MEMORANDUM TO ASSERT JURISDICTION FOR SPL-2007-261-FBV

Subject: Assertion of Jurisdiction for Jurisdictional Determination SPL-261-FBV

I. Introduction

The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) are asserting jurisdiction under the Clean Water Act (CWA) over the unnamed tributary of Canyon Lake, in jurisdictional determination (JD) SPL-261-FBV. This is based on the subject tributary ("Ambris segment") having a significant chemical nexus with Canyon Lake, a traditional navigable water (TNW), as consistent with the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States.*

A watercourse may have a significant nexus with a TNW where it can be demonstrated that the subject watercourse alone has the potential to contribute contaminants that would cause the TNW to exceed its water quality standards or otherwise degrade water quality of the TNW. This potential occurs when there is both the presence of the contaminants in the sub-watershed, and sufficient flows to make the likelihood such pollutants will reach the TNW and affect its chemical integrity more than speculatively or insubstantially. The fact that a TNW is a 303(d)-listed waterbody does not by itself establish a chemical nexus for every watercourse flowing into it, nor is it necessary for a TNW to be listed as impaired under CWA Section 303(d) for a tributary potentially to have a chemical nexus.

II. Site Conditions

A. Location and Description of Ambris Watercourse and Sub-Watershed

The tributary subject to this JD is located in the semi-arid environment of Riverside County, California, centered near 33.7086870265° North latitude and -117.2344700324° West longitude. The Ambris segment is an unnamed first-order ephemeral tributary between one and three feet in width that flows for approximately 1,000 feet before it joins an unnamed second-order ephemeral tributary that flows two straight miles and three river miles to Canyon Lake, a TNW.

In general, the Ambris soils are identified to have slow infiltration rates when thoroughly wetted, which indicates that the soils have a slow rate of water infiltration transmission.

Using the Rational Estimation method, calculations indicate peak flows from the Ambris segment to Canyon Lake are likely in the range of 4 – 8 cfs, with an expected two-year recurrence level. This estimate is based on rainfall records for the weather station near Canyon Lake, which found peak hourly rainfall amounts averaged 0.46 inches per hour (2 year recurrence interval, 35 year record).[1]

Although considerable unauthorized disturbance has occurred on the project site, including grading and filling of the tributary, the Ambris segment is expected to have had an ordinary high water mark (OHWM), a defined bed-and-bank, and other indicators of an OHWM. Just upstream of the project site, the channel currently has a bed and bank, and an OHWM. Before the channel enters the project site, there is a fence marking the property lines. At the upstream side of the fence, there is further evidence of a debris and a litter line on the fence where the water flows through it and onto the project site. Downstream of the project site, flow is routed through an artificial ditch, which eventually flows into a second-order ephemeral tributary, and then into Canyon Lake.[2]

The Ambris sub-watershed is approximately 25 acres, constituting 3% of the overall watershed and 5-6% of the developed urbanized area in the Quail Valley watershed. Land use in the Ambris sub-watershed currently is at the edge of urban development, and is comprised of disbursed urban development, including more than six houses on septic systems and some livestock (horses, chickens). In addition to potential runoff of surfacing septage, other land uses in the Ambris sub-watershed have the potential to create nonpoint source runoff of pollutants. For example, nutrient, pathogen, and sediment runoff from impervious surfaces, areas that house livestock and pets, and graded areas is likely in the area due to existing land uses.

The Ambris sub-watershed is hydrologically connected to Canyon Lake. Because of the relatively close proximity to Canyon Lake and soil type, pollutants discharged from that segment would during rain events move quickly to Canyon Lake before they have time to infiltrate or undergo chemical transformation.

B. Quail Valley Watershed

The Ambris sub-watershed is part of the Quail Valley watershed, which is approximately 900 acres in size. Of the 900 acres, approximately 400-500 acres are developed urbanized areas that are the dominant source of pollutants associated with human activities. In fact, the California Regional Water Quality Control Board cited Riverside County survey results that 37% of residents in the Quail Valley area reported problems with their septic systems.[3]

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[1] DWR, Rainfall Depth Duration Frequency Data, Maximum Rainfall for 60 Consecutive Minutes, Elsinore Station, downloaded from Department of Water Resources ftp site: ftp://ftp.water.ca.gov/users/dfmhydro/Rainfall%20Dept-Duration-Frequency/Rain%20Max%20Hr %20by20Month/Y02%20H-m%20Elsinore%20.xls

[2] On-site investigations were conducted for the Ambris jurisdictional determination by EPA and Corps staff on July 31, 2007, and by Corps staff on September 14, 2007. A Senior Scientist with the California Regional Water Quality Control Board, Santa Ana Region (the lead state agency for CWA programs) who is familiar with the area, noted that flows from the Ambris segment area would be sufficient in response to moderate or high magnitude rainfall events to reach Canyon Lake via the second-order tributary. Record of Communication with Mark Adelson, Santa Ana RWQCB, August 23, 2007.

[3] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 21.

In 2007, the California State Water Resources Control Board approved a phased prohibition in the Santa Ana Water Quality Control Plan on the use of septic systems in the Quail Valley area, including the Ambris sub-watershed.[4] The prohibition was adopted because the State found that widespread septic system failures in the area were substantially contributing to bacterial and nutrient impairment of Canyon Lake. The reports supporting the prohibition found that due to high groundwater levels and non-porous soils the in area, wastewater routed to septic systems often surfaces in the area and is transported downstream to Canyon Lake through a variety of surface features including small washes and streams.[5] The State found these bacterial loads contributed directly to water quality standards exceedences in Canyon Lake that triggered 145 closures of the lake for swimming in 2004-2005.[6]

The 2007 ban on septic tanks in the Quail Valley area, including the Ambris sub-watershed, was based on the fact that bacterial loadings from septic tanks were contributing to exceedences of water quality standards in Canyon Lake.[7] The State specifically identified the sub-watershed that includes the Ambris segment and flows to the Bass Cove arm of Canyon Lake as an important flow route of polluted runoff to Canyon Lake.[8]

In addition, the TMDLs developed for Canyon Lake concluded that, particularly under wet conditions, in the Quail Valley watershed (which includes the Ambris sub-watershed) sources such as agriculture, septic systems, and urban areas contribute significant amounts of nutrients to Canyon Lake.[9]

C. Nearest Traditional Navigable Water: Canyon Lake

Canyon Lake originally was formed in 1927 after Railroad Canyon Dam was built. It covers 383 acres and has 14.9 miles of shoreline. Facilities on the lake include several lakeside parks, swimming areas, fishing areas, beaches, a slalom course and a jump lagoon, and gas docks. Canyon Lake has rental slips for the more than 2,000 registered boats that use the lake. The local camp has 5 docks that can hold 45 boats and a 350 foot beach is available for swimming and other recreational activities. The lake is stocked each year with catfish and bass. Canyon Lake is frequently used for national and regional waterskiing competitions sanctioned by the American Water Ski Association. In 2007, tournaments were held on Canyon Lake on May 19-20, June 12, July 7-8, September 8-9 and scheduled for October 6-7.[10] Participants from across the country participate in these competitions.

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[4] SWQCB, Resolution No. 2007-0038, Approving Basin Plan Amendment re: Waste Discharge Prohibition on the Use of Onsite Septic Tanks Subsurface Disposal Units in the Quail Valley Area of Riverside County, 2007.

[5] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 21-22.

[6] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 21.

[7] SWQCB, Resolution No. 2007-0038, Approving Basin Plan Amendment re: Waste Discharge Prohibition on the Use of Onsite Septic Tanks Subsurface Disposal Units in the Quail Valley Area of Riverside County, 2007.

[8] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 7.

[9] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 53.

[10] AWSI, 2007. American Water Ski Association website at www.usawaterski.org

The State of California designated the following beneficial uses for Canyon Lake: municipal water supply, agricultural irrigation, groundwater recharge, contact and non-contact recreation, warm water aquatic habitat, and wildlife habitat.[11] Water from the reservoir feeds the Canyon Lake Water Treatment Plant, which provides approximately 10% of the domestic water supply in the Lake Elsinore/Canyon Lake area.

Canyon Lake is an impaired water body listed on California's 2006 Section 303(d) list for nitrogen, phosphorus, and pathogens.[12] The State of California adopted total maximum daily loads (TMDLs) for nitrogen and phosphorous for Canyon lake in 2005; the State is currently developing pathogen TMDLs for Canyon Lake.[13] Pathogen-impaired waters are highly sensitive to small-scale, discrete loadings of fecal material or other organic material as these loadings often contain extremely high pathogen concentrations that are sufficient to cause water quality standards exceedences.[14]

III. Ambris Segment Significant Nexus Evaluation

An EPA Region 9 pollutant flow analysis found that three sources of fecal coliform loading in the Ambris segment are likely: runoff from residential and open space areas, runoff of surface septage from failing septic tanks, and runoff associated with livestock.[15] Runoff coefficient data from the National Stormwater Quality Database[16] and from stormwater runoff data for Southern California analyzed by Ackerman and Schiff[17] include specific runoff coefficient information for the land uses present in the Ambris sub-watershed. These data and models show it is reasonable to expect pathogens and nutrients to be present in runoff from the land uses in the Ambris sub-watershed. The Ackerman and Schiff coefficients for nutrients are particularly relevant, because they are based on data collected in numerous southern California watersheds including many in Riverside County, where the Ambris sub-watershed is located.

The pollutant flow analysis shows that, even if the pathogen loads from Ambris were diluted by unpolluted flows from the rest of the watershed flowing to Canyon Lake, the resulting concentration of fecal coliform at the point of entry to Canyon Lake would likely exceed applicable state water quality standards for pathogens. Estimated concentrations of fecal coliform where the Ambris segment flows enter Canyon Lake via the second order tributary are 246.3 cfu/100 mL. The applicable water quality standard for fecal coliform is 200 cfu/100 mL on average, 400 cfu / 100 mL maximum.

The State's analysis of relationships between Canyon Lake and its tributaries helps to evaluate whether the nexus from Ambris segment to Canyon Lake is significant. TMDLs for nitrogen and phosphorus were approved for Canyon Lake in 2005. The TMDL analysis found nitrogen and

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[11] RWQCB, 1995. Water Quality Plan for the Santa Ana Basin, 1995, *et. Seq.*

[12] RWQCB, 2006, Staff Report Re: Waste Discharge Prohibition on Use of Onsite Septic Tanks Subsurface Disposal Units in the Quail Valley Area of Riverside County. January 12, 2006, revised May 2, 2006 and June 12, 2006.

[13] See http://www.waterboards.ca.gov/santana/html/tmdls.html

[14] *See, e.g.*, Protocol for Developing Pathogen TMDLs. EPA 841-R-00-002, January 2001.

[16] Pitt and Maestre, "Stormwater Quality as Described in the National Stormwater Quality Database (NSQD)", 10th International Conference on urban Drainage, Copenhagen, August 2005.

[17] Ackerman and Schiff, "Modeling Stormwater Mass Emissions to the Southern California Bight," Journal of Environmental Engineering, Vol. 29, No. 4, April 2003.

phosphorous loadings adversely affect the biological and chemical integrity of Canyon Lake by causing algal blooms in the lake, which have caused reductions in dissolved oxygen that in turn have caused occasional fish kills. The data and modeling analysis supporting the TMDLs concludes that polluted runoff from urban sources (including the lands in the Ambris segment area) substantially contributed to impairment of Canyon Lake by nitrogen and phosphorous. Urban runoff such as that discharged to the Ambris segment is estimated to contribute 12 – 15% of nitrogen loads and 6 – 12% of phosphorous loads to Canyon Lake.[18] The TMDLs conclude that, particularly under wet conditions, sources in the Quail Valley watershed such as agriculture, septic systems, and urban areas contribute significant amounts of nutrients to Canyon Lake.[19]

Pollutants impairing Canyon Lake are present in the Ambris sub-watershed, and soils, rainfall data and modeling indicate those pollutants are likely to reach Canyon Lake during high flow events and contribute to the lake's exceeding water quality standards.

IV. Conclusion: Jurisdictional Determination Findings

Findings from the site investigations and the desk analysis of available data confirmed that the Ambris segment has pollutants present in its watershed and a hydrologic connection to a TNW (Canyon Lake). The soils in the Ambris segment watershed have slow infiltration rates when thoroughly wetted and are not conducive to infiltration. This indicates that the movement of pollutants to the TNW is highly possible. Additionally, modeling efforts similarly confirm that the pollutants in the Ambris sub-watershed have a reasonable likelihood of reaching and adversely affecting Canyon Lake, such that there is a significant chemical nexus from the subject water to Canyon Lake. The Ambris segment is a "water of the United States" and is jurisdictional under the CWA.

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Date: 6 Dec. 07

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Date: 6 Dec 07

[18] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, Section 5.2

[19] RWQCB, Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads. March 26, 2005, revised May 21, 2004, p. 53.