

APPENDIX D

ATTACHMENT 2 404(b)(1) Guidelines Evaluation

Rio Anton Ruiz 1135 Continuing Authorities Program (CAP) Project
in Humacao, Puerto Rico



US Army Corps of Engineers
JACKSONVILLE DISTRICT

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**Final Evaluation of 404(b)(1) Guidelines
 Contained in Vol. 45 No. 249 of the
Federal Register dated 24 December 1980**

**Rio Anton Ruiz 1135 Continuing Authorities Program (CAP) Project
 February 2017**

1. Technical Evaluation Factors

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (230.20-230.25)(Subpart C)

	N/A	Not Significant	Significant
(1) Substrate impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Suspended particulates/turbidity impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Water Quality Control	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(4) Alteration of current patterns and water circulation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Alteration of normal water fluctuations/hydroperiod	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(6) Alteration of salinity gradients	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The purpose of the Rio Anton Ruiz Restoration Project is to preserve the *Pterocarpus officinalis* forest and the biodiversity of both the freshwater and saltwater fauna and flora in the Humacao Natural Reserve (HNR) within the limited authority of the CAP section 1135. The Recommended Plan consists of constructing two sheetpile notched concrete cap weirs over the same locations as the temporary saltwater intrusion measures (SWIM) structures, which were constructed in 2007. Temporary turbidity will occur as a result of sheetpile driving. Impacts will be temporary and localized, lasting only as long as construction takes place. Best Management Practices (BMPs) and methods to manage the placement of concrete caps and sheetpile driving will ensure minimized and controlled turbidity. Final details for BMPs and methods will be determined during the permitting and contracting process. The contractor will be given criteria to determine and achieve acceptable means and methods. During the design phase, additional soil borings and hydrographic/topographic survey will be collected for use in refined analysis of the riprap, sheetpile, and hydraulic designs.

b. Biological Characteristics of the Aquatic Ecosystem(230.30-230.32) (Subpart D)

	N/A	Not Significant	Significant
(1) Effect on threatened/endangered species and their habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(2) Effect on the aquatic food web	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Effect on other wildlife (mammals, birds, reptiles, and amphibians)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The sheetpile weirs will be constructed over the same locations as the temporary SWIMs. The Corps has concluded that the project may affect, but is not likely to adversely affect, the following federally listed species:

- West Indian (Antillean) manatee (*Trichechus manatus manatus*);
- Puerto Rican boa (*Epicrates inornatus*);
- Loggerhead Sea Turtle (*Caretta caretta*);
- Green Sea Turtle (*Chelonia mydas*);
- Hawksbill Sea Turtle (*Eretmochelys imbricata*);
- Leatherback Sea Turtle (*Dermochelys coriacea*).

The Corps has determined that the project will have no effect on the following federally-listed species:

- Pillar Coral (*Dendrogyra cylindrus*);
- Rough Cactus Coral (*Mycetophyllia ferox*);
- Lobed Star Coral (*Orbicella annularis*);
- Mountainous Star Coral (*Orbicella faveolata*);
- Boulder Star Coral (*Orbicella franksi*);
- Elkhorn Coral (*Acropora palmata*);
- Staghorn Coral (*Acropora cervicornis*).

c. Special Aquatic Site (230.40-230.45) (Subpart E)

	N/A	Not Significant	Significant
(1) Sanctuaries and refuges	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Mud flats	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Vegetated shallows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Coral reefs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Riffle and pool complexes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

There are no special aquatic sites located in the project area; therefore, no impacts are anticipated.

d. Human Use Characteristics (230.50-230.54) (Subpart F)

	N/A	Not Significant	Significant
(1) Effects on municipal and private water supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Recreational and Commercial fisheries impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(3) Effects on water-related recreation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(4) Aesthetic impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The sheetpile weirs will be constructed over the same locations as the temporary SWIMs. No new impacts are anticipated as a result of replacement.

2. Evaluation of Dredged or Fill Material (230.60) (Subpart G)

- a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. **(Check only those appropriate)**

- (1) Physical characteristics
 (2) Hydrography in relation to known or anticipated sources of contaminants
 (3) Results from previous testing of the material in the vicinity of the project
 (4) Known, significant, sources of persistent pesticides from land runoff or percolation
 (5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances
 (6) Other public records of significant introduction of contaminants from industries, municipalities or other sources
 (7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge
 (8) Other sources (specify)

The structures being constructed are sheetpile weirs with a concrete cap.

No dredging, disposal, or fill is being used for this project. There is no reason to suspect contamination.

- b. An evaluation of the appropriate information in 2a above indicated that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, of that levels of contaminants are substantively similar at extraction and disposal sites and not likely to exceed constraints. The material meets the testing exclusion criteria.

YES

NO

3. Disposal Site Delineation (Section 230.11(f))

- a. The following factors, as appropriate, have been considered in evaluating the disposal site.

- (1) Depth of water at disposal site
 (2) Current velocity, direction, and variability at disposal site
 (3) Degree of turbulence
 (4) Water volume stratification
 (5) Discharge vessel speed and direction
 (6) Rate of discharge
 (7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)
 (8) Number of discharges per unit of time
 (9) Other factors affecting rates and patterns of mixing (specify)

No dredging, disposal, or fill is being used for this project. Construction activities involve the following: The structures will be sheetpile driven from the bank of the diversion channel. The sheetpile weirs will have a concrete cap. Depending on the tidal conditions, there may be the need to draw down the water level directly adjacent to the sheetpile in order to construct the concrete cap. Sheetpile or use of other means to create a small dewatering cell and then pumping directly back into the channel should be sufficient if the concrete cap is placed in sections. No diversion of water (diversion channel) is anticipated for any dewatering efforts. Temporary turbidity will occur as a result of sheetpile driving. Impacts will be

temporary and localized, lasting only as long as construction takes place. BMPs and methods to manage the placement of concrete caps and sheetpile driving will ensure minimized and controlled turbidity. Final details for BMPs and methods will be determined during the permitting and contracting process. The contractor will be given criteria to determine and achieve acceptable means and methods. Access for the project will be via the existing project limits, within the berms along the channel and adjacent to the levee. An existing disposal/borrow area will be used for the staging/stockpiling. All construction and maintenance access can use the existing project limits from the original 205 project.

- b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.

YES NO

4. Actions to Minimize Adverse Effects (Section 230.70-230.77)(Subpart H)

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.

YES NO

5. Factual Determination (Section 230.11)

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge as related to:

- a. Physical substrate at the disposal site (review sections 2a, 3, 4, & 5)
- b. Water circulation, fluctuation & salinity (review sections 2a, 3, 4, & 5)
- c. Suspended particulates/turbidity (review sections 2a, 3, 4, & 5)
- d. Contaminant availability (review sections 2a, 3, & 4)
- e. Aquatic ecosystem structure and function (review sections 2b, c, 3, & 5)
- f. Disposal site (review sections 2, 4, & 5)
- g. Cumulative impact on the aquatic ecosystem
- h. Secondary impacts on the aquatic ecosystem

6. Review of Compliance (230.10(a)-(d) (Subpart B)

A review of the permit application indicates that:

- a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative);

YES NO

- b. The activity does not appear to 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally designated marine

sanctuary(if no, see section 2b and check responses from resource and water quality certifying agencies; YES NO

c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2); YES NO

d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5); YES NO

No dredging, disposal, or fill is being used for this project. The structures being constructed are sheetpile weirs with a concrete cap. There is no reason to suspect contamination. During the design phase, additional soil borings and hydrographic/topographic survey will be collected for use in refined analysis of the riprap, sheetpile, and hydraulic designs. Construction of the recommended plan will protect the freshwater Pterocarpus forest and the Mandri lagoon system from saltwater intrusion, which was a result of the diversion channel constructed in 2001 under the Rio Anton Ruiz Flood Control Project, CAP Section 205 of the Flood Control Act of 1948, as amended.

7. Findings

a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404 (b)(1) guidelines

b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions:

c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reason(s):

(1) There is a less damaging practicable alternative

(2) The proposed discharge will result in significant degradation of the aquatic ecosystem

(3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem