water Table Saturation F (includes ca	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B  /es N  /es N	Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Ird Thin Mucl ) Gauge or 8) Other (Ex	nined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduction R	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 on in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
HYDROLO  Wetland Hy Primary Indi Surface High W Saturat Water N Sedime Drift De Inundat Sparse Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	rdrology Indicators cators (minimum of of other cators (minimum of othe	Imagery (B7 e Surface (B /es N /es N n gauge, moi	Water-Sta Aquatic F Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iru Thin Mucl Gauge or Other (Ex	ained Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reducti k Surface Well Data plain in Re aches): nches): photos, pi	(B14) (B14) dor (C1) eres on Livi ed Iron (C4 fon in Tilled (C7) (D9) emarks)	d Soils (C	Second Sur Dra Dry Cra s (C3) Sat Stu 66) Gea FAC	ary Indicators (minimum of two required) face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) ryfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)

Project/Site: Leavenworth USP/CJA2875		City/County	: Leavenwo	orth/Leavenworth Sampling Date: 03/23/11		
		State: KS Sampling Point: Non-				
				nge: Sec. 23, T8S, R22E		
				(concave, convex, none): Concave-Linear		
Slope (%): <u>30</u> Lat:						
Are climatic / hydrologic conditions on the site typical for th						
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology				eeded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map			g point l	ocations, transects, important features, etc.		
Hydrophytic Vegetation Present? Yes X	No	1- 41	0 !!	•		
Hydric Soil Present? Yes X			ne Sampled			
Wetland Hydrology Present? Yes 1		With	iin a wetiar	nd? Yes NoX		
Remarks: Slopes directly above I-6 have moderate degree of slope PEM-3 downstream. Meets vegetation and hydric soils cri USACE determination.						
<b>VEGETATION</b> – Use scientific names of plants	S.					
Tree Stretum (Diet size) 50m cg	Absolute			Dominance Test worksheet:		
Tree Stratum (Plot size: 50m sq )		Species?		Number of Dominant Species		
1. Acer negundo			FAC FAC	That Are OBL, FACW, or FAC:4 (A)		
Ulmus americana     Salix amygdaloides	60	N		Total Number of Dominant		
. 01 111 11		N		Species Across All Strata:5 (B)		
		IN	FAC	Percent of Dominant Species		
5		= Total Co	vor	That Are OBL, FACW, or FAC: 80 (A/B)		
Sapling/Shrub Stratum (Plot size: 30m sq )		- Total Co	VCI	Prevalence Index worksheet:		
1. Lonicera mackii	30	Y	NA	Total % Cover of: Multiply by:		
2.			NA	OBL species0 x 1 =0		
3.				FACW species10 x 2 =20		
4				FAC species175 x 3 =525		
5				FACU species 25 x 4 = 100		
		= Total Co		UPL species0 x 5 =0		
Herb Stratum (Plot size: 20m sq )				Column Totals:(A)(B)		
1. Alliaria petiolata	5	N	FACW	Developed Index D/A 2.07		
2. Galium aparine	10	N	FACU	Prevalence Index = B/A = 3.07		
3. Osmorhiza claytonii	15	N	FACU	Hydrophytic Vegetation Indicators:		
4. Elymus virginicus	75	Y	FAC	<ul><li>X Dominance Test is &gt;50%</li><li>Prevalence Index is ≤3.0¹</li></ul>		
5				Morphological Adaptations <sup>1</sup> (Provide supporting		
6				data in Remarks or on a separate sheet)		
7				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
8						
9				<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
10		T-1-1-0	-	be present, unless disturbed or problematic.		
Woody Vine Stratum (Plot size:30m sq)	105	= Total Co	ver			
1. Vitis riparia	10	Υ	FAC	Hydrophytic		
2.				Vegetation		
	10	= Total Co	ver	Present? Yes X No No		
Remarks: (Include photo numbers here or on a separate	sheet )					
	3.1001.7					
Does not pass FAC neutral test. Passes dominance test t	out does not	pass preva	lence test.			

SOIL Sampling Point: Non-Wet-1-1

Profile Des	cription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confi	rm the absence of	of indicators.)
Depth	Matrix			x Features	- 1	. 2	<b>-</b>	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	Loc <sup>2</sup>	Texture	Remarks
0-5	10YR4/2	100					SL	
5-10	10YR4/2		10YR5/2	30	RM		SL	
10-15	10YR5/2	90	10YR 4/4	10	C	M	SCL	
							_	
<sup>1</sup> Type: C=C	concentration, D=Dep	letion RM=F	Reduced Matrix, CS	S=Covered	or Coate	ed Sand (	Grains <sup>2</sup> Loca	ation: PL=Pore Lining, M=Matrix.
	Indicators:		toudoud manny or					for Problematic Hydric Soils <sup>3</sup> :
Histoso	I (A1)		Sandy (	Gleyed Ma	trix (S4)		Coast F	Prairie Redox (A16)
	pipedon (A2)			Redox (S5				anganese Masses (F12)
	listic (A3)			d Matrix (S			Other (I	Explain in Remarks)
	en Sulfide (A4) d Layers (A5)			Mucky Mir Gleyed Ma				
	uck (A10)			ed Matrix (F				
	ed Below Dark Surfac	e (A11)		Dark Surfa	,			
	ark Surface (A12)	, ,		ed Dark Su	. ,	)	<sup>3</sup> Indicators	of hydrophytic vegetation and
	Mucky Mineral (S1)		Redox l	Depression	ns (F8)			hydrology must be present,
	ucky Peat or Peat (S						unless	disturbed or problematic.
_	Layer (if observed)							
Type:	l \.						Hadria Cail I	Dunnanto Van V Na
Depth (ir Remarks:	iches).						Hydric Soil I	Present? Yes X No
ixemaixs.								
HYDROLO	OGY							
	drology Indicators:	<u> </u>						
_	cators (minimum of c		d: check all that ar	(vlac			Secondar	ry Indicators (minimum of two required)
	: Water (A1)		Water-Sta		es (B9)			ace Soil Cracks (B6)
l —	ater Table (A2)		Aquatic Fa		` '		<del></del>	nage Patterns (B10)
Saturat			True Aqua					Season Water Table (C2)
Water N	Marks (B1)		Hydrogen	Sulfide Od	dor (C1)		Cray	fish Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	res on Liv	ing Root	s (C3) Satu	ration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	d Iron (C4	1)	Stunt	ted or Stressed Plants (D1)
_	at or Crust (B4)		Recent Iro	n Reduction	on in Tille	d Soils (0	• —	morphic Position (D2)
	posits (B5)		Thin Muck	,	,		FAC-	-Neutral Test (D5)
	ion Visible on Aerial		_		. ,			
	y Vegetated Concav	e Surface (B	B) Other (Exp	plain in Re	marks)			
Field Obse		/ NI	. Y D (1)	-1				
			o X Depth (in					
Water Table			o X Depth (in					5 10 V
Saturation F (includes ca	resent? Y pillary fringe)	es N	o X Depth (in	cnes):		_   we	tland Hydrology	Present? Yes No _X_
	ecorded Data (stream	n gauge, mon	itoring well, aerial	photos, pro	evious ins	pections	), if available:	
Remarks:								
No visible s	igns of flow, past flow	v, or prolonge	ed saturation at tim	e of surve	y.			

Project/Site: Leavenworth USP/CJA2875		City/County:	Leavenwo	orth/Leavenworth	Sampling Da	ate: 03/23/1	11
Applicant/Owner: Bureau of Prisons				State: KS	_ Sampling Po	oint: Non-W	/et-1-2
Investigator(s): Laura Totten/Chris Thomas							
				(concave, convex, none			
Slope (%): <u>5</u> Lat:							
				NWI or WWI			
Are climatic / hydrologic conditions on the site typical for th							
Are Vegetation, Soil, or Hydrology				'Normal Circumstances'		s <b>X</b> N	lo
Are Vegetation, Soil, or Hydrology							
SUMMARY OF FINDINGS – Attach site map				eeded, explain any ansv			es, etc.
				·	•		
Hydrophytic Vegetation Present?  Yes X  Hydric Soil Present?  Yes X  Yes X	No		e Sampled				
Wetland Hydrology Present? Yes !	No X	with	n a Wetlar	nd? Yes	No	<u>×</u>	
Remarks:							
Only one secondary hydrology indicator noted at time of s layer mostly upland species. Currently labeled as non-we					and hydric soi	ls present. S	Shrub
<b>VEGETATION</b> – Use scientific names of plants	S.						
T 01 1 (B) 1 ( 50m on )	Absolute	Dominant		Dominance Test wo	rksheet:		
Tree Stratum (Plot size: 50m sq )		Species?		Number of Dominant		4	<b>(A)</b>
Gleditsia triacanthos     Ulmus americana	10	N Y	FAC FAC	That Are OBL, FACW	, or FAC:	4	(A)
3. Platanus occidentalis	25			Total Number of Dom		_	(D)
4. Danulus dallaidas	20			Species Across All St	rata:	5	(B)
4. Populus delicides  5			170	Percent of Dominant		00	(4 (5)
o	115	= Total Cov	er	That Are OBL, FACW	/, or FAC:	80	(A/B)
Sapling/Shrub Stratum (Plot size: 30m sq )		- 10tal 00V	Ci	Prevalence Index we	orksheet:		
1. Lonicera mackii	30	Y	NA	Total % Cover of	: <u>M</u>	ultiply by:	
2. Juniperus virginiana	5	N	NA	OBL species	x 1 =	0	
3. Rosa multiflora	2	N	UPL	FACW species	x 2 =	0	_
4. Cornus drummondii	10	Y	FAC	FAC species	x 3 =	0	
5				FACU species	x 4 =	0	_
	47	= Total Cov	er	UPL species	x 5 =	0	
Herb Stratum (Plot size:)				Column Totals:	(A)	0	(B)
1				Prevalence Inde	ex = B/A =	0	
2				Hydrophytic Vegeta			
3				X Dominance Test			
4.       5.				Prevalence Index			
6				Morphological Ac		vide suppo	rting
7			-	data in Rema	rks or on a sepa	,	
8.				Problematic Hydi	rophytic Vegeta	ition¹ (Expla	ain)
9.							
10				<sup>1</sup> Indicators of hydric s be present, unless dis			must
22		= Total Cov	er	55 p. 556m, amood die			
Woody Vine Stratum (Plot size: 20m sq )	_	.,	<b>540</b>				
1. Vitis riparia	5	Y	FAC	Hydrophytic Vegetation			
2					es X N	lo	
	5	= Total Cov	er				
Remarks: (Include photo numbers here or on a separate	sheet )			•			
1	, sricci.)						

SOIL Sampling Point: Non-Wet-1-2

Profile Desc	cription: (Describe	to the depth n	eeded to docu	ment the i	ndicator	or confirm	the absence o	of indicators.)
Depth	Matrix			x Features	4	. 2		
(inches)	Color (moist)		Color (moist)	%	Type'	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-5	10YR4/2	100					SL	
5-10	10YR4/2	70	10YR5/2	30	RM		SL	
10-15	10YR5/2	90	10YR 4/4	10	С	M	SCL	
1							. 2.	
Type: C=C  Hydric Soil	oncentration, D=Depl	letion, RM=Re	duced Matrix, C	S=Covered	or Coate	d Sand Gr		ation: PL=Pore Lining, M=Matrix. or Problematic Hydric Soils <sup>3</sup> :
*			Candy	Clayed Ma	twist (C.4)			•
Histosol	pipedon (A2)			Gleyed Ma Redox (S5)				rairie Redox (A16) nganese Masses (F12)
	istic (A3)			d Matrix (S				Explain in Remarks)
	en Sulfide (A4)			Mucky Min				,
I	d Layers (A5)			Gleyed Ma				
	uck (A10)			ed Matrix (F	,			
	d Below Dark Surface	e (A11)		Dark Surfa	. ,		3Indicators	of hydrophytic venetation and
	ark Surface (A12) Mucky Mineral (S1)			ed Dark Su Depressior				of hydrophytic vegetation and hydrology must be present,
	ucky Peat or Peat (S3	3)	11000X	Бергеззіої	13 (1 0)			disturbed or problematic.
	Layer (if observed):							·
Type:			_					
Depth (in	ches):		_				Hydric Soil F	Present? Yes X No No
Remarks:							1	
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of o	ne is required;	check all that ap	oply)			Secondar	y Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9)		Surfa	ce Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B13)	1		Drain	age Patterns (B10)
Saturati	on (A3)		True Aqua	atic Plants	(B14)		Dry-S	Season Water Table (C2)
Water N	larks (B1)		Hydrogen					îsh Burrows (C8)
	nt Deposits (B2)			Rhizospher		_		ration Visible on Aerial Imagery (C9)
l —	posits (B3)			of Reduce	•	,		ed or Stressed Plants (D1)
_	at or Crust (B4)		Recent Iro			d Soils (C6		norphic Position (D2)
Iron De	, ,	magan (D7)	Thin Muck	,	•		FAC-	Neutral Test (D5)
	ion Visible on Aerial I y Vegetated Concave		Gauge or	vveii שמום plain in Rei	. ,			
Field Obser		Surface (Do)	Other (Ex	piaiii iii Ke	iliaiks)			
Surface Wat		es No	X Depth (in	ichee).				
Water Table			X Depth (in					
Saturation P			X Depth (in				and Hydrology	Present? Yes No X
(includes ca	pillary fringe)			·				11050H: 105 NO
Describe Re	corded Data (stream	gauge, monito	ring well, aerial	photos, pre	evious ins	pections),	if available:	
Domorko:								
Remarks:								
Currently hy	drology is not indicati	ve of wetland.	It could hold wa	ter and hav	ve hydrolo	gy indicate	ors at a wetter ti	me.

Project/Site: Leavenworth USP/CJA2875	City/County	: Leavenwo	orth/Leavenworth	Sampling Date: <u>03/23/11</u>			
Applicant/Owner: Bureau of Prisons			State: KS	Sampling Point: Non-Wet-2-1			
Investigator(s): Laura Totten/Chris Thomas	Section, To	wnship, Rar	nge: <u>Sec. 23, T8S, R22</u>	<u> </u>			
Landform (hillslope, terrace, etc.): Hillslope		Local relief (	(concave, convex, none)	: Concave-Linear			
Slope (%): <u>10</u> Lat:	Long:			Datum:			
Soil Map Unit Name: Knox Silt Loam		NWI or WWI classification: NA					
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes	X No_	(If no, explain in F	Remarks.)			
Are Vegetation, Soil, or Hydrology significar	ntly disturbed?	Are "	Normal Circumstances"	present? Yes X No			
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If ne	eded, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showi	ng samplin	g point lo	ocations, transects	s, important features, etc.			
Hydrophytic Vegetation Present? Yes No X Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks:	- with	e Sampled in a Wetlan		NoX			
Small ponded area directly below with willow tree and cattails with	large wetland a	area abuttinç	g open water in off-site a	rea to the west.			
VEGETATION – Use scientific names of plants.							
	te Dominant yer Species?	Status	Dominance Test worl Number of Dominant S That Are OBL, FACW,	Species			
2			Total Number of Domin Species Across All Stra	_			
4.       5.		/er	Percent of Dominant S That Are OBL, FACW,				
Sapling/Shrub Stratum (Plot size:)			Prevalence Index wo	rksheet:  Multiply by:			
1				0 x 1 = 0			
2				0 x 2 = 80			
4				0 x 3 = 0			
5.			-	60 x 4 = 240			
	= Total Cov	/er	*	0 x 5 = 0			
Herb Stratum (Plot size:20m sq)			Column Totals:1	00 (A) <u>320</u> (B)			
1. Schedonorus phoenix 60		FACU	Dravalance Index	x = B/A =3.20			
	N	FACW FACW	Hydrophytic Vegetati				
			Dominance Test is				
4			Prevalence Index				
5				aptations <sup>1</sup> (Provide supporting			
6			data in Remark	ks or on a separate sheet)			
8			Problematic Hydro	ophytic Vegetation <sup>1</sup> (Explain)			
9							
10			<sup>1</sup> Indicators of hydric so be present, unless dist	oil and wetland hydrology must turbed or problematic.			
	= Total Cov	/er					
Woody Vine Stratum (Plot size:)  1			Hydrophytic Vegetation				
2	= Total Cov		Present? Ye	es No _X			
Remarks: (Include photo numbers here or on a separate sheet.)							
Cyperus and Polygonum in areas of saturation and inundation. Do	es not meet hy	drophytic ve	egetation criteria or pass	FAC neutral test			

SOIL Sampling Point: Non-Wet-2-1

Profile Des	cription: (Describe	to the depth	needed to docur	nent the i	ndicator	or con	nfirm th	ne absence	e of indicators.)
Depth	Matrix		Redo	x Feature	S				
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type <sup>1</sup>	_Loc <sup>2</sup>		Texture	Remarks
0-4	10YR3/2	100						CL	
4-8	10YR3/2	70	5YR3/4	30	С	М		CL	
8-14	10YR3/2	80	10YR6/3	20	RM	М		CL	
		· — — —		. ———					
		· · · · · · · · · · · · · · · · · · ·							
1- 0.0								2.	
Hydric Soil	oncentration, D=Dep	letion, RM=Re	educed Matrix, CS	s=Covered	or Coate	d Sand	d Grair		cation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils³:
Histoso			Sandy (	Gleyed Ma	atriv (SA)				Prairie Redox (A16)
	pipedon (A2)			Redox (S5					Manganese Masses (F12)
	istic (A3)			d Matrix (S					(Explain in Remarks)
	en Sulfide (A4)			Nucky Mir	,				,
	d Layers (A5)			Gleyed Ma					
	uck (A10)			d Matrix (I					
	d Below Dark Surface	e (A11)	X Redox [		` '			2	
	ark Surface (A12)				rface (F7)				s of hydrophytic vegetation and
	Mucky Mineral (S1)	<b>)</b>	Redox [	Depressio	ns (F8)				d hydrology must be present,
	ucky Peat or Peat (S3 Layer (if observed):	•						uniess	s disturbed or problematic.
Type:	- I V		<u> </u>						I Processor V No.
Depth (in Remarks:	ches):							Hydric Soil	I Present? Yes X No
HYDROLO	)GY								
Wetland Hy	drology Indicators:								
	cators (minimum of o	ne is required	; check all that ap	ply)				Second	ary Indicators (minimum of two required)
X Surface	Water (A1)		Water-Sta	ined Leav	es (B9)			Sur	face Soil Cracks (B6)
High W	ater Table (A2)		X Aquatic Fa	una (B13	) ` ´			· · · · · · · · · · · · · · · · · · ·	inage Patterns (B10)
X Saturati			True Aqua						r-Season Water Table (C2)
Water N	Marks (B1)		Hydrogen	Sulfide O	dor (C1)			Cra	yfish Burrows (C8)
Sedime	nt Deposits (B2)		X Oxidized F			ing Ro	ots (C		uration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduce	d Iron (C4	<b>!</b> )		Stu	nted or Stressed Plants (D1)
X Algal M	at or Crust (B4)		Recent Iro	n Reducti	on in Tilled	d Soils	(C6)	Ged	omorphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface (	C7)			FA0	C-Neutral Test (D5)
Inundat	ion Visible on Aerial I	magery (B7)	Gauge or '	Well Data	(D9)				
Sparsel	y Vegetated Concave	Surface (B8)	Other (Exp	olain in Re	marks)				
Field Obser	vations:								
Surface Wa	ter Present? Y	es X No	Depth (in	ches):	1-2				
Water Table	Present? Y	es No	Depth (in	ches):		_			
Saturation F	Present? Y	es X No	Depth (in	ches):	0	v	Vetlan	d Hydrolog	y Present? Yes X No
(includes ca	pillary fringe)			-11			\ :f -		
Describe Re	corded Data (stream	gauge, monit	oring weil, aerial	onotos, pr	evious ins	pection	ns), it a	avallable:	
Remarks:									
Frogs noted	at time of survey.								

Project/Site: Leavenworth USP/CJA2875	City/County	: Leavenwo	orth/Leavenworth	Sampling Date: <u>03/23/11</u>				
Applicant/Owner: Bureau of Prisons			State: KS	Sampling Point: Non-Wet-2-2				
Investigator(s): Laura Totten/Chris Thomas	Section, To	wnship, Rar	nge: Sec. 23, T8S, R22E	<u> </u>				
Landform (hillslope, terrace, etc.): Hillslope		Local relief (	(concave, convex, none)	Convex				
Slope (%): <u>20</u> Lat:	Long:			Datum:				
Soil Map Unit Name: Knox Silt Loam		NWI or WWI classification: NA						
Are climatic / hydrologic conditions on the site typical for this time								
Are Vegetation, Soil, or Hydrology signification				present? Yes X No				
Are Vegetation, Soil, or Hydrology naturall			eded, explain any answe					
SUMMARY OF FINDINGS – Attach site map show		g point lo	ocations, transects	s, important features, etc.				
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes NoX  Yes NoX	- with	ne Sampled nin a Wetlan		NoX				
Out point on slope to the north of swale in managed hay pasture	and.							
VEGETATION – Use scientific names of plants.								
	lute Dominant over Species?	Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	Species				
2			Total Number of Domir Species Across All Stra					
4		ver	Percent of Dominant S That Are OBL, FACW,	pecies or FAC: 0 (A/B)				
Sapling/Shrub Stratum (Plot size:)  1				Multiply by:				
2				x 1 =0				
3			*	x 2 =0				
4				x 3 = 0				
5	= Total Co			x 4 = 0 x 5 = 0				
Herb Stratum (Plot size: 20m sq )	= 10tal C0	vei	Column Totals:					
1. Schedonorus phoenix 10	00 Y	FACU	Column Totale.	(),				
2. Setaria pumila 2	0 N	FAC	Prevalence Index	c = B/A =				
3			Hydrophytic Vegetati					
4			Dominance Test is					
5			Prevalence Index i					
6			data in Remark	aptations <sup>1</sup> (Provide supporting as or on a separate sheet)				
7				ophytic Vegetation <sup>1</sup> (Explain)				
8								
9			<sup>1</sup> Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic.				
	20 = Total Co	ver						
Woody Vine Stratum (Plot size:)  1			Hydrophytic Vegetation					
2	= Total Co			es No _X				
		voi						
Remarks: (Include photo numbers here or on a separate sheet.)								

SOIL Sampling Point: Non-Wet-2-2

		-				0. 00	m the absence	
Depth	Matrix	0/		ox Features		Loc <sup>2</sup>	Tandona	Davasadas
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	LOC	<u>Texture</u>	Remarks
0-10	10YR3/2	100				-	SCL	
10-14	10YR3/2		10YR4/3	50	C	M	SCL	
-						-		
-						-		
						-	<u> </u>	
1			de la Matria O			1010	21	- Core Di Dona Linia M. Matri
	Concentration, D=Deplindicators:	letion, RM=Re	educed Matrix, C	S=Covered	or Coate	d Sand G		cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histoso			Sandy	Gleyed Ma	triv (S4)			Prairie Redox (A16)
	pipedon (A2)			Redox (S5				anganese Masses (F12)
	listic (A3)			d Matrix (S				(Explain in Remarks)
-	en Sulfide (A4)			Mucky Min	, ,			
	d Layers (A5)			Gleyed Ma				
	uck (A10)	- (0.4.4)		ed Matrix (F	,			
	ed Below Dark Surface Park Surface (A12)	e (A11)	X Redox	Dark Surra ed Dark Su	` '		3Indicators	of hydrophytic vegetation and
	Mucky Mineral (S1)			Depression				d hydrology must be present,
	ucky Peat or Peat (S3	3)	<u>—</u>					disturbed or problematic.
Restrictive	Layer (if observed):							
Type:			_					
Depth (in	nches):		_				Hydric Soil	Present? Yes X No No
Remarks:							<u>'</u>	
HYDROLC	OGY							
	OGY vdrology Indicators:							
Wetland Hy		ne is required	; check all that a	pply)			Seconda	ary Indicators (minimum of two required)
Wetland Hy Primary Indi	drology Indicators:	ne is required:		pply) ained Leave	es (B9)			ary Indicators (minimum of two required) race Soil Cracks (B6)
Wetland Hy Primary Indi Surface	drology Indicators:	ne is required:	Water-Sta		` '		Surf	•
Wetland Hy Primary Indi Surface	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2)	ne is required:	Water-Sta Aquatic Fa True Aqua	ained Leave auna (B13) atic Plants	(B14)		Surl	ace Soil Cracks (B6)
Wetland Hy Primary Indi Surface High W Saturati Water N	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1)	ne is required:	Water-Sta Aquatic Fa True Aqua Hydrogen	ained Leave auna (B13) atic Plants Sulfide Oc	(B14) dor (C1)		Surl Drai Dry- Cra	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8)
Wetland Hy Primary Indi Surface High W. Saturati Water M Sedime	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2)	ne is required:	Water-Sta Aquatic Factor True Aquatic Hydrogen Oxidized	ained Leave auna (B13) atic Plants Sulfide Oc Rhizosphe	(B14) dor (C1) res on Livi	-	Surf Drai Crai Crai (C3) Satu	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) uration Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	ne is required:	Water-Sta Aquatic Factor True Aquatic Hydrogen Oxidized Presence	ained Leave auna (B13) atic Plants Sulfide Oo Rhizosphel of Reduce	(B14) dor (C1) res on Livi d Iron (C4	ł)	Surf Drai Crai (C3) Satu Stur	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rafish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Wetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De Algal M	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) ant Deposits (B2) eposits (B3) at or Crust (B4)	ne is required:	Water-Sta Aquatic F. True Aqua Hydrogen Oxidized Presence Recent Iro	ained Leave auna (B13) atic Plants Sulfide Oc Rhizosphei of Reduce on Reduction	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled	ł)	Surf Drai Cray Cray Stur Stur 6) Geo	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) umorphic Position (D2)
Wetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De Algal M Iron De	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) ant Deposits (B2) eposits (B3) at or Crust (B4) posits (B5)		Water-Sta Aquatic F. True Aqua Hydrogen Oxidized Presence Recent Iro	nined Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic k Surface (	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled	ł)	Surf Drai Cray Cray Stur Stur 6) Geo	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rafish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Wetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De Algal M Iron De Inundat	rdrology Indicators: icators (minimum of or water (A1) ater Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) at or Crust (B4) posits (B5) ion Visible on Aerial In	magery (B7)	Water-Sta Aquatic Factor True Aquatic Factor Hydrogen Oxidized Factor Presence Recent Iro Thin Mucl	ained Leave auna (B13) atic Plants Sulfide Oc Rhizospher of Reduce on Reductic k Surface ( Well Data	(B14) dor (C1) res on Livi d Iron (C4 on in Tilled C7) (D9)	ł)	Surf Drai Cray Cray Stur Stur 6) Geo	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1) umorphic Position (D2)
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# **APPENDIX B SITE PHOTOGRAPHS**





РНОТО #	1
DATE:	3/22/11
DIRECTION:	West

FEATURE NAME		
I-1		
DESCRIPTION		
Intermittent Tributary		
NOTES		
Datasheet I-1-1		



РНОТО #	2	
DATE:	3/22/11	
DIRECTION:	West	

FEATURE NAME
I-1
DESCRIPTION
Intermittent Tributary
NOTES
Datasheet I-1-2







РНОТО #	3	
DATE:	3/24/11	
DIRECTION:	Northeast	

FEATURE NAME
1-2
DESCRIPTION
Intermittent Tributary
NOTES
Tributary headwaters.
Datasheet I-2-3



РНОТО #	4
DATE:	3/22/11
DIRECTION:	Northeast

FEATURE NAME
1-2
DESCRIPTION
Intermittent Tributary
NOTES
Potential Groundwater Source
Datasheet I-2-3







РНОТО #	5	
DATE:	3/22/11	
DIRECTION:	Northeast	

FEATURE NAME
I-2
DESCRIPTION
Intermittent Tributary
NOTES
Datasheet I-2-1



РНОТО #	6
DATE:	3/22/11
DIRECTION:	Southwest

FEATURE NAME
1-3
DESCRIPTION
Intermittent Tributary
NOTES







РНОТО #	7
DATE:	3/22/11
DIRECTION:	Southwest

FEATURE NAME	
I-3	
DESCRIPTION	
Intermittent Tributary	
NOTES	
Downstream Portion	



РНОТО #	8
DATE:	3/22/11
DIRECTION:	East

FEATURE NAME	
1-4	
DESCRIPTION	
Intermittent Tributary	
NOTES	
Corral Creek	







РНОТО #	9
DATE:	3/22/11
DIRECTION:	West

FEATURE NAME	
I-4	
DESCRIPTION	
Intermittent Tributary	
NOTES	
Corral Creek	



РНОТО #	10
DATE:	3/23/11
DIRECTION:	South

FEATURE NAME	
1-5	
DESCRIPTION	
Intermittent Tributary	
NOTES	







РНОТО #	11
DATE:	3/23/11
DIRECTION:	East

FEATURE NAME	
I-6	
DESCRIPTION	
Intermittent Tributary	
NOTES	



РНОТО #	12
DATE:	3/23/11
DIRECTION:	West

FEA	TII	DE	МΛ	ME
FEA	U	KE	AFI	ME

1-6

#### **DESCRIPTION**

Intermittent Tributary

#### **NOTES**

Portion of tributary flowing out of riparian area into PEM-3.







РНОТО #	13
DATE:	3/23/11
DIRECTION:	Southwest

FEATURE NAME	
1-7	
DESCRIPTION	
Intermittent Tributary	
NOTES	



РНОТО #	14
DATE:	3/23/11
DIRECTION:	Southwest

FEATURE NAME	
1-7	
DESCRIPTION	
Intermittent Tributary	
NOTES	







РНОТО #	15
DATE:	3/24/11
DIRECTION:	East

FEATURE NAME		
I-8		
DESCRIPTION		
Intermittent Tributary		
NOTES		
Portion in upstream end of tributary above culvert in old road bed		



РНОТО #	16
DATE:	3/24/11
DIRECTION:	Northwest

FEATURE NAME	
1-8	
DESCRIPTION	
Intermittent Tributary	
NOTES	







РНОТО #	1 <i>7</i>
DATE:	3/24/11
DIRECTION:	South

FEATURE NAME
1-8
DESCRIPTION
Intermittent Tributary
NOTES
Broken pipe



РНОТО #	18
DATE:	3/24/11
DIRECTION:	Southeast

I-8

#### **DESCRIPTION**

Intermittent Tributary

#### **NOTES**

Enclosed portion of tributary downstream of datapoint I-8-1.







РНОТО #	19
DATE:	3/24/11
DIRECTION:	South

FEAT	JRE NAME
I-8	
DESCI	RIPTION
Intermittent Tributary	
NOTE	S
Downs	stream of confluence with I-9.



РНОТО #	20
DATE:	3/24/11
DIRECTION:	North

FEATURE NAME
1-9
DESCRIPTION
Intermittent Tributary
NOTES
Culvert above PEM-5 under roadway.







РНОТО #	21
DATE:	3/24/11
DIRECTION:	South

FEATURE NAME	
1-9	
DESCRIPTION	
Intermittent Tributary	
NOTES	
Portion of tributary below PEM-5.	



РНОТО #	22
DATE:	3/24/11
DIRECTION:	North

FEATURE NAME
1-9
DESCRIPTION
Intermittent Tributary
NOTES
D: .1

Directly upstream of confluence with I-8.







РНОТО #	23
DATE:	3/24/11
DIRECTION:	Northwest

FEATURE NA	AME
I-10	
DESCRIPTIO	N
Intermittent T	ributary
NOTES	
-	ylights at this location d pipe. D-11 upstream



РНОТО #	24
DATE:	3/24/11
DIRECTION:	Northeast

FEATURE NAME
I-10
DESCRIPTION
Intermittent Tributary
NOTES
Flowing out of underground pipe







РНОТО #	25
DATE:	3/24/11
DIRECTION:	Southeast

FEATURE NAME
I-10
DESCRIPTION
Intermittent Tributary
NOTES
Portion of tributary that is free flowing below fenceline.



РНОТО #	26
DATE:	3/24/11
DIRECTION:	Southwest

FEATURE NAME
I-11
DESCRIPTION
Intermittent Tributary
NOTES







РНОТО #	27
DATE:	3/24/11
DIRECTION:	South

FEATURE NAME
I-11
DESCRIPTION
Intermittent Tributary
NOTES



РНОТО #	28
DATE:	3/22/11
DIRECTION:	South

FEATURE NAME
E-1
DESCRIPTION
Ephemeral Tributary
NOTES







РНОТО #	29
DATE:	3/22/11
DIRECTION:	South

FEATURE NAME
E-2
DESCRIPTION
Ephemeral Tributary
NOTES



РНОТО #	30
DATE:	3/22/11
DIRECTION:	North

FEATURE NAME	
E-3	
DESCRIPTION	
Ephemeral Tributary	
NOTES	







РНОТО #	31
DATE:	3/22/11
DIRECTION:	South

FEATURE NAME
E-4
DESCRIPTION
Ephemeral Tributary
NOTES



РНОТО #	32
DATE:	3/23/11
DIRECTION:	North

FEATURE NAME	
DIRECTION:	North
DIRECTION:	NIil-
DATE:	3/23/11

DES	CR	PT	ON

**Ephemeral Tributary** 

#### **NOTES**

E-5

Daylighted manhole present within tributary







РНОТО #	33
DATE:	3/23/11
DIRECTION:	North

FEATURE NAME	
E-6	
DESCRIPTION	
Ephemeral Tributary	
NOTES	



РНОТО #	34
DATE:	3/23/11
DIRECTION:	Southwest

FEATURE NAME	
E-7	
DESCRIPTION	
Ephemeral Tributary	
NOTES	







РНОТО #	35
DATE:	3/23/11
DIRECTION:	Southwest

FEATURE NAME	
E-8	
DESCRIPTION	
Ephemeral Tributary	
NOTES	



РНОТО #	36
DATE:	3/23/11
DIRECTION:	North

FEATURE NAME
E-9
DESCRIPTION
Ephemeral Tributary
NOTES







РНОТО #	37
DATE:	3/23/11
DIRECTION:	South

FEATURE NAME	
E-9	
DESCRIPTION	
Ephemeral Tributary	
NOTES	



РНОТО #	38
DATE:	3/24/11
DIRECTION:	South

FEATURE NAME	
E-10	
DESCRIPTION	
Ephemeral Tributary	

### NOTES

Culvert over E-10 near datapoint E-10-2.







РНОТО #	39
DATE:	3/24/11
DIRECTION:	North

FEATURE NAME	
E-10	
DESCRIPTION	
Ephemeral Tributary	
NOTES	
Datasheet E-10-2. discontinuous OHWM in upstream portion.	



РНОТО #	40
DATE:	3/24/11
DIRECTION:	Southeast

FEATURE NAME
E-10
DESCRIPTION
Ephemeral Tributary
NOTES
Datasheet E-10-1.







РНОТО #	41
DATE:	3/24/11
DIRECTION:	East

FEATURE NAME
D-8
DESCRIPTION
Typical Drainage
NOTES



РНОТО #	42
DATE:	3/22/11
DIRECTION:	South

FEATURE NAME
D-2
DESCRIPTION
Typical Drainage
NOTES







РНОТО #	43
DATE:	3/24/11
DIRECTION:	North

FEATURE NAME
Wetland Outpoint
DESCRIPTION
Uplands
NOTES
Typical outpoint photo for wetlands. Taken near PEM-4.



РНОТО #	44
DATE:	3/22/11
DIRECTION:	West

FEATURE NAME
PEM-1
DESCRIPTION
Palustrine Emergent Wetland
NOTES







РНОТО #	45
DATE:	3/23/11
DIRECTION:	Northeast

FEATURE NAME
PEM-2
DESCRIPTION
Palustrine Emergent Wetland
NOTES



РНОТО #	46
DATE:	3/24/11
DIRECTION:	East

FEATURE NAME
PEM-3
DESCRIPTION
Palustrine Emergent Wetland
NOTES







РНОТО #	47
DATE:	3/24/11
DIRECTION:	South

FEATURE NAME
PEM-4
DESCRIPTION
Palustrine Emergent Wetland
NOTES



РНОТО #	48
DATE:	3/24/11
DIRECTION:	North

FEATURE NAME
PEM-5
DESCRIPTION
Palustrine Emergent Wetland
NOTES







РНОТО #	49
DATE:	3/23/11
DIRECTION:	Northeast

FEATURE NAME	
Nonwetland-1	
DESCRIPTION	
Nonwetland	
NOTES	
Datasheet Non-Wetland-1-2	



РНОТО #	50
DATE:	3/23/11
DIRECTION:	Northwest

FEATURE NAME
Nonwetland-2
DESCRIPTION
Nonwetland
NOTES
Datasheet Non-Wetland-2-1







РНОТО #	51
DATE:	3/23/11
DIRECTION:	East

FEATURE NAME	
OW-1	
DESCRIPTION	
Open Water	
NOTES	
Looking toward dam.	



РНОТО #	52
DATE:	3/23/11
DIRECTION:	South

FEATURE NAME
OW-2
DESCRIPTION
Open Water
NOTES







РНОТО #	53
DATE:	3/23/11
DIRECTION:	Northeast

FEATURE NAME
OW-2
DESCRIPTION
Open Water
NOTES
Southeast point of open water near D-4.

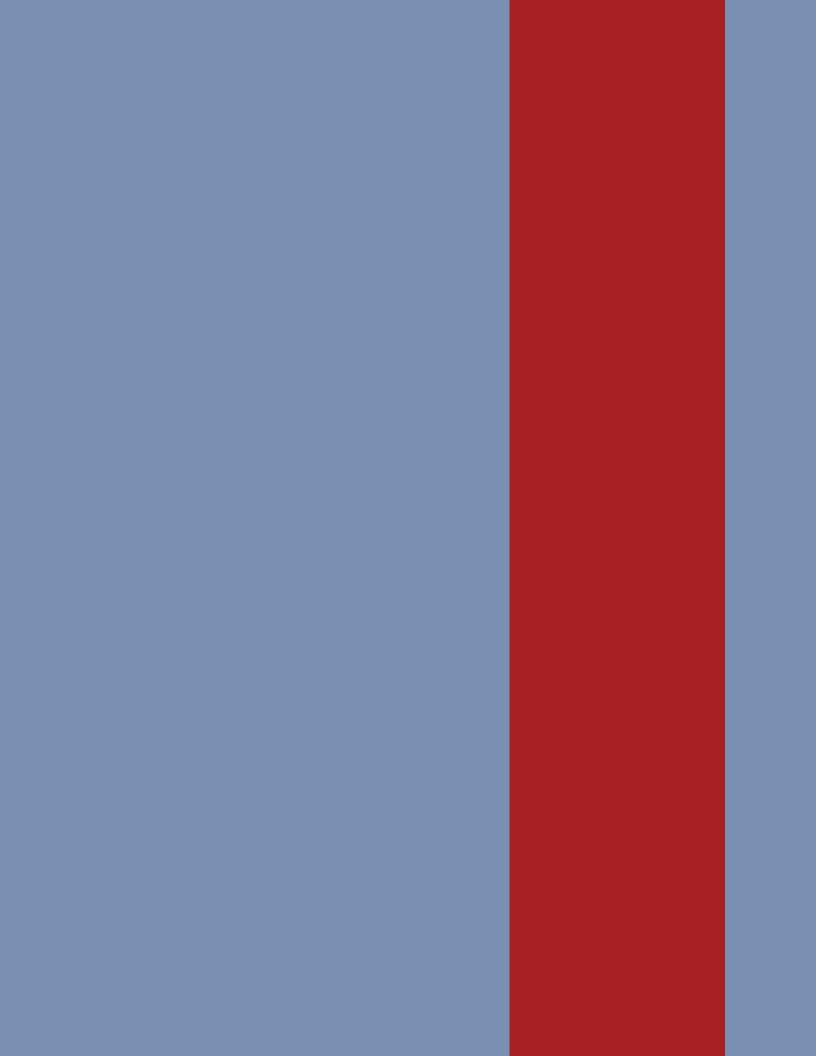


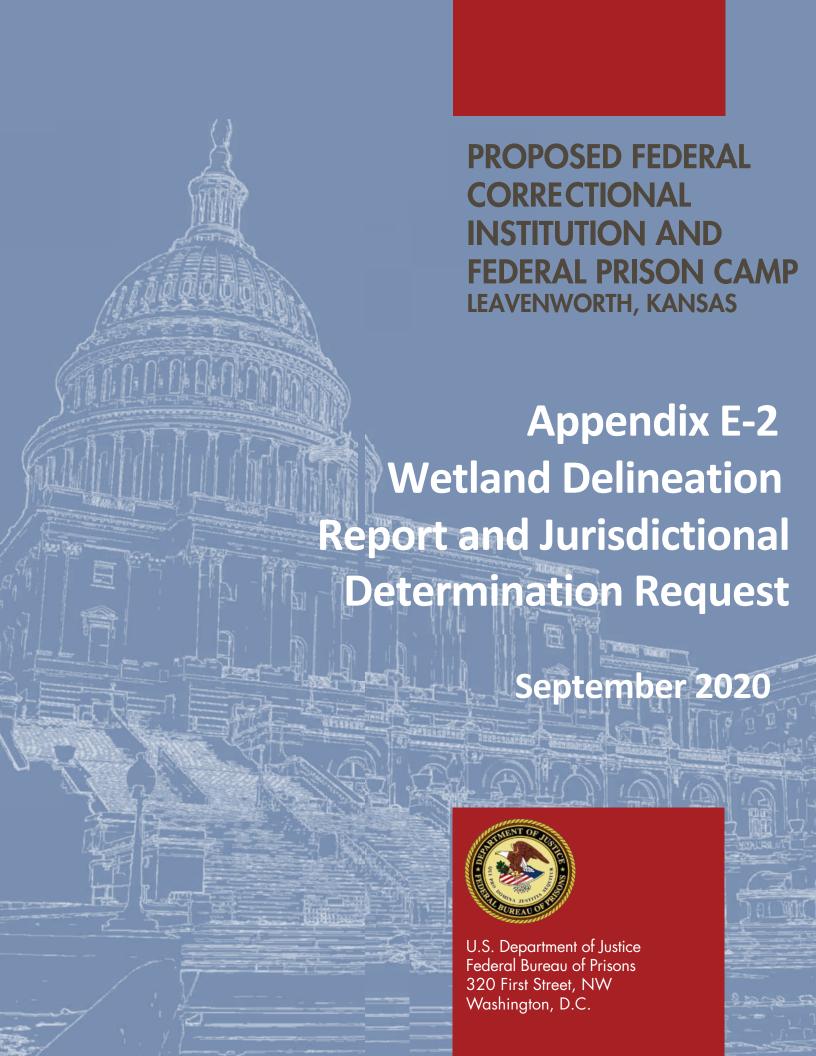
РНОТО #	54
DATE:	3/23/11
DIRECTION:	Northeast

FEATURE NAME
OW-2
DESCRIPTION
Open Water
NOTES
Southwest point of open water below PEM-2 with lower portion of

E-8 shown.







# **APPENDIX E-2 WETLAND DELINEATION REPORT AND JURISDICTIONAL DETERMINATION REQUEST SEPTEMBER 2020**

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#### **APPENDICES**

Appendix A: Request for Corps Jurisdictional Determination Form

Appendix B: USACE Approved Jurisdictional Determination Form

Appendix C: Site Photographs

Appendix D: Threatened and Endangered Species Correspondence

Appendix E: Wetland Determination Data Forms

Appendix F: Wetland Delineation Plan

#### LIST OF ACRONYMS AND ABBREVIATIONS

BOP Federal Bureau of Prisons

Corps U.S. Army Corps of Engineers

CWA Clean Water Act

FCI Federal Correctional Institution

FPC Federal Prison Camp

KDWPT Kansas Department of Wildlife, Parks, and Tourism

msl Mean sea level

Non-RPW Non-Relatively Permanent Waters

NWI National Wetlands Inventory

OWUS Other Waters of the United States

ppt Parts per trillion

RPW Relatively Permanent Waters

TNW Traditional Navigable Waters

USDA-NRCS U.S. Department of Agriculture, Natural Resources Conservation Service

USEPA U.S. Environmental Protection Agency

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

#### 1.0 SUMMARY

The U.S. Department of Justice, Federal Bureau of Prisons (BOP) is proposing to develop a new Federal Correctional Institution (FCI) and a Federal Prison Camp (FPC) within BOP-owned property in the City of Leavenworth, Leavenworth County, Kansas. Once development is completed and the new facilities are activated, inmates currently housed at the U.S. Penitentiary (USP) in Leavenworth will be transferred to the new facilities along with the complement of correctional officers, administrative staff, and others at which time the existing USP and prison camp will be deactivated.

On behalf of the BOP, WSP USA, Inc. (WSP) conducted an investigation of the property in Leavenworth proposed for FCI/FPC development, to determine the presence or absence of wetlands and other waters of the United States (OWUS). A wetland delineation was performed following guidance outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region* (August 2010). A desktop review of resource maps, soil interpretation, site photography, National Wetlands Inventory (NWI) data, and general observations of topographic and hydrologic conditions was conducted. Field investigations were conducted by WSP wetland scientists from July 27 to July 31, 2020.

This report documents the findings of the wetland delineation conducted of the portion of the overall USP property proposed for FCI/FPC development (Study Area) and requests a Preliminary Jurisdictional Determination from the U.S. Army Corps of Engineers (the Corps). Based on the desktop analysis and field determination, approximately 8.72 acres of palustrine wetland under federal jurisdiction were identified within the Study Area along with approximately 10,348 linear feet of stream under federal jurisdiction.

#### 2.0 INTRODUCTION

## 2.1 Background

The U.S. Department of Justice, Federal Bureau of Prisons (BOP) is proposing to further develop the property comprising the U.S. Penitentiary (USP) Leavenworth, located north of the City of Leavenworth, Kansas by constructing and operating a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC). The FCI would be designed to house approximately 1,152 medium-security inmates and the FPC would be designed to house 256 minimum-security inmates for a total population of 1,408 inmates along with approximately 338 full-time staff necessary for operation. Once development is completed and the new facilities are activated, inmates currently housed at USP Leavenworth will be transferred to the new facilities along with the complement of correctional officers, administrative staff, and others at which time the existing USP and prison camp will be deactivated.

On behalf of the BOP, WSP USA, Inc. (WSP) conducted an investigation of the property in Leavenworth proposed for FCI/FPC development, to determine the presence or absence of wetlands and other waters of the United States (OWUS). A wetland delineation was performed following guidance outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region* (August 2010). A desktop review of resource maps, soil interpretation, site photography, National Wetlands Inventory (NWI) data, and general observations of topographic and hydrologic conditions was conducted. Field investigations were conducted by WSP wetland scientists from July 27 to July 31, 2020.

This report documents findings of the wetland delineation conducted at the property herein described as the FCI/FPC Study Area and requests a Preliminary Jurisdictional Determination from the Corps.

#### 2.2 Site Description

The 754-acre USP Leavenworth property is bordered by Metropolitan Avenue to the south and is immediately north of the City of Leavenworth and south and west of the Fort Leavenworth U.S. Army Base. The BOP property is generally bordered by Corral Creek to the north, Grant Avenue to the east, Metropolitan Avenue to the south, and Santa Fe Trail to the west.

Much of the southern portion of the USP Leavenworth property has already been developed with the USP, minimum-security prison camp, warehouses, BOP staff housing, internal roadways, parking areas, and ancillary support facilities. Within the USP Leavenworth property, an area consisting of about 247 acres is under consideration for FCI/FPC development. Comprising undeveloped land, the FCI/FPC Study Area is east of the USP, north of Metropolitan Street, west of Grant Avenue, and south of Corral Creek.

Lands surrounding the Study Area consist of mixed commercial and residential uses. Military family housing associated with Fort Leavenworth is found to the north, with two schools situated northeast (Eisenhower Elementary) and east (Patton Junior High) of the Study Area. Commercial development fronting on Metropolitan Avenue forms a buffer between the USP Leavenworth property and the concentration of residential housing located south of Metropolitan Avenue. The USP abuts the western

boundary of the FCI/FPC Study Area. Exhibit 1 is a United States Geological Survey (USGS) topographic map of the Study Area and Exhibit 2 is an aerial view of the same area.

#### 2.3 Regulatory Authority

The Corps administers and enforces Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. The procedure for identifying and locating jurisdictional waters that are regulated by the Corps under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act is commonly referred to as a "jurisdictional determination." Regulated areas include wetlands, stream channels, rivers, lakes, ponds, and coastal and offshore waters. Wetlands and OWUS are considered jurisdictional by the Corps if they are relatively permanent waters (RPW); are intermittent, or perennial stream; or are adjacent to RPW.

#### 2.4 Jurisdictional Determination Request

A Request for Corps Jurisdictional Determination Form is included as Appendix A. The Corps' Preliminary Jurisdictional Determination Form is provided as Appendix B and was used to ensure all required information was provided with this request. The checklist of information to include with a Request for Jurisdictional Determination includes the name, address, telephone number, and email address of the property owner's representative, the applicant, and the wetland delineator are as follows:

USP Leavenworth Property Address: 1300 Metropolitan Avenue, Leavenworth, Kansas 66048

Current Property Owner: Federal Bureau of Prisons

Attention: Kimberly S. Hudson, COR, Site Selection Specialist

Address: 320 First Street, NW, Room 901-5, Washington, D.C. 20534

Telephone: 202-616-2574

Email: kshudson@bop.gov

Applicant: Federal Bureau of Prisons

Attention: Kimberly S. Hudson, COR, Site Selection Specialist

Address: 320 First Street, NW, Room 901-5, Washington, D.C. 20534

Telephone: 202-616-2574

Email: kshudson@bop.gov

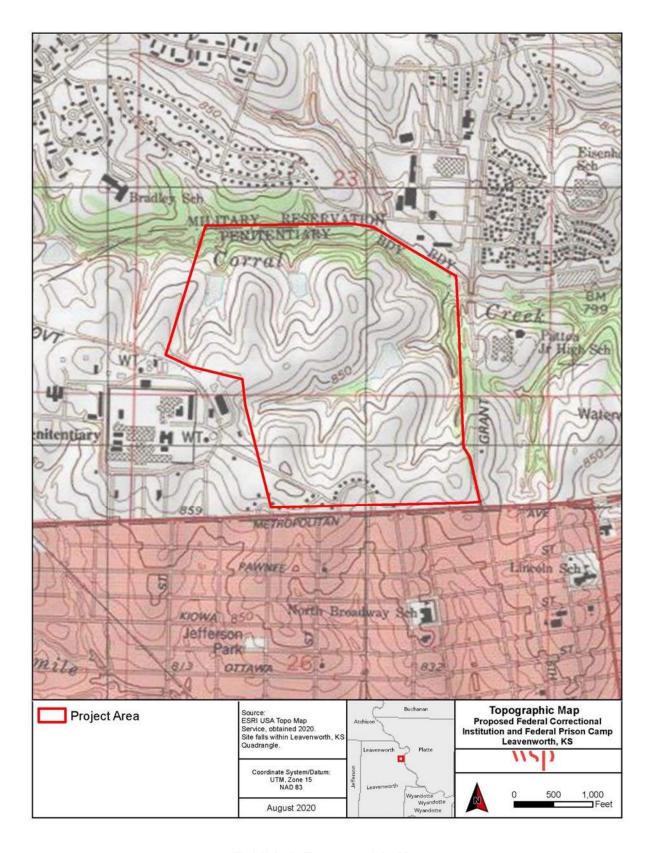
Wetland Delineator: WSP USA, Inc. Attention: Craig Hanlon

Address: 412 Mount Kemble Avenue, Morristown, New Jersey 07962

Telephone: 973-407-1462

Email: craig.hanlon@wsp.com

The FCI/FPC Study Area consists of three parcels as shown in Table 1. The BOP owns all three parcels.



**Exhibit 1: Topographic Map** 



**Exhibit 2: Aerial View** 

**Table 1: Site Parcels** 

Parcel ID	Land Area	Legal Description
076-23-0-00-00-002.00-0	156.62 acres	S23, T08, R22E, ACRES 181.57, PT SEC 23; BEG SW COR N2040'(S), NE100'(S), E2750'(S), SE1400'(S), S1500'(S), W4140'(S) TO POB (SCALED)
077-26-0-20-01-001.00-0	86.99 acres	S26, T08, R22E, ACRES 141.16, THAT PT OF N1/2 OF SECT 26 LYING N OF METRO AVE & W OF MILITARY RESERVATION
077-26-0-10-01-001.00-0	1.83 acres	S26, T08, R22E, ACRES 35.21, THAT PT OF N1/2 OF SECT 26 LYING N OF METRO AVE & E OF FEDERAL PENITENTIARY

Source: Geocortex, 2020.

#### 3.0 METHODS

The wetland delineation was performed following guidance outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region* (August 2010). Prior to field investigations, a desktop review of resource maps, soil interpretation, site photography, National Wetlands Inventory (NWI) data, and general observations of topographic and hydrologic conditions was conducted. Field investigations were conducted by WSP wetland scientists from July 27 to July 31, 2020, searching for wetland indicator parameters (vegetation, soils, or hydrology) of wetlands or OWUS. Water courses are categorized as either TNW, RPW, or non-RPW (U.S. Environmental Protection Agency, 2006).

TNWs are all tidal waters and waters that have been, could be, or are used in interstate or foreign commerce. TNWs are jurisdictional by the Corps, and any tributary that continually flows directly or indirectly, at least seasonally, into a TNW is also jurisdictional. RPWs are tributaries that flow year-round or have continuous flow at least seasonally, and that flow directly or indirectly into a TNW. Non-RPWs are tributaries that have less than seasonal flow, and that flow directly or indirectly into a TNW.

Wetlands can also be classified as abutting a tributary, adjacent to a tributary, or isolated (U.S. Environmental Protection Agency, 2006). A wetland that abuts a tributary has no distinction between the immediate edge of the tributary and the wetland itself. An adjacent wetland has a barrier between itself and the tributary but is connected by surface flow. Abutting and adjacent wetlands are jurisdictional waters of the U.S. Isolated wetlands are wetlands that satisfy the three criteria but have no direct surface connection to navigable waters or their tributaries that are not jurisdictional waters of the U.S. (EPA/USACE April 21, 2020).

If evidence was observed that suggested at least one positive wetland indicator parameter (vegetation, soils, or hydrology) is present, then further investigation, as detailed below, was performed to make a positive wetland determination. An area would not be considered a regulatory wetland if indicators for any one of these three parameters are not observed under normal environmental conditions.

#### 3.1 Determining Hydric Vegetation

A plant community is hydrophytic (wetland) vegetation if the vegetation displays indicators of hydrophytic vegetation, as defined in the delineation methodology (Corps, 2008). Most often the "Dominance Test" is used as the indicator. A sample plot is evaluated at each possible wetland area and meets the dominance test for hydrophytic vegetation if more than 50 percent of the dominant species from all strata have obligate wetland, facultative wetland, and/or facultative indicator status. Indicator status is provided by the Corps' *National Wetland Plant List* (Corps, 2018). Dominant species are identified as the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum (absolute percent cover), plus any other species that, by itself, accounts for at least 20 percent of the total. The wetland indicator status for each dominant species is then used to determine whether the plant community is dominated by hydrophytic

vegetation. The "Prevalence Index" may also be used as the indicator of hydrophytic vegetation. The Prevalence Index is a weighted-average of all plant species in the sample plot.

## 3.2 Determining Hydric Soils

Soil test pits are hand dug with a spade to approximately 18 inches deep to examine soils for hydric soil indicators. These soil test pits are labelled with a data point number and located on a site map. Colors of the soil, including concentrations, depletions, or gleying, if present, are identified using a Munsell color chart (Munsell, 2000). Field Indicators of Hydric Soils in the United States (USDA-NRCS, 2017) are used to determine the presence or absence of hydric soils, and soil pits helped reveal where the approximate wetland boundaries occur.

#### 3.3 Determining Hydrology

The hydrology of an area is evaluated by recording the depth to shallow groundwater and/or soil saturation in each soil test pit. Other indicators of hydrology are observed, including but not limited to, water marks, water-stained leaves, sediment deposits, crayfish burrows, and drainage patterns. These data provided information on timing and duration of ponding and/or saturation in the site.

Ephemeral streams and drainage features, which include swales, erosional features, or small washes, were documented but are not jurisdictional water of the U.S under the April 21, 2020 guidance from EPA/Corps. Ditches (including roadside ditches) draining only uplands and without a relatively permanent flow of water, and uplands transporting overland flow generated from precipitation, are also non-jurisdictional.

#### 4.0 FINDINGS

Investigations included a desktop/office review of resource maps, on-site vegetation identification, soil interpretation, site photography, and general field observations of hydrologic and other environmental conditions. Findings are described below with site photographs taken during the July 27 to July 31, 2020, field investigations included as Appendix C. Results of desktop review of potential Threatened and Endangered Species at the property are including in Appendix D.

#### 4.1 Site Description

The FCI/FPC Study Area is located within the eastern portion of the overall 754-acre USP Leavenworth property in east-central Leavenworth County, west of the Missouri River. The USP Leavenworth property is bordered by Metropolitan Avenue, immediately north of the City of Leavenworth and south and west of the Fort Leavenworth U.S. Army Base. The property is generally bordered by Corral Creek to the north, Grant Avenue to the east, Metropolitan Avenue to the south, and the realigned Santa Fe Trail to the west. Comprising approximately 247 acres, the FCI/FPC Study Area is in BOP ownership and undeveloped.

#### 4.2 Topography

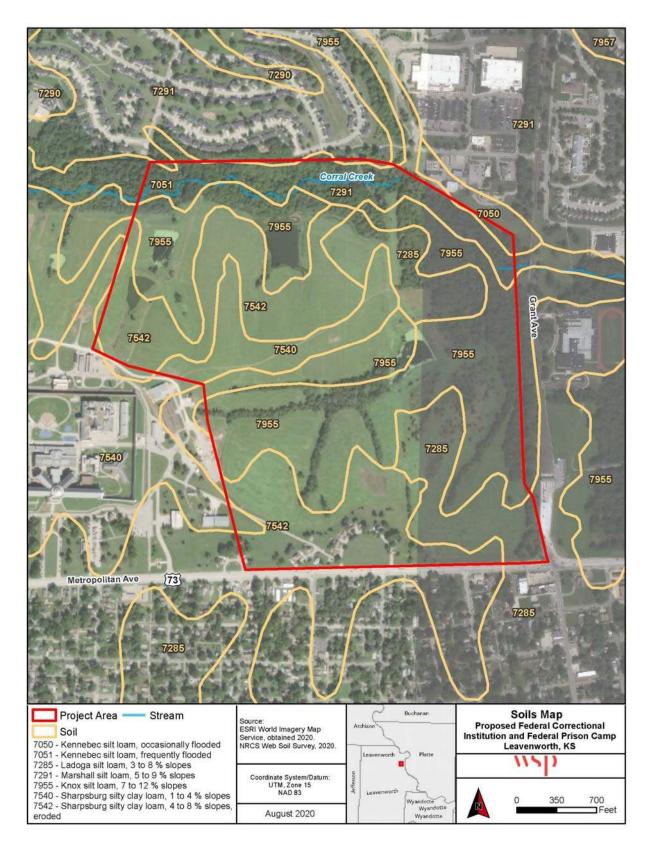
The USGS 7.5-minute Topographic Quadrangle Map for Leavenworth, Kansas (ESRI 2020) shows the overall USP Leavenworth property at an average elevation of 860 feet above mean sea level (msl). The topography of the FCI/FPC Study Area generally consists of rolling hill slopes, some of which are moderately steep with elevations ranging from 825 to 890 feet above msl (see Exhibit 1).

The property is located in the Missouri River Basin in the Independence-Sugar Watershed. The topography consists of gently rolling terrain that slopes from west to east on the eastern portion of the site, with relatively level terrain in the western portion sloping to the southeast. Runoff from the eastern portion of the site flows into Corral Creek and eventually to the Missouri River. Runoff from the contributing watershed flows into the Missouri River, located approximately one-mile east of the Study Area.

#### 4.3 Geology and Soils

Geologic resources within the area of USP Leavenworth consist of loess deposits underlain by residual clay soils and the Lawrence Shale Member. The majority of the Lawrence Formation is comprised of gray shale and sandstone with minor red shale, coal, gray limestone and conglomerate. The thickness of this formation ranges from 140 to 250 feet. The potential for seismic activity is low to moderate in the Leavenworth County area.

The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Custom Soil Resource Report for Leavenworth County, Kansas, indicates that there are seven soil units comprising the FCI/FPC Study Area (Exhibit 3). Descriptions of each soil, the extent of coverage, and the hydric soil and prime farmland status of each mapping unit are identified in Table 2. A hydric soil is one that



**Exhibit 3: Soils Map** 

formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. One on-site soil map units (7050 – Kennebec silt loam, occasionally flooded) has minor hydric components.

USDA defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.

Approximately 54 percent of soils at the FCI/FPC Study Area are considered prime farmland (Table 2). Land that does not meet the criteria for prime or unique farmland but includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods, as determined by the appropriate State agencies, is considered farmland of statewide importance. The Knox silt loam, 7 to 12 percent slopes component comprises approximately 37 percent of the Study Area and is considered farmland of statewide importance (Table 2).

Soil Unit Symbol	Soil Unit Name	Percentage of Site	Hydric Soil	Prime Farmland
7050	Kennebec silt loam, occasionally flooded	0.4%	5% hydric component	Yes
7051	Kennebec silt loam, frequently flooded	8.8%	No	No
7285	Ladoga silt loam, 3 to 8% slopes	14.7%	No	Yes
7291	Marshall silt loam, 5 to 9% slopes	0.4%	No	No
7540	Sharpsburg silty clay loam, 1 to 4% slopes	7.4%	No	Yes
7542	Sharpsburg silty clay loam, 4 to 8% slopes, eroded	31.6%	No	Yes
7955	Knox silt loam, 7 to 12% slopes	36.7%	No	No*

**Table 2: Soil Types and Characteristics** 

Source: USDA-NRCS, Web Soil Survey, Leavenworth County, Kansas, 2020.

#### 4.4 Hydrology

The overall USP Leavenworth property is located within the Missouri River Basin and the Independence-Sugar Watershed. The surface waters that drain the area consist of drainages, ephemeral streams, intermittent streams and a perennial stream. According to Federal Emergency Management Agency flood maps, no portion of the Study Area is located within the 100-year or 500-year flood zones.

A total of 12 ephemeral tributaries were identified within the FCI/FPC Study Area. Within the northern portion of the Study Area, several ephemeral tributaries flow north-northeast to the confluence with

<sup>\*</sup> Farmland of statewide importance

Corral Creek which runs along the northern boundary of the USP Leavenworth property. The remaining ephemeral tributaries drain into other water resources such as an intermittent tributary. Most of these tributaries have a forested riparian buffer. Under the April 21, 2020 Corps notice on Waters of the U.S. these ephemeral tributaries are considered non-jurisdictional by the Corps and therefore are not protected by Clean Water Act regulations.

Eight intermittent tributaries were identified within the Study Area. The two intermittent tributaries (Aquatic Resources J and L) flow mostly north from pond outfalls, are direct indirect tributaries of Corral Creek (perennial tributary Aquatic Resource K). Aquatic Resource M, P, V and T in the central portion of the area, drains through palustrine forested wetland (Aquatic Resource O) and palustrine emergent wetlands/open waters (Aquatic Resources N, U, and W) and into Aquatic Resource R which flows north into Corral Creek (Aquatic Resource K). Aquatic Resource S flows north into Aquatic Resource R which flows north into Corral Creek (Aquatic Resource K). At the time of the site visit in July 2020, approximately half of the intermittent tributaries were flowing. The riparian buffer of all tributaries consisted of forested vegetation.

Previous investigations have shown the groundwater throughout the overall USP Leavenworth property is close to the surface, with the depth to groundwater typically within 10 feet of the ground surface. The direction of groundwater flow is variable although the topography generally determines flow direction. Within the FCI/FPC Study Area, groundwater flow direction is variable. In the northern portion of the area, the groundwater generally flows north or northeast towards Corral Creek while in the southern portion, groundwater typically flows east. The Missouri River alluvial aquifer is close to Leavenworth, Kansas however the walls of the aquifer end before the USP Leavenworth property boundary. Groundwater, likely collected from surficial runoff, is the suspected source of several of the intermittent tributaries that run through the property.

#### 4.5 Vegetation

The majority of the FCI/FPC Study Area and the surrounding vicinity is dominated by maintained fields and retired cropland that are regularly mowed and maintained. Mostly pastureland herbaceous species were identified in these areas. The remaining land includes riparian corridors along perennial and non-perennial tributaries with palustrine emergent wetlands and scrub-shrub wetlands abutting and adjacent to the non-perennial tributaries. The palustrine emergent and scrub-shrub wetlands include predominantly hydrophytic herbaceous and shrub vegetation. The riparian corridors are dominated by white oak (*Quercus alba*), American elm (*Ulmus americana*), common hackberry (*Celtis occidentalis*), honey locust (*Gleditsia triacanthos*), American sycamore (*Platanus occidentalis*), Osage orange (*Maclura pomifera*), grape (*Vitis* spp.), and coral-berry (*Symphoricarpos orbiculatus*). The understory is mostly dominated by non-native shrub species including bush honeysuckles (spp.), and rambler rose (*Rosa multiflora*). The most significant riparian corridor is adjacent to Corral Creek.

Vegetation observed within the site is listed in Table 3 along with the species' wetland indicator status. This is not a complete list of all vegetation present within the Study Area, but rather it provides a summary of the dominant species observed.

Table 3: Vegetation Observed within the Jurisdictional Determination Area

Scientific Name	Common Name	Wetland Indicator Status <sup>a</sup>
Acer negundo	Ash-leaf maple	FAC
Acer rubrum	Red maple	FAC
Acer saccharinum	Silver maple	FACW
Agrimoniagryposepala	Tall hairy agrimony	FACU
Alliaria petiolata	Garlic mustard	FAC
Asclepias incarnata	Swamp milkweed	OBL
Asclepias syriaca	Common milkweed	UPL
Asimina triloba	Common paw paw	FAC
Carex lupulina	Hop sedge	OBL
Carex stipata	Stalk-grain sedge	OBL
Carya ovata	Shag-bark hickory	FACU
Catalpa specious	Northern catalpa	FACU
Celtis occidentalis	Common hackberry	FAC
Cirsium arvense	Canada thistle	FACU
Cornus florida	Flowering dogwood	FACU
Cyperus esculentus	Yellow nut sedge	FACW
Daucus carota	Queen Anne's-lace	UPL
Echinochloa crus-galli	Large barnyard grass	FACW
Eleusine indica	Indian goose grass	FACU
Elymus virginicus	Virginia wild rye	FACW
Equisetum arvense	Field horsetail	FAC
Erigeron annuus	Eastern daisy fleabane	FACU
Eupatorium perfoliatum	Common boneset	OBL
Festuca arundinacea	Tall fescue	NI
Fraxinus pennsylvanica	Green ash	FACW
Galium sp.	Bed-straw	
Galium aparine	Goosegrass	FACU
Gleditsia triacanthos	Honey locust	FACU
Juncus effusus	Lamp rush	OBL
Juniperus virginiana	Eastern red cedar	FACU
Leersia oryzoides	Rice cut grass	OBL
Lepidium latifolium	Broad-leaf pepperwort	FACW
Lespedeza cuneata	Chinese bushclover	FACU
Ligustrum sinense	Chinese privet	FAC
Lonicera japonica	Japanese honeysuckle	FACU
Lythrum salicaria	Purple loosestrife	OBL
Maclura pomifera	Osage-orange	FACU
Mentha arvensis	American wild mint	FACW
Microstegium vimineum	Japanese stilt grass	FAC
Morus rubra	Red mulberry	FACU
Parthenocissus quinquefolia	Virginia-creeper	FACU

Scientific Name	Common Name	Wetland Indicator Status <sup>a</sup>
Persicaria hydropiperoides	Swamp smartweed	OBL
Phalaris arundinacea	Reed canary grass	FACW
Phleum pratense	Common timothy	FACU
Phytolacca americana	American pokeweed	FACU
Platanus occidentalis	American sycamore	FACW
Poa sp.	Bluegrass	
Podophyllum peltatum	May-apple	FACU
Polygonum lapathifolium	Pale smartweed	FACW
Polygonum sagittatum	Arrowleaf tearthumb	OBL
Populus deltoides	Eastern cottonwood	FAC
Populus tremuloides	Quaking aspen	FAC
Potamogeton nodosus	Long-leaf pondweed	OBL
Prunus serotina	Black cherry	FACU
Quercus alba	White oak	FACU
Quercus palustris	Pin oak	FACW
Reynoutria japonica	Japanese-knotweed	UPL
Rosa multiflora	Rambler rose	FACU
Rubus allegheniensis	Black berry	UPL
Salix amygdaloides	Peach-leaf willow	FACW
Salix babylonica	Weeping willow	FAC
Scirpus atrovirens	Dark-green bulrush	OBL
Setaria pumila	Yellow bristle grass	FAC
Solidago spp.	Goldenrods	
Symphoricarpos orbiculatus	Coral-berry	FACU
Tilia americana	American basswood	FACU
Toxicodendron radicans	Poison ivy	FAC
Trifolium repens	White clover	FACU
Typha latifolia	Broad-leaved cattail	OBL
Ulmus rubra	Slippery elm	FAC
Urtica dioica	Stinging nettle	FACW
Verbesina alternifolia	Wingstem	FAC
Viburnum dentatum	Southern arrow-wood	FAC
Vitis labrusca	Fox grape	FAC
Zanthoxylum clava-herculis	Hercules-club	FAC

Key to indicator categories:

OBL: Obligate, almost always occur in wetlands.

FACW: Facultative Wetland, usually occur in wetlands, but may occur in non-wetlands.

FAC: Facultative, occur in wetlands and non-wetlands.

FACU Facultative Upland, usually occur in non-wetlands, but may occur in wetlands.

UPL: Upland, almost never occur in wetlands.

NI: Not found on national listings of plants occurring in wetlands.

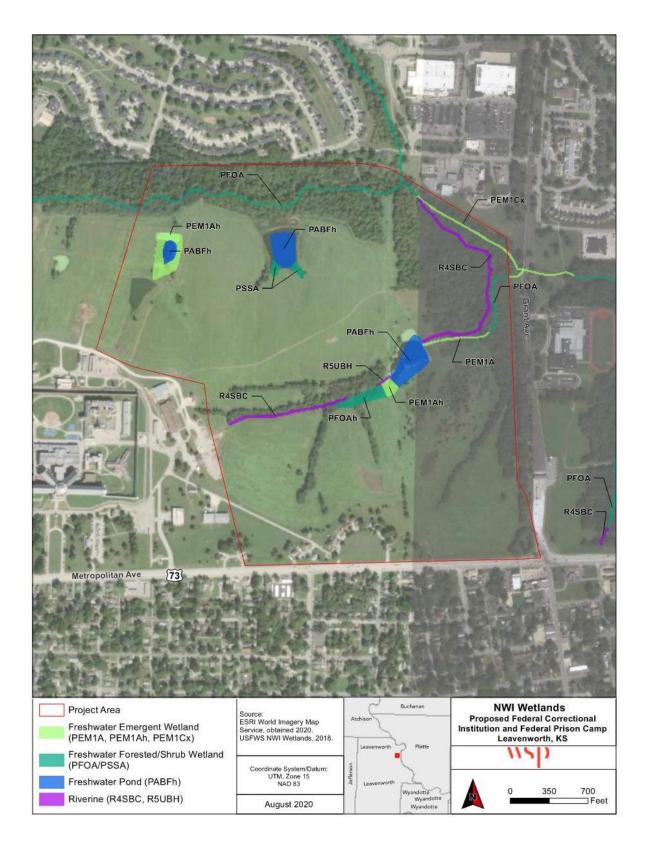
Source: Corps, 2018.

### 4.6 Wetlands

Relevant USGS 7.5-minute topographic quadrangle maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, the "Web Soil Survey of Leavenworth County, Kansas," and aerial photographs were gathered and reviewed to determine the likelihood that jurisdictional areas would exist on site. These data sources were used to assess the site for the possible presence of hydric soils, wetland areas, and streams and other watercourses that may provide an indication of jurisdictional areas. NWI maps depict freshwater forested/shrub, emergent, pond, and riverine wetlands within the Study Area as listed below and shown on Exhibit 4.

- Freshwater forested/shrub wetlands classified as Palustrine, Forested, Temporarily Flooded (PFOA).
- Freshwater forested/shrub wetland and classified as Palustrine, Scrub-Shrub, Temporarily Flooded (PSSA).
- Freshwater emergent wetlands classified as Palustrine, Emergent, Persistent, Temporarily Flooded (PEM1A).
- Freshwater emergent wetlands classified as Palustrine, Emergent, Persistent, Temporarily Flooded, Diked/Impounded (PEM1Ah).
- Freshwater emergent wetlands classified as Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated (PEM1Cx).
- Freshwater pond classified as Palustrine, Aquatic Bed, Semipermanently Flooded, Diked/Impounded (PABFh).
- Riverine wetlands classified as Riverine, Intermittent Streambed, Seasonally Flooded (R4SBC).
- Riverine wetlands classified as Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded (R5UBH).

A field wetland delineation of aquatic resources within the FCI/FPC Study Area was conducted in July 2020 to determine precise extent and boundaries of wetlands. As part of this effort, vegetative community types were recorded, dominant plant species were inventoried, descriptions of wetlands and open waters delineated were noted, and extensive photo-documentation was recorded. Also, soil profiles and hydrologic indicators were documented. Wetland determination data forms documenting the vegetative, soil, and hydrologic characteristics of each wetland are included as Appendix E. Aquatic resource boundaries were demarcated in the field using sequentially numbered surveyor flags and drawn on a field sketch map. Flags were located to sub-meter accuracy using a Trimble GEO global positioning system. Wetlands were classified in accordance with the *USFWS Manual FWS/OBS-79/31 Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Table 4 lists each aquatic resource identified within the site along with the Cowardin classification, flow regime, acreage, linear footage, and location. Aquatic resources are described below, and Exhibit 5 shows their location. An additional 3,287 linear feet of non-jurisdictional ephemeral stream was mapped within the Study Area (see Exhibit 5). Appendix F represents a large-scale Wetland Delineation Plan showing the location of each wetland flag and data point, the area of each wetland, and linear feet of each stream.



**Exhibit 4: National Wetland Inventory Map** 

Table 4: Aquatic Resources Identified within the Jurisdictional Determination Area

Aquatic Resource	Cowardin Classification	Flow Regime	Area (Acres)	Length (Linear Feet)	Location (Latitude/Longitude)
А	PEM1B	Seasonally Saturated	0.557	n/a	39.334/-94.934
В	PABFh	Semipermanently Flooded	1.047	n/a	39.335/-94.934
D	PABFh	Semipermanently Flooded	1.440	n/a	39.336/-94.933
Е	PEM1B	Seasonally Saturated	0.104	n/a	39.335/-94.933
G	PEM1B	Seasonally Saturated	0.144	n/a	39.335/-94.933
I	PABFh	Semipermanently Flooded	2.431	n/a	39.336/-94.929
J	R4SBC	Seasonally Flooded	0.107	n/a	39.337/-94.933
К	R3UBH	Permanently Flooded	1.807	4,066	39.337/-94.928
М	R4SBC	Seasonally Flooded	0.942	1,503	39.332/-94.928
L	R4SBC	Seasonally Flooded	0.099	221	39.332/-94.928
MM	PABFh	Semipermanently Flooded	0.004	n/a	39.337/-94.929
N	PABFh	Semipermanently Flooded	2.404	n/a	39.337/-94.930
0	PFO1B	Saturated	0.220	n/a	39.333/-94.926
Р	R4SBC	Seasonally Flooded	0.445	771	39.331/-94.928
Q	R4SBC	Seasonally Flooded	0.042	174	39.332/-94.928
R	R4SBC	Seasonally Flooded	1.526	2,413	39.333/-94.923
S	R4SBC	Seasonally Flooded	0.170	490	39.332/-94.922
Т	R4SBC	Seasonally Flooded	0.191	450	39.334/-94.924
U	PEM1B	Seasonally Saturated	0.192	n/a	39.334/-94.924
V	R4SBC	Seasonally Flooded	0.097	258	39.334/-94.924

Aquatic Resource	Cowardin Classification	Flow Regime	Area (Acres)	Length (Linear Feet)	Location (Latitude/Longitude)
W	PSS1B	Seasonally Saturated	0.066	n/a	39.334/-94.924

Source: WSP USA, Inc. September 2020.

Aquatic Resource A is a Palustrine Emergent Persistent (PEM1B) wetland demarcated in the field by flags A-1 through A-22. The Palustrine System includes all freshwater wetlands (such as marshes, bogs, and swamps) dominated by trees, shrubs, emergent herbaceous plants, floating leaved and submergent plants, and mosses and lichens. It also includes wetlands lacking such vegetation, but with all of the following characteristics: (1) area <20 acres; (2) maximum water depth, 6.6 feet; and (3) salinity <0.5 parts per thousand (ppt). The vegetative class Emergent, which is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. The subclass is Persistent, which includes species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems. The water regime is Seasonally Saturated, where water is saturated to the surface for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for most of the season. Dominant species include broadleaf cattail (*Typha latifolia*), darkgreen bulrush (*Scirpus atrovirens*), swamp milk weed (*Asclepias incarnata*) and stalk-grain sedge (*Carex stipata*).

Aquatic Resource B is a Palustrine Aquatic Bed Semipermanently Flooded Diked/Impounded (PABFh) wetland/pond demarcated in the field by flags B-1 through B-18. Palustrine Systems are defined above for Aquatic Resource A. The vegetative class Aquatic Bed, which is characterized by wetlands and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. The subclass is Semipermanently Flooded, in which surface water persists throughout the growing season in most years. The special modifier Diked/Impounded notes that these wetlands have been created or modified by a man-made barrier or dam that obstructs the inflow or outflow of water. Dominant species include broadleaf cattail, sedges, grasses and aquatic algae.

**Aquatic Resource D** is a PABFh wetland/pond demarcated in the field by flags D-1 through D17. Dominant species include broadleaf cattail, dark green bulrush, sedges, grasses, and aquatic algae.

**Aquatic Resource E** is a PEM1B wetland demarcated in the field by flags E-1 through E-8. Palustrine Systems are defined above for Aquatic Resource A. Dominant species include darkgreen bulrush, yellow nut sedge (*Cyperus esculentus*), awl-fruited sedge, reed canary grass (*Phalaris arundinacea*) and purple loosestrife (*Lythrum salicaria*).

**Aquatic Resource G** is a PEM1B wetland demarcated in the field by flags G-1 through G-7. Dominant species include darkgreen bulrush, yellow nut sedge, awl-fruited sedge, reed canary grass and purple loosestrife.

**Aquatic Resource I** is a PABFh wetland/pond demarcated in the field by flags I-1 through I-30. Dominant species include long-leaf pondweed (*Potamogeton nodosus*), sedges, grasses, and aquatic algae.

Aquatic Resource J is a Riverine, Intermittent, Streambed, Seasonally Flooded (R4SBC) feature demarcated in the field by flags J-2S through J-5S, and associated with the outfall of Aquatic Resource D (pond), and flows int Aquatic Resource K (Corral Creek). This classification includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created that periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water. This subsystem includes channels that contain flowing water only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent. The Streambed class includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide. The water regime is Seasonally Flooded, where surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to well below the ground surface.

Aquatic Resource K is Corral Creek, a Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded (R3UBH) system demarcated in the field by flags K-1-S through K-23a-S and KK-1-SS through KK-13-S. Riverine Systems are defined above for Resource J. Within Upper Perennial systems, the gradient is high and velocity of the water fast, with very little floodplain development. There is no tidal influence and some water flows throughout the year. The substrate consists of rock, cobbles, or gravel with occasional patches of sand. The natural dissolved oxygen concentration is normally near saturation. The Permanently Flooded water regime shows that water covers the substrate through the year in all years.

**Aquatic Resource L** is a R4SBC feature demarcated in the field by flags L1-S through L5-S associated with the outfall of Aquatic Feature I (pond) and flows into Corral Creek.

**Aquatic Resource M** is a R4SBC feature demarcated in the field by flags M1-S through M19-S associated with channel drainage that flows through Aquatic Feature O (forested wetland) and into Aquatic Feature N (pond).

**Aquatic Resource MM** is a PEM1B wetland demarcated in the field by flags MM-1 through MM-5 in which Aquatic Resource L flows through. Dominant species include darkgreen bulrush, purple loosestrife, yellow nut sedge, and awl-fruited sedge.

**Aquatic Resource N** is a PABFh wetland/pond demarcated in the field by flags N-1 through N-20. Dominant species include algae, reed canary grass, and yellow nut sedge.

**Aquatic Resource O** is a Palustrine Forested Persistent (PFO1B) wetland demarcated in the field by flags O1 through O9 in which Aquatic Resource M flows through. Palustrine Systems are defined above for

Aquatic Resource A. The vegetative class Forested, which is characterized by woody vegetation that is 6 meters tall or taller. They occur only in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and a herbaceous layer. The subclass is Persistent, which includes species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems. The water regime is Saturated, which is saturated to the surface for extended periods during the growing season, but surface water is seldom present. Dominant species include green ash (*Fraxinus pennsylvanica*), slippery elm (*Ulmus rubra*), and common paw paw (*Asimina triloba*).

**Aquatic Resource P** is a R4SBC feature demarcated in the field by flags P1 through P10, which flows north into Aquatic Resource M, and is associated with a drainage in the southern project area.

**Aquatic Resource Q** is a R4SBC feature that demarcated in the field by flags Q1-S through Q4-S and connects Aquatic Resource M and Aquatic Resource P.

**Aquatic Resource R** is a R4SBC feature demarcated in the field by flags R1-S through R27-S and associated with a drainage in the southeastern portion of the project area, flowing north into Aquatic Resource K (Corral Creek).

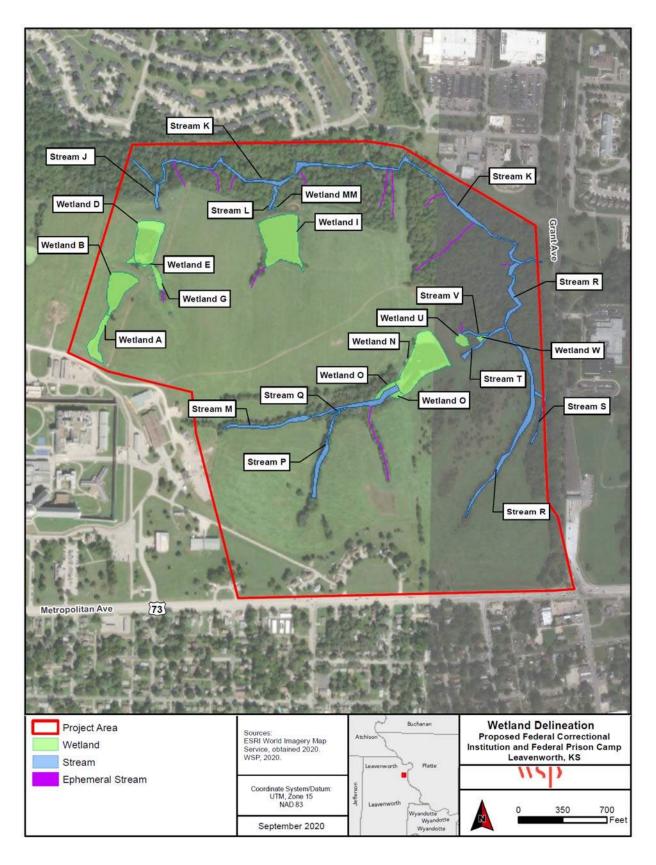
**Aquatic Resource S** is a R4SBC feature demarcated in the field by flags S1-S through S6-S and associated with a drainage in the southeastern portion of the project area and flows into Aquatic Resource R.

**Aquatic Resource T** is a R4SBC feature demarcated in the field by flags T1-S through T7-S and associated with the outfall of the pond identified as Aquatic Resource N and flows into Aquatic Resource R.

**Aquatic Resource U** is a PEM1B wetland demarcated in the field by flags U1 through U6 and adjacent to Aquatic Resource V (stream). Dominant species include darkgreen bulrush, common boneset (*Eupatorium perfoliatum*), yellow nut sedge, and field horsetail (*Equisetum arvense*).

**Aquatic Resource V** is a R4SBC feature demarcated in the field by flags V1-S through V4-S and associated with a drainage to the east of Aquatic Resource N (pond) and flows into Aquatic Resource T.

Aquatic Resource W is a Palustrine Scrub Shrub Broad-leaved Deciduous Seasonally Saturated (PSS1B) wetland demarcated in the field by flags W1 through W4 and located between Aquatic Resource V and Aquatic Resource T (streams). Palustrine Systems are defined above for Aquatic Resource A. The vegetative class Broad-leaved Deciduous, dominated by woody vegetation less than 20 feet tall. Plant species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. The water regime is Seasonally Saturated, where water is saturated to the surface for brief periods (from a few days to few weeks) during the growing season, but the water table usually lies well below the ground surface for most of the season. Dominant species in this wetland include Chinese privet (*Ligustrum sinense*), flowering dogwood (*Cornus florida*), horsetail, and darkgreen bulrush.



**Exhibit 5: Delineation Map** 

### 4.7 Wildlife

Based on field surveys conducted in 2011, 2015 and 2020, wildlife using the overall USP Leavenworth property (including the FCI/FPC Study Area) include wild turkey (*Meleagris gallopavo*), muskrat (*Ondatra zibethicus*), white-tailed deer (*Odocoileus virginiana*), and eastern gray squirrel (*Sciurus carolinensis*). Avian species observed include great blue heron (*Ardea herodias*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), northern cardinal (*Cardinalis cardinalis*), brown thrasher (*Toxostoma rufum*), killdeer, (*Charadrius vociferus*), canada goose (*Branta canadensis*), eastern bluebird (*Sialia sialis*), and mallard (*Anas platyrhynchos*). Raptor species observed flying over the area include the red-tailed hawk (*Buteo jamaicensis*) and vultures (*Cathartes* spp). The following aquatic species or reptiles and amphibians observed during field visits in July 2020: green frog (*Rana clamitans*), bull frog (*Lithobates catesbeianus*), and crayfish (*Procambarus* sp.).

According to the Kansas Department of Wildlife, Parks, and Tourism (KDWPT) other common wildlife that are likely to inhabit the Study Area include striped skunk (*Mephitis mephitis*), snakes, eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), cotton mouse, short-tailed shrew (*Blarina hylophaga*), white-footed deermouse (*Peromyscus leucopus*), woodland vole (*Microtus pinetorum*), eastern chipmunk (*Tamias striatus*), and woodchuck (*Marmota monax*). Common birds not seen during field investigations that likely use the project area include tufted titmouse (*Baeolophus bicolor*), wood thrush (*Hylocichla mustelina*), blue-gray gnatcatcher (*Polioptila caerulea*), Carolina wren (*Thryothorus ludovicianus*), summer tanager (*Piranga rubra*), and warblers (*Dendroica* spp.) (KDWPT, 2020).

### 4.8 Threatened and Endangered Species

The USFWS IPaC system was accessed to assess the potential presence of species under the jurisdiction of the USFWS within the area of the Study Area. According to IPaC, four species listed under the Endangered Species Act may occur in the area: the federally listed as threatened northern long-eared bat (*Myotis septentrionalis*); the federally listed as endangered pallid sturgeon (*Scaphirhynchus albus*); the federally listed as threatened Mead's milkweed (*Asclepias meadii*); and the federally listed as threatened western prairie fringed orchid (*Platanthera praeclara*) (USFWS, 2020a). There is no USFWS designated critical habitat for these or any other listed species within the area of the Study Area. WSP also obtained the KDWPT lists of State Threatened and Endangered Species and Species in need of Conservation in Leavenworth County (Appendix D). None of these species were observed during field wetland investigations, although species-specific surveys were not conducted.

### 5.0 CONCLUSION

Based on the desktop analysis and field determination, regulated wetlands of the United States are present within the Study Area. Approximately 8.72 acres of palustrine wetland under federal jurisdiction were identified within the FCI/FPC Study Area boundary. Approximately 10,348 linear feet of stream under federal jurisdiction were identified within the property boundary. The delineated wetlands are dominated by hydrophytic vegetation and contain hydric soils and evidence and/or presence of wetland hydrology and are subject to a Jurisdictional Determination by the Corps. An additional 3,287 linear feet of non-jurisdictional ephemeral stream was also mapped within the property. This wetland delineation report and preliminary jurisdictional determination request is hereby submitted to the Corps for concurrence and approval of jurisdictional limits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

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### 7.0 PREPARERS

### **WSP USA**

412 Mt. Kemble Avenue, Morristown, New Jersey 07962

Robert J. Nardi, PP, Program Manager M.C.R.P., 1978, City and Regional Planning, Rutgers University B.A., 1975, Community Planning, Rutgers University

Tara Stewart, CE, ENV SP, Senior Environmental Scientist/Biologist B.S., 1998, Marine Biology, Stockton University

Craig Hanlon, PWS, CE, ENV SP, Principal Environmental Scientist B.S., 1992, Environmental Studies, Slippery Rock University A.S., 1990, Wildlife Technology, Pennsylvania State University

Heather Shaw, Senior Environmental Scientist/GIS Specialist B.S., 1996, Natural Resource Management, Rutgers University Certification in Geomatics, 1999, Rutgers University

Denise Short, Senior Editor M.S., 2000, Agricultural and Environmental Policy, Tufts University B.A., 1984, English, The College of Wooster

Sabrina Jones – Research Analyst B.A., 2017, Anthropology, Washburn University

Linda Green, ENV SP – GIS Analyst B.A., 2010, University of Kansas

Jordan Hippensteel – GIS Analyst B.S., 2013, University of Missouri – Kansas City GIS Certificate, 2013, University of Missouri – Kansas City

# APPENDIX A REQUEST FOR CORPS JURISDICTIONAL DETERMINATION

### U.S. ARMY CORPS OF ENGINEERS REQUEST FOR CORPS JURISDICTIONAL DETERMINATION CORPS USE ONLY: Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for DATE RECEIVED: 33 CFR Parts 320-332. Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website. Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be PROJECT NO .: 2.REQUESTOR CONTACT INFORMATION: 1. PROPERTY LOCATION: Street Address: 1300 Metropolitan Avenue Typed or Printed Name: Craig Hanlon City/Township/Parish: Leavenworth Company Name: WSP USA County: Leavenworth State: Kansas Street Address: 412 Mount Kemble Avenue Acreage of Parcel/Review Area for JD: 247 City: Morristown State: NJ ZIP: 07960 Section: 0 Township: O Phone Number: (973) 407-1462 Range: RO Latitude: 39.333249 E-mail: craig.hanlon@wsp.com Longitude: -94.927633 (For linear projects, please include the center point of the proposed alignment.) MAP: Please attach a survey/plat map and vicinity map identifying location and review area for the JD. 4. REASON FOR REQUEST (check as many as applicable): I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources. I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority. I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process. I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process. I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide. A Corps JD is required in order to obtain my local/state authorization. I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel. ☐ I believe that the site may be comprised entirely of dry land. Other: 5. TYPE OF DETERMINATION BEING REQUESTED: 6. OWNERSHIP DETAILS: ☐ I am requesting an approved JD. I currently own this property. ☐ I am requesting a preliminary JD. I plan to purchase this property. I am requesting a "no permit required" letter as I I am an agent/consultant acting on behalf of the believe my proposed activity is not regulated. requestor. I am unclear as to which JD I would like to request Other (please explain:) and require additional information to inform my By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature:

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Date:

# APPENDIX B CORPS APPROVED JURISDICTIONAL DETERMINATION FORM

# Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

### **BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR PJD:					
B. NAME AND AD	DDRESS OF PERSON REQUESTING PJI	<b>D</b> :			
C. DISTRICT OFF	ICE, FILE NAME, AND NUMBER:				
(USE THE TABLE	CATION(S) AND BACKGROUND INFORM BELOW TO DOCUMENT MULTIPLE AC IRCES AT DIFFERENT SITES)				
State:	County/parish/borough:	City:			
Center coordin	Center coordinates of site (lat/long in degree decimal format):				
Lat.:	Long.:				
Universal Transverse Mercator:					
Name of nearest waterbody:					
<ul><li>E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):</li><li>Office (Desk) Determination. Date:</li></ul>					
Field Determination. Date(s):					
TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY					

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

### SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in s below where indicated for all checked	subject file. Appropriately reference sources items:
Maps, plans, plots or plat submitted	d by or on behalf of the PJD requestor:
Office concurs with data sheets	y or on behalf of the PJD requestor. /delineation report. a sheets/delineation report. Rationale:
Data sheets prepared by the Corp.	s:
Corps navigable waters' study:	
U.S. Geological Survey Hydrologic	c Atlas:
USGS NHD data.	
USGS 8 and 12 digit HUC map	
	te scale & quad name:
☐ Natural Resources Conservation S	Service Soil Survey. Citation:
☐ National wetlands inventory map(s	). Cite name:
State/local wetland inventory map(	s):
FEMA/FIRM maps:	
	(National Geodetic Vertical Datum of 1929
	Date):
or Other (Name &	Date):
Previous determination(s). File no	and date of response letter:
Other information (please specify):	
MPORTANT NOTE: The information red	corded on this form has not necessarily not be relied upon for later jurisdictional
signature and date of degulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable) <sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

# APPENDIX C SITE PHOTOGRAPHS

### **PHOTOGRAPHS**



Photo 1 – View of northwest portion of proposed FCI facility from perimeter road around existing facility.



Photo 2 - View of north portion of proposed FCI facility from perimeter road around existing facility.



Photo 3 - View of northeastern portion of proposed FCI facility from perimeter road around existing facility.



Photo 4 - View of eastern portion of proposed FCI facility from perimeter road around existing facility.



Photo 5 - View of Wetland A, facing north.



Photo 6 - View of Wetland A, facing south.

September 2020



Photo 7 – View of Wetland B, facing north.



Photo 8 - View of Wetland B, facing southwest.



Photo 9 - View of Wetland D, facing north.



Photo 10 - View of Wetland D, facing south.



Photo 11 - View of Wetland E, facing west.



Photo 12 - View of Wetland E, facing west.



Photo 13 – View of Wetland G, facing north.



Photo 14 - View of Wetland I, facing northeast.



Photo 15 - View of Wetland I, facing northwest.



Photo 16 - View of Wetland MM, facing west.



Photo 17 - View of Wetland N, facing south.



Photo 18 - View of Wetland N, facing southeast.



Photo 19 – View of Wetland O, facing north.



Photo 20 - View of Wetland O, facing south.



Photo 21 - View of Wetland U, facing northeast.



Photo 22 - View of Wetland W, facing east.



Photo 23 - View of Stream J, facing northeast.



Photo 24 - View of Stream K at confluence with stream J, facing west.



# APPENDIX D THREATENED AND ENDANGERED SPECIES CORRESPONDENCE



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## Leavenworth County



### Threatened and Endangered (T&E) Species

### Critical Habitat Designated

### **MUCKET MUSSEL** Actinonaias ligamentina

State: Endangered Federal: N/A Critical Habitat:

#### STURGEON CHUB Macrhybopsis gelida

State: Threatened Federal: Candidate Critical

Habitat: Yes

### SHOAL CHUB Macrhybopsis hyostoma

State: Threatened Federal: N/A Critical Habitat:

Yes

### PALLID STURGEON Scaphirhynchus albus

State: Endangered Federal: Endangered Critical

Habitat: Yes

### SICKLEFIN CHUB Macrhybopsis meeki

State: Endangered Federal: Candidate Critical

**Habitat:** Yes

### **WESTERN SILVERY MINNOW** Hybognathus argyritis

State: Threatened Federal: N/A Critical Habitat:

Yes

### **PLAINS MINNOW** Hybognathus placitus

State: Threatened Federal: N/A Critical Habitat:

Yes

### FLATHEAD CHUB Platygobio gracilis

State: Threatened Federal: N/A Critical Habitat:

Yes

#### SILVER CHUB Macrhybopsis storeriana

State: Endangered Federal: N/A Critical Habitat:

Yes

### No Critical Habitat Designated

### **SNOWY PLOVER** Charadrius alexandrinus

State: Threatened Federal: N/A Critical Habitat:

#### **EASTERN SPOTTED SKUNK** Spilogale putorius

State: Threatened Federal: N/A Critical Habitat:

### **AMERICAN BURYING BEETLE** Nicrophorus

americanus

State: Endangered Federal: Endangered Critical

Habitat: No

**LEAST TERN** Sterna antillarum

State: Endangered Federal: Endangered Critical

Habitat: Yes

PIPING PLOVER Charadrius melodus

State: Threatened Federal: Threatened Critical

Habitat: Yes

Species In Need of Conservation (SINC)

There are no SINC species with critical habitat in

Leavenworth county

River Shiner Notropis blennius

State: SINC Federal: N/A Critical Habitat: No Southern Bog Lemming Synaptomys cooperi

State: SINC Federal: N/A Critical Habitat: No

Black Tern Chlidonias niger

State: SINC Federal: N/A Critical Habitat: No

Short-eared Owl Asio flammeus

State: SINC Federal: N/A Critical Habitat: No

Golden Eagle Aquila chrysaetos

State: SINC Federal: N/A Critical Habitat: No

Highfin Carpsucker Carpiodes velifer

State: SINC Federal: N/A Critical Habitat: No

Timber Rattlesnake Crotalus horridus

State: SINC Federal: N/A Critical Habitat: No

Southern Flying Squirrel Glaucomys volans State: SINC Federal: N/A Critical Habitat: No

Blue Sucker Cycleptus elongatus

State: SINC Federal: N/A Critical Habitat: No Eastern Hognose Snake Heterodon platirhinos State: SINC Federal: N/A Critical Habitat: No

**Bobolink** Dolichonyx oryzivorus

State: SINC Federal: N/A Critical Habitat: No

Henslow's Sparrow Ammodramus henslowii State: SINC Federal: N/A Critical Habitat: No

Yellow-throated Warbler Setophaga dominica

State: SINC Federal: N/A Critical Habitat: No

Cerulean Warbler Setophaga cerulean

State: SINC Federal: N/A Critical Habitat: No

Brassy Minnow Hybognathus hankinsoni

State: SINC Federal: N/A Critical Habitat: No Eastern Whip-poor-will Antrostomas vociferus State: SINC Federal: N/A Critical Habitat: No IPaC: Explore Location

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IPaC Information for Planning and Consultation u.s. Fish & Wildlife Service

Last login August 13, 2020 06:13 PM MDT

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Leavenworth County, Kansas



## Local office

Kansas Ecological Services Field Office

**(**785) 539-3474

**(785)** 539-8567

2609 Anderson Avenue Manhattan, KS 66502-2801 IPaC: Explore Location Page 2 of 10

# **Endangered species**

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- Click REQUEST SPECIES LIST.

### Listed species

<sup>1</sup> and their critical habitats are managed by the <u>Ecological Services Program</u> of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

- Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information.
- 2. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

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### **Mammals**

NAME **STATUS** 

Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/9045

**Threatened** 

### **Fishes**

NAME **STATUS** 

Pallid Sturgeon Scaphirhynchus albus

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/7162

Endangered

# Flowering Plants

NAME

Mead's Milkweed Asclepias meadii

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/8204

Western Prairie Fringed Orchid Platanthera praeclara Threatened

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/1669

Threatened

# Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

- 1. The Migratory Birds Treaty Act of 1918.
- 2. The Bald and Golden Eagle Protection Act of 1940.

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Additional information can be found using the following links:

• Birds of Conservation Concern <a href="http://www.fws.gov/birds/management/managed-species/">http://www.fws.gov/birds/management/managed-species/</a> birds-of-conservation-concern.php

- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/ conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the <u>USFWS Birds of</u> Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area. JOTFOR

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

https://ecos.fws.gov/ecp/species/1626

Breeds Oct 15 to Aug 31

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### **Bobolink** Dolichonyx oryzivorus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

### Kentucky Warbler Oporornis formosus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 20

### Prothonotary Warbler Protonotaria citrea

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

### Red-headed Woodpecker Melanerpes erythrocephalus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

### Rusty Blackbird Euphagus carolinus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

### Wood Thrush Hylocichla mustelina

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

# **Probability of Presence Summary**

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (=)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted

Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (1)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

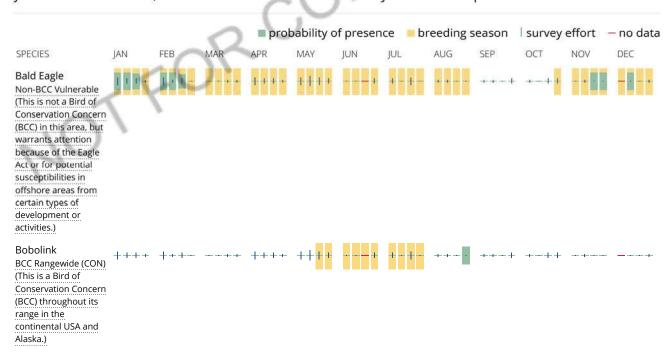
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

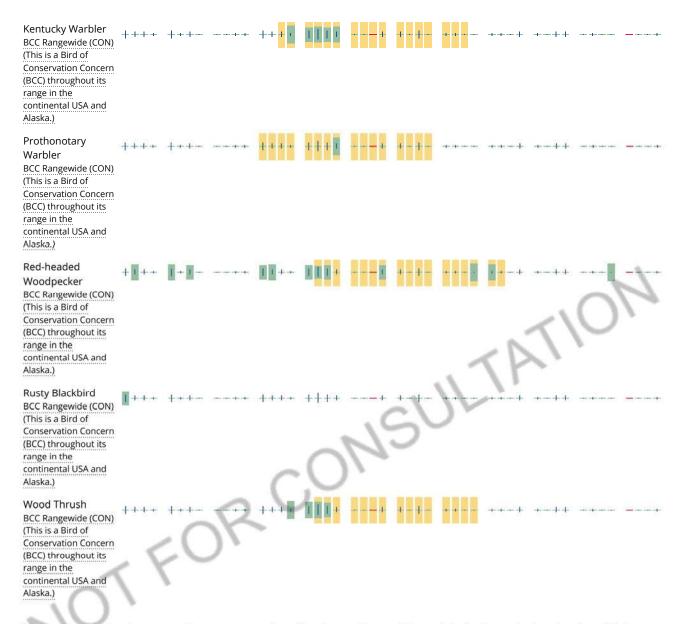
### No Data (-)

A week is marked as having no data if there were no survey events for that week

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





### Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge Network</u> (<u>AKN</u>). The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects,

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and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>AKN Phenology Tool</u>.

# What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey, banding, and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

#### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

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Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

#### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

#### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# **Facilities**

# National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

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Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of Engineers</u> <u>District</u>.

#### WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the <a href="NWI map">NWI map</a> to view wetlands at this location.

#### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# APPENDIX E WETLAND DETERMINATION DATA FORMS

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling Date: <u>7/28/2020</u>
Applicant/Owner: FBOP				State: KS	Sampling Point: WET A
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	ange:	
Landform (hillside, terrace, etc.): hillside		!	Local relief (	concave, convex, none):	convex
Slope (%):5 Lat: 39.333478		Long: -	94.934474		Datum: WGS 84
Soil Map Unit Name: Sharpsburg silty clay loam, 4-8%	slopes			NWI classif	ication: n/a
Are climatic / hydrologic conditions on the site typical f	for this time o	of year?	Yes X	No (If no, exp	plain in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly of	disturbed? A	Are "Normal (	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology				κρlain any answers in Rei	
SUMMARY OF FINDINGS – Attach site m			g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X N	0	Is the	Sampled A	rea	
Hydric Soil Present? Yes X No	0		n a Wetland		No
Wetland Hydrology Present? Yes X	0				<del></del>
Remarks:					
Hydrology is from hillside seeps and outfall. Wetland	drains north	into pond.			
NOTATION III was the stiff of the state of the					
VEGETATION – Use scientific names of pla		Deminant	la diantor	т	
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:
1				Number of Dominant	Species That
2.				Are OBL, FACW, or F	•
3.				Total Number of Domi	•
4				Across All Strata:	(B)
5				Percent of Dominant S	•
Continuish Christian (Digt cizo	·	=Total Cover		Are OBL, FACW, or F	AC: 100.0% (A/B)
Sapling/Shrub Stratum (Plot size:1.	)			Prevalence Index wo	arkshoot.
1 2				Total % Cover of	
3.				OBL species 70	
4.				FACW species 0	
5.				FAC species 0	x 3 = 0
_	:	=Total Cover		FACU species 5	
Herb Stratum (Plot size: 5' )				UPL species 0	
1. Typha latifolia	30	Yes	OBL	Column Totals: 75	``
2. Scirpus atrovirens	30	Yes	OBL	Prevalence Index =	= B/A = <u>1.20</u>
Asclepias syriaca     Carex stipata	<u>5</u> 10	No No	FACU_ OBL	Hydrophytic Vegetat	ion Indicators:
5.	10	110	OBL		Hydrophytic Vegetation
6.				X 2 - Dominance Te	
7.				X 3 - Prevalence Inc	
8.				4 - Morphological	Adaptations <sup>1</sup> (Provide supporting
9.					s or on a separate sheet)
10				Problematic Hydro	ophytic Vegetation <sup>1</sup> (Explain)
		=Total Cover			oil and wetland hydrology must
Woody Vine Stratum (Plot size:	)			be present, unless dis	turbed or problematic.
1.				Hydrophytic	
2		=Total Cover		Vegetation Present? Yes	X No
Described the shall shall shall be shal		- Total Cover		Tresent: Tes_	<u> </u>
Remarks: (Include photo numbers here or on a sepa	rate sneet.)				
					ļ

**SOIL** Sampling Point: WET A

Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 4/2	100					Loamy/Clayey	
3-14	5Y 5/1	95	10YR 5/6	5	RM		Loamy/Clayey	
								-
	oncentration, D=Dep	letion, RM	I=Reduced Matrix, I	MS=Mas	ked Sand	l Grains.		n: PL=Pore Lining, M=Matrix.
Hydric Soil					. (0.1)			rs for Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Gle		rix (S4)			st Prairie Redox (A16)
	ipedon (A2)		Sandy Re					Manganese Masses (F12)
Black His			Stripped N		5)			Parent Material (F21)
	n Sulfide (A4)		Dark Surfa	` '				Shallow Dark Surface (F22)
	Layers (A5)		Loamy Mu				Othe	r (Explain in Remarks)
2 cm Mu		(4.44)	Loamy Glo	-				
	Below Dark Surface	e (A11)	X Depleted I	,	,		3	
	rk Surface (A12)		Redox Da		` '			rs of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted I		, ,			and hydrology must be present, ss disturbed or problematic.
	cky Peat or Peat (S3	<u> </u>	Redox De	pression	s (Fo)		unie	ss disturbed or problematic.
	_ayer (if observed):							
Type: _								
This data for	<u> </u>							s of Hydric Soils, Version 7.0, 2015
Remarks: This data for	m is revised from Mi						NRCS Field Indicator	
Remarks: This data for Errata. (http:	m is revised from Mi //www.nrcs.usda.gov						NRCS Field Indicator	
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Remarks: This data for Errata. (http:  HYDROLO  Wetland Hyde Primary India Surface V X High Wa	m is revised from Mi //www.nrcs.usda.gov  GY  drology Indicators: cators (minimum of company) Water (A1) ter Table (A2)	/Internet/I	uired; check all that  X Water-Sta	apply) ined Lea	ves (B9)		NRCS Field Indicator )  Seconda Surfa X Draii	ry Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10)
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Remarks: This data for Errata. (http:  HYDROLO  Wetland Hyde Primary Indice Surface V X High Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatice Sparsely  Field Obser Surface Water Table Saturation Pe (includes cap	m is revised from Mi //www.nrcs.usda.gov  IGY  Idrology Indicators: cators (minimum of	magery (B Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc surface Well Dat blain in F  Depth (i Depth (i	ves (B9) 3) s (B14) Odor (C1) eres on L ced Iron ( tion in Til (C7) a (D9) emarks) nches): _ nches): _ nches): _	Living Ro C4)	Seconda Surfa X Drain Dry- Cray Stun S (C6) X Geon X FAC	ry Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hyde Primary Indice Surface V X High Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatice Sparsely  Field Obser Surface Water Table Saturation Pe (includes cap	m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of control	magery (B Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc surface Well Dat blain in F  Depth (i Depth (i	ves (B9) 3) s (B14) Odor (C1) eres on L ced Iron ( tion in Til (C7) a (D9) emarks) nches): _ nches): _ nches): _	Living Ro C4)	Seconda Surfa X Drain Dry- Cray Stun S (C6) X Geon X FAC	ry Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data for Errata. (http:  IYDROLO  Wetland Hyde  Primary Indice  X High Wa  X Saturation  Water M  Sediment  Drift Dep  Algal Ma  Iron Dep  Inundation  Sparsely  Field Obsert  Surface Wate  Water Table  Saturation Per  (includes cap  Describe Receivers	m is revised from Mi //www.nrcs.usda.gov  drology Indicators: cators (minimum of control	magery (B Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc surface Well Dat blain in F  Depth (i Depth (i	ves (B9) 3) s (B14) Odor (C1) eres on L ced Iron ( tion in Til (C7) a (D9) emarks) nches): _ nches): _ nches): _	Living Ro C4)	Seconda Surfa X Drain Dry- Cray Stun S (C6) X Geon X FAC	ry Indicators (minimum of two requirence Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Project/Site: Leavenworth FCI		City/Coun	nty: Leavenw	orth/Leavenworth	Sampling Date:	7/28/2020
Applicant/Owner: FBOP				State: KS	Sampling Point:	UPL A
Investigator(s): C.Hanlon, S.		Section, To	ownship, Rar	nge:		
Landform (hillside, terrace, etc.): hillside		L	ocal relief (co	oncave, convex, nor	ne): convex	
Slope (%): 5 Lat: 39.33454		Long: <u>-</u> 9	94.934391		Datum: WGS 84	
Soil Map Unit Name: Sharpsburg silty clay loam, 4-8% s	lopes			NWI cla	assification: n/a	
Are climatic / hydrologic conditions on the site typical for	this time of	year?	Yes X	No (If no,	explain in Remarks.)	<del></del>
Are Vegetation, Soil, or Hydrologysignature.	gnificantly dis	sturbed? A	re "Normal C	ircumstances" prese	ent? Yes X N	lo
Are Vegetation, Soil, or Hydrologyna	turally proble	ematic? (If	f needed, exp	olain any answers in	Remarks.)	<u>-</u>
SUMMARY OF FINDINGS – Attach site map	ວ showing	յ samplin	g point lo	cations, transe	cts, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No	Х	Is the	Sampled Are	ea		
	X		a Wetland?		No X	
Wetland Hydrology Present? Yes No	X				<u> </u>	
Remarks:						
VEGETATION – Use scientific names of plan		D. Connet	· **			
<u>Tree Stratum</u> (Plot size: )		Dominant Species?	Indicator Status	Dominance Test	worksheet:	
1				Number of Domin		
2.				Are OBL, FACW,	•	0 (A)
3.				Total Number of D	Dominant Species	
4				Across All Strata:		1 (B)
5				Percent of Domina	•	
- (Diet size)	=I	Total Cover		Are OBL, FACW,	or FAC:	0.0% (A/B)
Sapling/Shrub Stratum (Plot size:)  1.			}	Prevalence Index	workshoot:	
				Total % Cove		v hv:
3.				OBL species	0 x 1 =	0
4.				FACW species	10 x 2 =	20
5.				FAC species	1 x 3 =	3
<del></del>	=7	Total Cover		FACU species	60 x 4 =	240
Herb Stratum (Plot size: 5')				UPL species	0 x 5 =	0
1. Phalaris arundinacea	10	No .	FACW	Column Totals:	71 (A)	263 (B)
2. Festuca arundinacea	60	Yes	FACU	Prevalence Ind	ex = B/A = 3.7	0
3			<del></del> }	Hydronhytic Vea	etation Indicators:	
					etation indicators. t for Hydrophytic Vege	etation
6.					e Test is >50%	idion
7.					e Index is ≤3.0 <sup>1</sup>	
8.					ical Adaptations <sup>1</sup> (Pro	
9.					narks or on a separate	•
10				Problematic F	lydrophytic Vegetation	n¹ (Explain)
<u>.</u>	70 =1	Total Cover			ic soil and wetland hy	
Woody Vine Stratum (Plot size:)	4	N1 -	-10	be present, unless	disturbed or problem	atic.
1. Toxicodendron radicans	1	No	<u>FAC</u>	Hydrophytic		
2		Total Cover		Vegetation Present? Y	'es No X	
- Law Markeda whata manahara hara		TOtal Cover		Fiesein: .	<u>es</u>	
Remarks: (Include photo numbers here or on a separa	te sneet.)					

SOIL Sampling Point: UPL A

Depth	cription: (Describe t Matrix	ιο ιπε αερτ		ument ti x Featur		ator or C	confirm the absence of inc	aicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 4/3	100	, , ,				Loamy/Clayey	
4-11	10YR 5/3	100					Loamy/Clayey	
11-16	10YR 5/3	90	10YR 5/6	10	RM		Loamy/Clayey	
11-10	10111 3/3		10111 3/0		TXIVI		Loamy/olayey	
1							2	
	oncentration, D=Depl	etion, RM=	Reduced Matrix, I	MS=Mas	ked San	d Grains		=Pore Lining, M=Matrix.
Hydric Soil			Sandy Cla	wad Mat	riv (C1)			r Problematic Hydric Soils <sup>3</sup> :
— Histosol	` '		Sandy Gle	-				irie Redox (A16)
	oipedon (A2)		Sandy Re					ganese Masses (F12)
	stic (A3) n Sulfide (A4)		Stripped N Dark Surfa					nt Material (F21) low Dark Surface (F22)
			Loamy Mu					plain in Remarks)
	d Layers (A5) uck (A10)		Loamy Gle	•	, ,		Other (EX	olain iii Neinalko)
	d Below Dark Surface	· (A11)	Depleted I	-				
	ark Surface (A12)	(7(1)	Redox Da	,	,		<sup>3</sup> Indicators of t	hydrophytic vegetation and
	Mucky Mineral (S1)		Depleted I		, ,	)		ydrology must be present,
	ucky Peat or Peat (S3	)	Redox De		` '	,	•	sturbed or problematic.
_	Layer (if observed):	,		·				<u> </u>
Type:	, (							
Depth (ii	nches):						Hydric Soil Present?	Yes No X
HYDROLO	OGY							
Wetland Hy	drology Indicators:							
Primary Indi	cators (minimum of o	ne is requir	ed; check all that	apply)			Secondary Ind	dicators (minimum of two required
Surface	Water (A1)		Water-Sta	ined Lea	aves (B9)	)		oil Cracks (B6)
	ater Table (A2)		Aquatic Fa	auna (B1	3)		Drainage	Patterns (B10)
Saturation			True Aqua					on Water Table (C2)
	larks (B1)		Hydrogen					Burrows (C8)
	nt Deposits (B2)		Oxidized F			-	· · · · —	Visible on Aerial Imagery (C9)
	posits (B3)		Presence			` '		r Stressed Plants (D1)
	at or Crust (B4)		Recent Iro			illed Soil		nic Position (D2)
	oosits (B5)	magam, (D7)	Thin Muck		, ,		FAC-Neut	ral Test (D5)
	on Visible on Aerial Ir / Vegetated Concave		·		, ,			
Field Obser		Surface (D	0)Other (EX	Jiaiii iii i	(Ciliaiks)		T	
Surface Wat		9	No X	Denth (i	nches):			
Water Table					nches):			
Saturation P			No X	Depth (i	_		Wetland Hydrology Pr	resent? Yes No X
	pillary fringe)	<b></b>	<u> </u>	Dopui (i	_		Wedana Hydrology 1 1	105 <u>NO X</u>
	corded Data (stream	gauge, mo	nitoring well. aeria	al photos	, previou	s inspec	tions), if available:	
10	(	5 5 ,	J, 2.2.1.2	,	. ,	1	,,	
Remarks:								

Midwest Region Version 2.0

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling Date: <u>7/28/2020</u>
Applicant/Owner: FBOP				State: KS	Sampling Point: WET E
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	nge:	
Landform (hillside, terrace, etc.): hillside			Local relief (d	concave, convex, none):	convex
Slope (%):5 Lat: 39.335338		Long: -	94.933187		Datum: WGS 84
Soil Map Unit Name: Knox silt loam, 7-12% slopes				NWI classif	ication: PEM1Ah
Are climatic / hydrologic conditions on the site typical for	or this time c	of year?	Yes X	No (If no, exp	olain in Remarks.)
Are Vegetation, Soil, or Hydrologys	significantly (	disturbed? A	Are "Normal (	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology				plain any answers in Rei	
SUMMARY OF FINDINGS – Attach site ma			g point lo	cations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	)	Is the	Sampled A	rea	
Hydric Soil Present? Yes X No			n a Wetland		No
Wetland Hydrology Present? Yes X No	)				
Remarks:					
Wetland hydrology is from hillside seeps and outfall fr	om upstrean	n pond. Wetla	and flows nor	th into pond.	
VEGETATION – Use scientific names of pla		<u> </u>			
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:
1.				Number of Dominant	
2.				Are OBL, FACW, or F	•
3				Total Number of Dom	inant Species
4				Across All Strata:	(B)
5		Tatal Causer		Percent of Dominant S	•
Sapling/Shrub Stratum (Plot size:	· ———	=Total Cover		Are OBL, FACW, or F	AC: <u>100.0%</u> (A/B)
1.	,			Prevalence Index wo	orksheet:
2.				Total % Cover of	
3.				OBL species 45	<del></del>
4.				FACW species 45	x 2 = 90
5				FAC species 0	x 3 =0
		=Total Cover		FACU species 0	
Herb Stratum (Plot size: 5' )	40		E4 0)4/	UPL species 0	
1. Phalaris arundinacea	40	Yes	FACW	Column Totals: 90	`'
Scirpus atrovirens     Carex stipata	10	Yes No	OBL OBL	Prevalence Index =	= B/A = 1.50
Carex supara     Cyperus esculentus	5	No	FACW	Hydrophytic Vegetat	ion Indicators:
5. Carex lurida	3	No	OBL		Hydrophytic Vegetation
6. Lythrum salicaria	2	No	OBL	X 2 - Dominance Te	
7.				X 3 - Prevalence Inc	dex is ≤3.0 <sup>1</sup>
8					Adaptations <sup>1</sup> (Provide supporting
9					s or on a separate sheet)
10					ophytic Vegetation <sup>1</sup> (Explain)
Was da Visa Otratura (District		=Total Cover			oil and wetland hydrology must
Woody Vine Stratum (Plot size:)	1			be present, unless dis	turbed or problematic.
1 2.				Hydrophytic	
2.		=Total Cover		Vegetation Present? Yes	X No
Remarks: (Include photo numbers here or on a separ		_		1100	<u> </u>
Remarks. (include prioto numbers here or on a separ	ate sneet.)				

SOIL Sampling Point: WET E

Depth	Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-2	10YR 4/2	100					Loamy/Clayey		
2-12	5Y 4/1	80	10YR 4/6	10	RM	М	Loamy/Clayey		
			10YR 5/6	10	RM				
12-18	5Y 4/1	95	10YR 4/6	5	RM		Loamy/Clayey		
1 <sub>Typo: C=C</sub>	oncentration, D=Dep	otion PM	I-Poducod Matrix N		od San	d Grains	<sup>2</sup> l ocatio	n: PL=Pore Lir	ning M-Matrix
Hydric Soil		Ction, rtiv	i–rteadea Matrix, N	vio-iviasi	cu oan	u Oranis.			natic Hydric Soils <sup>3</sup> :
Histosol			Sandy Gle	yed Mat	ix (S4)			st Prairie Redo	•
	oipedon (A2)		Sandy Red	-	` ,			-Manganese M	
Black Hi	stic (A3)		Stripped M	1atrix (S6	i)		Red	l Parent Materia	al (F21)
Hydroge	n Sulfide (A4)		Dark Surfa	ace (S7)			Ver	y Shallow Dark	Surface (F22)
Stratified	d Layers (A5)		Loamy Mu	icky Mine	eral (F1)		Oth	er (Explain in R	lemarks)
2 cm Mu	ıck (A10)		Loamy Gle	eyed Mat	rix (F2)				
Depleted	d Below Dark Surface	(A11)	X Depleted N	,	,		_		
	ark Surface (A12)		Redox Dar		` '			, , ,	tic vegetation and
	lucky Mineral (S1)		Depleted [		•	)			must be present,
5 cm Mu	icky Peat or Peat (S3	)	Redox Dep	pressions	s (F8)		unle	ess disturbed or	r problematic.
Restrictive	Layer (if observed):								
Type:									
							Hydric Soil Prese	nt?	Yes X No
	· · ·						NRCS Field Indicate		ils, Version 7.0, 2015
Remarks: This data fo	rm is revised from Mic						NRCS Field Indicate		
Remarks: This data fo	rm is revised from Mid //www.nrcs.usda.gov						NRCS Field Indicate		
Remarks: This data for Errata. (http	rm is revised from Mid //www.nrcs.usda.gov						NRCS Field Indicate		
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy  Primary Indi	orm is revised from Mid //www.nrcs.usda.gov DGY drology Indicators: cators (minimum of o	/Internet/f	SE_DOCUMENTS	/nrcs142	p2_0512	293.docx	NRCS Field Indicato	ors of Hydric So	ils, Version 7.0, 2015
Remarks: This data for Errata. (http://prescripts.com/deland/primary Indiagonal Communication)  Remarks: This data for the communication of the communicatio	OGY drology Indicators: cators (minimum of o	/Internet/f	uired; check all that	/nrcs142 apply) ined Lea	p2_0512 ves (B9)	293.docx	NRCS Field Indicato	ors of Hydric So ary Indicators (r	ils, Version 7.0, 2015  minimum of two requires (B6)
Remarks: This data for Errata. (http://pxcccccccccccccccccccccccccccccccccc	OGY drology Indicators: cators (minimum of o Water (A1) ater Table (A2)	/Internet/f	uired; check all that  X Water-Sta Aquatic Fa	apply) ined Lea	p2_0512 ves (B9)	293.docx	NRCS Field Indicato	ary Indicators (r face Soil Crack inage Patterns	minimum of two requires s (B6)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturation	OGY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3)	/Internet/f	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua	apply) ined Lea auna (B1	ves (B9) 3) s (B14)	293.docx	NRCS Field Indicators)  Second Sur X Dra Dry	ary Indicators (ifface Soil Crack inage Patterns	minimum of two requires (B6) (B10) Table (C2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatie Water M	OGY drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1)	/Internet/f	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen	apply) ined Lea auna (B1 tic Plant Sulfide (	p2_0512 ves (B9) 3) s (B14) Odor (C1	293.docx	NRCS Field Indicators)  Second Sur X Dra Dry Cra	ary Indicators (r face Soil Crack inage Patterns -Season Water yfish Burrows (r	minimum of two requires (B6) (B10) Table (C2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturation Water M Sedimen	orm is revised from Micel/www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of orwater (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2)	/Internet/f	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 tic Plant Sulfide C	ves (B9) 3) s (B14) Odor (C1 eres on	293.docx	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (reaction Visible course)	minimum of two requires (B6) (B10) Table (C2) C8) on Aerial Imagery (C9)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatie Water M Sedimer Drift Dep	orm is revised from Mic //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	/Internet/f	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on led Iron eled Iron	) Living Ro	Second	ary Indicators (reface Soil Crackinage Patternseseason Water yfish Burrows (retained or Stresse	minimum of two requires s (B6) (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	orm is revised from Midul/www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of	/Internet/f	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on led Iron attorning Titon in Titon	) Living Ro	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (ruration Visible conted or Stresse omorphic Position	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	orm is revised from Mic //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of o Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	/Internet/f	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized Fa  Presence of Recent Iro  Thin Muck	apply) ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface	vves (B9) 3) s (B14) Odor (C1 eres on led Iron in Ti (C7)	) Living Ro	Second	ary Indicators (reface Soil Crackinage Patternseseason Water yfish Burrows (retained or Stresse	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	orm is revised from Midul/www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	ne is requ	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  To Gauge or	apply) ined Lea auna (B1 tic Plant: Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron etion in Ti (C7) a (D9)	) Living Ro (C4) illed Soil:	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (ruration Visible conted or Stresse omorphic Position	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators: cators (minimum of of Mater (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In	ne is requ	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  To Gauge or	apply) ined Lea auna (B1 tic Plant: Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron etion in Ti (C7) a (D9)	) Living Ro (C4) illed Soil:	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (ruration Visible conted or Stresse omorphic Position	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely	drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial In a Vegetated Concave	ne is requessessessessessessessessessessessessess	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck (7) Gauge or V (88) Other (Exp	apply) ined Lea auna (B1 tic Plant: Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron in Ti (C7) a (D9) emarks)	) Living Ro (C4) illed Soil:	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (ruration Visible conted or Stresse omorphic Position	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely	orm is revised from Mid //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In / Vegetated Concave  revations: ter Present? Ye Present? Ye	magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized Fa  Presence of Recent Iro  Thin Muck  To Gauge or V  (B8) Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat	vves (B9) 3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) emarks)	) Living Ro (C4) illed Soil:	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (ruration Visible conted or Stresse omorphic Position	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface War	orm is revised from Mid //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of or Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In / Vegetated Concave  revations: ter Present? Ye Present? Ye	ne is requested and the magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized Fa  Presence  Recent Iro  Thin Muck  To Gauge or V  (B8) Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in R	ves (B9) 3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soil:	Second	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (refunded or Stresseomorphic Position C-Neutral Test (	minimum of two requires (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely  Field Obser Surface Water Table Saturation F (includes ca	orm is revised from Mid //www.nrcs.usda.gov  order (A)  drology Indicators: cators (minimum of orwater (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In / Vegetated Concave revations: ter Present?  Ye Present? Ye pillary fringe)	magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  Gauge or V  B8)  Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat blain in R  Depth (ii Depth (ii	ves (B9) 3) s (B14) Odor (C1 eres on literation in Ti (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field Indicate  Second  Sur  X Dra  Dry  Cra  Sots (C3) Stu  Stu  Stu  FAC	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (refunded or Stresseomorphic Position C-Neutral Test (	minimum of two requires (B6) (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2) (D5)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely  Field Obser Surface Water Table Saturation F (includes ca	orm is revised from Michigan M	magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  Gauge or V  B8)  Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat blain in R  Depth (ii Depth (ii	ves (B9) 3) s (B14) Odor (C1 eres on literation in Ti (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field Indicate  Second  Sur  X Dra  Dry  Cra  Sots (C3) Stu  Stu  Stu  FAC	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (refunded or Stresseomorphic Position C-Neutral Test (	minimum of two requires (B6) (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2) (D5)
Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely  Field Obser Surface Water Table Saturation F (includes ca	orm is revised from Mid //www.nrcs.usda.gov  order (A)  drology Indicators: cators (minimum of orwater (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In / Vegetated Concave revations: ter Present?  Ye Present? Ye pillary fringe)	magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  Gauge or V  B8)  Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat blain in R  Depth (ii Depth (ii	ves (B9) 3) s (B14) Odor (C1 eres on literation in Ti (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field Indicate  Second  Sur  X Dra  Dry  Cra  Sots (C3) Stu  Stu  Stu  FAC	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (refunded or Stresseomorphic Position C-Neutral Test (	minimum of two requires (B6) (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2) (D5)
Remarks: This data for Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturation Vater M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface War  Water Table Saturation F (includes ca Describe Re	orm is revised from Mid //www.nrcs.usda.gov  order (A)  drology Indicators: cators (minimum of orwater (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial In / Vegetated Concave revations: ter Present?  Ye Present? Ye pillary fringe)	magery (B Surface (	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized F  Presence  Recent Iro  Thin Muck  Gauge or V  B8)  Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc n Reduc Surface Well Dat blain in R  Depth (ii Depth (ii	ves (B9) 3) s (B14) Odor (C1 eres on literation in Ti (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field Indicate  Second  Sur  X Dra  Dry  Cra  Sots (C3) Stu  Stu  Stu  FAC	ary Indicators (reface Soil Crack inage Patterns -Season Water yfish Burrows (refunded or Stresseomorphic Position C-Neutral Test (	minimum of two requires (B6) (B10) Table (C2) C8) on Aerial Imagery (C9) d Plants (D1) on (D2) (D5)

Project/Site: Leavenworth FCI		City/Cour	nty: Leaveny	worth/Leavenworth	Sampling D	ate: <u>7/28/2020</u>	)
Applicant/Owner: FBOP				State: KS	Sampling P	oint: UPL E	_
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	nge:			
Landform (hillside, terrace, etc.): hillside		I	Local relief (c	concave, convex, noi	ne): convex		
Slope (%):5 Lat: 39.335282		Long: -	94.933154		Datum: WGS	84	
Soil Map Unit Name: Knox silt loam, 7-12% slopes				NWI cla	assification: n/a		
Are climatic / hydrologic conditions on the site typical f	for this time o	f year?	Yes X	No (If no.	, explain in Remar	ks.)	
Are Vegetation, Soil, or Hydrology	significantly of	disturbed? A	Are "Normal C	Circumstances" pres	ent? Yes X	No	
Are Vegetation, Soil, or Hydrology				plain any answers in			
SUMMARY OF FINDINGS – Attach site m						t features, etc	c.
Hydrophytic Vegetation Present? Yes No	lo X	Is the	Sampled Ar	·ea			
	lo X		n a Wetland?		No X		
	lo X					1	
Remarks:			<del>,</del>			,	$\Box$
<b>VEGETATION</b> – Use scientific names of pla	ants.						
T Chrotima (Diet eizer	Absolute	Dominant Species?	Indicator	Deminance Toot	···arkahaati		
Tree Stratum (Plot size:) 1.	% Cover	Species?	Status	Dominance Test			-
2.				Number of Domin Are OBL, FACW,	•	1 (A)	
3.				Total Number of D		``	
4.				Across All Strata:	•	2 (B)	
5.				Percent of Domina	ant Species That		
		=Total Cover		Are OBL, FACW,	•	50.0% (A/E	3)
Sapling/Shrub Stratum (Plot size:							
1				Prevalence Index			
2				Total % Cove		ultiply by:	
3				OBL species FACW species	1 x 1 = 40 x 2 =		
5.				FAC species	0 x 2 =	0	
3		=Total Cover		FACU species	30 x 4 =	120	
Herb Stratum (Plot size: 5' )				UPL species	15 x 5 =	75	
1. Phalaris arundinacea	40	Yes	FACW	Column Totals:	86 (A)	276 (B)	
2. Festuca arundinacea	30	Yes	FACU	Prevalence Ind	lex = B/A =	3.21	
3. Carex stipata	1	No	OBL				
4. Lespedeza thunbergii	15	No	UPL		etation Indicator		
5					st for Hydrophytic \	/egetation	
6.					ce Test is >50%		
7					e Index is ≤3.0 <sup>1</sup> gical Adaptations <sup>1</sup>	(Dravida aupporti	:~a
9.					gical Adaptations marks or on a sepa		.i iy
10.					Hydrophytic Vegeta		
10	86 =	=Total Cover			ric soil and wetland	` ' '	ı
Woody Vine Stratum (Plot size:	)				s disturbed or prob		1
1.			1	Hydrophytic	•		_
2.				Vegetation			
		=Total Cover		_	res No	X	
Remarks: (Include photo numbers here or on a sepa	rate sheet.)						

**SOIL** Sampling Point: UPL E

Profile Dese	cription: (Describe to Matrix	to the depth		<b>ument t</b> l ox Featur		ator or c	confirm the absence of in	ndicators.)
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR 4/2	100	` /				Loamy/Clayey	
3-11	10YR 4/3	95	10YR 5/6	5	RM		Loamy/Clayey	
11-16	10YR 4/3	90	10YR 5/6	10	RM	M	Loamy/Clayey	
11-10	101114/3	_90	10113/0	10	KIVI	IVI	Loaniy/Clayey	
				· —				
1							2 –	
•	oncentration, D=Depl	etion, RM=F	Reduced Matrix,	MS=Mas	ked Sand	d Grains		L=Pore Lining, M=Matrix.
Hydric Soil			Sandy Cla	aved Met	riv (C1)			or Problematic Hydric Soils <sup>3</sup> :
— Histosol	pipedon (A2)		Sandy Gle Sandy Re	-				airie Redox (A16) ganese Masses (F12)
	istic (A3)		Stripped N					ent Material (F21)
	en Sulfide (A4)		Dark Surf		•			allow Dark Surface (F22)
	d Layers (A5)		Loamy Mu					xplain in Remarks)
	uck (A10)		Loamy Gl	-				xpiaiii iii i teiriarito)
	d Below Dark Surface	(A11)	Depleted	•	. ,			
	ark Surface (A12)	(,	Redox Da	,	,		<sup>3</sup> Indicators of	hydrophytic vegetation and
	Mucky Mineral (S1)		— Depleted		, ,	)		hydrology must be present,
5 cm Mu	ucky Peat or Peat (S3	)	Redox De		` '			sturbed or problematic.
Restrictive	Layer (if observed):							
Type:	,							
Depth (ii	nches):		_				Hydric Soil Present?	Yes No
HYDROLC	OGY							
Wetland Hy	drology Indicators:							
-	cators (minimum of o	ne is require						dicators (minimum of two require
	Water (A1)		Water-Sta					Soil Cracks (B6)
	ater Table (A2)		Aquatic F					Patterns (B10)
Saturation			True Aqua			`		son Water Table (C2)
	farks (B1)		Hydrogen					Burrows (C8)
	nt Deposits (B2) posits (B3)		Oxidized I			_		on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
	at or Crust (B4)		Recent Ire			` '		ohic Position (D2)
`	posits (B5)		Thin Muck			iica ooii	· · ·	utral Test (D5)
	on Visible on Aerial Ir	nagery (B7)			. ,			
	Vegetated Concave	. , ,	<u> </u>		` '			
Field Obser	rvations:	•	·					
Surface Wat	ter Present? Ye	s	No X	Depth (i	nches):			
Water Table	Present? Ye	s	No X	Depth (i	nches):			
Saturation P	Present? Ye	s	No X	Depth (i	_		Wetland Hydrology P	resent? Yes No
(includes ca	pillary fringe)							
Describe Re	ecorded Data (stream	gauge, mor	itoring well, aeria	al photos	, previou	s inspec	tions), if available:	
Remarks:								

Midwest Region Version 2.0

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling Date: <u>7/28/2020</u>
Applicant/Owner: FBOP				State: KS	Sampling Point: WET G
Investigator(s): C.Hanlon, S.		Section, 7	Township, Ra	ange:	
Landform (hillside, terrace, etc.): hillside			Local relief (d	concave, convex, none):	convex
Slope (%): 3 Lat: 39.334979		Long: -	94.932720		Datum: WGS 84
Soil Map Unit Name: Knox silt loam, 7-12% slopes				NWI classif	ication: n/a
Are climatic / hydrologic conditions on the site typical f	or this time o	of year?	Yes X	No (If no, exp	plain in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly	disturbed? A	Are "Normal (	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology				kplain any answers in Re	<u> </u>
SUMMARY OF FINDINGS – Attach site m			ng point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	0	Is the	Sampled A	rea	
Hydric Soil Present? Yes X No			n a Wetland		No
Wetland Hydrology Present? Yes X No	o				
Remarks:					
Wetland hydrology is from hillside seeps and outfall for	om upstrean	n pond. Wetla	and flows nor	th into pond.	
VEGETATION – Use scientific names of pla		<u> </u>		T	
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:
1.		<u> </u>		Number of Dominant	
2.				Are OBL, FACW, or F	•
3				Total Number of Dom	•
4				Across All Strata:	(B)
5		T-1-1 Co		Percent of Dominant S	•
Sapling/Shrub Stratum (Plot size:	`	=Total Cover		Are OBL, FACW, or F	AC: 100.0% (A/B)
Sapling/Shrub Stratum (Plot size:	)			Prevalence Index wo	arkeheet.
2.				Total % Cover of	
3.				OBL species 4	
4.				FACW species 45	5 x 2 = 90
5.				FAC species 0	x 3 = 0
		=Total Cover		FACU species0	
Herb Stratum (Plot size: 5' )		.,	-: 0:4/	UPL species 0	
1. Phalaris arundinacea	45	Yes	FACW	Column Totals: 92	
Scirpus atrovirens     Carex stipata	<del>40</del> 7	Yes No	OBL OBL	Prevalence Index :	= B/A = <u>1.49</u>
Carex supata     Polygonum amphibium	2	No	OBL	Hydrophytic Vegetat	ion Indicators:
					Hydrophytic Vegetation
6.				X 2 - Dominance Te	
7.				X 3 - Prevalence Inc	dex is ≤3.0 <sup>1</sup>
8.					Adaptations <sup>1</sup> (Provide supporting
9.					s or on a separate sheet)
10				Problematic Hydro	ophytic Vegetation <sup>1</sup> (Explain)
		=Total Cover			oil and wetland hydrology must
Woody Vine Stratum (Plot size:	)			be present, unless dis	turbed or problematic.
1 2.				Hydrophytic	
2.		=Total Cover		Vegetation Present? Yes	X No
Pomarka: //naluda photo susphere have are as a series		- rotal Gover		110001111 165	
Remarks: (Include photo numbers here or on a sepa	rate sneet.)				

**SOIL** Sampling Point: WET G

Profile Desc Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1	10YR 4/3	100	, ,				Loamy/Clayey	
1-11	5Y 4/2	95	10YR 5/6	5	RM		Loamy/Clayey	
11-16	5Y 5/1	90	10YR 5/6	10	RM		Loamy/Clayey	
	01 3/1		1011(3/0		TXIVI		Loamy/Olayey	
1- 0.0							2, ,,	
Hydric Soil	oncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	Grains.		=Pore Lining, M=Matrix. r Problematic Hydric Soils <sup>3</sup> :
Histosol			Sandy Gle	ved Mat	rix (S4)			nirie Redox (A16)
	pipedon (A2)		Sandy Red	-				ganese Masses (F12)
Black His			Stripped M					nt Material (F21)
	n Sulfide (A4)		Dark Surfa		-,			low Dark Surface (F22)
	Layers (A5)		Loamy Mu		eral (F1)			plain in Remarks)
2 cm Mu			Loamy Gle	-				,
	l Below Dark Surface	(A11)	X Depleted I	-				
Thick Da	rk Surface (A12)	,	Redox Da				<sup>3</sup> Indicators of	hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted [	Dark Sur	face (F7)	ı	wetland h	ydrology must be present,
5 cm Mu	cky Peat or Peat (S3	)	Redox De	oression	s (F8)		unless dis	sturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								
Depth (ir Remarks: This data for	· -							Yes X No
Depth (ir Remarks: This data for Errata. (http:	m is revised from Mio						NRCS Field Indicators of I	
Depth (in Remarks: This data for Errata. (http:	m is revised from Mie //www.nrcs.usda.gov						NRCS Field Indicators of I	
Depth (ir Remarks: This data for Errata. (http:	m is revised from Mid //www.nrcs.usda.gov	/Internet/F	SE_DOCUMENTS	/nrcs142			NRCS Field Indicators of I	Hydric Soils, Version 7.0, 2015
Depth (ir Remarks: This data for Errata. (http:	m is revised from Mid //www.nrcs.usda.gov PGY drology Indicators: cators (minimum of o	/Internet/F	SE_DOCUMENTS	/nrcs142	2p2_0512	293.docx	NRCS Field Indicators of I	Hydric Soils, Version 7.0, 2015
Depth (ir Remarks: This data for Errata. (http:  HYDROLO Wetland Hyde Primary India Surface	m is revised from Mic//www.nrcs.usda.gov	/Internet/F	SE_DOCUMENTS  ired; check all that  X Water-Sta	/nrcs142 apply) ined Lea	ves (B9)	293.docx	NRCS Field Indicators of I )  Secondary Inc. Surface S	Hydric Soils, Version 7.0, 2015  dicators (minimum of two required toil Cracks (B6)
Depth (ir Remarks: This data for Errata. (http:  HYDROLO Wetland Hyd Primary India Surface High Wa	m is revised from Mic//www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of of of the cators) Water (A1) ter Table (A2)	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa	/nrcs142 apply) ined Lea auna (B1	2p2_0512 aves (B9)	293.docx	NRCS Field Indicators of I  Secondary Inc. Surface S X Drainage	dicators (minimum of two required coil Cracks (B6) Patterns (B10)
Depth (ir Remarks: This data for Errata. (http:  HYDROLO Wetland Hy Primary India Surface High Wa X Saturatio	m is revised from Mic//www.nrcs.usda.gov	/Internet/F	ired; check all that  X Water-Sta  Aquatic Fa  True Aqua	apply) ined Lea auna (B1	oves (B9) 3) s (B14)	93.docx	NRCS Field Indicators of I  Secondary Inc Surface S X Drainage Dry-Seas	dicators (minimum of two required toil Cracks (B6) Patterns (B10) on Water Table (C2)
Depth (ir Remarks: This data for Errata. (http:  HYDROLO  Wetland Hy Primary India Surface High Wa X Saturatic Water M	m is revised from Mid//www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of of of the cators) Water (A1) ter Table (A2) on (A3) arks (B1)	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen	apply) ined Lea auna (B1 tic Plant	eves (B9) 3) s (B14) Odor (C1)	(93. docx)	NRCS Field Indicators of Indic	Hydric Soils, Version 7.0, 2015  dicators (minimum of two required to Cracks (B6)  Patterns (B10)  on Water Table (C2)  Burrows (C8)
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Midwest Region Version 2.0

Project/Site: Leavenworth FCI		City/Cour	nty: Leavenv	worth/Leavenworth	Sampling	Date: <u>7/28/2020</u>	
Applicant/Owner: FBOP				State: KS	S Sampling	Point: UPL G	
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	nge:			
Landform (hillside, terrace, etc.): hillside		I	Local relief (c	concave, convex, n	ione): convex		
Slope (%): 3 Lat: 39.333903		Long:	94.923802		Datum: WG	S 84	
Soil Map Unit Name: Knox silt laom, 7-12% slopes				NWI d	classification: n/a		
Are climatic / hydrologic conditions on the site typical for	this time of	year?	Yes X	No (If n	no, explain in Rem	arks.)	
Are Vegetation, Soil, or Hydrologysignature.	gnificantly d	listurbed? A	Are "Normal C	ircumstances" pre	esent? Yes X	No	
Are Vegetation, Soil, or Hydrologyna	aturally prob	lematic? (I	If needed, exp	plain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site map	p showin	g samplin	g point lo	cations, trans	ects, importa	nt features, etc	٥.
Hydrophytic Vegetation Present? Yes No	Х	Is the	Sampled Ar	ea			
	X		n a Wetland?		No X		
	Х						
Remarks:							
NECETATION III de la constitue							Ш
VEGETATION – Use scientific names of plan	Absolute	Dominant	Indicator				_
Tree Stratum (Plot size: )	% Cover	Species?	Indicator Status	Dominance Tes	st worksheet:		
1.				Number of Dom	inant Species Tha	at	
2				Are OBL, FACW	•	1 (A)	
3					f Dominant Specie		
4				Across All Strata		2 (B)	
5		=Total Cover		Percent of Domi Are OBL, FACW	inant Species Tha	nt 50.0% (A/B)	٤)
Sapling/Shrub Stratum (Plot size: )		Total Cove.		AIC ODE, I ACT.	7, 01 1 AO.		')
1.				Prevalence Inde	ex worksheet:		
2.				Total % Co	ver of:	Multiply by:	
3				OBL species		= 0	
4				FACW species_	10 x 2		
5		Total Cover		FAC species	5 x3		
Herb Stratum (Plot size: 5' )	=	=Total Cover		FACU species _ UPL species	60 x 4		
1. Phalaris arundinacea	10	No	FACW	Column Totals:	75 (A)	= <u>0</u> (B)	
Fridans aranamacea     Festuca arundinacea	60	Yes	FACU	_	$\frac{75}{\text{ndex}} = B/A =$	3.67	
3.				- I			_
4.				Hydrophytic Ve	egetation Indicate	ors:	
5.					est for Hydrophytic	> Vegetation	
6					nce Test is >50%		
7					nce Index is ≤3.0 <sup>1</sup>	1	
8					ogical Adaptations emarks or on a se	s <sup>1</sup> (Provide supportir	ηg
9					: Hydrophytic Veg		
10	70 =	=Total Cover				, , ,	
Woody Vine Stratum (Plot size: )		Total CC.S.			dric soil and wetla ess disturbed or pr	and hydrology must oblematic.	
Toxicodendron radicans	5	Yes	FAC	Hydrophytic			_
2.				Vegetation			
	5 =	=Total Cover		Present?	Yes N	lo <u>X</u>	_
Remarks: (Include photo numbers here or on a separa	ite sheet.)						

SOIL Sampling Point: UPL G

Depth (inches) 0-14			Redo	x Featur	es			
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
I ———	10YR 4/3	100	, , ,				Loamy/Clayey	more silt present
14-18	10YR 4/3	100					Loamy/Clayey	•
	oncentration, D=Deple	etion, RM=F	Reduced Matrix, N	/IS=Mas	ked San	d Grains.		PL=Pore Lining, M=Matrix.
Hydric Soil			0 1 01		. (0.4)			or Problematic Hydric Soils <sup>3</sup> :
— Histosol	` '		Sandy Gle	-	rıx (S4)			rairie Redox (A16)
	pipedon (A2)		Sandy Red		• •			nganese Masses (F12)
Black His			Stripped M		5)			rent Material (F21)
	n Sulfide (A4)		Dark Surfa	` '	! ( <b>-</b> 1)			allow Dark Surface (F22)
2 cm Mu	Layers (A5)		Loamy Mu	•	` '		Other (E	explain in Remarks)
	d Below Dark Surface	(A11)	Loamy Gle Depleted N	-				
	ark Surface (A12)	(A11)	Redox Dai	`	,		<sup>3</sup> Indicators o	f hydrophytic vegetation and
	lucky Mineral (S1)		Depleted [		, ,	`		hydrology must be present,
	icky Peat or Peat (S3)		Redox De		` '	,		listurbed or problematic.
_	Layer (if observed):				(. 0)			
Type:	Layer (ii observed).							
Depth (in	iches).		_				Hydric Soil Present?	Yes No X
			_				•	
					. –	293.docx	s)	
						293.uUCX	.)	
HYDROLO	OGY					293.UOCX	.)	
						293.docx	.)	
Wetland Hy	OGY drology Indicators: cators (minimum of on	ne is require	ed; check all that	apply)		293.ducx		ndicators (minimum of two required
Wetland Hyd	drology Indicators:	ne is require	ed; check all that Water-Sta				Secondary I	ndicators (minimum of two required Soil Cracks (B6)
Wetland Hyden Primary India	drology Indicators: cators (minimum of on	ne is require		ined Lea	ves (B9)		Secondary II	
Wetland Hyden Primary India	drology Indicators: cators (minimum of on Water (A1) ter Table (A2)	ne is require	Water-Sta	ined Lea auna (B1	ves (B9)		Secondary IiSurfaceDrainage	Soil Cracks (B6)
Wetland Hyde Primary Indice Surface of High Wate Saturation	drology Indicators: cators (minimum of on Water (A1) ter Table (A2)	ne is require	Water-Sta	ined Lea auna (B1 itic Plant	ves (B9) 3) s (B14)		Secondary II Surface Drainage	Soil Cracks (B6) e Patterns (B10)
Wetland Hyd Primary India Surface High Wa Saturatic Water M	drology Indicators: cators (minimum of on Water (A1) tter Table (A2) on (A3)	ne is require	Water-Sta Aquatic Fa True Aqua	ined Lea auna (B1 itic Plant Sulfide (	ves (B9) 3) s (B14) Odor (C1	)	Secondary II Surface Drainage Dry-Sea Crayfish	Soil Cracks (B6) e Patterns (B10) son Water Table (C2)
Wetland Hyden Primary India Surface Migh Wa Saturation Water Might Sediment Drift Dep	drology Indicators: cators (minimum of on Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3)	ne is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence	ined Lea auna (B1 itic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on lead Iron	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturatie	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hyden Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma	drology Indicators: cators (minimum of on Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4)	ne is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Ddor (C1 eres on lead Iron attion in Ti	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
Wetland Hyder Primary Indice Surface Surface High Wa Saturation Water Mater Ma	drology Indicators: cators (minimum of on Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Lea auna (B1 itic Plant Sulfide ( Rhizosph of Reduc in Reduc Surface	ves (B9) 3) s (B14) Odor (C1 eres on led Iron of tion in Ti	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hyderimary India Surface of High Was Saturation Water Management Sediment Drift Dep Algal Management Iron Dep Inundation	drology Indicators: cators (minimum of on Water (A1) Inter Table (A2) In (A3) In (A3) In (B1) In Deposits (B2) In Original (B3) In or Crust (B4) In Original (B5) In Visible on Aerial Im	nagery (B7)	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or	ined Lea auna (B1 sulfide ( Rhizosph of Reduc in Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron etion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
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Wetland Hyderimary India Surface of High Was Saturation Water Management Sediment Drift Dep Algal Management Inundation Sparsely Field Obsertions	drology Indicators: cators (minimum of on Water (A1) Inter Table (A2) Inter Table (A2) Inter Table (B1) Int Deposits (B2) Intor Crust (B4) Intor Crust (B4) Intor Crust (B5) Intor Visible on Aerial Improved the one of the	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in R	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Tion (C7) a (D9) demarks)	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
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Midwest Region Version 2.0

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling Date:	7/28/2020
Applicant/Owner: FBOP				State: KS	Sampling Point:	WET MM
Investigator(s): C.Hanlon, S.		Section, 7	Γownship, Ra	inge:		
Landform (hillside, terrace, etc.): hillside			Local relief (d	concave, convex, none):	convex	
Slope (%): 2 Lat: 39.336450		Long: -	94.932629		Datum: WGS 84	
Soil Map Unit Name: Knox silt loam, 7-12% slopes				NWI classif	ication: n/a	
Are climatic / hydrologic conditions on the site typical for	or this time o	of year?	Yes X	No (If no, exp	olain in Remarks.)	
Are Vegetation, Soil, or Hydrologys	significantly	disturbed? A	Are "Normal (	Circumstances" present?	Yes X No	
Are Vegetation, Soil, or Hydrology				plain any answers in Rei	<u> </u>	
SUMMARY OF FINDINGS – Attach site ma	ap showii	ng samplir	ng point lo	cations, transects	, important feat	ures, etc.
Hydrophytic Vegetation Present? Yes X No	)	Is the	Sampled A	rea		
Hydric Soil Present? Yes X No			n a Wetland		No	
Wetland Hydrology Present? Yes X No						
Remarks:						
Wetland hydrology is from hillside seeps and outfall fr	om upstrear	n pond. Wetla	and flows into	stream L.		
VEGETATION – Use scientific names of pla		Daminant	la di satan	Γ		
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:	
1				Number of Dominant	Species That	
2.				Are OBL, FACW, or F	•	(A)
3				Total Number of Domi	•	
4				Across All Strata:	2	(B)
5		=Total Cover		Percent of Dominant S	•	00/ (A/D)
Sapling/Shrub Stratum (Plot size:		=10tal Cover		Are OBL, FACW, or F	AC: 100.	0% (A/B)
1.	1			Prevalence Index wo	orksheet:	
2.				Total % Cover of		y:
3.				OBL species 90		
4.				FACW species 0	x 2 = 0	
5				FAC species 0		
		=Total Cover		FACU species 0		
Herb Stratum (Plot size: 5' )	10	Voc	ODI	UPL species 0		
Scirpus atrovirens     Lythrum salicaria	10	Yes No	OBL OBL	Column Totals: 90 Prevalence Index =	` ′	) (B)
Carex stipata	30	Yes	OBL	FIEVAICHUE HIUEA -	= D/A = 1.00	<del></del>
Scirpus atrovirens	10	No	OBL	Hydrophytic Vegetat	ion Indicators:	
5			000		Hydrophytic Vegetat	ion
6.				X 2 - Dominance Te		
7.				X 3 - Prevalence Inc		
8.					Adaptations <sup>1</sup> (Provid	
9					s or on a separate sl	,
10				<del></del>	ophytic Vegetation <sup>1</sup> (	
		=Total Cover		<sup>1</sup> Indicators of hydric so		
Woody Vine Stratum (Plot size:	)			be present, unless dis	turbed or problemati	C.
1 2.				Hydrophytic		
2.		=Total Cover		Vegetation Present? Yes	X No	
Pamarka: (Include photo numbers here or on a cons		=10tai 00vci		11000111. 100_	<u> </u>	
Remarks: (Include photo numbers here or on a separate	rate sneet.)					

**SOIL** Sampling Point: WET MM

Profile Desci Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-14	10YR 5/1	100					Loamy/Clayey	
14-18	10YR 5/2	95	10YR 5/6		RM		Loamy/Clayey	
				<u> </u>				
								-
	-							
		oletion, RM	/I=Reduced Matrix, I	√S=Mas	ked Sand	l Grains.		n: PL=Pore Lining, M=Matrix.
Hydric Soil II			0 01		-i (O.4)			rs for Problematic Hydric Soils <sup>3</sup> :
Histosol (	•		Sandy Gle					st Prairie Redox (A16)
	pedon (A2)		Sandy Re					Manganese Masses (F12)
Black His			Stripped N		0)			Parent Material (F21)
	Sulfide (A4)		Dark Surfa	` '	oral (F1)			Shallow Dark Surface (F22)
2 cm Muc	Layers (A5)		Loamy Mu Loamy Gle	-			Othe	r (Explain in Remarks)
		o (A11)		•	` '			
	Below Dark Surfac	c (A11)	X Depleted I	,	,		3Indiact-	re of hydrophytic vogototics and
	k Surface (A12) ucky Mineral (S1)		Redox Da Depleted I		` ,			rs of hydrophytic vegetation and and hydrology must be present,
	cky Peat or Peat (S	3)	Redox De		, ,			ss disturbed or problematic.
		-		prodoion	3 (1 0)		unio	so distarbed of problematic.
	ayer (if observed)	•						
Type: _	1 \						Hydric Soil Presen	t? Yes X No
Denth (inc	ches).							
	n is revised from M		gional Supplement				NRCS Field Indicator	s of Hydric Soils, Version 7.0, 2015
Remarks: This data form	n is revised from M						NRCS Field Indicator	
Remarks: This data forn Errata. (http://	n is revised from M /www.nrcs.usda.go						NRCS Field Indicator	
Remarks: This data form Errata. (http://	n is revised from M /www.nrcs.usda.go	v/Internet/I					NRCS Field Indicator	
Remarks: This data form Errata. (http://	n is revised from M /www.nrcs.usda.go	v/Internet/I	FSE_DOCUMENTS	apply)	2p2_0512		NRCS Field Indicator )  Seconda	s of Hydric Soils, Version 7.0, 2015
Remarks: This data forn Errata. (http:// HYDROLOG Wetland Hyd Primary Indicators	m is revised from M/www.nrcs.usda.go  GY  rology Indicators: ators (minimum of electric part of electric par	v/Internet/I	FSE_DOCUMENTS	apply)	2p2_0512		NRCS Field Indicator )  Seconda	s of Hydric Soils, Version 7.0, 2015  ry Indicators (minimum of two required ace Soil Cracks (B6)
Remarks: This data form Errata. (http:// HYDROLOG Wetland Hyd Primary Indication Surface V X High Wat	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of other (A1) er Table (A2)	v/Internet/I	uired; check all that  X Water-Sta	apply) ined Lea	2p2_0512 aves (B9) 3)		NRCS Field Indicator  Seconda Surfa	ry Indicators (minimum of two required ace Soil Cracks (B6) mage Patterns (B10)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic: Surface V  X High Wat  X Saturation	GY  Irology Indicators: ators (minimum of other (A1) er Table (A2) n (A3)	v/Internet/I	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua	apply) ined Lea auna (B1	aves (B9) 3) s (B14)	(93.docx)	NRCS Field Indicator  Seconda Surfa X Drair Dry-	ry Indicators (minimum of two required ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indication Surface V  X High Watt X Saturation Water Ma	GY  rology Indicators: ators (minimum of electron of the content o	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua	apply) ined Lea auna (B1 sulfide (	aves (B9) 3) s (B14) Odor (C1)	(93.docx)	NRCS Field Indicator  Seconda  Surfa X Drain Dry- Cray	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
Remarks: This data forn Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic.  Surface V  X High Wat  X Saturation  Water Ma  Sediment	r is revised from M /www.nrcs.usda.go GY rology Indicators: ators (minimum of of the control o	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 stitc Plant Sulfide ( Rhizosph	aves (B9) 3) s (B14) Odor (C1) eres on L	(93.docx)	NRCS Field Indicator  Seconda Surfa X Draii Dry- Cray ots (C3) Satu	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic.  Surface V  X High Wat  X Saturation  Water Ma  Sediment  Drift Depo	GY  Irology Indicators: ators (minimum of other (A1) er Table (A2) n (A3) arks (B1) Deposits (B2) posits (B3)	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 sulfide ( Rhizosph of Reduc	aves (B9) 3) ss (B14) Odor (C1) beres on L	) Living Ro	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indicator  Surface V  X High Watt  X Saturation  Water Matter	GY  Irology Indicators: ators (minimum of or Vater (A1) er Table (A2) in (A3) arks (B1) Deposits (B2) posits (B3) or Crust (B4)	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Redu on Reduc	aves (B9) 3) s (B14) Odor (C1) heres on Lection in Til	) Living Ro	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic: Surface V  X High Wat  X Saturation Water Ma  Sediment Drift Depo  Algal Mat Iron Depo	GY  Irology Indicators: ators (minimum of elements) ators (Minimum of elements) arks (B1) a Deposits (B2) bosits (B3) or Crust (B4) bosits (B5)	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence Recent Iro	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduce on Reduce Surface	aves (B9) 3) s (B14) Odor (C1) eres on L ced Iron ( ction in Tile	) Living Ro	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indica  Surface V  X High Wat  X Saturation  Water Ma  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation	GY  rology Indicators: ators (minimum of elements) ators (Minimum of elements) arks (B1) arks (B1) beits (B2) cosits (B3) or Crust (B4) beits (B5) n Visible on Aerial I	v/Internet/I	uired; check all that  X Water-Sta  Aquatic Fa  True Aqua  Hydrogen  Oxidized Fa  Presence  Recent Iro  Thin Muck  37)  Gauge or	apply) ined Lea auna (B1 sulfide ( Rhizosph of Reduce on Reduce Surface Well Dat	aves (B9) 3) as (B14) Ddor (C1) areas on Led Iron (ction in Tile (C7) area (D9)	) Living Ro	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
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Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indica Surface V  X High Wat  X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely  Field Observ	rology Indicators: ators (minimum of electric (Management) ators	v/Internet/I	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat	aves (B9) 3) s (B14) Odor (C1) teres on Leced Iron (ction in Tile (C7) ta (D9) Remarks)	) Living Ro	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indica  Surface V  X High Wate  X Saturation  Water Ma  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation  Sparsely  Field Observ  Surface Water	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of electric (A1) er Table (A2) in (A3) arks (B1) in Deposits (B2) in Sits (B3) or Crust (B4) in Visible on Aerial If Vegetated Concave artions: ar Present?	magery (Be Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc surface Well Dat blain in F	aves (B9) 3) s (B14) Odor (C1) eres on Led Iron (ction in Tile (C7) a (D9) Remarks) nches):	) Living Ro C4) Illed Soils	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic: Surface V  X High Wat  X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely  Field Observ  Surface Water  Water Table I	rois revised from M/www.nrcs.usda.go  GY  rology Indicators: ators (minimum of electric (A1) er Table (A2) er (A3) er (A3) er (A3) er (B4) esits (B3) er Crust (B4) esits (B5) en Visible on Aerial I Vegetated Concave rations: er Present?  Ye Present?	magery (Ee Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide (Rhizosph of Reduce on Reduce Surface Well Dat blain in F Depth (i	aves (B9) 3) s (B14) Ddor (C1) beres on Letion in Tile (C7) ca (D9) Remarks) nches): _ nches): _	) Living Ro C4) Illed Soils	Seconda Surfa X Drain Dry- Cray oots (C3) Satu Stun 6 (C6) X Geo X FAC	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data forn Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indic: Surface V  X High Water Ma  Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely  Field Observ  Surface Water  Water Table If Saturation Prince	rology Indicators: ators (minimum of evaluations) arks (B1) arks (B1) beits (B3) cor Crust (B4) beits (B5) n Visible on Aerial I Vegetated Concave vations: ar Present? Present? Yesent? Yesent?	magery (Be Surface (	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc surface Well Dat blain in F	aves (B9) 3) s (B14) Ddor (C1) beres on Letion in Tile (C7) ca (D9) Remarks) nches): _ nches): _	) Living Ro C4) Illed Soils	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd Primary Indica Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely  Field Observ Surface Water Water Table I Saturation Pro (includes cap	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of or	Imagery (Bes X	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in F  Depth (i Depth (i	aves (B9) 3) s (B14) Odor (C1) eres on Leced Iron (ction in Tile (C7) ea (D9) Remarks) nches): nches): nches):	Living Ro C4)	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indica  Surface V  X High Wate  X Saturation  Water Ma  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation  Sparsely  Field Observ  Surface Water  Water Table I  Saturation Pro  (includes cap  Describe Reco	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of or	Imagery (Bes X	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in F  Depth (i Depth (i	aves (B9) 3) s (B14) Odor (C1) eres on Leced Iron (ction in Tile (C7) ea (D9) Remarks) nches): nches): nches):	Living Ro C4)	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd Primary Indica Surface V X High Water X Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation Sparsely  Field Observ Surface Water Water Table I Saturation Pro (includes cap	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of or	Imagery (Bes X	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in F  Depth (i Depth (i	aves (B9) 3) s (B14) Odor (C1) eres on Leced Iron (ction in Tile (C7) ea (D9) Remarks) nches): nches): nches):	Living Ro C4)	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
Remarks: This data form Errata. (http://  HYDROLOG  Wetland Hyd  Primary Indica  Surface V  X High Wate  X Saturation  Water Ma  Sediment  Drift Depo  Algal Mat  Iron Depo  Inundation  Sparsely  Field Observ  Surface Water  Water Table I  Saturation Pro  (includes cap  Describe Reco	m is revised from M/www.nrcs.usda.go  GY  Irology Indicators: ators (minimum of or	Imagery (Bes X	uired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 37) Gauge or (B8) Other (Exp	apply) ined Lea auna (B1 stic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in F  Depth (i Depth (i	aves (B9) 3) s (B14) Odor (C1) eres on Leced Iron (ction in Tile (C7) ea (D9) Remarks) nches): nches): nches):	Living Ro C4)	Seconda	ry Indicators (minimum of two require ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	_ Sampling Da	ite: <u>7/30/</u>	/2020
Applicant/Owner: FBOP				State: KS	Sampling Po	int: W	ET U
Investigator(s): C.Hanlon, S.		Section, 7	Гownship, Ra	ange:			
Landform (hillside, terrace, etc.): hillside			Local relief (	concave, convex, none	): convex		
Slope (%): 3 Lat: 39.333749						<del></del> 34	
Soil Map Unit Name: Knox silt loam, 7-12%					= ———sification: n/a		
Are climatic / hydrologic conditions on the site typical	for this time o	f vear?	Yes X	No (If no, ex		s )	
Are Vegetation , Soil , or Hydrology		-				•	
Are Vegetation, Soil, or Hydrology	•						_
SUMMARY OF FINDINGS – Attach site m						features	s, etc.
Hydrophytic Vegetation Present? Yes X N	lo	Is the	Sampled A	rea			
	lo		n a Wetland		No		
lai a an an an an an an an an <del>an a</del> n an	lo						
Remarks:		<u>-</u>					
Wetland hydrology is from hillside seeps. Wetland flo	ows into strea	m V.					
<b>VEGETATION</b> – Use scientific names of pla	ants.						
Tree Christian (Diet sine)	Absolute	Dominant	Indicator	Daminana Taatuu			
<u>Tree Stratum</u> (Plot size: <u>30'</u> )  1. Salix babylonica	% Cover 10	Species? Yes	Status FAC	Dominance Test we			
2.		163	TAC	Number of Dominan Are OBL, FACW, or	•	3	(A)
3.				Total Number of Do	_		_ ( ' ' '
4.				Across All Strata:	minant Species	3	(B)
5.				Percent of Dominan	t Species That		
_	10	=Total Cover		Are OBL, FACW, or	•	100.0%	_(A/B)
Sapling/Shrub Stratum (Plot size: 15"	.)						
1				Prevalence Index w			
2.				Total % Cover		Itiply by:	_
3.	·			· —	80 x1=_	80	-
4 5.				FACW species FAC species	$\frac{5}{10}$ $x 2 = $	10 30	-
<del> </del>		=Total Cover		FACU species	$\frac{10}{0}$ $x4 = $	0	-
Herb Stratum (Plot size: 5' )				UPL species	0 x 5 =	0	-
1. Scirpus atrovirens	40	Yes	OBL	· —	95 (A)	120	<b>–</b> (B)
2. Eupatorium perfoliatum	10	No	OBL	Prevalence Index	= B/A =	1.26	_
3. Carex stipata	30	Yes	OBL				
4. Equisetum hyemale	55	No	FACW	Hydrophytic Vegeta	ation Indicators	:	
5				l —	or Hydrophytic Ve	egetation	
6				X 2 - Dominance			
7				X 3 - Prevalence I		Duardala arr	
8. 9.				· — · · ·	al Adaptations <sup>1</sup> (F Irks or on a sepal		
					drophytic Vegetat		
10	85	Total Cover		¹Indicators of hydric			,
Woody Vine Stratum (Plot size:	)			be present, unless d			must
1	·			Hydrophytic			
2.				Vegetation			
		=Total Cover	_	Present? Yes	s_X_No_		
Remarks: (Include photo numbers here or on a sepa	arate sheet.)						

SOIL Sampling Point: WET U

0-12			Redo	x Feature	es			
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
12-18	10YR 5/1	100					Loamy/Clayey	
	10YR 5/2	100					Loamy/Clayey	
	_							
<del></del>								
Type: C=Concen	•	tion, RM=	Reduced Matrix, I	MS=Masl	ked Sand	Grains.		Pore Lining, M=Matrix.
Hydric Soil Indica	ators:		0   0   -		···· (O.4)			Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	· (40)		Sandy Gle		rix (S4)			e Redox (A16)
Histic Epipedo	` '		Sandy Re		• • • • • • • • • • • • • • • • • • • •			nese Masses (F12)
Black Histic (A	,		Stripped N		<b>)</b>			Material (F21)
Hydrogen Sulf			Dark Surfa	` '	! ( <b>-</b> 4)			w Dark Surface (F22)
Stratified Laye	, ,		Loamy Mu	-			Otner (Expla	ain in Remarks)
2 cm Muck (A	10) w Dark Surface (	<b>A11</b> \	Loamy Gle	-				
Thick Dark Su	`	A11)	X Depleted I Redox Da				3Indicators of his	drophytic vegetation and
	` ,				` '			rology must be present,
Sandy Mucky	Peat or Peat (S3)		Depleted I  Redox De				•	rbed or problematic.
			RCGOX BC	pressions	3 (1 0)	Ī	unicoo dista	Toda or problematic.
Restrictive Layer	(It observed):							
Type:	\ .		<u> </u>				Uhadala Oali Barranio	V V N-
Depth (inches)	)						Hydric Soil Present?	Yes X No
IYDROLOGY								
Wetland Hydrolog	gy Indicators:							
Primary Indicators	•	<u>e is requir</u>	ed; check all that	apply)				ators (minimum of two require
X Surface Water	` '		X Water-Sta		` '			Cracks (B6)
	` '		Aquatic Fa				X Drainage Pa	atterns (B10)
High Water Ta	3)		True Aqua	tic Plant	s (B14)			,
High Water Ta X Saturation (A3	,		<del></del> ·		` '			Water Table (C2)
High Water Ta X Saturation (A3 Water Marks (			Hydrogen		Odor (C1)		X Crayfish Bu	Water Table (C2) rrows (C8)
High Water Ta X Saturation (A3 Water Marks ( Sediment Dep	oosits (B2)		Oxidized F	Rhizosph	Odor (C1) eres on l	iving Ro	X Crayfish But pots (C3) Saturation V	Water Table (C2) rrows (C8) risible on Aerial Imagery (C9)
High Water Ta X Saturation (A3 Water Marks ( Sediment Dep Drift Deposits	posits (B2) (B3)		Oxidized F Presence	Rhizosph of Reduc	Odor (C1) eres on l ced Iron (	iving Ro	X Crayfish Bur oots (C3) Saturation V Stunted or S	Water Table (C2) rrows (C8) risible on Aerial Imagery (C9) stressed Plants (D1)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits  Algal Mat or C	oosits (B2) (B3) Crust (B4)		Oxidized F Presence Recent Iro	Rhizosph of Reduc on Reduc	Odor (C1) eres on l ced Iron ( tion in Ti	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits  Algal Mat or C  Iron Deposits (	crust (B4) (B5)	ogory (P7	Oxidized F Presence Recent Iro Thin Muck	Rhizosph of Reduc on Reduc Surface	Odor (C1) eres on led Iron ( tion in Ti	iving Ro	X Crayfish Bur oots (C3) Saturation V Stunted or S	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep Drift Deposits Algal Mat or C Iron Deposits ( Inundation Vis	oosits (B2) (B3) Crust (B4) (B5) sible on Aerial Im-	• • • •	Oxidized F Presence Recent Iro Thin Muck	Rhizosph of Reduc on Reduc Surface Well Dat	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9)	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta X Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C Iron Deposits ( Inundation Vis Sparsely Vege	oosits (B2) (B3) crust (B4) (B5) sible on Aerial Imetated Concave S	• • • •	Oxidized F Presence Recent Iro Thin Muck	Rhizosph of Reduc on Reduc Surface Well Dat	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9)	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits  Algal Mat or C  Iron Deposits ( Inundation Vis  Sparsely Vege	oosits (B2) (B3) crust (B4) (B5) sible on Aerial Impetated Concave Sens:	• • • •	Oxidized F Presence Recent Irc Thin Muck ) Gauge or 8) Other (Exp	Rhizosph of Reduc on Reduc Surface Well Data Dlain in R	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) cemarks)	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits ( Algal Mat or C  Iron Deposits ( Inundation Vis Sparsely Vege  Field Observation  Surface Water Pre	posits (B2) (B3) Frust (B4) (B5) Sible on Aerial Impetated Concave Series: Page 17  Present?  Present?  Yes	• • • •	Oxidized F Presence Recent Irc Thin Muck ) Gauge or 8) Other (Exp	Rhizosph of Reduc on Reduc Surface Well Data Dlain in R	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) emarks)	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) rrows (C8) lisible on Aerial Imagery (C9) Stressed Plants (D1) Position (D2)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits ( Iron Deposits ( Inundation Vis Sparsely Vege  Field Observation  Water Table Preservation (A3  Sediment Deposits ( Inundation Vis Sparsely Vege	cosits (B2) (B3) Crust (B4) (B5) Sible on Aerial Impetated Concave Series: Sesent? Yes ent? Yes	Surface (B	Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp No X No X	Rhizosph of Reduc on Reduc Surface Well Dat blain in R Depth (ii	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) demarks) nches): _ nches): _	Living Ro	X Crayfish Bursons (C3) Saturation V Stunted or S X Geomorphic X FAC-Neutra	Water Table (C2) Frows (C8) Frost (C9) Stressed Plants (D1) Frostition (D2) I Test (D5)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits ( Iron Deposits ( Inundation Vis Sparsely Vege  Field Observation  Surface Water Presentation Presentation	crust (B2) (B3) crust (B4) (B5) sible on Aerial Impetated Concave Seasont? esent? Yes ent? Yes t? Yes	Surface (B	Oxidized F Presence Recent Irc Thin Muck ) Gauge or 8) Other (Exp	Rhizosph of Reduc on Reduc Surface Well Data Dlain in R	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) demarks) nches): _ nches): _	iving Ro	X Crayfish But Saturation V Stunted or S (C6) X Geomorphic	Water Table (C2) Frows (C8) Frost (C9) Stressed Plants (D1) Frostition (D2) I Test (D5)
High Water Ta X Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C Iron Deposits ( Inundation Vis Sparsely Vege Field Observation Surface Water Present Water Table Present (includes capillary	crust (B2) (B3) crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) crust (B2) cr	Surface (B	Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp No X No X No X	Rhizosph of Reduc on Reduc Surface Well Dat Dlain in R Depth (in Depth (in	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) eremarks) enches):nches):	Living Ro C4) Illed Soils	X Crayfish Bur Saturation V Stunted or S S (C6) X Geomorphic X FAC-Neutra	Water Table (C2) Frows (C8) Frost (C9) Stressed Plants (D1) Frostition (D2) I Test (D5)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits ( Iron Deposits ( Inundation Vis Sparsely Vege  Field Observation  Surface Water Presentation Presentation	crust (B2) (B3) crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) crust (B2) cr	Surface (B	Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp No X No X No X	Rhizosph of Reduc on Reduc Surface Well Dat Dlain in R Depth (in Depth (in	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) eremarks) enches):nches):	Living Ro C4) Illed Soils	X Crayfish Bur Saturation V Stunted or S S (C6) X Geomorphic X FAC-Neutra	Water Table (C2) Frows (C8) Frost (C9) Stressed Plants (D1) Frostition (D2) I Test (D5)
High Water Ta  X Saturation (A3  Water Marks ( Sediment Dep  Drift Deposits  Algal Mat or C  Iron Deposits ( Inundation Vis Sparsely Vege  Field Observation  Surface Water Presentation Present  includes capillary	crust (B2) (B3) crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) (B5) sible on Aerial Impetated Concave Services  crust (B4) crust (B2) cr	Surface (B	Oxidized F Presence Recent Iro Thin Muck Gauge or Other (Exp No X No X No X	Rhizosph of Reduc on Reduc Surface Well Dat Dlain in R Depth (in Depth (in	Odor (C1) eres on I ced Iron ( tion in Ti (C7) a (D9) eremarks) enches):nches):	Living Ro C4) Illed Soils	X Crayfish Bur Saturation V Stunted or S S (C6) X Geomorphic X FAC-Neutra	Water Table (C2) Frows (C8) Frost (C9) Stressed Plants (D1) Frostition (D2) I Test (D5)

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling Da	ate: <u>7/29/</u>	/2020
Applicant/Owner: FBOP				State: KS	Sampling Po	int: W	ET O
Investigator(s): C.Hanlon, S.		Section, 7	Γownship, Ra	ange:			
Landform (hillside, terrace, etc.): hillside			Local relief (	concave, convex, none	:): convex		
Slope (%):3 Lat: 39.332834		Long:	94.926283		Datum: WGS	84	
Soil Map Unit Name: Knox silt loam, 7-12%				NWI clas	sification: PFOAl	h	
Are climatic / hydrologic conditions on the site typical for	or this time o	f year?	Yes X	No (If no, e	xplain in Remark	 (s.)	
Are Vegetation , Soil , or Hydrology	significantly o	disturbed? A	Are "Normal (				
Are Vegetation , Soil , or Hydrology	naturally prol	olematic? (	If needed, ex	κplain any answers in F	Remarks.)		_
SUMMARY OF FINDINGS – Attach site ma						features	s, etc.
Hydrophytic Vegetation Present? Yes X No	)	Is the	Sampled A	rea			
		l l	n a Wetland		No		
Wetland Hydrology Present? Yes X No							
Remarks:		<u>-</u>					
Wetland hydrology is from hillside seeps and stream	M. Wetland f	lows into pon	d N.				
VEGETATION – Use scientific names of pla							
<u>Tree Stratum</u> (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test w	orksheet:		
1. Fraxinus pennsylvanica	40	Yes	FACW	Number of Dominar			
2. ulmus rubra	30	Yes	FAC	Are OBL, FACW, or	•	3	(A)
3.				Total Number of Do	- minant Species		-
4.				Across All Strata:	· <u>-</u>	3	_(B)
5				Percent of Dominan	•		
	70	=Total Cover		Are OBL, FACW, or	· FAC:	100.0%	_ (A/B)
Sapling/Shrub Stratum (Plot size:	)			D			
1.				Prevalence Index v		Itiply by:	
2. 3.	-			Total % Cover OBL species	5 x 1 =	Itiply by: 5	_
4.				FACW species	40 x 2 =	80	-
5.				FAC species	30 x 3 =	90	-
	-	=Total Cover		FACU species	0 x 4 =	0	_
Herb Stratum (Plot size: 5' )				UPL species	0 x 5 =	0	_
1. Carex stipata	5	Yes	OBL	Column Totals:	75 (A)	175	(B)
2				Prevalence Index	c = B/A =	2.33	_
3.							
4				Hydrophytic Veget			
5 6.				X 2 - Dominance	or Hydrophytic V	egetation	
7				X 3 - Prevalence I			
8.				l <del></del>	al Adaptations <sup>1</sup> (l	Provide sur	pportina
9.				l —	arks or on a sepa		
10				Problematic Hy	drophytic Vegeta	tion <sup>1</sup> (Expl	ain)
	5	=Total Cover		<sup>1</sup> Indicators of hydric	soil and wetland	hydrology	must
Woody Vine Stratum (Plot size:	)			be present, unless of	disturbed or probl	ematic.	
1				Hydrophytic			
2				Vegetation			
		=Total Cover		Present? Yes	s_XNo_		
Remarks: (Include photo numbers here or on a separ	rate sheet.)						

SOIL Sampling Point: WET O

Hydric Soil Indicators:  Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Loamy Mucky Mineral (F1)  2 cm Muck (A10)  Loamy Gleyed Matrix (F2)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sem Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil Indicators:  Hydric Soil Indicators:  Hydric Soil Indicators:  Indicators:  Indicators:  Indicators:  Sandy Redox (S5)  Stripped Matrix (S6)  Loamy Mucky Mineral (F1)  Loamy Gleyed Matrix (F2)  Depleted Matrix (F2)  Depleted Matrix (F3)  Redox Dark Surface (F6)  Redox Depressions (F8)  Hydric Soil Indicators:  Indicators:  Hydric Soil Indi	ayey  ayey  ayey  Location: PL=Pore Lining, M=Matrix.  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
8-13 10YR 5/2 95 10YR 5/6 5 RM M Loamy/Cla  13-18 10YR 5/2 90 10YR 4/6 10 RM M Loamy/Cla  13-18 10YR 5/2 90 10YR 4/6 10 RM M Loamy/Cla  13-18 10YR 5/2 90 10YR 4/6 10 RM M Loamy/Cla  14-14	ayey  ayey  ayey  Location: PL=Pore Lining, M=Matrix.  Indicators for Problematic Hydric Soils³:  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
13-18 10YR 5/2 90 10YR 4/6 10 RM M Loamy/Cla  1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  1thydric Soil Indicators:  Histosol (A1)  Histosol (A2)  Black Histic Epipedon (A2)  Sandy Redox (S5)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Depleted Dark Surface (F6)  Sandy Mucky Mineral (S1)  Depleted Dark Surface (F7)  5 cm Mucky Peat or Peat (S3)  Redox Depressions (F8)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil Inchres (Nttp://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)	Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils³:  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histic Epipedon (A2)  Sandy Redox (S5)  Black Histic (A3)  Stripped Matrix (S6)  Hydrogen Sulfide (A4)  Dark Surface (S7)  Stratified Layers (A5)  Loamy Mucky Mineral (F1)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Depleted Dark Surface (F6)  3 ln  Redox Dark Surface (F7)  5 cm Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil Increase.  Hydric Soil Increase.  Hydroclogy	Location: PL=Pore Lining, M=Matrix.  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  1 Hydric Soil Indicators:  Histosol (A1)  Sandy Gleyed Matrix (S4)  Histic Epipedon (A2)  Sandy Redox (S5)  Black Histic (A3)  Stripped Matrix (S6)  Hydrogen Sulfide (A4)  Dark Surface (S7)  Stratified Layers (A5)  Loamy Mucky Mineral (F1)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Depleted Dark Surface (F6)  3 In  Redox Dark Surface (F7)  5 cm Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil In  Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Location: PL=Pore Lining, M=Matrix.  Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Interval. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Interval. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Interval. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydric Soil Indicators:  Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Sandy Mucky Mineral (F2) Depleted Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S3) Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Indicators for Problematic Hydric Soils <sup>3</sup> :  Coast Prairie Redox (A16)  Iron-Manganese Masses (F12)  Red Parent Material (F21)  Very Shallow Dark Surface (F22)  Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Loamy Mucky Mineral (F1)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  Sandy Mucky Mineral (S1)  Sem Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil I  Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Coast Prairie Redox (A16) Iron-Manganese Masses (F12) Red Parent Material (F21) Very Shallow Dark Surface (F22) Other (Explain in Remarks)  ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stripped Matrix (S6)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (F1)  Sandy Mucky Mineral (F2)  Depleted Dark Surface (F6)  Sandy Mucky Mineral (S1)  See Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil I  Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Iron-Manganese Masses (F12) Red Parent Material (F21) Very Shallow Dark Surface (F22) Other (Explain in Remarks)  Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  2 cm Muck (A10)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  5 cm Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type:  Depth (inches):  Hydric Soil I  Remarks:  This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Red Parent Material (F21) Very Shallow Dark Surface (F22) Other (Explain in Remarks)  ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Some Mucky Mineral (S1) Some Mucky Peat or Peat (S3)  Restrictive Layer (if observed): Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Very Shallow Dark Surface (F22) Other (Explain in Remarks)  ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present?  Yes X No
2 cm Muck (A10) Loamy Gleyed Matrix (F2)  Depleted Below Dark Surface (A11) X Depleted Matrix (F3)  Thick Dark Surface (A12) Redox Dark Surface (F6) 3/10  Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)  5 cm Mucky Peat or Peat (S3) Redox Depressions (F8)  Restrictive Layer (if observed):  Type: Depth (inches): Hydric Soil II  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)	ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Present? Yes X No
Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  5 cm Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	wetland hydrology must be present, unless disturbed or problematic.  Present? Yes X No
Thick Dark Surface (A12) Redox Dark Surface (F6)  Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)  5 cm Mucky Peat or Peat (S3) Redox Depressions (F8)  Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil I  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Ir Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	wetland hydrology must be present, unless disturbed or problematic.  Present? Yes X No
Sandy Mucky Mineral (S1)  5 cm Mucky Peat or Peat (S3)  Restrictive Layer (if observed):  Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	wetland hydrology must be present, unless disturbed or problematic.  Present? Yes X No
S cm Mucky Peat or Peat (S3) Redox Depressions (F8)  Restrictive Layer (if observed):  Type: Depth (inches): Hydric Soil I  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	unless disturbed or problematic.  Present? Yes X No
Restrictive Layer (if observed):  Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	Present? Yes X No
Type: Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	
Depth (inches):  Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field In Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	
Remarks: This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Ir Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Ir Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)  HYDROLOGY	
Wetland Hydrology Indicators:	and the state of t
	econdary Indicators (minimum of two require Surface Soil Cracks (B6)
<del></del>	X Drainage Patterns (B10)
X Saturation (A3)  True Aquatic Plants (B14)	Dry-Season Water Table (C2)
` ` ' <u></u> ' ' ` ' ' '	X Crayfish Burrows (C8)
Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)	X Geomorphic Position (D2)
Iron Deposits (B5)  Thin Muck Surface (C7)	X FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)	
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Water Table Present? Yes X No Depth (inches): 2	
<del></del>	
(includes capillary fringe)	lydrology Present? Yes X No
· · · · · · · · · · · · · · · · · · ·	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if availa	
· · · · · · · · · · · · · · · · · · ·	

Project/Site: Leavenworth FCI		City/Cou	nty: Leaven	worth/Leavenworth	Sampling D	)ate: <u>7/29</u>	/2020
Applicant/Owner: FBOP				State: KS	Sampling P	oint: <u>U</u>	IPL O
Investigator(s): C.Hanlon, S.		Section, 7	Γownship, Ra	inge:			
Landform (hillside, terrace, etc.): hillside			Local relief (d	concave, convex, no	one): convex		
Slope (%): 3 Lat: 39.332913		Long: -	94.926438		Datum: WGS	84	
Soil Map Unit Name: Knox silt loam, 7-12% slopes				NWI c	lassification: n/a		
Are climatic / hydrologic conditions on the site typica	I for this time of	f year?	Yes X	No (If no	o, explain in Rema	rks.)	
Are Vegetation, Soil, or Hydrology	significantly o	listurbed? A	Are "Normal (	 Circumstances" pres	sent? Yes X	No	
Are Vegetation, Soil, or Hydrology	<del></del>			plain any answers i			_
SUMMARY OF FINDINGS – Attach site			ng point lo	cations, transe	ects, importan	t features	s, etc.
Hydrophytic Vegetation Present? Yes	No X	Is the	Sampled A	rea			
	No X		n a Wetland		No X		
Wetland Hydrology Present? Yes	No X			_		-	
Remarks:							
VEGETATION – Use scientific names of p		Danis	In all a stand	ı			
Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test	t worksheet:		
1. Fraxinus pennsylvanica	30	Yes	FACW		nant Species That		
2. Celtis occidentalis	20	Yes	FAC	Are OBL, FACW	•	2	(A)
3				Total Number of	Dominant Species	;	
4				Across All Strata	:	4	_(B)
5		Tatal Causa			nant Species That		(A/D)
<u>Sapling/Shrub Stratum</u> (Plot size: 15'	50 =	Total Cover		Are OBL, FACW	, or FAC:	50.0%	_(A/B)
1. ligustrum sinense	_ <sup>/</sup> 15	Yes	FACU	Prevalence Inde	x worksheet:		
2.				Total % Cov		lultiply by:	
3.				OBL species	0 x 1 =		_
4.				FACW species	30 x 2 =	60	_
5.				FAC species	20 x 3 =	60	_
	15=	Total Cover		FACU species _	25 x 4 =	100	_
Herb Stratum (Plot size: 5' )				UPL species _	0 x 5 =		<b>-</b>
Agrimonia gryposepala	10	Yes	FACU	Column Totals:	`` ′	220	_ <sup>(B)</sup>
2. 3.				Prevalence Inc	jex = B/A =	2.93	_
				Hydrophytic Ver	getation Indicator		
				1	st for Hydrophytic		
6.				l —	ce Test is >50%	9	
7				3 - Prevalenc	ce Index is ≤3.0 <sup>1</sup>		
8.					gical Adaptations <sup>1</sup>	•	
9				data in Re	marks or on a sep	arate sheet	)
10				Problematic	Hydrophytic Veget	ation <sup>1</sup> (Expl	ain)
Washi Vina Chahima (Diahaina	10=	Total Cover			dric soil and wetlan		must
Woody Vine Stratum (Plot size:	_)			be present, unles	ss disturbed or prol	piematic.	
1. 2.				Hydrophytic Vegetation			
<u></u>		Total Cover		_	Yes No	<u> </u>	
Remarks: (Include photo numbers here or on a seg	parate sheet.)			I .			
, , ,	,						

SOIL Sampling Point: UPL O

Depth	Matrix		Redo	x Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
1-10	10YR 4/3	100		-			Loamy/Clay	/ey	more silt pres	ent
10-16	10YR 4/4	100					Loamy/Clay	/ey		
				·				<u> </u>		
				·						
	oncentration, D=Dep	letion, RM:	=Reduced Matrix,	MS=Mas	ked San	d Grains.			ore Lining, M=Mat	•
Hydric Soil			0 01		····· (O.4)		Inc		oblematic Hydric	Soils":
Histosol	, ,		Sandy Gle		rix (S4)			_	Redox (A16)	
	oipedon (A2)		Sandy Re		• • • • • • • • • • • • • • • • • • • •			_	ese Masses (F12)	
	stic (A3)		Stripped Nork Surf		<b>)</b>			_	Material (F21)	2)
	n Sulfide (A4)			` '	orol (□1)			_	Dark Surface (F2	2)
	d Layers (A5) ick (A10)		Loamy Mu Loamy Gl	•	. ,		_	_Other (Explai	in in Remarks)	
	d Below Dark Surface	\((\Lambda 11)	Depleted							
	ark Surface (A12)	; (A11)	Redox Da	•	•		<sup>3</sup> In	dicators of hyd	rophytic vegetatio	n and
	fucky Mineral (S1)		Depleted		` '	)	""	-	ology must be pre	
	icky Peat or Peat (S3	8)	Redox De			,		-	bed or problemation	
	Layer (if observed):			P10001011	o (i o)			unioco diotai	bod of probleman	<del>'·</del>
Type:	Layer (ii observed).									
ı ypc.										
Depth (i	nches):						Hydric Soil P	resent?	Yes	No X
	rm is revised from Mi						NRCS Field In			
Remarks: This data fo	rm is revised from Mi						NRCS Field In			
Remarks: This data fo Errata. (http	rm is revised from Mi //www.nrcs.usda.gov						NRCS Field In			
Remarks: This data fo Errata. (http	rm is revised from Mi //www.nrcs.usda.gov						NRCS Field In			
Remarks: This data fo Errata. (http	rm is revised from Mi //www.nrcs.usda.gov	/Internet/F	SE_DOCUMENTS	S/nrcs142			NRCS Field In	dicators of Hyc		7.0, 2015
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi	rm is revised from Mi //www.nrcs.usda.gov OGY drology Indicators:	/Internet/F	SE_DOCUMENTS	apply)	2p2_0512	293.docx	NRCS Field In	dicators of Hyc	ric Soils, Version	7.0, 2015
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface	rm is revised from Mi //www.nrcs.usda.gov DGY drology Indicators: cators (minimum of c	/Internet/F	SE_DOCUMENTS	apply)	ves (B9)	293.docx	NRCS Field In	dicators of Hyd	tors (minimum of	7.0, 2015
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturation	OGY drology Indicators: cators (minimum of county) Water (A1) ater Table (A2) on (A3)	/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua	apply) ained Lea auna (B1 atic Plant	ves (B9) 3) s (B14)	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat	ttors (minimum of Cracks (B6) tterns (B10) Water Table (C2)	7.0, 2015
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M	orm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company of	/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua	apply) ained Lea auna (B1 atic Plant Sulfide (	ves (B9) 3) s (B14) Odor (C1	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season	ntors (minimum of Cracks (B6) cterns (B10) Water Table (C2) rows (C8)	7.0, 2015
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimer	orm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company of	/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua Hydrogen Oxidized	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph	ves (B9) 3) s (B14) Odor (C1 eres on l	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season to Crayfish Burn Saturation Vi	ators (minimum of Cracks (B6) eterns (B10) Water Table (C2) rows (C8) sible on Aerial Ima	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimen Drift De	orm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua Hydrogen Oxidized	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduce	ves (B9) 3) s (B14) Odor (C1 eres on lead Iron ced Iron	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season Crayfish Burn Saturation Vi	ators (minimum of Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Ima	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Dep Algal Ma	orm is revised from Mic/www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) ont Deposits (B2) osits (B3) at or Crust (B4)	/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on lead Iron of the tool in Titon	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep	drology Indicators: cators (minimum of companies (M2)) water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5)	v/Internet/F	ired; check all that Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc c Surface	ep2_0512 vves (B9) 3) s (B14) Odor (C1 eres on leed Iron of the ced Iron of th	293.docx	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season Crayfish Burn Saturation Vi	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati	orm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company of	ne is requ	ired; check all that  Water-Sta  Aquatic F  True Aqua  Hydrogen  Oxidized I  Presence  Recent Ird  Thin Mucl  7)  Gauge or	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc c Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron et (C7) a (D9)	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Dep Algal Ma Iron Dep Inundati Sparsely	orm is revised from Mi c//www.nrcs.usda.gov  DGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial In or Vegetated Concave	ne is requ	ired; check all that  Water-Sta  Aquatic F  True Aqua  Hydrogen  Oxidized I  Presence  Recent Ird  Thin Mucl  7)  Gauge or	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc c Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron et (C7) a (D9)	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely	m is revised from Mic/www.nrcs.usda.gov  DGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) on Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial Indicators: vegetated Concave	magery (B'	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or B8) Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc on Surface Well Dat plain in R	ves (B9) 3) s (B14) Odor (C1 eres on led Iron in Tile (C7) a (D9) demarks)	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface Water Water M	m is revised from Mi c//www.nrcs.usda.gov  DGY  drology Indicators: cators (minimum of company of c	magery (B' Surface (I	ired; check all that  Water-Sta  Aquatic F  True Aqua  Hydrogen  Oxidized I  Presence  Recent Iro  Thin Mucl  7) Gauge or  B8) Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc on Reduc on Surface Well Dat plain in R	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron in Tile (C7) a (D9) emarks)	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imateressed Plants (D1 Position (D2)	two require
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Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Wa Saturati Water M Sedimel Drift Del Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface Wa Water Table Saturation F	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company of c	magery (B' Surface (I	ired; check all that  Water-Sta  Aquatic F  True Aqua  Hydrogen  Oxidized I  Presence  Recent Iro  Thin Mucl  7) Gauge or  B8) Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide ( Rhizosph of Reduc on Reduc on Reduc on Surface Well Dat plain in R	ves (B9) 3) s (B14) Odor (C1 eres on led Iron et (C7) a (D9) lemarks) nches):nches): _	) Living Ro (C4) illed Soils	Se ots (C3)	condary Indica Surface Soil Drainage Pat Dry-Season V Crayfish Buru Saturation Vi Stunted or Si Geomorphic	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface Wa Water Table Saturation F (includes ca	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In / Vegetated Concave  rvations: ter Present? Ye Present? Ye pillary fringe)	magery (B' Surface (I	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide (C Rhizosph of Reduce C Surface Well Dat plain in R  Depth (iii Depth (iii	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Till (C7) a (D9) elemarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Par Dry-Season Crayfish Burn Saturation Vi Stunted or Si Geomorphic FAC-Neutral	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface Wa Water Table Saturation F (includes ca	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company of c	magery (B' Surface (I	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide (C Rhizosph of Reduce C Surface Well Dat plain in R  Depth (iii Depth (iii	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Till (C7) a (D9) elemarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Par Dry-Season Crayfish Burn Saturation Vi Stunted or Si Geomorphic FAC-Neutral	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimer Drift Der Algal Mater M Iron Der Inundati Sparsely  Field Obser Surface Water Table Saturation F (includes ca	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In / Vegetated Concave  rvations: ter Present? Ye Present? Ye pillary fringe)	magery (B' Surface (I	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide (C Rhizosph of Reduce C Surface Well Dat plain in R  Depth (iii Depth (iii	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Till (C7) a (D9) elemarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Par Dry-Season Crayfish Burn Saturation Vi Stunted or Si Geomorphic FAC-Neutral	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimer Drift Der Algal Ma Iron Der Inundati Sparsely  Field Obser Surface Water Table Saturation F (includes ca	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In / Vegetated Concave  rvations: ter Present? Ye Present? Ye pillary fringe)	magery (B' Surface (I	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide (C Rhizosph of Reduce C Surface Well Dat plain in R  Depth (iii Depth (iii	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Till (C7) a (D9) elemarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Par Dry-Season Crayfish Burn Saturation Vi Stunted or Si Geomorphic FAC-Neutral	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require
Remarks: This data fo Errata. (http  HYDROLO  Wetland Hy Primary Indi Surface High Water M Sedimen Drift Del Algal Ma Iron Dep Inundati Sparsely  Field Obser Surface Wa Water Table Saturation F (includes ca	rm is revised from Mi //www.nrcs.usda.gov  OGY  drology Indicators: cators (minimum of company) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In / Vegetated Concave  rvations: ter Present? Ye Present? Ye pillary fringe)	magery (B' Surface (I	ired; check all that  Water-Sta Aquatic F True Aqua Hydrogen Oxidized Presence Recent Iro Thin Mucl 7) Gauge or Other (Ex	apply) ained Lea auna (B1 atic Plant Sulfide (C Rhizosph of Reduce C Surface Well Dat plain in R  Depth (iii Depth (iii	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Till (C7) a (D9) elemarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	NRCS Field In	condary Indica Surface Soil Drainage Par Dry-Season Crayfish Burn Saturation Vi Stunted or Si Geomorphic FAC-Neutral	tors (minimum of Cracks (B6) terns (B10) Water Table (C2) rows (C8) sible on Aerial Imaterssed Plants (D1 Position (D2) Test (D5)	two require

Project/Site: Leavenworth FCI		City/Cour	nty: Leaven	worth/Leavenworth	Sampling Date: <u>7/30/2020</u>
Applicant/Owner: FBOP				State: KS	Sampling Point: WET W
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	ange:	
Landform (hillside, terrace, etc.): hillside		!	Local relief (d	concave, convex, none):	convex
Slope (%): 3 Lat: 39.333913		Long:	94.923627		Datum: WGS 84
Soil Map Unit Name: Knox silt loam, 7-12%				NWI classif	ication: n/a
Are climatic / hydrologic conditions on the site typical f	for this time c	of year?	Yes X	No (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly (	disturbed? A	re "Normal (	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology			If needed, ex	xplain any answers in Rer	marks.)
SUMMARY OF FINDINGS – Attach site m			g point lo	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes X N	0	Is the	Sampled A	rea	
Hydric Soil Present? Yes X N			n a Wetland		No
Wetland Hydrology Present? Yes X N	0				
Remarks:		•			
Wetland hydrology is from hillside seeps. Wetland flo	ws into strea	m M.			
VEGETATION – Use scientific names of pla					
Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	ksheet:
1. Catalpa bignonioides	2	No No	FACU	Number of Dominant S	
2.				Are OBL, FACW, or F.	
3.				Total Number of Domi	nant Species
4.				Across All Strata:	5 (B)
5				Percent of Dominant S	•
	:	=Total Cover		Are OBL, FACW, or F	AC: <u>60.0%</u> (A/B)
Sapling/Shrub Stratum (Plot size: 15"	)	Vaa	EAGII	Businelan as Index we	ساسان مها
Ligustrum sinense     Cornus florida	<u>5</u> 10	Yes	FACU FACU	Prevalence Index wo Total % Cover of:	
2. Comus nonda 3.	10	Yes	FACU	OBL species 35	
4.				FACW species 60	
5.				FAC species 0	
	15 :	=Total Cover		FACU species 17	
Herb Stratum (Plot size:5' )				UPL species 0	x 5 = 0
Scirpus atrovirens	5	No	OBL	Column Totals: 11	2 (A) 223 (B)
2. Phalaris arundinacea	20	Yes	FACW	Prevalence Index =	= B/A = 1.99
3. Carex stipata	30	Yes	OBL		
4. Equisetum hyemale	40	Yes	FACW	Hydrophytic Vegetati	
5				· ·	Hydrophytic Vegetation
6.				X 2 - Dominance Te	
7				X 3 - Prevalence Inc	
8. 9.				· · ·	Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10.					ophytic Vegetation <sup>1</sup> (Explain)
10	95 :	=Total Cover			
Woody Vine Stratum (Plot size:		-10101 00.0.		be present, unless dis	oil and wetland hydrology must turbed or problematic.
1.	,			·	
2.				Hydrophytic Vegetation	
		=Total Cover		Present? Yes	X No
Remarks: (Include photo numbers here or on a sepa	rate sheet.)				
` '	,				

SOIL Sampling Point: WET W

Depth	Matrix		Redo	x Feature	es				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	_	Remarks
0-3	10YR 4/1	100					Loamy/Clayey		
3-12	10YR 4/2	95	10YR 5/4	5	RM	M	Loamy/Clayey		
12-16	10YR 4/2	90	10YR 5/6	10	RM		Loamy/Clayey		
								-	
								-	
1							2		
Type: C=Co	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	MS=Masi	ked Sand	d Grains.			ining, M=Matrix. matic Hydric Soils <sup>3</sup>
Histosol (			Sandy Gle	wed Mat	riv (S4)			ast Prairie Red	•
	pedon (A2)		Sandy Re	-	IX (O4)			n-Manganese N	
Black His			Stripped M		;)			d Parent Mater	
	Sulfide (A4)		Dark Surfa	•	')				k Surface (F22)
·	Layers (A5)		Loamy Mu		eral (F1)			er (Explain in l	
2 cm Mu			Loamy Gle	•	, ,				,
	Below Dark Surface	(A11)	X Depleted	-					
Thick Da	rk Surface (A12)		Redox Da	rk Surfac	e (F6)		<sup>3</sup> Indicat	ors of hydroph	ytic vegetation and
Sandy M	ucky Mineral (S1)		Depleted [	Dark Sur	face (F7)	)	wet	land hydrology	must be present,
5 cm Mud	cky Peat or Peat (S3	)	Redox De	pressions	s (F8)		unle	ess disturbed o	or problematic.
Restrictive L	.ayer (if observed):								
Type:									
. , , ,							Hydric Soil Prese	nt?	Yes X No
Depth (in Remarks: This data forr							NRCS Field Indicate		oils, Version 7.0, 20
Depth (in Remarks: This data forr	m is revised from Mic						NRCS Field Indicate		
Depth (in Remarks: This data forr Errata. (http:/	m is revised from Mio /www.nrcs.usda.gov						NRCS Field Indicate		
Depth (in Remarks: This data forr Errata. (http:/	m is revised from Mio /www.nrcs.usda.gov						NRCS Field Indicate		
Depth (in Remarks: This data forr Errata. (http://h	m is revised from Mid/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of o	/Internet/F	SE_DOCUMENTS	apply)	p2_0512	293.docx	NRCS Field Indicato )  Second	ors of Hydric S	oils, Version 7.0, 20 <sup>2</sup>
Depth (in Remarks: This data forr Errata. (http://h	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of o	/Internet/F	SE_DOCUMENTS  ired; check all that  X Water-Sta	apply) ined Lea	ves (B9)	293.docx	NRCS Field Indicate )  Second	ors of Hydric S  ary Indicators face Soil Crac	oils, Version 7.0, 20°  (minimum of two requests (B6)
Depth (in Remarks: This data forr Errata. (http://h	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of o	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa	apply) ined Lea	ves (B9)	293.docx	NRCS Field Indicate )  Second Sur X Dra	ary Indicators face Soil Crac	(minimum of two req
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Depth (in Remarks: This data forr Errata. (http://  HYDROLO  Wetland Hyc Primary Indic X Surface V High Wat X Saturatio Water Ma	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) arks (B1)	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen	apply) ined Lea auna (B1 stic Plant	ves (B9) 3) s (B14) Odor (C1	)	NRCS Field Indicate )  Second  X Dra  Dry X Cra	ary Indicators face Soil Crac inage Patterns -Season Wate	(minimum of two req ks (B6) s (B10) or Table (C2) (C8)
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Depth (in Remarks: This data forr Errata. (http://  HYDROLO Wetland Hyc Primary Indic X Surface V High Wat X Saturatio Water Ma Sediment Drift Depo	GY  Irology Indicators: ators (minimum of o Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on led Iron (	) Living Ro	Second	ary Indicators face Soil Crac inage Patterns -Season Wate ryfish Burrows uration Visible nted or Stress	(minimum of two reg ks (B6) s (B10) or Table (C2) (C8) on Aerial Imagery (Ced Plants (D1)
Depth (in Remarks: This data forr Errata. (http://www.primary.lndic_X_Surface_W_High_Water_Mater	GY  Irology Indicators: ators (minimum of or Nater (A1) ter Table (A2) in (A3) arks (B1) it Deposits (B2) posits (B3) arc Crust (B4)	/Internet/F	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	apply) ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on lead from the call fr	) Living Ro	Second	ary Indicators face Soil Crac inage Patterns -Season Wate nyfish Burrows uration Visible nted or Stress omorphic Posi	(minimum of two reg ks (B6) s (B10) or Table (C2) (C8) on Aerial Imagery (Ced Plants (D1)
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Depth (in Remarks: This data forr Errata. (http://www.primary.lndic X Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundatio Sparsely	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of or	ne is requesting magery (B	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	apply) ined Lea auna (B1 auna (B1 stic Plant Sulfide C Rhizosph of Reduc on Reduc Surface Well Dat	vves (B9) 3) s (B14) Odor (C1 eres on I ed Iron ( (C7) a (D9) emarks)	) Living Ro (C4)	Second	ary Indicators face Soil Crac inage Patterns -Season Wate lyfish Burrows uration Visible nted or Stress	(minimum of two reg ks (B6) s (B10) or Table (C2) (C8) on Aerial Imagery (Ced Plants (D1)
Depth (in Remarks: This data forr Errata. (http://www.communications.com/depth (in Remarks)    HYDROLO Wetland Hyde Primary Indic X Surface Water Max Saturation Water Max Sediment Drift Depth Algal Material Iron Depth Inundations Sparsely Field Observators.	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of or	ne is requesting magery (B	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc on Reduc on Reduc surface Well Dat blain in R	ves (B9) 3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4)	Second	ary Indicators face Soil Crac inage Patterns -Season Wate ryfish Burrows uration Visible nted or Stress omorphic Posi	(minimum of two reg ks (B6) s (B10) or Table (C2) (C8) on Aerial Imagery (Ced Plants (D1)
Depth (in Remarks: This data forr Errata. (http://www.communications.com/wetland Hyden High Water March Marc	m is revised from Mic/www.nrcs.usda.gov  GY  Irology Indicators: ators (minimum of o Vater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) tosits (B3) t or Crust (B4) tosits (B5) n Visible on Aerial Ir Vegetated Concave Vations: ar Present? Ye Present? Ye esent? Ye	magery (B Surface (	ired; check all that  X Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	apply) ined Lea auna (B1 tic Plant Sulfide C Rhizosph of Reduc on Reduc on Reduc on Surface Well Dat blain in R  Depth (ii	ves (B9) 3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) emarks) nches): _ nches): _	) Living Ro (C4) illed Soils	Second	ary Indicators face Soil Crac inage Patterns -Season Wate ryfish Burrows uration Visible nted or Stress omorphic Posi	(minimum of two requires (B6) (B10) (C8) (C8) on Aerial Imagery (Ced Plants (D1) (D5)
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Project/Site: Leavenworth FCI		City/Cour	nty: Leaveny	worth/Leavenworth	Sampling	Date: <u>7/30/2</u>	2020
Applicant/Owner: FBOP				State: K	S Sampling	Point: UPL	U/W
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	inge:			
Landform (hillside, terrace, etc.): hillside		I	Local relief (c	concave, convex, n	ione): convex		
Slope (%): 3 Lat: 39.333903		Long:	94.923802		Datum: WG	S 84	
Soil Map Unit Name: Knox silt laom, 7-12% slopes				NWI	classification: n/a		
Are climatic / hydrologic conditions on the site typical for	ior this time of	f year?	Yes X	No (If n	no, explain in Rema	arks.)	
Are Vegetation, Soil, or Hydrology	significantly d	listurbed? A	Are "Normal C	Circumstances" pre	esent? Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prob	olematic? (I	If needed, ex	plain any answers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site ma	ap showin	ıg samplin	g point lo	cations, trans	ects, importa	nt features,	etc.
Hydrophytic Vegetation Present? Yes No	o X	Is the	Sampled Ar	rea			
	o X		n a Wetland?		No X		
	o X			_		_	
Remarks:							
VEGETATION – Use scientific names of pla		Deminant	lia di anton	Г			
Tree Stratum (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Tes	st worksheet:		
1					inant Species Tha	at	
2				Are OBL, FACW	•		(A)
3.					f Dominant Specie		
4				Across All Strata			(B)
5		=Total Cover		Percent of Domi Are OBL, FACW	inant Species Tha		(A/B)
Sapling/Shrub Stratum (Plot size:		· I Otal Covo.		AIG ODE, I AGU	V, 0. 1 AO.	30.070	(1-1,12)
1.				Prevalence Ind	ex worksheet:		
2.				Total % Co	over of:	Multiply by:	
3.				OBL species	0 x 1 :		
5.				FACW species_ FAC species	10 x 2 : 5 x 3 :		
5.		=Total Cover		FAC species  FACU species	60 x 4 :		
Herb Stratum (Plot size: 5' )		1010. 00.11		UPL species	0 x5:		
Phalaris arundinacea	10	No	FACW	Column Totals:	75 (A)	275	(B)
2. Festuca arundinacea	60	Yes	FACU	Prevalence Ir	ndex = B/A =	3.67	
3.				· · · · · · · · · · · · · · · · · · ·			
4 5.					egetation Indicators est for Hydrophytic		
6.					est for Hydrophytic nce Test is >50%	; vegetation	
7.					nce Index is ≤3.0 <sup>1</sup>		
8.				•	ogical Adaptations	`	porting
9.					emarks or on a se		
10					Hydrophytic Vege	, .	,
Manada Mina Christiana (Diot circu	70 =	=Total Cover			dric soil and wetla		nust
Woody Vine Stratum (Plot size:)  1. Toxicodendron radicans	,) 5	Yes	FAC		ess disturbed or pro	oblematic.	
2.		103	170	Hydrophytic Vegetation			
	5 =	=Total Cover		Present?	YesN	lo <u>X</u>	
Remarks: (Include photo numbers here or on a sepa	rate sheet.)						
	,						

**SOIL** Sampling Point: UPL U/W

Depth (inches) 0-14			Redo	x Featur	es			
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
I ———	10YR 4/3	100	, , ,				Loamy/Clayey	more silt present
14-18	10YR 4/3	100					Loamy/Clayey	•
	oncentration, D=Deple	etion, RM=F	Reduced Matrix, N	/IS=Mas	ked San	d Grains.		PL=Pore Lining, M=Matrix.
Hydric Soil			0 1 01		. (0.4)			or Problematic Hydric Soils <sup>3</sup> :
— Histosol	` '		Sandy Gle	-	rıx (S4)			rairie Redox (A16)
	pipedon (A2)		Sandy Red		• •			nganese Masses (F12)
Black His			Stripped M		5)			rent Material (F21)
	n Sulfide (A4)		Dark Surfa	` '	! ( <b>-</b> 1)			allow Dark Surface (F22)
2 cm Mu	Layers (A5)		Loamy Mu	•	` '		Other (E	explain in Remarks)
	d Below Dark Surface	(A11)	Loamy Gle Depleted N	-				
	ark Surface (A12)	(A11)	Redox Dai	`	,		<sup>3</sup> Indicators o	f hydrophytic vegetation and
	lucky Mineral (S1)		Depleted [		, ,	`		hydrology must be present,
	icky Peat or Peat (S3)		Redox De		` '	,		listurbed or problematic.
_	Layer (if observed):				(. 0)			
Type:	Layer (ii observed).							
Depth (in	iches).		_				Hydric Soil Present?	Yes No X
			_				•	
					. –	293.docx	s)	
						293.uUCX	.)	
HYDROLO	OGY					293.UOCX	.)	
						293.docx	.)	
Wetland Hy	OGY drology Indicators: cators (minimum of on	ne is require	ed; check all that	apply)		293.ducx		ndicators (minimum of two required
Wetland Hyd	drology Indicators:	ne is require	ed; check all that Water-Sta				Secondary I	ndicators (minimum of two required Soil Cracks (B6)
Wetland Hyden Primary India	drology Indicators: cators (minimum of on	ne is require		ined Lea	ves (B9)		Secondary II	
Wetland Hyden Primary India	drology Indicators: cators (minimum of on Water (A1) ter Table (A2)	ne is require	Water-Sta	ined Lea auna (B1	ves (B9)		Secondary IiSurfaceDrainage	Soil Cracks (B6)
Wetland Hyde Primary Indice Surface of High Wate Saturation	drology Indicators: cators (minimum of on Water (A1) ter Table (A2)	ne is require	Water-Sta	ined Lea auna (B1 itic Plant	ves (B9) 3) s (B14)		Secondary II Surface Drainage	Soil Cracks (B6) e Patterns (B10)
Wetland Hyd Primary India Surface High Wa Saturatic Water M	drology Indicators: cators (minimum of on Water (A1) tter Table (A2) on (A3)	ne is require	Water-Sta Aquatic Fa True Aqua	ined Lea auna (B1 itic Plant Sulfide (	ves (B9) 3) s (B14) Odor (C1	)	Secondary II Surface Drainage Dry-Sea Crayfish	Soil Cracks (B6) e Patterns (B10) son Water Table (C2)
Wetland Hyden Primary India Surface Migh Wa Saturation Water Might Sediment Drift Dep	drology Indicators: cators (minimum of on Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3)	ne is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence	ined Lea auna (B1 itic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Odor (C1 eres on lead Iron	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturatie	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hyden Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma	drology Indicators: cators (minimum of on Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4)	ne is require	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc	ves (B9) 3) s (B14) Ddor (C1 eres on lead Iron attion in Ti	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
Wetland Hyder Primary Indice Surface Surface High Wa Saturation Water Mater Ma	drology Indicators: cators (minimum of on Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Lea auna (B1 itic Plant Sulfide ( Rhizosph of Reduc in Reduc Surface	ves (B9) 3) s (B14) Odor (C1 eres on led Iron of tion in Ti	) Living Ro (C4)	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1)
Wetland Hyderimary India Surface of High Was Saturation Water Management Sediment Drift Dep Algal Management Iron Dep Inundation	drology Indicators: cators (minimum of on Water (A1) Inter Table (A2) In (A3) In (A3) In (B1) In Deposits (B2) In Original (B3) In or Crust (B4) In Original (B5) In Visible on Aerial Im	nagery (B7)	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or	ined Lea auna (B1 sulfide ( Rhizosph of Reduc in Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron etion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
Primary India Surface	drology Indicators: cators (minimum of on Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Im v Vegetated Concave S	nagery (B7)	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or	ined Lea auna (B1 sulfide ( Rhizosph of Reduc in Reduc Surface Well Dat	ves (B9) 3) s (B14) Odor (C1 eres on led Iron etion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
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Wetland Hyderimary India Surface of High Was Saturation Water Management Sediment Drift Dep Algal Management Inundation Sparsely Field Obsertions	drology Indicators: cators (minimum of on Water (A1) Inter Table (A2) Inter Table (A2) Inter Table (B1) Int Deposits (B2) Intor Crust (B4) Intor Crust (B4) Intor Crust (B5) Intor Visible on Aerial Improved the one of the	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in R	ves (B9) 3) s (B14) Ddor (C1 eres on led Iron (tion in Tion (C7) a (D9) demarks)	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2)
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Primary India Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely Field Obser Surface Water Table Saturation P	drology Indicators: cators (minimum of or Water (A1) ther Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Im vegetated Concave s vations: er Present? Yes resent? Yes resent? Yes	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc on Reduc Surface Well Dat blain in R	ves (B9) 3) s (B14) Odor (C1 eres on led Iron tion in Ti (C7) a (D9) emarks) nches): _nches):	) Living Ro (C4) illed Soils	Secondary II Surface Drainage Dry-Sea Crayfish Dots (C3) Saturation Stunted s (C6) Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)
Primary India Surface of High Water M Sedimen Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Obser Surface Water Table Saturation Pe (includes cap	drology Indicators: cators (minimum of or Water (A1) Iter Table (A2) In (A3) In Deposits (B2) In Or Crust (B4) In Or Crust (B4) In Visible on Aerial Im It Vegetated Concave S Vations: Iter Present? Iter Table (A2) In (A3)	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (i Depth (i	ves (B9) 3) s (B14) Ddor (C1 eres on letton in Tile (C7) a (D9) lemarks) nches): nches):	) Living Ro (C4) illed Soils	Secondary II  Surface Drainage Dry-Sea Crayfish Saturatio Stunted S (C6) FAC-Ne  Wetland Hydrology I	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)
Wetland Hyderimary Indices Surface of High Water Management Sediment Drift Depton Algal Management Inundation Sparsely Field Obsert Surface Water Table Saturation Performance Captage Control (includes captage)	drology Indicators: cators (minimum of or Water (A1) ther Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial Im vegetated Concave s vations: er Present? Yes resent? Yes resent? Yes	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (i Depth (i	ves (B9) 3) s (B14) Ddor (C1 eres on letton in Tile (C7) a (D9) lemarks) nches): nches):	) Living Ro (C4) illed Soils	Secondary II  Surface Drainage Dry-Sea Crayfish Saturatio Stunted S (C6) FAC-Ne  Wetland Hydrology I	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)
Wetland Hyderimary India Surface of High Was Saturation Water Maged Mater Table Saturation Polymore (includes caped Maged Mater Table Saturation Polymore Maged Maged Mater Table Saturation Polymore Maged	drology Indicators: cators (minimum of or Water (A1) Iter Table (A2) In (A3) In Deposits (B2) In Or Crust (B4) In Or Crust (B4) In Visible on Aerial Im It Vegetated Concave S Vations: Iter Present? Iter Table (A2) In (A3)	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (i Depth (i	ves (B9) 3) s (B14) Ddor (C1 eres on letton in Tile (C7) a (D9) lemarks) nches): nches):	) Living Ro (C4) illed Soils	Secondary II  Surface Drainage Dry-Sea Crayfish Saturatio Stunted S (C6) FAC-Ne  Wetland Hydrology I	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)
Wetland Hyderimary Indices Surface of High Water Management Sediment Drift Depton Algal Management Inundation Sparsely Field Obsert Surface Water Table Saturation Performance Captage Control (includes captage)	drology Indicators: cators (minimum of or Water (A1) Iter Table (A2) In (A3) In Deposits (B2) In Or Crust (B4) In Or Crust (B4) In Visible on Aerial Im It Vegetated Concave S Vations: Iter Present? Iter Table (A2) In (A3)	nagery (B7) Surface (B8	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (i Depth (i	ves (B9) 3) s (B14) Ddor (C1 eres on letton in Tile (C7) a (D9) lemarks) nches): nches):	) Living Ro (C4) illed Soils	Secondary II  Surface Drainage Dry-Sea Crayfish Saturatio Stunted S (C6) FAC-Ne  Wetland Hydrology I	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imagery (C9) or Stressed Plants (D1) phic Position (D2) utral Test (D5)

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Project/Site: Leavenworth FCI		City/Cour	nty: Leaven	worth/Leavenworth	Sampling Date:	7/30/2020
Applicant/Owner: FBOP				State: KS	Sampling Point:	UPL 1
Investigator(s): C.Hanlon, S.		Section, T	ownship, Ra	nge:		<u>-</u>
Landform (hillside, terrace, etc.): hillside		I	Local relief (c	concave, convex, none):	convex	
Slope (%): 2 Lat: 39.334028		Long:	94.932293		Datum: WGS 84	
Soil Map Unit Name: Knox silt loam, 7-12%				NWI class	fication: n/a	
Are climatic / hydrologic conditions on the site typical f	or this time o	of year?	Yes X	No (If no, ex	plain in Remarks.)	
Are Vegetation, Soil, or Hydrology	significantly o	disturbed? A	re "Normal C	Circumstances" present	Yes X No	o
Are Vegetation, Soil, or Hydrology				plain any answers in Re	<u> </u>	
SUMMARY OF FINDINGS – Attach site m			g point lo	cations, transects	, important fea	tures, etc.
Hydrophytic Vegetation Present? Yes X N	0	Is the	Sampled Ar	rea		
Hydric Soil Present? Yes N	0 X	withir	within a Wetland? Yes No _X			
Wetland Hydrology Present? Yes N	0 <u>X</u>					
Remarks:						
VEGETATION – Use scientific names of pla		Deminant	lliator			
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:	
1				Number of Dominant	Species That	
2.				Are OBL, FACW, or I	•	1 (A)
3				Total Number of Dom	inant Species	
4				Across All Strata:		1 (B)
5		T : 10		Percent of Dominant	•	2 22 (A/D)
Sapling/Shrub Stratum (Plot size:		=Total Cover		Are OBL, FACW, or I	AC: 10	0.0% (A/B)
	)			Prevalence Index w	orksheet:	
				Total % Cover o		hv:
3.				-		40
4.				FACW species 1	0 x 2 =	20
5.					) x 3 =	0
	:	=Total Cover				80
Herb Stratum (Plot size: 5')			·		x 5 =	0 (7)
1. Carex stipata	40	Yes	OBL			(B)
Eleusine indica     Echinochloa crus-qalli	10	No No	FACU FACW	Prevalence Index	= B/A = <u>2.00</u>	)
Ecninocnioa crus-gaiii     Setaria faberi	10	No No	FACU	Hydrophytic Vegeta	tion Indicators:	
5.	10	INO	1700		r Hydrophytic Veget	ation
6.				X 2 - Dominance T		
7.				3 - Prevalence In		
8.					Adaptations <sup>1</sup> (Prov	
9.					ks or on a separate	
10					ophytic Vegetation <sup>1</sup>	, , ,
	70 :	=Total Cover		<sup>1</sup> Indicators of hydric s		
Woody Vine Stratum (Plot size:	)			be present, unless di	sturbed or problema	tic.
1. 2.				Hydrophytic		
2		=Total Cover		Vegetation Present? Yes	X No	
Describe. (In allude whether surple as here on an analysis		- Total Cover		Tresent: Tes	<u> </u>	_
Remarks: (Include photo numbers here or on a sepa	rate sheet.)					

SOIL Sampling Point: UPL 1

Profile Desc Depth	cription: (Describe : Matrix	to the dept	oth needed to document the indicator or Redox Features			ator or c	confirm the absence of it	of indicators.)		
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-4	10YR 4/2	100	, , ,				Loamy/Clayey			
4-13	10YR 4/3	90	10YR 5/6	10	RM		Loamy/Clayey			
13-18	10YR 4/3	90	10YR 5/6	5	RM	M	Loamy/Clayey			
10-10	1011(4/0		5Y 5/6	5	RM	M	Loamy/olaycy			
	-		31 3/6		KIVI	IVI				
1			De desert Matrice				21	I. Daniel Indian M. Madaha		
•	oncentration, D=Depl	etion, Rivi=	Reduced Matrix, i	vi5=ivias	ked Sand	Grains		L=Pore Lining, M=Matrix.  or Problematic Hydric Soils <sup>3</sup> :		
•	Hydric Soil Indicators: Histosol (A1) Sandy Gleyed Matrix (S4)					Coast Prairie Redox (A16)				
	Histic Epipedon (A2)  Sandy Gleyed Matrix (34)  Sandy Redox (S5)				Iron-Manganese Masses (F12)					
	stic (A3)		Stripped Matrix (S6)				Red Parent Material (F21)			
	n Sulfide (A4)	Dark Surface (S7)				Very Shallow Dark Surface (F22)				
	d Layers (A5)					Other (Explain in Remarks)				
	ıck (A10)		Loamy Gle	-				,		
Depleted	d Below Dark Surface	(A11)	Depleted I	-						
Thick Da	ark Surface (A12)		Redox Da	rk Surfac	e (F6)		<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy Mucky Mineral (S1)  Depleted Dark Surface (F7)					)	wetland hydrology must be present,				
5 cm Mu	5 cm Mucky Peat or Peat (S3) Redox Depressions (F8)				unless disturbed or problematic.					
Restrictive	Layer (if observed):									
Type:										
Depth (in	nches):						Hydric Soil Present?	Yes No _X		
HYDROLC	OGY									
-	drology Indicators:									
-	cators (minimum of o	ne is requir						<u>ndicators (minimum of two required</u>		
	Water (A1)		Water-Stained Leaves (B9)				Surface Soil Cracks (B6)			
	ater Table (A2)		Aquatic Fauna (B13)					e Patterns (B10)		
Saturatio				True Aquatic Plants (B14)				son Water Table (C2)		
	larks (B1)		Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R					Burrows (C8)		
	nt Deposits (B2) posits (B3)		Presence of Reduced Iron (C4)				` · —	on Visible on Aerial Imagery (C9) or Stressed Plants (D1)		
	at or Crust (B4)		Recent Iron Reduction in Tilled Soils					phic Position (D2)		
`	oosits (B5)					iica ooii		utral Test (D5)		
	on Visible on Aerial Ir	nagery (B7	Thin Muck Surface (C7)  Gauge or Well Data (D9)				<u></u>			
	/ Vegetated Concave		·		` '					
Field Obser			<del></del>		,					
Surface Wat		s	No X	Depth (i	nches):					
Water Table	Present? Ye	s			nches):		-			
Saturation P	Present? Ye	s	No X	Depth (i	_		Wetland Hydrology F	Present? Yes No X		
(includes ca	pillary fringe)				_					
Describe Re	corded Data (stream	gauge, mo	nitoring well, aeria	al photos	, previou	s inspec	tions), if available:			
Remarks:										
ı										

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# APPENDIX F WETLAND DELINEATION PLAN

