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 9, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, NRCS - Shem Dam , SPK-2013-01063-SG

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Utah** County/parish/borough: **Washington** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **37.192161487148°**, Long. **-113.769828126401°**
Universal Transverse Mercator: **12 254147.15 4119783.65**
Name of nearest waterbody:
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Santa Clara River**
Name of watershed or Hydrologic Unit Code (HUC): **Upper Virgin, Utah, 15010008**
☒ 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 9, 2014**
☐ Field Determination. Date(s):

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: **915-** linear feet, wide, and/or **1.45** acres.
Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: **Established by OHWM.**
Elevation of established OHWM (if known):

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:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs: NA

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

[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.

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: 377.5 **square miles**
Drainage area: **377.5 square miles**
Average annual rainfall: **18.1** inches
Average annual snowfall: **8.4** inches

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

Project waters are **30 (or more)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **The Santa Clara River is located entirely in Utah but drains into the Virgin River, an interstate, navigable in fact water.**

Identify flow route to TNW[5]: **Santa Clara River to the Virgin River to the Colorado River (Lake Mead)**
Tributary stream order, if known: **3**

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **The Santa Clara River is regulated at this point upstream by the Gunlock Reservoir. There is a constriction point at Shem Dam. The river reach between Gunlock Reservoir and Shem Dam is relatively natural.**

Tributary properties with respect to top of bank (estimate):
Average width: **50** feet
Average depth: **2** feet
Average side slopes: **3:1 .**

Primary tributary substrate composition (check all that apply):
☐ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☒ Gravel ☐ Muck

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

☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain: **Run/riffle/pool complexes are not present in most years although the water does pool behind the dam but this causes a 2-3 foot drop below the dam.**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **1** %

(c) Flow:
Tributary provides for: **Perennial**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **Hayden and Willis (2011) estimate an average daily flow through the Santa Clara River "just west" of the St. George quadrangle of 20 cfs. For comparison, the average daily flow rate is 22 cfs based on 30 years of gage data collected at USGS gaging station 09410100 downstream of Shem Dam. These flows are regulated by Gunlock Dam, which is located a little over five miles upstream.**
Other information on duration and volume: **The average peak annual flow rate for the Santa Clara River near Shem Dam is 666 cfs, based on a 29- year period of record at USGS gaging station 09410100. This record began in 1973, three years after Gunlock Dam had been completed. Therefore, the record represents regulated flows in the Santa Clara River.**

Surface flow is: **Confined.** Characteristics:

Subsurface flow: **Unknown**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☒ changes in the character of soil ☐ destruction of terrestrial vegetation
☒ shelving ☒ the presence of wrack line
☐ vegetation matted down, bent, or absent ☒ sediment sorting
☐ leaf litter disturbed or washed away ☒ scour
☒ sediment deposition ☒ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: **During storm events the Santa Clara River is usually sediment laden. During low flow periods the water is relatively clear.**
Identify specific pollutants, if known: **The Santa Clara River, from the confluence with the Virgin River to Gunlock Reservoir, is listed on Utah's 303(d) listing for temperature and boron. The reach is also listed as impaired due to selenium and total dissolved solids (TDS) by the EPA.**

(iv) Biological Characteristics. Channel supports (check all that apply):
☒ Riparian corridor. Characteristics (type, average width): **Approximately 50-ft wide with in-channel emergent vegetation and scrub shrub and forested on terraces.**
☒ Wetland fringe. Characteristics: **Mainly riverine emergent along edges of river.**

[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.

☒ Habitat for:
☒ Federally Listed species. Explain findings: **Mojave desert tortoise (Gopherus agassizii), southwestern willow flycatcher (Empidonax traillii extimus), Mexican spotted owl (Strix occidentalis lucida) and Shivwits milkvetch (Astragalus ampullarioides). Of these species, the only one known to occur within riparian and wetland habitat is the flycatcher. The Survey Area contains riparian habitat but vegetation is too sparse to provide nesting habitat. The Survey Area does provide foraging habitat for the species and it could occur there on a transient basis.**
☒ Fish/spawn areas. Explain findings: **There are three fish passage barriers below Shem Dam that preclude listed species from utilizing the project area. Virgin spinedace are found throughout much of the Santa Clara River system with the exception of the reservoirs and near the confluence with the Virgin River (Valdez et al. 1990).There are a number of introduced species that may use the project location such as Brown trout, Green Sunfish, largemouth bass, Western Mosquitofish and Black Crappie.**
☐ 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: **1.9** acres
Wetland type. Explain: **Palustrine emergent, Palustrine scrub shrub, riverine perennial and riverine intermittent.**
Wetland quality. Explain: **Relatively high quality with some non-native tamarisk on terraces. Channel vegetation is some non-native interspersed with native vegetation.**
Project wetlands cross or serve as state boundaries. Explain: **The wetlands do not serve or cross state boundaries.**

(b) General Flow Relationship with Non-TNW:
Flow is: **Perennial flow**. Explain: **The Santa Clara River is a perennial stream that flows directly into the Virgin River, an interstate, navigable in fact water. The wetlands are abutting the Santa Clara River and flow is from the wetland to the Santa Clara River.**

Surface flow is**: Discrete and confined**
Characteristics:

Subsurface flow: **Unknown**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain:
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **30 (or more)** river miles from TNW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** 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:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):
☒ Riparian buffer. Characteristics (type, average width): **Approximately 50-ft in width**
☒ Vegetation type/percent cover. Explain: **100% coverage by scrub shrub and emergent vegetation.**
☒ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:

☒ Aquatic/wildlife diversity. Explain findings: **In an arid environment, aquatic systems provide support for all types of terrestrial and aquatic species. Migratory birds certainly are found within the project area.**

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

All wetland(s) being considered in the cumulative analysis: **4**
Approximately 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)
Y	**1.38**	**Y**	**0.23**
Y	**0.70**	**Y**	**0.97**

Summarize overall biological, chemical and physical functions being performed: **Biological functions of the wetlands associated with this project include contribution of organic material to downstream foodwebs and habitat for terrestrial and aquatic species. Other functions include flood flow alteration, sediment and toxicant removal, erosion control and shoreline stabilization, connectivity to other habitat types, and possible recharge of groundwater.**

C. SIGNIFICANT NEXUS DETERMINATION: NA

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

1. TNWs and Adjacent Wetlands. NA

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: **Based on data provided by NRCS in the Shem Dam Rehabilitation EA - the Santa Clara River is a perennial system and is controlled by Gunlock Reservoir in the project area.**

☐ 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: **1.38** acres.
Identify type(s) of waters: **Santa Clara River**

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

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: **1.45** acres.

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

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

7. Impoundments of jurisdictional waters. NA

[8]See Footnote # 3.

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): NA

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

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:
- ☒ 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:
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; UT-SHIVWITS**
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):
  or ☒ Other (Name & Date):
- ☒ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☒ Applicable/supporting scientific literature: **McMillen, LLC. 2014. Final Environmental Assessment for the Rehabilitation of Shem Dam. USDA-NRCS**
- ☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The Santa Clara River is a perennial stream that flows directly into the Virgin River, an interstate, navigable in fact tributary of the Colorado River.