APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): July 15, 2020

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **Phillips Property**, **SPK-2019-00594**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Utah** County/parish/borough: **Utah County** City: **Payson**
Center coordinates of site (lat/long in degree decimal format): Lat. **40.04788**°, Long. **-111.71184**°
Universal Transverse Mercator: **12 439280.17 4433314.04**
Name of nearest waterbody: **Beer Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Utah Lake (Navigable-in-Fact)**
Name of watershed or Hydrologic Unit Code (HUC): **Spanish Fork, 16020202**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: **July 15, 2020**
☒ Field Determination. Date(s): **September 23, 2019**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters:

      Wetlands: **2.3 acres (see figure *Project Area Wetlands – Phillips Property (SPK-2019-00594)*, prepared by USACE and dated July 9, 2020).**

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): **NA**

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: **Utah Lake**

Summarize rationale supporting determination: **Navigable-in-fact determination – see *Memorandum For Record, Subject: Traditional Navigable Waterways, Federally Navigable Determination for Utah Lake (SPK-2007-01601)*, dated November 9, 2007.**

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": **NA**

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **10390.78 acres (via EPA WATERS GeoViewer)**
Drainage area: **4139.02 acres (via EPA WATERS GeoViewer)**
Average annual rainfall: **18.17-20.28 inches (via Santaquin and Spanish Fork WETS Tables)**
Average annual snowfall: **57.5-66.1 inches (via Santaquin and Spanish Fork WETS Tables)**

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **1** tributaries before entering TNW.

Project waters are **10-15** river miles from TNW **(via aerial imagery and EPA WATERS GeoViewer)**.
Project waters are **1-2** river miles from RPW **(measured via aerial imagery and EPA WATERS GeoViewer)**.
Project waters are **5-10** aerial (straight) miles from TNW **(measured via aerial imagery)**.
Project waters are **1-2** aerial (straight) miles from RPW **(measured via aerial imagery)**.
Project waters cross or serve as state boundaries. Explain: **NA.**

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: **The Relevant Reach is the 2nd order reach of Beer Creek from the confluence of the 1st order Beer Creek main stem with the Salem Lake 1st order tributary (40.065031°, -111.698085°), where it flows approximately 5.27 miles (measured via EPA WATERS GeoViewer) to the confluence with the 2nd order Spring Creek (40.084974°, -111.772812°), at which point it becomes the 3rd order Benjamin Slough. Benjamin Slough continues for approximately 5.05 miles until it joins with Utah Lake (40.140576°, -111.792789°), a navigable-in-fact TNW under 33 CFR 328.3(a)(1) (*Memorandum For Record, Subject: Traditional Navigable Waterways, Federally Navigable Determination for Utah Lake (SPK-2007-01601)*, dated November 9, 2007). Stream order determined via EPA WATERS GeoViewer. See figure *Flowpath 1 Overview, Phillips Property (SPK-2019-00594)*, prepared by USACE and dated May 26, 2020.**

Tributary stream order, if known: **2nd**

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **Although Beer Creek is a natural channel, the Relevant Reach of Beer Creek flows through an area of heavy agricultural use and has many sections that have been relocated, straightened or altered (visible in aerial imagery). It also contains many connecting ditches and diversions, and flows beneath several roads.**

Tributary properties with respect to top of bank (estimate):
Average width: **varies from 10 to 160 feet inconsistently through Relevant Reach (via aerial imagery)**
Average depth: **Unknown – flow data is publicly available via the National Water Quality Monitoring Council Water Quality Portal (monitoring location UTAHDWQ_WQX-5919822), but data output did not include cross sectional data**
Average side slopes: **3:1 – low gradient/slope but visibly confined in aerial imagery– see below.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☐ Gravel	☒ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	

☒ Other. Explain: **The Psomas' August 2007, *Utah Lake TMDL: Pollutant Loading Assessment & Designated Beneficial Use Impairment Assessment Final Draft* document describes Beer Creek as having limited cobble substrate near the outlet, having poor habitat quality for spawning fish, low water clarity, and low flows. Water is visibly dark in aerial imagery indicating muddy substrates and high turbidity.**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Stable. Characterized by low gradient (see below), lower flows (see below), large areas of abutting and/or adjacent wetlands, and little-no visible change in channel location in aerial imagery from September 1993 through July 2019.**

Presence of run/riffle/pool complexes. Explain: **Few-none. The Relevant Reach is characterized by a very low gradient (see below) and meanders through wetland areas for much of its length. These characteristics are not conducive to support riffle-pool complexes. The substrate is characterized as having few cobbles, and riffle/pool complexes are unreported in other studies conducted by others (see above). There is no evidence of run/riffle/pool complexes on the aerial imagery reviewed for this determination.**

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): **Based on spot elevations taken via the USGS's National Map viewer, elevations range from 4529 feet at the start of the relevant reach to 4502 at the end of the relevant reach. The 5.268 mile (27815 feet) long Relevant Reach is therefore characterized by a shallow 0.10% slope.**

(c) Flow:
Tributary provides for: **Perennial**

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Estimate average number of flow events in review area/year: **1**

Describe flow regime: **Beer Creek is identified as a blue-lined, named, perennial stream on the USGS topo. It is also identified as perennial via the EPA WATERS GeoViewer. Water can be seen within the Relevant Reach of Beer Creek in all aerial imagery from August 1993 through July 2019. Monitoring data by the Utah DEQ for monitoring location UTAHDWQ_WQX-5919822, located at Latitude 40.06496, Longitude -111.707, obtained via the National Water Quality Monitoring Council Water Quality Portal, reports flow data collected monthly from the 2018 water year (October 2017 through September 2018). Values range from 2.1 cfs (June 2017) to 23.2 cfs (May 2017). Flow was recorded during all months, indicating continuous flow throughout the year within the Relevant Reach of Beer Creek.**

Other information on duration and volume: **Based on Psomas' July 15, 2005, *Utah Lake TMDL Data Validation and Evaluation Memo*, Beer Creek contributes a total of 36,700 acre-feet of water per year to Utah Lake, which is approximately 4.4% of its inflow. The Psomas' August 2007, document identifies Benjamin Slough, where Beer Creek becomes a 3rd order stream, as contributing to 9% of Utah Lakes' stream inflow.**

Surface flow is: **Discrete and confined.** Characteristics: **Flow is contained within the banks of Beer Creek. While abutting wetlands are visible along the banks, no discontinuation in the stream channel or topping of banks is visible in aerial imagery from August 1993 through July 2019.**

Subsurface flow: **Unknown**. Explain findings: **According to StreamCat (via EPA WATERS GeoViewer), the ratio of base flow to total flow in Beer Creek, expressed as a percentage within the local catchment, is 74.51%, indicating the majority is fed through groundwater.**

☐ Dye (or other) test performed: **NA**

Tributary has (check all that apply):

☒ Bed and banks

☐ OHWM[6] (check all indicators that apply):

- ☐ clear, natural line impressed on the bank
- ☐ changes in the character of soil
- ☐ shelving
- ☐ vegetation matted down, bent, or absent
- ☐ leaf litter disturbed or washed away
- ☐ sediment deposition
- ☐ water staining
- ☐ the presence of litter and debris
- ☐ destruction of terrestrial vegetation
- ☐ the presence of wrack line
- ☐ sediment sorting
- ☐ scour
- ☐ multiple observed or predicted flow events
- ☒ abrupt change in plant community
- ☒ other (list): **Blue-line, named stream on USGS topo and identified in EPA WATERS GeoViewer as a perennial stream. Identified as perennial stream by Utah DWQ and a perennial source of water to Utah Lake. Standing water and banks/vegetation changes are clearly visible in aerial imagery.**

☐ Discontinuous OHWM.[7] Explain: **NA**

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:

- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:

- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **The Relevant Reach of Beer Creek flows through an area of heavy agricultural use and is bordered by municipal development. Based on aerial imagery, Beer Creek is characterized by dark, turbid water, and algal blooms (bright green - indicators of eutrophication) can be seen in multiple years of imagery (particularly in years 2019, 2018, 2017, 2016, 2015, 2011, 2005, and 2002). Based on the Utah Division of Water Quality's December 7, 2016, *Utah's Final 2016 Integrated Report*, Beer Creek is impaired for total ammonia and the OE Bioassessment metric, a measure of the**

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

[7]Ibid.

Observed versus Expected assemblages of benthic macroinvertebrates, fish, periphyton, and mussels, and is therefore not meeting its designated beneficial use, 3C, which is protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain. The Psomas 2005 memo documents in-stream exceedances of multiple water quality criteria set for Utah Lake, including dissolved oxygen (DO, 12%), dissolved total phosphorus (DTP, 95%), total dissolved solids (TDS, 2.7%), total phosphorus (TP, 97.5%), and total suspended solids (TSS, 56.4%) at monitoring location 591984, and DO (3%), DTP (100%), TP (98.7%), and TSS (46.9%) at location 499542, both of which are located within the Relevant Reach of Beer Creek.

Identify specific pollutants, if known: **Total ammonia, DTP, TDS, TP, TSS, low DO**

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width):

☒ Wetland fringe. Characteristics: **Seasonal and perennial wetland signatures visible in aerial imagery surrounding the length of the Relevant Reach**.

☐ Habitat for:

☐ Federally Listed species. Explain findings:

☒ Fish/spawn areas. Explain findings: **Based on the Psomas' August 2007 document, Beer Creek is a spawning location for Utah Lake warm water species, including white bass, walleye, brown trout, and rainbow trout.**

☐ Other environmentally-sensitive species. Explain findings:

☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: **2.3 acres**

Wetland type. Explain: **Palustrine Emergent**

Wetland quality. Explain: **Fair – Wetland signatures of vegetation and hydrology visible in aerial imagery, but are located near the developed boundary of Salem and Payson Cities and receive municipal runoff, in addition to being located within an area of intense agricultural use.**

Project wetlands cross or serve as state boundaries. Explain: **NA**

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: **The project wetlands represent the southern extent of a large complex/mosaic of wetlands and swales near the headwaters of Beer Creek. Wetlands are located in an area of heavy agricultural use and are crisscrossed by a network of agricultural and irrigation ditches. The general flow direction from the project site it northeast and northwest based on topographic contours and elevation gradients.**

Based on the applicant's reports, *Aquatic Resources Delineation Report: Phillips Property – Payson, Utah*, dated June 3, 2019, and *Aquatic Resources Delineation Report: Addendum Phillips Property – Payson, Utah*, dated April 6, 2020, and prepared by Kagel Environmental, LLC, the project wetlands drain north from the project site through a ditch that terminates in an area that used to be a pond, which is located approximately 2250 feet north of the project site. However, review of aerial imagery shows that the ditch identified by Kagel Environmental, LLC, clearly continues north past the identified terminus for approximately 1000 feet, and connects to multiple other ditches flowing north, east, and west. Both wet signatures (as changes in vegetation) and standing water can be seen within the entire length of the ditch, as well as its connecting ditches, for all years of imagery from September 1993 through July 2019. See figure, *Phillips Property SPK-2019-00594 – Potential Flowpaths*, created by USACE and dated July 14, 2020.

Given the mosaic nature of the wetlands within the catchment, the prevalence of ditches, and landscape position relative to Beer Creek, many potential flowpaths exist between the project wetlands and the Relevant Reach of Beer Creek, and between the project wetlands and Utah Lake (TNW). The flowpath addressed within this form, and described below, was determined to be the most dominant based on the general width of the ditches visible in aerial imagery, indicating a potentially larger flow volume is transported through these particular ditches to the Relevant Reach.

Project waters flow north and east from the project site through a large ditch located adjacent to the site's eastern boundary. Project waters continue in a general northeasterly direction through approximately 1.70 miles of discrete and confined ditches and swales to the start of the Relevant Reach, which is visible in aerial imagery, and is shown in *Catchment 1 Flowpath to Relevant Reach*

– *Phillips Property (SPK-2019-00594)*, prepared by USACE and dated June, 26, 2020. Standing water and indictors of saturation can be seen within the project area wetlands and the flowpath ditches and swales within aerial imagery for all years. Wet signatures and/or standing water are also visible in imagery represented for all months available (June through October), indicating hydrology is present at least seasonally, and especially during the dry summer season.

It is important to note that flowpath ditches and swales were evaluated remotely using desktop tools as documented above. Therefore, while hydrology and wet signatures are visible in aerial imagery, it is unclear as to whether or not an ordinary high water mark is present in some or all of the ditches, and similarly, whether or not wetlands potentially present within the ditches/swales would meet the parameters outlined by the 1987 Delineation Manual. In order to avoid an incorrect identification of the Relevant Reach, the flowpath ditches were evaluated only for their connectivity (i.e. were considered as discrete/confined surface hydrologic connections) from the project site to the nearest known tributary with publically available data, which is the Relevant Reach of Beer Creek evaluated here in this form.

Surface flow is**: Discrete and confined**
Characteristics: **Ditches and swales with discrete and confined flow (visible in aerial imagery) convey water from the project site to the Relevant Reach**

Subsurface flow: **Unknown**. Explain findings: **Surface saturation and inundation is visible in satellite imagery (aerial imagery) within adjacent wetland mosaic features. Project wetlands are characterized by Bramwell series soils, described as occurring on level to gently sloping low stream or lacustrine terraces and floodplains, being somewhat poorly drained, and having slow runoff and low permeability (via UC Davis California Soil Resource Lab, SoilWeb).**
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☒ Not directly abutting the relevant reach
☒ Discrete wetland hydrologic connection. Explain: As described in Section 2(i)(b), above, **Wetlands within the project site flow through approximately 1.70 miles of ditches and swales which serve as discrete and confined connections to the Relevant Reach of Beer Creek.**
☐ Ecological connection. Explain: **NA**
☐ Separated by berm/barrier. Explain: **NA**

(d) Proximity (Relationship) to TNW
Project wetlands are **10-15** river miles from TNW.
Project waters are **5-10** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **500-year or greater (via FEMA flood map)** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: A**erial imagery shows that areas with standing water near the project wetlands (ditches that convey water from the project site) frequently form dense layers of algae (indicated by the bright green in imagery). Algal blooms are strongly associated with increased nutrient levels in aquatic systems (eutrophication), which is also expected within areas, such as the project site, that are characterized by municipal runoff and agricultural use.**
Identify specific pollutants, if known: **Unknown**

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width):
☒ Vegetation type/percent cover. Explain: **Based on SoilWeb, Bramwell series supports *Distichilis spicata* (FAC (arid west)), *Sporobolus airoides* (FAC), *Poa secunda* (FACU), *Sarcobatus vermiculatus* (FACU), *Carex douglasii* (FAC), *Juncus balticus* (FACW), *Leymus cinereus* (FAC), among other perennial grasses, forbs, and shrubs.**

Based on the September 23, 2019, site visit conducted by USACE, impacted project wetlands were found to support *Juncus balticus* (0-80%; FACW), *Phalaris arundinacea* (0-10%; FACW), *Polypogon monspeliensis* (5-60%; FACW), *Rumex crispus* (0-5%; FAC), *Symphyotrichum bracteolatum* (0-10%; FAC), *Lactuca serriola* (0-2%; FACU); *Puccinelia nuttalliana* (0-10%; FACW); *Trifolium repens* (0-5%; FACU); *Polygonum aviculare* (0-1%; FAC); *Schoenoplectus maritimus* (0-5%; OBL); and *Hordeum jubatum* (0-10%; FAC).

☐ Habitat for:
- ☐ Federally Listed species. Explain findings:
- ☐ Fish/spawn areas. Explain findings:
- ☐ Other environmentally-sensitive species. Explain findings:
- ☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **30 (or more)**
Approximately **1025** acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)	Size (in acres)		Directly abuts? (Y/N)	Size (in acres)
0	N	2.60	103	Y	0.18
1	N	12.75	104	Y	5.57
2	N	22.79	105	N	0.51
3	N	11.79	106	N	1.04
4	N	1.83	107	N	0.17
5	N	15.68	108	N	0.00
6	N	40.90	109	N	0.37
7	N	16.58	110	N	0.38
8	N	14.09	111	N	0.43
9	N	2.48	112	N	0.97
10	N	14.54	113	N	2.66
11	N	7.93	114	N	0.08
12	N	3.42	115	N	1.57
13	N	0.62	116	N	4.08
14	N	16.17	117	Y	0.63
15	N	4.28	118	N	7.30
16	N	2.02	119	N	0.49
17	Y	14.39	120	Y	1.31
18	Y	3.32	121	Y	1.34
19	N	1.23	122	N	2.25
20	Y	2.99	123	N	2.40
21	N	17.86	124	N	2.89
22	N	1.95	125	N	0.42
23	N	3.24	126	Y	0.10
24	Y	4.67	127	N	0.73
25	Y	0.04	128	N	0.43
26	N	1.24	129	N	0.05
27	N	1.30	130	Y	24.14
28	N	2.65	131	N	0.35
29	N	8.35	132	Y	1.16
30	Y	23.09	133	N	0.00
31	N	49.05	134	Y	94.15
32	N	2.19	135	N	0.74
33	N	0.30	136	N	0.06
34	Y	0.12	137	Y	28.54
35	N	0.00	138	N	1.27
36	N	0.25	139	N	0.05
37	Y	32.15	140	N	0.70
38	N	3.22	141	N	0.14

39	N	7.68
40	N	0.25
41	N	0.22
42	N	2.22
43	N	0.37
44	N	0.23
45	N	5.77
46	N	0.14
47	N	8.39
48	N	0.01
49	N	0.73
50	N	0.01
51	N	0.30
52	N	0.31
53	N	8.37
54	N	2.72
55	N	0.18
56	N	0.31
57	N	0.26
58	N	1.53
59	N	0.54
60	N	8.70
61	N	0.29
62	N	0.72
63	N	93.97
64	N	6.36
65	N	0.17
66	Y	0.15
67	Y	79.56
68	N	0.47
69	N	0.60
70	N	21.67
71	N	0.24
72	N	0.40
73	N	0.56
74	Y	15.22
75	N	0.91
76	Y	26.75
77	N	0.18
78	N	0.31
79	N	0.78
80	Y	4.60
81	N	1.32
82	N	6.22
83	N	0.10
84	Y	39.92
85	N	0.94
86	N	1.06
87	Y	3.65
88	Y	6.82
142	N	5.69
143	Y	3.57
144	N	6.17
145	N	2.37
146	N	2.30
147	N	0.48
148	N	0.74
149	Y	2.69
150	Y	0.16
151	Y	15.80
152	N	0.10
153	N	2.26
154	Y	1.23
155	N	3.75
156	N	9.01
157	N	7.20
158	Y	0.03
159	Y	2.67
160	Y	1.48
161	Y	3.59
162	Y	2.68
163	Y	0.01
164	Y	0.49
165	Y	0.43
166	Y	0.18
167	N	0.16
168	N	0.96
169	N	0.66
170	N	0.42
171	N	0.69

89	N	0.40
90	N	1.14
91	N	9.27
92	Y	1.80
93	Y	0.02
94	Y	5.06
95	N	0.18
96	N	0.25
97	N	0.35
98	Y	3.43
99	N	6.54
100	Y	1.47
101	N	0.10
102	N	0.88

Summarize overall biological, chemical and physical functions being performed: **Approximately 1025 acres of aquatic resources in total are being considered in the cumulative analysis. Wetlands within the catchment area were determined using a NWI wetlands GIS layer obtained from the AGRC State Geographic Information Database (SGID). The layer was clipped to the catchment area boundary and filtered to exclude wetland features identified in the description as either streams or ponds. Wetland features within a 10 meter buffer of the Relevant Reach feature were considered abutting. The remaining features were included as adjacent if potential surface water connections (i.e., ditches and swales) were visible in aerial imagery (see *Catchment 1 AR Estimates (NWI) – Phillips Property (SPK-2019-00594)*, prepared by USACE and dated July 1, 2020)**

The catchment area for the Relevant Reach is characterized by an area of intense agricultural use and is bordered by urban development. Wetlands within this catchment area perform standard wetland functions as identified below in the Significant Nexus Factors bulleted items to consider. They receive and filter both agricultural and municipal runoff, allowing for the retention and conversion of nutrients and other pollutants prior to entering the Relevant Reach of Beer Creek. Wetlands also help retain sediments and therefore reduce contribution of fines to Beer Creek and ultimately to Utah Lake. Retention of water during spring runoff and precip events also contributes to attenuation of flood flows, reducing potential for erosion and sediment transport in Beer Creek, attenuating nutrient pulses through Beer Creek to Utah Lake, and contributing water to downstream reaches for a longer period of time during the dry season.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The Relevant Reach (i.e. Beer Creek), in combination with its adjacent wetlands, including the 2.3-acre project wetlands, transports pollutants to the TNW (i.e. Utah Lake). This nexus and its significance are both established by the Psomas' August 2007, Utah Division of Water Quality's December 7, 2016, and Psomas' July 15, 2005, documents. Both Utah Lake and Beer Creek are listed on the State's 303(d) list for impaired waters. Utah Lake's designated beneficial uses include secondary recreational contact (2B), warm water fishery (3B), wild life and aquatic organisms in their food chain (3D), and agricultural uses including irrigations and stock watering (4). Utah Lake is listed in Utah's 2016 Final Integrated Report document 303(d) list for exceedances of state criteria for total phosphorus (impairing 3B), total dissolved solids (impairing 4), harmful algal blooms (impairing 2B), and PCB in fish tissue (impairing 3B). Beer Creek is impaired for total ammonia and the OE Bioassessment metric, a measure of the Observed versus Expected assemblages of benthic macroinvertebrates, fish, periphyton, and mussels, and is therefore not meeting its designated beneficial use, 3C, which is protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain. TMDLs are in development for both water bodies.**

   The Relevant Reach, in combination with its adjacent wetlands including the 2.3-acre project wetland, contributes fresh water to the TNW. Based on Psomas' July 15, 2005, document, Beer Creek contributes a total of 36,700 acre-feet of water per year to Utah Lake, which is approximately 4.4% of its inflow. The Psomas' August 2007, document identifies Benjamin Slough, where Beer Creek becomes a 3rd order stream, as contributing to 9% of Utah Lakes' stream inflow.

   The Relevant Reach, in combination with its adjacent wetlands including the 2.3-acre project wetland, transports nutrients and suspended solids to the TNW. Beer Creek represents an important source of adverse nutrient loading to Utah Lake, particularly with respect to phosphorus and suspended solids. Based on the Psomas 2007 document, in-stream concentrations of TP and TSS taken from Beer Creek routinely exceeded the nutrient standards set for Utah Lake (97.5% and 56.4%, respectively), among others. Based on the same report, streams represented 20.7% of the total phosphorus load to Utah Lake. Benjamin Slough, which is the 3rd order continuation of Beer Creek to Utah Lake, was calculated to contribute an average of 4.1 tons of total phosphorus per year. Additionally, streams represented 43% of the total suspended solid load to Utah Lake, and Benjamin Slough was calculated to contribute 38,200 tons of total dissolved solids per year to Utah Lake. The document further states, "Total nutrient loading and in-lake nutrient concentrations in a water body can have both direct and indirect effects on water quality and aquatic life habitat. Algal blooms occur when nutrient concentrations, sunlight and water temperatures are high enough to promote excessive algal growth. When aquatic organisms expire, they sink and collect on the bottom sediments. Decomposition of algae removes oxygen from the surrounding water, reducing dissolved oxygen concentrations near the bottom thereby increasing internal nutrient loading. Important factors influencing internal TP cycling include water temperature, disturbance and resuspension of sediments from bottom feeding fish, redox potential of the overlying water column and mineralogy of the sediment."

   Known functions of wetlands include retaining sediments and nutrients, including TP and TSS, and flood flows. As discussed above, the wetlands within the review area, in combination with all adjacent wetlands to Beer Creek, receive and filter both agricultural and municipal runoff, allowing for the retention and conversion of nutrients and other pollutants prior to entering the Relevant Reach of Beer Creek and therefore function to meaningfully reduce transport of pollutants to Utah Lake.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet, wide, Or acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. RPWs that flow directly or indirectly into TNWs.

☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet wide.

☐ Other non-wetland waters: acres.

Identify type(s) of waters:

3. Non-RPWs[8] that flow directly or indirectly into TNWs.

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet, wide.

☐ Other non-wetland waters: acres.

Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **2.3** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

[8]See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: ***Aquatic Resources Delineation Report: Phillips Property – Payson, Utah*, dated June 3, 2019, and *Aquatic Resources Delineation Report: Addendum Phillips Property – Payson, Utah*, dated April 6, 2020, and prepared by Kagel Environmental, LLC (2019.08.22-PHILLIPS JD REPORT-201900594, 2020.04.07-PHILLIPS FINAL UPDATED REPORT-201900594, and 2020.04.07-EXHIBITS – PHILLIPS ADDENDUM FINAL RPT-201900594)**
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☒ Office does not concur with data sheets/delineation report.
☒ Data sheets prepared by the Corps: **draft-Final-Arid-West-Data-Form(SP-12)-201900594; draft-Final-Arid-West-Data-Form(SP-13)-201900594; draft-Final-Arid-West-Data-Form(SP-14)-201900594; draft-Final-Arid-West-Data-Form(SP-5)-201900594**

[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☒ Corps navigable waters' study: ***Memorandum For Record, Subject: Traditional Navigable Waterways, Federally Navigable Determination for Utah Lake (SPK-2007-01601)*, dated November 9, 2007 (2007.11.09-Utah Lake NIF MFR-201900594)**
☒ U.S. Geological Survey Hydrologic Atlas: **viewer.nationalmap.gov**
☒ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Spanish Fork (2020.01.31-USGS Spanish Fork-201900594)**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **UC Davis, California Soil Resource Lab, SoilWeb (2020.07.09-BRAMWELL SoilWeb-201900594)**
☒ National wetlands inventory map(s). Cite name: **AGRC State Geographic Information Database (SGID)**
☒ State/Local wetland inventory map(s): **paysonutah.org/maps-gis**
☒ FEMA/FIRM maps: ***Utah County, Utah (Unincorporated Areas), Panel 480 of 725, Community-Panel Number 495517 0480 A, Effective Date: October 15, 1982* (2020.05.26-FEMA Flood Map-201900594)**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date):
or ☒ Other (Name & Date): **Google Earth time-lapse September 1993 through July 2019 (2020.07.01-Google Earth FP1 All-201900594; 2020.07.01-Google Earth PS1 All-201900594; 2020.07.01-Google Earth RR1 All-201900594)**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **Psomas' August 2007, *Utah Lake TMDL: Pollutant Loading Assessment & Designated Beneficial Use Impairment Assessment Final Draft* (2007.08.01-Psomas Final Draft-201900594); Utah Division of Water Quality's December 7, 2016, *Utah's Final 2016 Integrated Report* (2016.12.07-Utah DWQ Final 2016 IR-201900594); Psomas' July 15, 2005, *Utah Lake TMDL Data Validation and Evaluation Memo* (2005-07.15-Psomas Utah Lake Memo-201900594); EPA WATERS GeoViewer (epa.gov; 2020.05.29-EPA Watershed Report RR1-201900594); National Water Quality Monitoring Council Water Quality Portal (waterqualitydata.us; 2020.07.01-Flow Data UTAHDWQ WQX-5919822-201900594); AgACIS climate data WETS Tables (2020.05.29-WETS Santaquin Spanish Fork-201900594); USACE Antecedent Precipitation Tool (2020.07.07-APT for Google Earth All-201900594); *Flowpath 1 Overview, Phillips Property (SPK-2019-00594)*, prepared by USACE and dated May 26, 2020 (2020.05.26-USACE Flowpath 1 Overview-201900594); *Catchment 1 AR Estimates (NWI) – Phillips Property (SPK-2019-00594)*, prepared by USACE and dated July 1, 2020 (2020.07.01-USACE Flowpath 1 Catchment ARs-201900594); *Catchment 1 Flowpath to Relevant Reach – Phillips Property (SPK-2019-00594)*, prepared by USACE and dated June, 26, 2020 (2020.06.26-USACE Flowpath to RR 1-201900594); *Project Area Wetlands – Phillips Property (SPK-2019-00594)*, prepared by USACE and dated July 9, 2020 (2020.07.09-USACE Project Wetlands-201900594); *Phillips Property SPK-2019-00594 – Potential Flowpaths*, created by USACE and dated July 14, 2020 (2020.07.14-USACE Potential Flowpaths-201900594)**

B. ADDITIONAL COMMENTS TO SUPPORT JD:

This AJD was completed for approximately 2.3 acres of wetlands on the project site, which were impacted by unauthorized fill activities between July 2017 and September 2018. Jurisdiction was therefore determined based on the time the unauthorized activity occurred using the Rapanos Guidance.

Summary of critical findings:

a. The second order segment of Beer Creek is the relevant reach of the tributary for purposes of this analysis (See Sec.III.B.1.ii.a)

b. The 2.3-acre project wetland is adjacent to Beer Creek by virtue of an unbroken surface hydrologic connection through ditches and swales that connect the wetland to Beer Creek as depicted in the figure titled, *Catchment 1 Flowpath to Relevant Reach – Phillips Property (SPK-2019-00594)* (See Sec.III.B.2.b and c).

c. Beer Creek in combination with its adjacent wetlands, including the 2.3-acre project wetland: (1) transports pollutants to the TNW; (2) contributes fresh water to the TNW; and (3) transports nutrients to the TNW. These nexuses are significant to Utah Lake (the TNW) (See Sec.III.C).