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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 22,484.34 linear feet, 0.5-5 feet wide, and/or 1.55 acres.
   Wetlands: 0.53 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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
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.

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[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.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: 2,000 **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through Channel 1, a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek and mapped (USGS) as perennial outside the project area. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles.
   Tributary stream order, if known: Channel 1 is a 2nd order stream. The portion of Channel 1 above the confluence with Channel 1L is a 1st order stream. Channel 1 combines with Channel 1L to become a 2nd order stream. Channel 1 combines with several other 1st order streams within the review area (including

[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.

streams 1D, 1C, 1B, 1A, 1E, 1F, 1G, 1H, 1I, 1J, 1K, 1L, and 1M), but still leaves the review area as a 2nd order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 0.5-5 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1 is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. Channel 1 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1 was observed to be intermittent with continuous seasonal flow (R4) within the project area.

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;

[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.

☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **0.53** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetlands W45, W47, W48, W49 and W51 directly abut Channel 1. Channel 1 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 1 was observed to be intermittent with continuous seasonal flow (R4).

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **5**
Approximately 0.53 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)
W45 (Y)	0.06	W47 (Y)	0.26
W48 (Y)	0.05	W49 (Y)	0.13
W51 (Y)	0.03		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
Channel 1 was demonstrated to be an RPW with continuous seasonal flow. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1 is an intermittent stream channel that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1 and its abutting wetlands W45, W47, W48, W49, and W51 (subject channel and wetlands) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channel and wetlands provide habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channels provide gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The subject wetlands provide nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 1 is an intermittent seasonal channel that originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **22,484.34** linear feet 0.5-5 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: The findings of Stantec Inc. clearly demonstrate that Wetland W45, W47, W48, W49 and W51 border and are directly touching (i.e., no breaks in connection) Channel 1 with no barriers.

[8]See Footnote # 3.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.53** 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: 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).

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.

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W45, W47, W48, W49, and W51 directly abut Channel 1. Outside of the project area Channel 1 is mapped as a (USGS) perennial stream and drains directly to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1A**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 2,030.86 linear feet, 1 feet wide, and/or 0.05 acres.
   Wetlands: 0.62 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain directly to Channel 1 a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles. Channel 1A is a seasonal RPW that drains to Channel 1.
   Tributary stream order, if known: Channel 1A is a 1st order stream.

[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.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: 10% grass, Poa spp.	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1A is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1A was observed to be intermittent with continuous seasonal flow (R4).

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):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **0.62** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetland W58 directly abuts Channel 1A. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 1A was observed to be intermittent with continuous seasonal flow (R4).

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:

☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*

☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.

☐ 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: **1**

Approximately 0.62 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)
W58 (Y)	0.62		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

Channel 1A, an RPW with seasonal flow was demonstrated to flow directly to Channel 1, an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1A is a seasonal RPW that flows directly to Channel 1, a seasonal RPW that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats.

Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1A and its abutting wetland W58 (subject channel and wetland) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channel and wetland provide habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channel provides gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The subject wetland provides nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 1A is an intermittent seasonal channels that originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **2,030.86** linear feet 1 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: The findings of Stantec Inc. clearly demonstrate that Wetland W58 borders and is directly touching (i.e., no breaks in connection) Channel 1A with no barriers.

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.62** 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.

[8]See Footnote # 3.

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

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.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  - ☒ 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; Robinson Mountain, NV**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
- ☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
- ☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☒ Applicable/supporting scientific literature:

  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
- ☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W58 directly abuts Channel 1A. Channel 1A is a seasonal RPW and tributary to Channel 1. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 14,977.7 linear feet, 0.5-3 feet wide, and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L and 1M are ephemeral tributaries of and drain to Channel 1, a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles.
   Tributary stream order, if known:

[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.

Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L and 1M are 1st order streams.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 0.5-3 feet
Average depth: 0.25-1 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L and 1M (subject channels) is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that the subject channels were observed to have ephemeral flow (R6).

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: Channels 1C and 1M have defined bend and banks and are connected to channel 1 by a vegetated swale with no defined bed and banks (discontinuous ordinary high water mark area of tributary). No other tributaries to Channel 1 exhibit discontinuous OHWM.

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;

[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.

☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☐ Wetland fringe. Characteristics:
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **pick list** Explain:

Surface flow is**:**
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 river miles from TNW.
Project waters are aerial (straight) miles from TNW.
Flow is from:**.**
Estimate approximate location of wetland as within the 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):
☐ Vegetation type/percent cover. Explain:
☐ 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:
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)

Summarize overall biological, chemical and physical functions being performed:

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 Channels labeled 1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M on attached maps Appendix A were each demonstrated to flow directly to Channel 1 an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M are ephemeral stream channels and tributaries to Channel 1 that flow into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel, and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term species reproduction. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced. The subject channels each have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir.

   The Channels labeled 1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M on attached maps Appendix A each provide habitat and life cycle support functions for fish species present in the downstream TNW. Each of these streams provides gravel and cobble to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream food webs. Based on the above, each of these channels (1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M) has a significant nexus to the Rye Patch Reservoir.

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:

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. The Channels labeled 1B, 1C, 1E, 1F, 1J, 1K, 1L, and 1M flow directly into Channel 1. Channels 1 flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☒ Tributary waters: **14,977.7** linear feet, 0.5-3 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: 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.

[8]See Footnote # 3.

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).

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Office concurs with data sheets/delineation report.

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

☐ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Channels 1B, 1C, 1E, 1F, 1J, 1K, 1L and 1M are ephemeral tributaries to Channel 1. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1D**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 1,043.57 linear feet, 2 feet wide, and/or 0.02 acres.
   Wetlands: 1.22 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through Channel 1 a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles. Channel 1D is an ephemeral stream that drains directly to Channel 1.

[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.

Tributary stream order, if known: Channel 1D is a 1st order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 2 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: 10%, Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Evidence of impacts from cattle grazing but not significantly disturbed.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: Intermittent bu **Intermittent but not Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1D is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that channel 1D was observed to be ephemeral (R6).

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	

[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.

☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **1.22** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 1D was observed to be ephemeral and wetland W44 is the water source. Wetlands W44 and W60 directly abuts channel 1D. Wetland W57 is connected to channel 1D via upland swale.

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 W44 and W60
☒ Not directly abutting W57
- ☒ Discrete wetland hydrologic connection. Explain: Connected to Channel 1D through swale that does not exhibit bed and banks.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **3**
Approximately 1.22 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)
W44 (Y)	0.72	W57 (N)	0.48
W60 (Y)	0.02		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
The Channel labeled 1D was demonstrated to flow directly to Channel 1, an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1D is an ephemeral stream channel that flows into channel 1, Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream

perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1D, its abutting wetlands W44 and W60, and its adjacent wetland W57 (subject channel and wetlands) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channels and wetlands provide habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channels provide gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The subject wetlands provide nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. Channel 1D flows directly into Channel 1. Channel 1 flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **1,043.57** linear feet, 2 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.**

[8]See Footnote # 3.

☐ 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: 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: **1.22** 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).

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:

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Robinson Mountain, NV**

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018

☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018

☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W44 and W60 directly abut Channel 1D. Wetland W57 is adjacent to and connected to channel 1D via upland swale. Channel 1D is an ephemeral tributary to and flows directly to Channel 1. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1G**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 952.23 linear feet, 1 feet wide, and/or 0.02 acres.
   Wetlands: 0.61 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain to Channel 1 a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles. Channel 1G is an ephemeral stream that drains directly to Channel 1.

[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.

Tributary stream order, if known: Channel 1G is a 1st order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1 feet
Average depth: 0.08 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1G is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1G was observed to be flowing during site visit and is an ephemeral channel (R6).

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):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.61** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow** Explain: Wetland W61 directly abuts channel 1G. Wetland W2-seep is adjacent to and connected to channel 1G via sheet flow during flow events. Channel 1G is an ephemeral tributary to and flows directly into channel 1. Channel 1 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that channels 1 was observed to be intermittent with continuous seasonal flow.

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 W61
☒ Not directly abutting W2-seep
- ☒ Discrete wetland hydrologic connection. Explain: Connected to channel 1G via shallow subsurface connection through permeable soils and sheet flow during flow events.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **2**
Approximately 0.61 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)
W2-Seep (N)	0.04	W61 (Y)	0.57

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

The Channel labeled 1G was demonstrated to flow directly to Channel 1, an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1G is an ephemeral stream channel that flows through channel 1 into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1G, its abutting wetland W61, and adjacent wetland W2-seep (subject channel and wetlands) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channels and wetlands provide habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channels provide gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The subject wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. Channel labeled 1G flows directly into Channel 1. Channels 1 flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **952.23** linear feet, 1 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:

[8]See Footnote # 3.

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: 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: **0.61** 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).

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):

---

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W61 directly abuts ephemeral Channel 1G. Wetland W2-seep is adjacent to but does not directly abut ephemeral Channel 1G. Channel 1G is an ephemeral tributary to Channel 1. Channel 1, an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1H**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 2,929.69 linear feet, 0.8-3 feet wide, and/or 0.13 acres.
   Wetlands: 0.37 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain to Channel 1 a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles. Channel 1H is a seasonal RPW that drains to Channel 1.
   Tributary stream order, if known: Channel 1H is a 1st order stream.

[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.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 0.8-3 feet
Average depth: 1 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain: no
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1H is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1H was observed to be intermittent with continuous seasonal flow (R4).

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):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **0.37** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetlands W50 and W59 directly abut channel 1H. Channel 1H in an RPW with intermittent seasonal flow and a tributary to channel 1. Channel 1 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1 and 1H were observed to be intermittent with continuous seasonal flow.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:

☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
- ☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
- ☐ 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: **2**
Approximately 0.37 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)
W50 (Y)	0.22	W59 (Y)	0.15

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

Channel 1H was demonstrated to flow directly to Channel 1, an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1H is an intermittent stream channel with continuous seasonal flow that flows through channel 1 into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by

proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1H and its abutting wetlands W50 and W59 (subject channels and wetlands) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channels and wetlands provide water, habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channels provide gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The subject wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 1H is an intermittent seasonal channel that originate on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channel as having continuous seasonal flow (R4).

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **2,929.69** linear feet 0.8-3 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: The findings of Stantec Inc. clearly demonstrate that Wetland W50 and W59 border and are directly touching (i.e., no breaks in connection) Channel 1H with no barriers.

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.37** acres.

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

[8]See Footnote # 3.

☐ 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: 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).

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:

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

[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.*

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Robinson Mountain, NV**

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018

☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018

☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☒ Applicable/supporting scientific literature:

Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc ***136****, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci ***100****, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W50 and W59 directly abut Channel 1H. Channels 1H is an RPW with continuous seasonal flow and tributary to Channel 1. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 1I**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 666.88 linear feet, 3 feet wide, and/or 0.05 acres.
      Wetlands: 0.03 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain to Channel 1 a seasonal Relatively Permanent Water (RPW). Channel 1 is an unnamed tributary to Dixie Creek. Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of ~ 170 miles. Channel 1I is an ephemeral stream that drains to Channel 1.
   Tributary stream order, if known: Channel 1I is a 1st order stream.

[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.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 3 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 1I is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 1I was observed to be ephemeral (R6).

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):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☐ Wetland fringe. Characteristics:
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **0.03** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that channel 1I is an ephemeral tributary to and flows directly into channel 1. Wetland W1-Seep is connected to channel 1I via upland swale.

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: Connected to channel 1 through swales that do not exhibit bed and banks.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:

☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
- ☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
- ☐ 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: **1**
Approximately 0.03 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)
W1-Seep (N)	0.03		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

The Channel labeled 1I was demonstrated to flow directly to Channel 1, an RPW. Channel 1 drains directly to Dixie Creek outside of the project area. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 1I is an ephemeral stream channel that flows through channel 1 into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively

influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 1I and its adjacent wetland W1-Seep (subject channel and wetland) on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The subject channel and wetland provide habitat and lifecycle support functions for fish species present in the downstream TNW. The subject channel provides gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for fish species that migrate downstream to the Rye Patch Reservoir. The subject wetland provides nutrient input, infiltration and reduces runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. Channel 1I flows directly into Channel 1. Channels 1 flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☒ Tributary waters: **666.88** linear feet, 3 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.

[8]See Footnote # 3.

Provide acreage estimates for jurisdictional wetlands in the review area: 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. Wetland W1-seep on attached maps Appendix A were demonstrated to be adjacent to but does not directly abut Channel 1.

   Provide estimates for jurisdictional wetlands in the review area: **0.03** 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).

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.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  - ☒ 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; Robinson Mountain, NV**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
- ☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
- ☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
- ☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W1-Seep is adjacent to Channel 1I and connected via upland swale that does not exhibit bed and banks. Channel 1I is an ephemeral tributary to Channel 1. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 2**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 13,679.96 linear feet, 4-6 feet wide, and/or 1.57 acres.
   Wetlands: 2.35 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through ephemeral Channel 2 and confluence with Channel 1, which is a Relatively Permanent Water (RPW) outside of the project area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known:
Channel 2 is a 3rd order stream at the point where it flows out of the review area. The portion of Channel 2 above the confluence with Channel 2D is a 1st order stream. Channel 2 combines with Channel 2D to become a 2nd order stream. Channel 2L combines with Channel 2K to become a 2nd order stream, and this stream combines with an additional 1st order stream (2K), and remains 2nd order to its confluence with the 2nd order portion of Channel 2 to become a 3rd order stream, near the location of W14, and from that point Channel 2 remains 3rd order until it leaves the review area.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 4-6 feet
Average depth: 0.25 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 2 is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. Outside of the review area Channel 2 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that within the review area Channel 2 was observed to be ephemeral (R6).
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:

[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.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 2.35** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 2 was observed to be ephemeral. Wetlands W3, W4, W11, W14, W15, W16 and W43 directly abut Channel 2. Wetland W13 does not directly abut Channel 2, but is adjacent to Channel 2. Wetland W13 is connected to Channel 2 via upland swale that does not exhibit bed and banks.

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 W3, W4, W11, W14, W15, W16 and W43
☒ Not directly abutting W13
- ☒ Discrete wetland hydrologic connection. Explain: Connected to Channel 2 through swales that do not exhibit bed and banks.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*.
- ☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
- ☐ 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: **8**
Approximately 2.35 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)
W3 (Y)	0.14	W4 (Y)	0.03
W11 (Y)	0.07	W13 (N)	1.89
W14 (Y)	0.1	W15 (Y)	0.03
W16 (Y)	0.04	W43 (Y)	0.05

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
Outside of the review area Channel 2 is mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. Within the review area Channel 2 was observed to have ephemeral flow. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that within the review area Channel 2 is an ephemeral stream channel that flows into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 2, its abutting wetlands W3, W4, W11, W14, W15, W16 and W43, and its adjacent wetland W13 (connected via upland swale), shown on the attached maps in Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. They provide habitat and lifecycle support functions for fish species present in the downstream TNW. The channel provides water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River, thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. Ephemeral Channel 2 flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☒ Tributary waters: **13,679.96** linear feet, 4-6 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.

[8]See Footnote # 3.

☐ 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: 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: **2.35** 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).

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.

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W3, W4, W11, W14, W15, W16, and W43 directly abut Channel 2. Wetland W13 is adjacent to but does not directly abut Channel 2. Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 _ Channel 2A, Channel 2C, and Channel 2I**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 7,578.23 linear feet, 1-2 feet wide, and/or 0.25 acres.
   Wetlands: 0.313 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channels 2A, 2C and 2I drain directly to Channel 2. Channel 2 drains to Channel 1 a Relatively Permanent Water (RPW) outside of the project area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channel 2A (1st order), Channel 2C (1st order) and Channel 2I (1st order).

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1-2 feet
Average depth: 0.25-0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 2A, 2C and 2I is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 2A, 2C and 2I were observed to be ephemeral.
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):	

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.313** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 2A, 2C and 2I were observed to be ephemeral. Wetland W25 directly abuts Channel 2A. Wetland W53 directly abuts Channel 2I. Wetlands W19 and W20 are adjacent to but do not directly abut Channel 2C.

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 W25, W53
☒ Not directly abutting W19, W20
- ☒ Discrete wetland hydrologic connection. Explain: W19 and W20 are each Connected to Channel 2C through swales that do not exhibit bed and banks.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **4**
Approximately 0.313 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)
W19 (N)	0.03	W20 (N)	0.01
W25 (Y)	0.003	W53 (Y)	0.27

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
The Channels labeled 2A, 2C, and 2I were each demonstrated to flow directly to Channel 2. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 2A, 2C and 2I are ephemeral stream channels that flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream

perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 2A and its abutting wetland W25; Channel 2C and its adjacent wetlands W19 and W20 (connected via upland swale); and Channel 2I and its abutting wetland W53, on attached maps Appendix A each have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. Each of these three tributaries and adjacent wetlands provides habitat and lifecycle support functions for fish species present in the downstream TNW. Each of the channels provides water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River, thereby providing spawning and rearing habitat for fish species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff, thereby regulating and maintaining flow volumes and turbidity in the tributary to which they are adjacent, and deliver water downstream to the tributary and ultimately to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. The Channels labeled 2A, 2C and 2I flow directly into Channel 2. Channels 1, 2 and 3 combine outside of the review area to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: 7,578.23 linear feet, 0.5-4 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.

[8]See Footnote # 3.

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: 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. The wetlands labeled W19, and W20 on attached maps Appendix A were demonstrated to be adjacent to but do not directly abut Channel 2C. Wetland W25 directly abuts (i.e., no breaks in connection) Channel 2A. Wetland W53 directly abuts (i.e., no breaks in connection) Channel 2I.

Provide estimates for jurisdictional wetlands in the review area: **0.313** 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).

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.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W25 directly abuts Channel 2A. Wetland W53 directly abuts Channel 2I. Wetlands W19 and W20 are adjacent to but do not directly abut Channel 2C. Channels 2A, 2C and 2I are ephemeral tributaries to Channel 2. Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 2B, 2D, 2F, 2G, 2J, 2K, and 2L**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 13,151.29 linear feet, 1.5-4 feet wide, and/or 0.85 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through Channel 2 into Channel 1 a Relatively Permanent Water (RPW), Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channels 2B, 2D, 2G, 2J, 2K and 2L are 1st order streams. Channel 2F is a 1st order stream in the upper reach, it combines with Channel 2G to become a 2nd order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1.5-4 feet
Average depth: 0.25-1 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 2D, 2J, 2K and 2L is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 2D, 2G, 2J, 2K and 2L were observed to be intermittent (R4).
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 2B, 2G and 2F are dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 2B and 2G were observed to be ephemeral (R6).
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: Channel 2B exhibits a discontinuous OHWM in the upstream portion. The upstream portion of Channel 2B has areas of defined bend and banks in 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.

upstream portion and the downstream portion, but a short stretch of Channel 2B has discontinuous OHWM exhibited as an area of vegetated swale with no defined bed and banks.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.

☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.

☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Explain:

Surface flow is:

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 river miles from TNW.

Project waters are aerial (straight) miles from TNW.

Flow is from:.

Estimate approximate location of wetland as within the floodplain.

(ii) Chemical Characteristics:

[7]Ibid.

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):
☐ Vegetation type/percent cover. Explain:
☐ 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:
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)

Summarize overall biological, chemical and physical functions being performed:

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 Channels labeled 2B, 2D, 2F, 2G, 2J, 2K and 2L on attached maps Appendix A were each demonstrated to flow directly to Channel 2. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perennial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 2B, 2D, 2G, 2J, 2K and 2L each flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term species reproduction. These studies demonstrate that the individual tributaries to

the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced. The subject channels each have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir.

The Channels labeled 2B, 2D, 2F, 2G, 2J, 2K and 2L on attached maps Appendix A each provide water, habitat and life cycle support functions for fish species present in the downstream TNW. Each provides water, gravel and cobble to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. This process, which occurs in each of these tributaries, transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream food webs.

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:

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: Channels 2D, 2J, 2K and 2L are intermittent seasonal channels that originate on site and flow to Channel 2. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having continuous seasonal flow (R4).

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **4,665.33** linear feet 1.5-2 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. The Channels labeled 2B, 2F and 2G flow directly into Channel 2. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having ephemeral flow (R6).

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **8,485.96** linear feet, 3-4 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.

[8]See Footnote # 3.

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: 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).

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.

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

[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.***

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Channels 2D, 2J, 2K, and 2L are intermittent seasonal RPW tributaries to channel 2. Channels 2B, 2F and 2G are ephemeral tributaries to Channel 2. Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 2E and 2H**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 5,642.33 linear feet, 1.5-4 feet wide, and/or 0.37 acres.
   Wetlands: 2.283 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channel 2H drains directly to Channel 2E. Channel 2E drains to Channel 2. Channel 2 drains to Channel 1 a Relatively Permanent Water (RPW) outside of the project area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Stream 2H (1st order) confluences with Stream 2F (2nd Order), to become Stream 2E (2nd Order).

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

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain:
- ☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
- Average width: 1.5-4 feet
- Average depth: 0.5-1.5 feet
- Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**.
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 2E is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 2E was observed to be ephemeral.
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 2H is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 2H was observed to be intermittent with continuous seasonal flow.
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:

[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.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 2.283** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: Wetland W52 directly abuts Channel 2E and Channel 2H. Wetlands W17, W21, W22, W29, and W30 are adjacent to but do not directly abut Channel 2E. Wetlands W17, W21, W22, W29, and W30 are connected to Channel 2E via upland swale and through shallow, unconfined groundwater movement through underlying permeable sediments. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that it was observed to have ephemeral flow.

Flow is: **Intermittent flow** Explain: Wetland W52 directly abuts and is directly touching (i.e., no breaks in connection) Channels 2H and 2E. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 2H was observed to be intermittent with continuous seasonal flow.

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 W52
☒ Not directly abutting W17, W21, W22, W29 and W30
- ☒ Discrete wetland hydrologic connection. Explain: Connected to Channel 2E through swales that do not exhibit bed and banks and underlying permeable sediments.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.
Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):
☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **6**
Approximately 2.283 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)
W17 (N)	0.08	W21 (N)	0.003
W22 (N)	0.26	W29 (N)	1.79
W30 (N)	0.04	W52 (Y)	0.11

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
The Channels labeled 2E, and 2H were both demonstrated to flow directly to Channel 2. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 2E and 2H flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

   Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

   Channel 2E and its adjacent wetlands W17, W21, W22, W29 and W30 (connected via upland swale) and Channel 2H and its abutting wetland W52 (shown on attached maps Appendix A) both have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. Each of these tributaries provides habitat and lifecycle support functions for fish species present in the downstream TNW. Each of the channels provides water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands adjacent to each channel provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process, which occurs in each of the two tributaries and adjacent wetlands, transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 2H is an intermittent seasonal channel that originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channel as having continuous seasonal flow.
   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: **2,525.69** linear feet 1.5 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. The Channel 2E flows directly into Channel 2. Channels 1, 2 and 3 conbine outside of the review area to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

[8]See Footnote # 3.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☒ Tributary waters: **3,116.64** linear feet, 4 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: The findings of Stantec Inc. clearly demonstrate that Wetland W52 border and is directly touching (i.e., no breaks in connection) Channel 2H with no barriers.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.11** 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. The wetlands labeled W17, W21, W22, W29 and W30 on attached maps Appendix A were demonstrated to be adjacent to but do not directly abut Channel 2E.

Provide acreage estimates for jurisdictional wetlands in the review area: **2.173** 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).

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):

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W17, W21, W22, W29 and W30 are adjacent to but do not directly abut Channel 2E. Wetland W52 directly abuts Channels 2H and 2E. Channels 2E and 2H flow directly to Channel 2. Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 3**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 3,534.83 linear feet, 3-4 feet wide, and/or 0.28 acres.
   Wetlands: 6.16 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through Channel 3 a Relatively Permanent Water (RPW), Channel 3 combines with Channel 2 and Channel 1 outside of the review area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channel 3A and 3B, two first order streams, combine to become Channel 3, a 2nd order stream. Channel 3 combines with Channel 2 outside the review area, but leaves the review area as a 2nd order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 3-4 feet
Average depth: 1 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 3 is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. Channel 3 is mapped as an intermittent stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 3 was observed to be intermittent with continuous seasonal flow (R4).
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;

[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.

☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 6.16** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetlands W5, W6, W12, W32 and W46 directly abut Channel 3. Wetlands W7, W18, and W56 are adjacent to but do not directly abut Channel 3. Wetlands W7, W18, and W56 are connected to Channel 3 via upland swale that does not exhibit bed and banks. Channel 3 is mapped as an intermittent stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc., which states that Channel 3 was observed to be intermittent with continuous seasonal flow.

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 Wetlands W5, W6, W12, W32 and W46 directly abut Channel 3
☒ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain: Wetlands W7, W18, and W56 are connected to Channel 3 via upland swale that does not exhibit bed and banks
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.
Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):
☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **8**
Approximately 6.16 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)
W5 (Y)	2.38	W6 (Y)	0.1
W7 (N)	1.9	W12 (Y)	0.49
W18 (N)	0.05	W32 (Y)	0.52
W46 (Y)	0.64	W56 (N)	0.08

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

Channel 3 confluences with Channel 2 outside of the project area. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 3 is an intermittent stream channel with continuous seasonal flow that flows into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 3 and its abutting wetlands (W5, W6, W12, W32, W46) and non-abutting but adjacent Wetlands (W7, W18, and W56) (shown on attached maps in Appendix A) has a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. The tributary and its adjacent wetlands provides habitat and lifecycle support functions for fish species present in the downstream TNW. The channel provides gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for fish species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 3 is an intermittent seasonal channel that originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channel as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **3,534.83** linear feet 3-4 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.**

[8]See Footnote # 3.

☒ 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: The findings of Stantec Inc. clearly demonstrate that Wetlands W5, W6, W12, W32 and W46 border and are directly touching (i.e., no breaks in connection) Channel 3 with no barriers.

Provide acreage estimates for jurisdictional wetlands in the review area: **4.13** 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. The findings of Stantec Inc. clearly demonstrate that Wetlands W7, W18, and W56 are adjacent to but do not directly abut Channel 3. Wetlands W7, W18, and W56 are connected to Channel 3 via upland swale that does not exhibit ban and banks.

Provide acreage estimates for jurisdictional wetlands in the review area: **2.03** 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).

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).

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc ***136****, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci ***100****, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W5, W6, W12, W32 and W46 directly abut Channel 3. Wetlands W7, W18, and W56 are adjacent to but do not directly abut Channel 3. Wetlands W7, W18, and W56 are connected to

Channel 3 via upland swale that does not exhibit ban and banks. Channel 3 flows to channel 2 outside the project area, Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact TNW. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 3A and 3B**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 2,520.5 linear feet, 2 feet wide, and/or 0.12 acres.
   Wetlands: 0.151 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channels 3A and 3B combine to form Channel 3 a Relatively Permanent Water (RPW), Channel 3 combines with Channel 2 outside of the project area, this unnamed channel combines with Channel 1 outside the project area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known:
Channel 3A and 3B, two first order streams, combine to become Channel 3, a 2nd order stream. Channel 3 combines with Channel 2 outside the review area, but leaves the review area as a 2nd order stream.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 2 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **ephemeral**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 3A and 3B is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. Channels 3A and 3B are mapped as a perennial streams on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 3A and 3B were observed to be ephemeral (R6).
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;

[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.

☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.151** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow** Explain: Channels 3A and 3B are mapped as a perennial stream on the 2018 Robinson Mountain, NV USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 3A and 3B were observed to be ephemeral. Wetland W8 directly abuts Channel 3A. Wetlands W9 and W10 directly abut Channel 3B.

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 W8, W9, W10
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
- ☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
- ☐ 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: **3**
Approximately 0.151 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)
W8 (Y)	0.001	W9 (Y)	0.03
W10 (Y)	0.12		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

Channels 3A and 3B confluence to form Channel 3, Channel 3 is an RPW. Channel 3 confluences with Channel 2 outside of the project area. Channel 2 confluences with Channel 1 outside of the project area and the unnamed

perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 3A and 3B are ephemeral stream channels that flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 3A and its abbutting wetland (W8) and Channel 3B and its abutting wetlands (W9 and W10) (shown on attached maps Appendix A) each have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. Each of these two tributary systems provides habitat and lifecycle support functions for fish species present in the downstream TNW. The channels provide gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process, which is occurring in each of the two tributary systems, transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. The Channels labeled 3A and 3B confluence and flow directly into Channel 3. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **2,520.5** linear feet, 2 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:

[8]See Footnote # 3.

☐ 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: 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: **0.151** 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).

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:

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

[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.***

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W9 and W10 directly abut Channel 3B an ephemeral stream that drains to Channel 3. Wetland W8 directly abuts Channel 3A an ephemeral stream that drains to Channel 3. Channel 3 flows to channel 2, Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 4**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Trout Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **Pine, 16040104**
☒ 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: May 13, 2019
☐ 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: 13,015.87 linear feet, 5-6 feet wide, and/or 1.64 acres.
   Wetlands: 0.9 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: **Pick List**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** 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 waters within the project area are located entirely within the State of Nevada.

   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a "Navigable in Fact" water. The waters in the review area drain through Channel 4 (Dixie fork of Trout Creek) a Relatively Permanent Water (RPW), Trout Creek drains to Pine Creek, Pine Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: The portion of Channel 4 (Dixie fork of Trout Creek) above the confluence with Channel 4B is a 1st order stream. Channel 4 combines with Channel 4B to become a 2nd order stream. Channel 4 combines with four other 1st order streams (4A, 4C, 4D, and 6) within the review area but leaves the review area as a 2nd order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 5-6 feet
Average depth: 1-1.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Perennial**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 4 (Dixie Fork of Trout Creek) is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. Channel 4 is mapped as an intermittent stream on the 2018 Papoose Canyon USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 4 was observed to be perennial (R3/4).
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;

[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.

☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.9** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Wetlands, provide rare water source in arid environment.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Perennial flow**. Explain: Wetlands W24, W33 and W54 directly abut Channel 4 (Dixie Fork of Trout Creek), it is mapped as an intermittent stream on the 2018 Papoose Canyon USGS map. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that it was observed to be perennial.

Flow is: **Intermittent flow** Explain: Wetlands W23, W26, W27 and W28 are adjacent to but do not directly abut Channel 4. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that each of these wetlands is connected to channel 4 via an upland swale.

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 Wetlands W24, W33 and W54 directly abut Channel 4
☒ Not directly abutting
- ☒ Discrete wetland hydrologic connection. Explain: Wetlands W23, W26, W27 and W28 are adjacent to but do not directly abut Channel 4. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that each of these wetlands is connected to channel 4 via an upland swale
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.
Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):
☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: 7
Approximately **0.9** 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)
W23 (N)	0.01	W24 (Y)	0.04
W26 (N)	0.27	W27 (N)	0.03
W28 (N)	0.07	W33 (Y)	0.18
W54 (Y)	0.3		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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 wetlands labeled W23, W26, W27 and W28 (subject wetlands) on attached maps Appendix A were demonstrated to be adjacent to Channel 4 (Dixie Fork of Trout Creek) an RPW. The findings of Stantec Consulting Services Inc. documented that the subject wetlands are connected to Channel 4 during flow events via upland swales. Channel 4 flows into Trout Creek and eventually to the Rye Patch Reservoir a TNW.

The subject wetlands are intermittently connected to the adjacent RPW via upland swales. Channel 4 has an unbroken surface connection to the downstream TNW, the Rye Patch Reservoir. An extensive review of the literature on waterbody connectivity (USEPA 2015), which included a detailed review by an EPA Science Advisory Board (SAB) of technical experts from the public concluded that low levels of connectivity can be important relative to impacts on the chemical, physical, and biological integrity of downstream waters. The subject wetlands in combination with other similarly situated waters (those wetlands that have an unbroken hydrologic connection, via surface or subsurface flow, with the RPW) in the Pine Creek watershed have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir.

The subject wetlands and similarly situated wetlands provide infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. The subject wetlands and similarly situated wetlands provide water, nutrients and organic carbon to headwater streams that support downstream foodwebs for fish species present in perennial tributaries that migrate to the downstream TNW. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW.

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: Channel 4 is a perennial channel that originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents it to be 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: **13,015.87** linear feet **5-6** 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: The findings of Stantec Inc. clearly demonstrate that Wetlands W24, W33 and W54 border and are directly touching (i.e., no breaks in connection) Channel 4 (Dixie Fork of Trout Creek) with no barriers.

[8]See Footnote # 3.

☐ 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: **0.52** 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. Wetlands W23, W26, W27 and W28 are adjacent to but do not directly abut Channel 4 (Dixie Fork of Trout Creek).

Provide acreage estimates for jurisdictional wetlands in the review area: **0.38** 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).

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:

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panel 5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ 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; Papoose Canyon**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W24, W33 and W54 directly abut Channel 4. Wetlands W23, W26, W27 and W28 are adjacent to but do not directly abut Channel 4. Channel 4 is an RPW and mapped (USGS) perennial stream (Dixie fork of Trout Creek) that flows directly to Pine Creek an RPW and mapped (USGS) perennial stream, Pine Creek Drains directly to the Humboldt River, an RPW and mapped (USGS) perennial river which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 4A, 4B, and 4D**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Trout Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **Pine, 16040104**
☒ 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: May 13, 2019
☐ 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: 2,990.08 linear feet, 1-2 feet wide, and/or 0.09 acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **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

[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.

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:

   Summarize rationale supporting determination:

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

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: **Pick List**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** 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 waters within the project area are located entirely within the State of Nevada.

   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channels 4A, 4B and 4D drain directly to Channel 4 (Dixie fork of Trout Creek) a Relatively Permanent Waters (RPW), Trout Creek drains to Pine Creek, Pine Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channels 4A, 4B and 4D are 1st order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1-2 feet
Average depth: 0.25-0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 4B is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 4A was observed to be intermittent with continuous seasonal flow (R4).
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 4A and 4D is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 4A and 4D were observed to be ephemeral (R6).
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: Channel 4D has areas of defined bend and banks connected by areas of vegetated swale with no defined bed and banks.

[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.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.

☐ Wetland fringe. Characteristics:

☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Explain:

Surface flow is:

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):
☐ Vegetation type/percent cover. Explain:
☐ 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:
   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)

   Summarize overall biological, chemical and physical functions being performed:

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 Channels labeled 4A, 4B, and 4D (subject channels) on attached maps Appendix A were demonstrated to flow directly to Channel 4 (Dixie Fork of Trout Creek) a Relatively Permanent Waters (RPW). The findings of Stantec Consulting Services Inc. clearly demonstrate that the subject channels flow into Trout Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

   Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* 2003, found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term species reproduction. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced. Each of the subject channels in the Pine Creek watershed has a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir.

   Each of the subject channels provides habitat and lifecycle support functions for fish species present in the downstream TNW. Each channel provides water, gravel and cobble to perennial tributaries to the Humboldt River thereby providing

spawning and rearing habitat for fish species that migrate downstream to the Rye Patch Reservoir. This process, which occurs in each of the three channels, transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 4B is an intermittent channel that flows continuously seasonally and originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents Channel 4B as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: **494.71** linear feet **1** 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. Channels 4A and 4D flow directly into Channel 4 (Dixie Fork of Trout Creek).

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☒ Tributary waters: **2,495.37** linear feet, **1-2** 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: acres.

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

[8]See Footnote # 3.

☐ 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).

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 South Railroad Project Elko County, Nevada. Appendix A, Panel 5, prepared by Stantec Consulting Services Inc. November 26, 2018.

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

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Papoose Canyon**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Channels 4A and 4D are ephemeral tributaries to Channel 4. Channel 4B is an intermittent tributary to Channel 4. Channel 4 drains to Trout Creek an RPW and mapped (USGS) perennial stream that flows directly to Pine Creek an RPW and mapped (USGS) perennial stream, Pine Creek Drains directly to the Humboldt River, an RPW and mapped (USGS) perennial river which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 4C**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Trout Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **Pine, 16040104**
☒ 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: May 13, 2019
☐ 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: 2162.54 linear feet, 1.5 feet wide, and/or 0.17 acres.
      Wetlands: 0.3 acre.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: **Pick List**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** 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 waters within the project area are located entirely within the State of Nevada.

   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channel 4C, a Relatively Permanent Water (RPW) and its abutting wetlands drain to Channel 4 (Dixie fork of Trout Creek) a RPW, Trout Creek drains to Pine Creek, Pine Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channel 4C is a 1st order stream.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1.5 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal Flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 4C is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 4C was observed to be intermittent with continuous seasonal flow (R3/4).
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
☒ changes in the character of soil
☒ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☒ sediment deposition
☐ water staining
☐ other (list):
☐ 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
☐ 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:
☐ 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.

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.3** acre

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Wetlands, provide rare water source in arid environment.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetland W54 directly abuts Channel 4C. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 4C was observed to be intermittent with continuous seasonal flow (R3/4).

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:

☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: 1
Approximately 0.30 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)
W54 (Y)	0.30		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
Channel 4C (RPW with continuous seasonal flow) was demonstrated to flow directly to Channel 4 (Dixie Fork of Trout Creek) an RPW. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 4C flows into Trout Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and

increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 4C and its abutting wetland W54 on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. They provide habitat and lifecycle support functions for fish species present in the downstream TNW. The channels provide water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 4C is an intermittent channel that flows continuously seasonally and originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: **2162.54** linear feet **1.5** 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: The findings of Stantec Inc. clearly demonstrate that Wetland W54 borders and directly touches (i.e., no breaks in connection) Channel 4C with no barriers.

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.3** 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.

[8]See Footnote # 3.

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

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.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panel 5, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  - ☒ 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; Papoose Canyon**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
- ☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
- ☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
- ☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetland W54 directly abuts unnamed seasonal RPW 4C. Channel 4C drains directly to Channel 4 (Dixie Fork of Trout Creek) an RPW and mapped (USGS) intermittent stream. Channel 4 drains to Trout Creek an RPW and mapped (USGS) perennial stream that flows directly to Pine Creek an RPW and mapped (USGS) perennial stream, Pine Creek Drains directly to the Humboldt River, an RPW and mapped (USGS) perennial river which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 5**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 6,225.37 linear feet, 2.5 feet wide, and/or 0.36 acres.
   Wetlands: 0.21 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain through Channel 5, Channel 5 drains to Channel 2. Channel 2 combines with Channel 1 outside the review area. Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channel 5 is a 1st order stream in the upper reach and joins with Channel 5B to become a 2nd order stream.

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 0.5-6 feet
Average depth: 0.25-1 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbaceous and shrub	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 5 is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 5 was observed to be intermittent without continuous seasonal flow (R6).
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: Channel 5 has areas of defined bend and banks connected by an area of vegetated swale with no defined bed and banks.

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.

[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.

☐ 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 quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 0.21** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 5 was observed to be ephemeral. Wetlands W41, W42 and W31-Spring directly abut Channel 5.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.

☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **3**
Approximately 0.21 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)
W31-Spring (Y)	0.07	W41 (Y)	0.1
W42 (Y)	0.04		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

The Channel labeled 5 was demonstrated to flow directly to Channel 2 an RPW. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 5 is an ephemeral stream channel that flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream

perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 5 and its abutting wetlands W31-spring, W41 and W42, on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. They provide habitat and lifecycle support functions for fish species present in the downstream TNW. The channels provide water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. The Channel labeled 5 flows directly into Channel 2. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **6,225.37** linear feet, 2.5 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.**

[8]See Footnote # 3.

☐ 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: 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. The wetlands labeled W31-Spring, W41 and W42 were demonstrated to directly abut (i.e., no breaks in connection) Channel 5.

Provide estimates for jurisdictional wetlands in the review area: **0.21** 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).

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.

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

[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.***

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W31-Spring, W41 and W42 directly abut ephemeral Channel 5. Channel 5 flows to channel 2, Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channels 1A, 1C, and 1D**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 4,973.64 linear feet, 1-4 feet wide, and/or 0.18 acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain to Channel 5, Channel 5 drains to Channel 2. Channel 2 combines with Channel 1 outside the project area. Channel 1 is a Relatively Permanent Water (RPW) with continuous seasonal flow, Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known:
Channels 5A, 5C and 5D are 1st order streams.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1-4 feet
Average depth: 0.08 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channels 5A, 5C and 5D is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 5A, 5C and 5D were observed to be intermittent without continuous seasonal flow (R4&R6)
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
☒ changes in the character of soil
☒ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☒ sediment deposition
☐ water staining
☐ other (list):
☐ 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
☐ 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:
☐ 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.

[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.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: Explain:

Surface flow is:
Characteristics:

Subsurface flow:. 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):
- ☐ Vegetation type/percent cover. Explain:
- ☐ 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:
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)

Summarize overall biological, chemical and physical functions being performed:

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: Channel 5A, 5C and 5D (shown on attached maps in Appendix A) were demonstrated to flow directly to Channel 5, Channel 5 flows directly to Channel 2. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perennial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channels 5A, 5C and 5D are intermittent stream channels that flow into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

   Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term species reproduction. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced. The subject channels each have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir.

   Channels labeled 5A, 5C and 5D (shown on attached maps in Appendix A) each provide habitat and life cycle support functions for fish species present in the downstream TNW. They each provide gravel and cobble to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. This process, which is occurring in each of the three tributaries) transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream food webs.

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:

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. The Channels labeled 5A, 5C and 5D flow directly into Channel 5. Channel 5 flows to Channel 2. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☒ Tributary waters: **4,973.64** linear feet, 1-4 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: 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

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ 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.

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[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.*

☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Channels 5A, 5C, and 5D intermittent streams that drain to Channel 5. Channel 5 flows to channel 2, Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 5B**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Dixie Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **South Fork Humboldt, 16040103**
☒ 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: May 13, 2019
☐ 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.

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: 7,727.24 linear feet, 2 feet wide, and/or 0.35 acres.
   Wetlands: 0.28 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: 835,910 **acres**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** 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 waters within the project area are located entirely within the State of Nevada.
   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). The waters in the review area drain to Channel 5, Channel 5 drains to Channel 2. Channel 2 combines with Channel 1 outside the project area. Channel 1 is a Relatively Permanent Water (RPW) with continuous seasonal flow, Channel 1 is an unnamed tributary to Dixie Creek, Dixie Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known:
Channel 5B combines with Channel 5D to become a 2nd order stream. Channel 5B combines with three 1st order channels (channels 5C, channel 5 and channel 5A) but remains a 2nd order stream until its confluence with Channel 2, which is 3rd order.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 2 feet
Average depth: 0.8 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Stream channel incised in areas where channel is constricted.
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 5B is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channels 5B were observed to be intermittent without continuous seasonal flow (R6)
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: Channel 5B has areas of defined bend and banks connected by an area of vegetated swale with no defined bed and banks.

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:

[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.

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

☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **0.28** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Fair quality wetlands, provide rare water source in arid environment. Wetlands have been disturbed by livestock grazing.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 5B was observed to be intermittent without continuous seasonal flow. Wetlands W34 and W41 directly abut Channel 5B. Wetlands W62 and W35-Hillslope are adjacent to but do not directly abut Channel 5B, these wetlands are connected to Channel 5B via overland sheet flow and through shallow subsurface connection.

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 W34, W41
☒ Not directly abutting W62, W35-Hillslope
- ☒ Discrete wetland hydrologic connection. Explain: Connected to Channel 1 through shallow subsurface connection and swales that do not exhibit bed and banks.
- ☐ 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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.
Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):
☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:
☒ Habitat for:
☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
☐ 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: **4**
Approximately 0.28 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)
W34 (Y)	0.06	W35-Hillslope (N)	0.09
W41 (Y)	0.1	W62 (N)	0.03

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:

The Channel labeled 5B was demonstrated to flow through Channel 5 to Channel 2 an RPW. Channel 2 confluences with Channel 1 outside of the project area and the unnamed perenial stream drains directly to Dixie Creek. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 5B is an intermittent stream channel that flows into Dixie Creek and eventually to the Rye Patch Reservoir a Traditional Navigable Water (TNW).

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 5B, its abutting wetlands W34 and W41 and adjacent wetlands W62 and W35-Hillslope, on attached maps Appendix A have a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. They provide habitat and lifecycle support functions for fish species present in the downstream TNW. The channels provide water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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. The Channel labeled 5B flows into Channel 5 which flows directly into Channel 2. Channels 1, 2 and 3 conbine to form an unnamed perenial stream that flows into Dixie Creek and eventually to the Rye Patch Reservoir a TNW.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **7,727.24** linear feet, 2 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:

[8]See Footnote # 3.

☐ 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: 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. Wetlands W34 and W41 directly abut Channel 5B, Wetlands W62 and W35-Hillslope are adjacent to but do not directly abut Channel 5B.

Provide estimates for jurisdictional wetlands in the review area: **0.28** 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).

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.

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

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 South Railroad Project Elko County, Nevada. Appendix A, Panels 1-5, prepared by Stantec Consulting Services Inc. November 26, 2018.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.
  ☒ 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; Robinson Mountain, NV**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018
☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018
☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
  *Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*
  USEPA (US Environmental Protection Agency). "Connectivity of streams and wetlands to downstream waters: a review and synthesis of the scientific evidence." (2015).
  *Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*
  Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.
  Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.
☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W34 and W41 directly abut Channel 5B. Wetlands W62 and W35-Hillslope are adjacent to but do not directly abut Channel 5B. Channel 5B is an intermittent stream that drains to Channel 5. Channel 5 flows to channel 2, Channel 2 and Channel 1 confluence outside of the project areas boundary. Channel 1 an RPW and mapped (USGS) perennial stream drains to Dixie Creek an RPW and mapped (USGS) perennial stream that flows directly to the Humboldt River, an RPW and mapped (USGS) Perennial River which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.

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): May 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, **South Railroad Project**, **SPK-2018-00673 – Channel 6**

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **Nevada** County/parish/borough: **Elko County** City:
Center coordinates of site (lat/long in degree decimal format): Lat. **40.4764**°, Long. **-116.0428**°
Universal Transverse Mercator: **11 581136.26 4481075.11**
Name of nearest waterbody: Trout Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Rye Patch Reservoir**
Name of watershed or Hydrologic Unit Code (HUC): **Pine, 16040104**
☒ 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: May 13, 2019
☐ 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: 3,657.54 linear feet, 1.5 feet wide, and/or 0.13 acres.
   Wetlands: 1.15 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and 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

[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.

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:

   Summarize rationale supporting determination:

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

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: **Pick List**
   Drainage area: **acres**
   Average annual rainfall: **10** inches
   Average annual snowfall: **41** inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **2** 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 waters within the project area are located entirely within the State of Nevada.

   Identify flow route to TNW[5]: The Rye Patch Reservoir, an instream impoundment of the Humboldt River, has been determined to be a Navigable in Fact Traditional Navigable Water (TNW). Channel 6, a Relatively Permanent Waters (RPW) and its abutting wetlands drain to Channel 4 (Dixie fork of Trout Creek) a RPW, Trout Creek drains to Pine Creek, Pine Creek Drains directly to the Humboldt River which flows directly into Rye Patch Reservoir at a distance of about 170 miles.

[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.

Tributary stream order, if known: Channel 6 is a 1st order stream.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: 1.5 feet
Average depth: 0.5 feet
Average side slopes: **3:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Herbaceous and shrub
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Seasonal Flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Streamflow of Channel 6 is dependent almost entirely on snowpack in the surounding Mountains. Mean annual precipitation ranges from about 6-15 inches. Year to year and longer-term variations in annual precipitation results in corresponding variations in flow of these streams. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 6 was observed to be intermittent with continuous seasonal flow (R4).
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
☒ changes in the character of soil
☒ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☒ sediment deposition
☐ water staining
☐ other (list):
☐ 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
☒ Discontinuous OHWM.[7] Explain: Channel 6 has areas of defined bend and banks connected by areas of vegetated swale with no defined bed and banks.

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
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

[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.

☐ other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

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

☒ Riparian corridor. Characteristics (type, average width): Palustrine emergent, width varies 0-20 feet.
☒ Wetland fringe. Characteristics: Palustrine emergent wetlands.
☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi*
- ☒ Fish/spawn areas. Explain findings: Channels provide spawning gravel and cobble down gradient to perennial waters that provide habitat for fish species.
- ☐ 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: **total 1.15** acres

Wetland type. Explain: Palustrine emergent

Wetland quality. Explain: Wetlands, provide rare water source in arid environment.

Project wetlands cross or serve as state boundaries. Explain: No, the waters within the project area are located entirely within the State of Nevada.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow** Explain: Wetlands W33, W36, W37, W38, W39, W40 and W55 directly abut Channel 6. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. states that Channel 6 was observed to be intermittent with continuous seasonal flow.

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: Water quality appears to be relatively good through the proposed project area. However, known water quality issues and concerns exist in the Humboldt Watershed.

Identify specific pollutants, if known: Mining and agricultural activities both historic and current, may contribute to poor water quality within the watershed.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width): Palustrine emergent, width varies 1-20-feet.
☒ Vegetation type/percent cover. Explain:

☒ Habitat for:
- ☒ Federally Listed species. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for ESA listed *Oncorhynchus clarkii henshawi.*
- ☒ Fish/spawn areas. Explain findings: Wetlands provide stream recharge and maintain streamflow during periods of low precipitation to downstream perennial waters that provide habitat for fish species.
- ☐ 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: 7
Approximately **1.15** 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)
W33 (Y)	0.18	W36 (N)	0.23
W37 (N)	0.41	W38 (N)	0.04
W39 (N)	0.04	W40 (N)	0.18
W55 (N)	0.07		

Summarize overall biological, chemical and physical functions being performed: Groundwater recharge and streamflow maintenance, wildlife habitat, water quality improvement through sediment removal and flood protection through runoff detention.

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:
Channel 6 (RPW with continuous seasonal flow) was demonstrated to flow directly to Channel 4 (Dixie Fork of Trout Creek) an RPW. The findings of Stantec Consulting Services Inc. clearly demonstrate that Channel 6 flows into Trout Creek and eventually to the Rye Patch Reservoir a TNW.

Kondolf n et al. (1991) demonstrated that intermittent and ephemeral high-gradient tributaries are important to spawning and rearing habitat for trout species (including ESA listed *Oncorhynchus clarkii henshawi*) in downstream perennial streams. Intermittent and ephemeral streams provide water, spawning gravel and cobble to down gradient

perennial waters during flow events. Nelson et al. (1992) found *Oncorhynchus spp.* abundance to be positively influenced by proximity to sedimentary inputs within the Humboldt River watershed. The findings of Achord *et al.* (2007) indicate that *Oncorhynchus spp.* exhibit fine-scale population structure and local adaptations to their natal habitats. Hilborn *et al.* (2003), found that the variation among local environmental conditions decreases extinction risk and increase sustainability of long-term production from groups of populations. These studies demonstrate that the individual tributaries to the Rye Patch Reservoir have a buffering effect on variability of the aggregate fish community and these populations become weaker as habitat diversity is reduced.

Channel 6 and its abutting wetlands W33, W36, W37, W38, W39, W40, and W55 on attached maps Appendix A has a significant effect on the physical, chemical and biological integrity of the Rye Patch Reservoir. They provide habitat and lifecycle support functions for fish species present in the downstream TNW. The channel provides water, gravel, cobble, nutrients and organic carbon to perennial tributaries to the Humboldt River thereby providing spawning and rearing habitat for trout species that migrate downstream to the Rye Patch Reservoir. The wetlands provide water, nutrient input, infiltration and reduce runoff thereby regulating and maintaining flow volumes and turbidity delivered downstream to the Rye Patch Reservoir. This process transfers nutrients and organic carbon from the headwaters to the downstream TNW and supports downstream foodwebs.

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:

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: Channel 6 is an intermittent channel that flows continuously seasonally and originates on site. The applicant supplied delineation titled *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* prepared by Stantec Consulting Services Inc. documents the channels as having continuous seasonal flow.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☒ Tributary waters: **3,657.54** linear feet **1.5** 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: The findings of Stantec Inc. clearly demonstrate that Wetlands W33, W36, W37, W38, W39, W40 and W55 border and are directly touching (i.e., no breaks in connection) Channel 6 with no barriers.

   Provide acreage estimates for jurisdictional wetlands in the review area: **1.15** acres.

[8]See Footnote # 3.

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: 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).

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:

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

☐ 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 South Railroad Project Elko County, Nevada. Appendix A, Panel 5, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant. Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix E and F, prepared by Stantec Consulting Services Inc. November 26, 2018.

☒ 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; Papoose Canyon**

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed September 25, 2018

☒ National wetlands inventory map(s). Cite name: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed September 25, 2018

☐ 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): Aquatic Resources Delineation South Railroad Project Elko County, Nevada. Appendix C, prepared by Stantec Consulting Services Inc. November 26, 2018.

☐ Previous determination(s). File no. and date of response letter:

☐ Applicable/supporting case law:

☒ Applicable/supporting scientific literature:

*Achord, S., Zabel R.W., Sandford B.P. (2007) Migration timing, growth, and estimated parr-to-smolt survival rates of wild Snake River spring-summer Chinook salmon from the Salmon River Basin, Idaho, to the Lower Snake River. Trans Am Fish Soc **136**, 142–154.*

*Hilborn, R., Quinn T.P, Schindler D.E., Rogers D.E. (2003) Biocomplexity and fisheries sustainability. Proc Natl Acad Sci **100**, 6564–6568.*

Kondolf, G. M., et al. "Distribution and stability of potential salmonid spawning gravels in steep boulder-bed streams of the eastern Sierra Nevada." *Transactions of the American Fisheries Society* 120.2 (1991): 177-186.

Nelson, Rodger L., et al. "Trout distribution and habitat in relation to geology and geomorphology in the North Fork Humboldt River drainage, northeastern Nevada." *Transactions of the American Fisheries Society* 121.4 (1992): 405-426.

☒ Other information (please specify): U.S. Fish & Wildlife Service, IpaC Information for Planning and Consultation https://ecos.fws.gov/ipac/ Accessed November 9, 2018

B. ADDITIONAL COMMENTS TO SUPPORT JD: Wetlands W33, W36, W37, W38, W39, W40 and W55 directly abut unnamed seasonal RPW Channel 6 that drains to Channel 4 (Dixie Fork of Trout Creek) an RPW and mapped (USGS) intermittent stream. Channel 4 drains to Trout Creek an RPW and mapped (USGS) perennial stream that flows directly to Pine Creek an RPW and mapped (USGS) perennial stream, Pine Creek Drains directly to the Humboldt River, an RPW and mapped (USGS) perennial river which flows directly into the Rye Patch Reservoir a navigable-in-fact water of the U.S. Each wetland and stream is documented on individual forms located in the *Aquatic Resources Delineation South Railroad Project Elko County, Nevada* report submitted by Stantec Consulting Services Inc. dated November 26, 2018. These sheets include the general area conditions, physical characteristics, chemical characteristics, and biological characteristics of each wetland/water evaluated so the responses provided in B and D of this document should be considered averages.