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): October 28, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, BedRoc Proposed Landfill - Pahranagat Wash, SPK-2014-00603-SG

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Nevada** County/parish/borough: **Lincoln** City: **Coyote Springs**
Center coordinates of site (lat/long in degree decimal format): Lat. **36.9738°**, Long. **-114.9856°**
Universal Transverse Mercator: **11 679303.84 4093870.2**
Name of nearest waterbody: **Pahranagat Wash**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Colorado River**
Name of watershed or Hydrologic Unit Code (HUC): **Muddy River, Nevada, 15010012**
☒ 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: **October 28, 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: **3600** linear feet, **24** wide, and/or **3.18** 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

[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.

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: **505600 acres**
Drainage area: **262324.0 acres**
Average annual rainfall: **6.27** inches
Average annual snowfall: **7.4** 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 **2-5** river miles from RPW.
Project waters are **30 (or more)** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: **The Pahranagat Wash does not cross or serve as a state boundary.**

Identify flow route to TNW[5]: **The Pahranagat Wash flows into the Muddy River, which flows directly into the Colorado River.**
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 Pahranagat Wash has been modified upstream through channelization because of the landfill and US 93.**

Tributary properties with respect to top of bank (estimate):
Average width: **24** feet
Average depth: **1** feet
Average side slopes: **2:1.**

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

[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.

☐ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **The Pahranagat Wash is relatively stable but subject to erosion and sloughing banks during storm events.**
Presence of run/riffle/pool complexes. Explain: **There are no run/riffle/pool complexes within the proposed project area.**
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): **1** %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime:
Other information on duration and volume:

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: **Water is only present within the wash during storm events and then is usually sediment laden.**
Identify specific pollutants, if known: **Potential leachates from the landfill could be present within the wash during storm events.**

(iv) Biological Characteristics. Channel supports (check all that apply):
☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☒ Habitat for:
☒ Federally Listed species. Explain findings: **Desert Tortoise are known to be in the area.**
☐ Fish/spawn areas. Explain findings:
☐ 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: NA

[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.

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

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: **The Pahranagat Wash and associated drainages is an ephemeral stream throughout the proposed project area.There is a USGS gage on the wash located on the left bank, two miles downstream of the Arrow Canyon dam. Maximum flow was recorded on September 6, 1991 at 3,350 ft3/s. Between 1988 and 1991, the gage station recorded 19 days of flow at a mean of 38.3 ft3/s. For water years 1990-93, annual streamflow averaged 0.92 ft3/s and ranged from 0.21 ft3/s for 1992 to 1.5 ft3/s for 1991 and 1993. The USGS has reported that the Pahranagat Wash-White River drainage surface and subsurface flows contribute about 18,000 tons per year of dissolved solids to the Colorado River. Although flow is infrequent, during storm events it is likely that water from the Pahranagat Wash does have the ability to carry pollutants to the Colorado River. There are areas along the wash that flood waters could be attenuated and pollutants allowed to settle out before entering the Muddy River. These drainages do not provide habitat for aquatic species, but may provide food-chain support to downstream reaches. During flood events, nutrients and organic matter are swept downstream and provide additional food sources for aquatic and terrestrial species. Habitat exists within the washes for small mammals, reptiles and birds and these areas would provide foraging, nesting and rearing habitat. The Pahranagat Wash drainage has a physical and chemical relationship to the Colorado River with flood waters and a biological connection with potential inputs of nutrients and organic material from the upper watershed.**

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** NA

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** 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. NA**

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.

[8]See Footnote # 3.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☒ Tributary waters: **3600** linear feet, **24** wide.
☒ Other non-wetland waters: **3.18** acres.
Identify type(s) of waters:

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

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**

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; NV-WILDCAT WASH NW**
☐ 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: **SPK-2007-00327 – September 23, 2008; SPK-200125042 – August 1, 2001.**
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature: **: Westenburg, C.L. 1995. Dissolved-Solids Contribution to the Colorado River from Public Lands in Southeastern Nevada, Through September 1993. U.S. GEOLOGICAL SURVEY, Water-Resources Investigations Report 94-4210. http://pubs.usgs.gov/wri/1994/4210/report.pdf Gortsema, G.C. 1993. Selected data on water quantity and quality at four sites on streams drainage public lands, Colorado River Basin, Southeastern Nevada, October 1988-September 1991. U.S. Geological Survey, Open File report 93-439.http://pubs.usgs.gov/of/1993/0439/report.pdf**

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The Pahranagat Valley is located in the west-central region of Lincoln County, Nevada and drains south through Coyote Springs, Moapa Valley and ultimately into the Muddy River, a tributary of the Colorado River. Data from Gortsema (1993) indicated that during a three year study from October of 1988 through September of 1991, the Pahranagat Wash near Moapa had flow 19 days with a mean flow of 38.3 cfs and a maximum flow of 3,350 cfs. The Pahranagat Wash is a perennial stream upstream of the proposed project area at the Pahranagat National Wildlife Refuge and again when it becomes the Muddy River downstream near Muddy Springs. From the proposed project area to the Muddy River, the Pahranagat Wash has a continuous ordinary high water mark with signs of surface water flow including debris and clear and natural lines impressed on the banks. Although flow may be sporadic, it is very likely that surface water from the Pahranagat Wash contributes nutrients and organic matter to the Muddy River and ultimately to the Colorado River. The Corps has determined that there is more than just a speculative connection to the Colorado River and are jurisdictional waters of the U.S.