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): 13 Nov 2012

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, AMAFCA; Approved JD Request; S. Pino Arroyo; Albuquerque, Bernalillo Co., SPA-2012-00190

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **New Mexico** County/parish/borough: **Bernalillo** City: **Albuquerque**
Center coordinates of site (lat/long in degree decimal format): Lat. **35.156562°**, Long. **-106.527889°**
Universal Transverse Mercator: **13 360838.08 3891473.99**
Name of nearest waterbody: **Grande, Rio**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Grande, Rio**
Name of watershed or Hydrologic Unit Code (HUC): **Rio Grande-Albuquerque, New Mexico, 13020203**
☒ 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:
☒ Field Determination. Date(s): **May 17, 2012; July 19, 2012; August 3,10, and 13, 2012**

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: **60,720** linear feet, **10'** wide, and/or **13.939** acres.
      Wetlands: acres.

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

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

[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.

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW
Identify TNW:

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: **8.3 square miles**
Drainage area: **8.3 square miles**
Average annual rainfall: **9.7** inches
Average annual snowfall: **9.7** inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.
Project waters are **5-10** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]: **The S. Pino headwaters begin at the crest of the Sandia Mountains east of Albuquerque. Developed flows are conveyed via a natural earthen channel approximately 4.5 miles to the Pino Dam located on the eastern edge of the City of Albuquerque. The Pino is concrete-lined beginning at the dam outlet and continues as a concrete-lined channel for approximately 6.0 miles except for a 2.1-mile earthen**

[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.

channel reach in the middle of the city. The Pino discharges developed flow less than 100 cfs through a low-flow diversion (P1 in Attachment 4) and into a trash removal pond where flows are diverted back into the unlined channel or, in smaller quantities, through an 8-inch trickle pipe and into a water quality enhancement basin. The water quality enhancement basin also discharges flow into the unlined arroyo via an 8-inch standpipe outlet (P4 in Attachment 4). Both water quality ponds are part of a 6.0 acre earthen water quality feature (WQF) immediately upstream of the arroyo's confluence with the North Diversion Channel (NDC), a large, concrete-lined storm water channel. Flows in excess of 100 cfs are conveyed directly into the unlined arroyo channel within the WQF. The NDC conveys flows developed in the Pino for 3.3 miles to the NDC settling pond. The settling pond is a large detention feature that collects developed flows in eastern Albuquerque and discharges flows in excess of 50 cfs into the NDC embayment either through an existing approximate 12" steel pipe or by overtopping an earthen maintenance road separating the pond from the embayment. The embayment pool blends with Rio Grande flows and is characterized as an extension of the Rio Grande.

Tributary stream order, if known: **N/A**

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

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain:
- ☒ Manipulated (man-altered). Explain: **Except for the headwater drainage, a 2.1-mile reach in mid-town, and the WQF the Pino has been concrete-lined to improved drainage conveyance.**

Tributary properties with respect to top of bank (estimate):
- Average width: **30** feet
- Average depth: **8** feet
- Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☒ Concrete
☐ Cobbles	☒ Gravel	☒ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: **Riparian shrubs and trees; 15% in earthen water quality feature.**	

☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Relatively stable. Earthen water quality feature presents slight channel incision from concrete discharge to rundown into NDC.**
Presence of run/riffle/pool complexes. Explain: **N/A. Ephemeral drainage.**
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): **2.65** %

(c) Flow:

Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **The Pino flow regime is described in Section C 1, Significant Nexus Determination. The map in Attachment 1 illustrates the flow path of the Pino.**

Other information on duration and volume: **See Section C1.**

Surface flow is: **Discrete and confined.** Characteristics: **See Section C 1.**

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

[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.

☒ water staining ☐ abrupt change in plant community
☒ other (list): **In the concrete-lined reaches, staining is evident from cyclic runoff.**
☐ 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.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: **S. Pino runoff is the result of stormwater conveyed into the channel. The runoff originates primarily from developed residential, commercial and industrial areas. A golf course also conveys drainage into the S. Pino. Site visits during August noted water was discolored to a brownish hue.**
Identify specific pollutants, if known: **Pollutants include those found in aeresol cans, petrochemical contaminants, contaminants associated with discarded computer equipment. Escherichia coli (E. coli) has been detected upstream of the WQF. Also reported hydraulic fluid spill (Dec. 2010).**

(iv) Biological Characteristics. Channel supports (check all that apply):
☒ Riparian corridor. Characteristics (type, average width): **Found in the earthen water quality feature: grasses to cottonwood canopy. Corridor is a thin (~25' wide) line found along both of the arroyo's banks, in the center of the feature, approximately 200 long.**
☒ Wetland fringe. Characteristics: **The two water quality ponds in the earthen water quality feature display wetland vegetation characteristics. The western-most pond in particular has robust sedge growth and a densely populated willow stand. The eastern pond supports willow and cottonwood growth.**
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

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

(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**: Pick List**
Characteristics:

Subsurface flow: **Pick List**. 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 **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**

[7] Ibid.

Estimate approximate location of wetland as within the **Pick List** 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: **Pick List**
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 South Pino (Pino) headwaters begin at the crest of the Sandia Mountains east of Albuquerque. Developed flows are conveyed via a natural earthen channel approximately 4.5 miles to the Pino Dam located within the City of Albuquerque boundary. Downstream of the dam the Pino drainage is a trapezoidal, concrete-lined constructed channel for most of its length within the City of Albuquerque. The constructed channel is operated and maintained by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA).**

The Pino is ephemeral, conveying developed storm flows from the east to the west, within the eastern section of the City of Albuquerque. Flows develop primarily during the monsoon season (June - September). The drainage basin is

approximately 8.3 sq. mi. beginning at the crest of the Sandia Mountains. The upper 3.8 sq mi are characterized by extremely steep slopes within the Cibola National Forest. From its headwaters the Pino is conveyed via a natural channel with steep slopes for approximately 4.5 miles until the arroyo reaches the Pino Dam, a stormwater management facility. The Pino is a trapazoidal, concrete-lined channel as it exits the Pino Dam and remains a concrete channel for approximately 3.15 miles until it reaches the Albuquerque Academy land parcel. For 2.1 miles through the Academy, the Pino is an unimproved earthen channel which discharges again into a trapazoidal, concrete-lined channel for an additional 1.75 miles. The concrete lined reaches of the Pino have a bottom width of 10', bank height of 8', and banks at 2:1 slopes. The Pino has a maximum conveyance capacity of 4,000 cfs. After a total of approximately 11.5 miles the Pino discharges into an approximately 6-acre, earthen water quality feature (WQF). Components of the WQF are depicted in Attachment 2. A photolog map is found in Attachment 3 with referenced photos in Attachment 4.

The WQF is described as a first-generation water quality facility (Bohannon Huston - 2010). Two water quality basins have been constructed within the WQF: the eastern-most is characterized as a trash removal pond, and the western-most as a water quality enhancement basin (WQEB). The trash removal pond was constructed to trap trash and floatables and discharge the diverted flows back into the unlined arroyo downstream of the concrete channel. The trash removal pond also receives runoff from the 19.0-acre Ellison Street drainage area. The peak discharge and volumn from the Ellison Street Basin are 78.1 cfs and 3.19 acre-feet respectively. Developed flows from this basin are conveyed into the trash removal pond via a 5-foot concrete storm channel. In addition, a low flow diversion is located approximately 60 yards upstream of the Pino outfall into the unlined WQF (P1 in Attachment 4). Thus, the trash removal pond receives developed flows from both the Pino and Ellison Street Basin drainages. The trash removal pond was designed to return flows in excess of 100 cfs to the unlined arroyo via a concrete, slot-ported vertical intake (P3 in Attachment 4). A 20-foot concrete spillway was constructed on the ponds' southern embankment (P2 in Attachment 4) The intake is connected to a 42-inch rolled concrete pipe with a 66-inch energy dissipator attached at the outfall that drains into the unlined channel through the WQF. The WQEB is also connected to the trash removal pond's intake via a 6-inch inflow pipe set at the invert of the WQEB. The WQEB returns flow into the unlined arroyo through an 8-inch pipe set approximately 1.3-feet above basin invert (P4 in Attachment 4). The WQEB retains a shallow pool primarily through summer and fall and supports robust wetland and riparian vegetative populations. The WQEB is described by Thompson (2000) as a constructed wetland that functions as a filtration system to help remove contaminants from the trash removal pond's diverted flow as well as provide habitat for wildlife. Information on flow conveyance into the WQF and the structures within the WQF was taken from "Pino Arroyo Low-Flow Diversion Structure and Debris Basin" (Thompson Engineering – 2000). Both ponds exhibit wetland characteristics but have not been delineated so are not classified as such for the purposes of this JD (April through August 2012 site visits). However, the ponds are described as a pilot wetlands project (City of Albuquerque Antibiotic Resistance Analysis of Contamination in Stormwater, Final Report, CDM (June 2002).

Flows conveyed through the WQF are discharged into the North Diversion Channel (NDC), a concrete stormwater channel conveying developed flows to the NDC's upper settling pond, then through an approximate 12" steel pipe culvert at the pond's invert (P14 in Attachment 4), or overtopping an earthen maintenance road and into an embayment, which blends with flows from the Rio Grande. The distance from the WQF's confluence with the NDC and the NDC settling pond is approximately 3.3 miles. The NDC is a massive storm water management facility collecting and conveying developed flows from throughout eastern Albuquerque. The NDC settling pond and embayment also collect flows conveyed from the north and east via the Albuquerque Riverside Drain.

The reach of the Rio Grande into which the Pino discharges is classified as an impaired water by the New Mexico Environment Department (Rio Grande - non-pueblo Alameda Bridge to Angostura Div; 2008-2010 State of New Mexico Integrated (303d) List). Identified impairments include Ambient Bioessays - Acute Aquatic Toxicity, E. coli and low dissolved oxygen. On October 10, 2003 the United States Geological Survey (USGS) collected water samples from five storm water drainages in the Albuquerque metropolitan area. The samples were analyzed for E. coli and the Pino was found to have the highest level of E. coli during that round of testing and the second highest level for the testing year (USGS Open-File Report 2005-1266). The samples were obtained upstream of the WQF.

Additional sources of contamination are found in the Pino that can contribute contaminants to the Rio Grande. In December 2010, the New Mexico Environment Department documented a hydraulic fluid spill, quantity unknown, upstream of the WQF that the Department stated was possibly conveyed to the NDC. Also, as seen in Attachment 4, petrochemical product containers are found in the WQF as are aerosol spray paint cans and computer components (P9 through P12). These items are known sources of contaminants. These and other garbage and contaminant sources are so abundant in the Pino that AMAFCA has established three concrete "debris drying bins" adjacent to the WQF to place the material to dry prior to transporting to a disposal location (telephone conversation with Brad Bingham, AMAFCA, August 13, 2012). Two of the bins are reportedly used by AMAFCA and one bin is used by the City of Albuquerque. Although AMAFCA has stated that the debris in the bins is contained and drainage from the bins does not enter the arroyo flow path; however, observations made during site visits indicate that the debris is not confined and that drainage from the bins does in fact drain into the Pino drainageway (P7 and P8 in Attachment 4). On August 3, 2012, an earthen berm (15' long by 3' wide by 2' high) was observed pushed up across the flow path of the Pino immediately before its confluence with the NDC. During the site visit the unlined arroyo through the WQF was conveying flow through the water quality ponds, into the unlined arroyo channel, and around the push up berm (P13 in Attachment 4). The flow was a brownish color (P6 in Attachment 4). A request as to the purpose and need of the berm was submitted via e-mail to AMAFCA but a response was not received.

Abundant pollutants wash into and through the Pino as evidenced by the construction of the WQF in general and the trash removal pond, WQEB, and debris bins in particular. These features may decrease the level of contamination or debris conveyed to the Rio Grande and thus have a beneficial significant physical and chemical nexus to the TNW Rio Grande. When these facilities are overloaded the Pino has an adverse phyical /chemical nexus to the Rio Grande. Based on documentation and on-site observations, it is established that the Pino has a more than speculative significant nexus with the TNW Rio Grande.

In its April 2012 proposed JD submittal, AMAFCA stated that only developed flows in excess of 100 cfs are conveyed through the Pino WQF and into the NDC. AMAFCA also noted that these developed flows occur 8-12 times per year, generally only during the monsoon season. AMAFCA stated that flows in excess of 100 cfs are very infrequent and provided USGS average daily flow rates over a 10-year time period in support of how infrequently those flows occur. The USGS gaging station, no longer in use, is located on the Pino, approximately 80 yards upstream of the WQF. The average daily flow rates did not exceeded 100 cfs. However, peak flow rates provided by the USGS show that flows in excess of 100 cfs are common year-to-year (e-mailed response from Todd Kelly, USGS). Also, the Corps' Waterways Experiment Station found that the 2-year developed flow events at the Pino's confluence with the NDC was 402 cfs (Albuquerque Arroyos Sedimentation Study; March 1995). The ponds and the arroyo discharge into the unlined arroyo channel within the WQF frequently enough for the channel to have clear indicators of an OHWM. Wrack lines at the base of cottonwood trees and willows also provide evidence of more frequent high flow events (P5 in Attachment 4).

Also in its initial submittal, AMAFCA stated that flows conveyed into the NDC settling pond are restricted from entering the embayment due to an unculverted earthen maintenance road. However, there is an approximate 12" steel pipe connecting the stilling pond to the embayment (Sept. 24, 2012 site visit; P14 in Attachment 4). Additionally, a dissolved oxygen study conducted by Daniel B. Stephens & Associates, Inc. found that developed flows in excess of 50 cfs were conveyed through the settling basin and into the embayment (Investigation of Dissolved Oxygen in the North Diversion Channel, Embayment, and Rio Grande; August 5, 2009).

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.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☒ Tributary waters: **60,720** linear feet, **10** wide.
   - ☒ Other non-wetland waters: **0.88** acres.
     Identify type(s) of waters: **Two Water Quality Basins within the Pino WQF**

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:

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
☐ 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):

[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, 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: **AMAFCA's submittals; April 2012 and Sept. 2012**
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; NM-ALAMEDA**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **Corps of Engineers, 2009 NM NAIP Photography**
  or ☒ Other (Name & Date): **Site visit photos May, July and August 2012**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☒ Other information (please specify): **Site Visits as listed in Sec. ID**

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Other Documents Referrenced:

1. Stormwater Quality A Matter of Sustainability, Water Quality Facilities in the North Diversion Channel Watershed, Westcas 2010 Winter Conference; Bohannon Huston - 2010
2. City of Albuquerque, Antibiotic Resistance Analysis of Contamination in Stormwater Final Report; CDM - 2002
3. Rainfall, Runoff, and Water-Quality Data for the Urban Storm-Water Program in the Albuquerque, New Mexico, Metropolitan Area, Water Year 2003, Open File Report 2005-1266; USGS - 2005
4. NPDES Compliance Evaluation Inspection, San Antonio Self Storage, NMR10GR04; NMED - December 3, 2010
5. Albuquerque Arroyos Sedimentation Study; U.S. Army Corps of Engineers, Waterways Experiment Station; March 1995
6. Pino Arroyo Low-Flow Diversion Structure and Debris Basin (draft - provided by AMAFCA), Thompson Engineering; July 2000
7. E-mail communication with Brad Bingham, AMAFCA; August 13, 2012
8. Peak flow data for Pino Arroyo provided by Todd Kelly, USGS via e-mail communication; August 15, 2012
9. Second E-mail inquiry to AMAFCA/Marcus Rael re: disposition of earthen berm pushed up in front of Pino/NDC confluence; Sept. 26, 2012
10. Investigation of Dissolved Oxygen in the North Diversion Channel, Embayment, and Rio Grande; August 5, 2009
11. Rio Grande - non-pueblo Alameda Bridge to Angostura Div; 2008-2010 State of New Mexico Integrated (303d) List

SPA-2012-00190-ABQ
Attachment 1
S. Pino Arroyo JD
Arroyo routing to Rio Grande

Sandoval County

Sandia Pueblo

Cibola National Forest & Sandia Ranger District

Kirtland Air Force Base

Rio Puerco Watershed

Isleta Pueblo

CBZSA 000Q
NVPEN 000Q
NDCP2 096Q
DOBND 000Q
DOBND 021Q
DOBND 001Q
DOBND 207Q
DOBSD 262Q
Domingo Baca
DOBND 067Q
NOPPA 000Q
NOPPA 001Q
PINPA 000Q
PINPA 001Q
PMCPM 000Q
PMCCC 000Q
SANMD 000D
NVEMO 000Q
SANSA 000Q
NVENC 000Q
NVETC 000Q
NVEDU 000Q
WBO40 075Q
ARDCL 000Q
ARDMP 001Q
NDCP3 437Q
EMBSF 021Q
EMBSF 000Q
SVEUR 000Q
SVEAL 000Q
SVESF 000Q
SVEBO 000Q
SVEBO 000Q
AMHAN 225Q
AMHSV 094Q
AMHWS 000Q
AMHAH 070Q
AMHBR 025Q
SWMPD 010Q
SWMRD 000Q
SWMMC 000Q
La Cueva
Calabacillas
Rio Grande
San Antonio
North Diversion Channel
North Pino
Pino Arroyo
Bear Canyon Arroyo
Hahn Arroyo
Embudo Arroyo
Amole Hubbell
Rio Grande
South Diversion Channel
Tijeras Arroyo
I-25
I-40

Legend

- Arroyos & Channels
- Roads
- Watershed Boundaries
- AMAFCA Boundary
- Albuquerque City Limits

Water Quality Features

- Media Filter
- Pump Station Mechanical Bar Screen
- Baffled Weir Structure
- Environmental Pond
- Debris Screen Structure
- Sediment Pond
- Submerged Port Outlet
- Debris Manhole

Note: See DFPR for details

N
W E
S

1 inch equals 2 miles

2 0 2 Miles

Facility ID Naming Convention
Sample ID WWWFF 000T
WWW = Watershed ID
FF = Facility ID
000 = Distance from Termination (Hundreds of Feet)
T = Type of Facility
Q = Water Quality Improvement

ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY and CITY OF ALBUQUERQUE

AMAFCA/Albuquerque MS4 GROSS POLLUTANT STUDY

EXISTING WATER QUALITY FACILITIES

AMAFCA

ASCG INCORPORATED ENGINEERS • ARCHITECTS • SURVEYORS • PLANNERS

FIGURE NUMBER 2

JULY, 2004


SPA-2012-00190; Elements of the South Pino Arroyo Water Quality Feature
Attachment 2
rundown to NDC
Ellison Street drainage channel
0.37 acre water quality enhancement basin
8" trickle pipe outfall
unlined channel
vertical concrete intake
0.51 acre trash removal pond
66" energy dissipator outfall
low flow diversion outfall
emergency spillway
concrete debris bins
debris bin drainage
Pino arroyo
constructed plunge pool
low flow diversion
© 2012 Google
©2010 Google
Imagery Date: 3/21/2012
1991
35°09'35.15" N 106°36'03.16" W elev 5105 ft
Eye alt 6573 ft

SPA-2012-00190-ABQ S. Pino JD Photolog
Attachment 3

PHOTOS FOR S. PINO JD

P1: Looking west (downstream) at low flow diversion intake location

P2: Looking west across trash removal pond’s concrete emergency spillway

P3: Looking north at trash removal pond's vertical concrete intake. Note abundant trash/debris, clogged ports

P4: Looking east (upstream) at WQEB 8" intake. Note robust sedge growth

P5: Looking west (downstream). Note wrack lines, approximately 2 ft high

P6: Looking east (upstream). Flow has been conveyed past WQEB/Trash Removal Pond. Note water's brownish color

P7: Looking west at debris bins. Note loose, unconfined trash, cracked soils from prior ponding

P8: Looking northwest, on the southwest corner of debris bins. Note discolored drainage from bins. Drainage crosses earthen access road in foreground and is conveyed into Pino drainage area on left.

P9: Photo of spray paint can located outside debris bins, on north side of Pino floodplain

P10: Photo of anti-freeze container outside debris bins.

P11: Photo of 2-cycle motor oil container outside debris bins

P12: Photo of discarded computer electronics located outside debris bins.

P13: Looking west (downstream) at Pino/NDC confluence. Note earthen berm placed in flow path. Water on D/S side of berm is the result of the berm being flanked by flow. Flow continues into the NDC. This water was discolored as that in P6.

P14: Looking at discharge pipe from NDC settling basin into embayment. Photo location not shown on photo log.