Appendix 2 - Evaluation for Compliance with the Section 404(b)(1) Guidelines

A2-1.0 Practicable Alternatives

Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5.0 of the decision document and Appendix 1. The statements below summarize the analysis of alternatives:

In summary, based on the analysis in Appendix 1, the No Federal Action and the State's No Action alternatives, which would not involve discharges into waters of the United States, are not practicable.

Aquatic resource restoration projects are water dependent. For those projects that would discharge into a special aquatic site and are not water dependent, the applicant has demonstrated there are no practicable alternatives that do not involve special aquatic sites.

It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging (Subpart B, 40 CFR 230.10(a)).

The proposed discharge in this evaluation is the practicable alternative with the least adverse effect on the aquatic ecosystem, and it does not have any significant environmental consequences.

A2-2.0 Candidate Disposal Site Delineation (Subpart B, 40 CFR 230.11(f))

Each disposal site shall be specified through the application of these Section 404(b)(1) Guidelines:

The potential disposal sites are described in Sections 3 and 4 of Appendix 1.

A2-3.0 Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C 40 CFR 230.20-40 CFR 230.25)

The following has been considered in evaluating the potential impacts on physical and chemical characteristics (see Table A2-1):

Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Substrate					Х	
Suspended particulates/ turbidity				Х		
Water						Х
Current patterns and water circulation					Х	
Normal water fluctuations					Х	
Salinity gradients						Х

Table A2-1 – Potential Impacts on Physical and Chemical Characteristics

Discussion: The Proposed Action would have a beneficial effect on the aquatic environment. Groundwater hydrology would experience a major long-term effect that would be mitigated by coordination with the relevant subbasin groundwater agencies and location of the groundwater extraction wells to avoid and minimize adverse effects to the tributary creeks. Refer to Appendix 1 for detailed analysis.

A2-4.0 Potential impacts on the living communities or human uses (Subparts D, E and F)

A2-4.1 Potential impacts on the biological characteristics of the aquatic ecosystem (Subpart D 40 CFR 230.30)

The following has been considered in evaluating the potential impacts on biological characteristics (see Table A2-2):

Biological Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Threatened and endangered species						Х
Fish, crustaceans, mollusks, and other aquatic organisms						Х
Other wildlife						Х

Table A2-2 – Potential Impacts on Biological Characteristics

Discussion: The Proposed Action would have a major beneficial effect on the biological characteristics of the aquatic environment. Major short-term and long-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures. Refer to Appendix 1 for detailed analysis.

A2-4.2 Potential impacts on special aquatic sites (Subpart E 40 CFR 230.40)

The following has been considered in evaluating the potential impacts on special aquatic sites (see Table A2-3):

Table A2-3 –	Potential	Impacts	on Special	Aquatic Sites
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Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Sanctuaries and refuges		Х				
Wetlands						Х
Mud flats						Х
Vegetated shallows	Х					

Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Coral reefs	Х					
Riffle pool complexes	Х					

Discussion: The Proposed Action would have a major beneficial effect on the biological characteristics of the aquatic environment. Any short-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures. The LOP Procedures require each subsequent permit application to include a statement to document compliance with the 404(b)(1) Guidelines. Refer to Appendix 1 for additional information and analysis.

A2-4.3 Potential impacts on human use characteristics (Subpart F 40 CFR 230.50)

The following has been considered in evaluating the potential impacts on human use characteristics (see Table A2-4):

 Table A2-4 – Potential Impacts on Human Use Characteristics

Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Municipal and private water supplies					Х	
Recreational and commercial fisheries					Х	
Water-related recreation					Х	
Aesthetics			Х			
Parks, national and historical monuments, national seashores,			x			

Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
wilderness areas, research sites, and similar preserves						

Discussion: The Proposed Action would have beneficial effects on the physical and chemical characteristics of the aquatic environment. Any short-term and long-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures. Refer to Appendix 1 for additional information and analysis.

A2-5.0 Pre-testing evaluation (Subpart G, 40 CFR 230.60)

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (see Table A-5):

Table /	42-5 -	Possible	Contaminants	in	Dredged/Fill Material

Physical substrate characteristics	Х
Hydrography in relation to known or anticipated sources of contaminants	
Results from previous testing of the material or similar material in the vicinity of the project	Х
Known, significant sources of persistent pesticides from land runoff or percolation	Х
Spill records for petroleum products or designated hazardous substances (Section 311 of the Clean Water Act)	Х
Other public records or significant introduction of contaminants from industries, municipalities, or other sources	Х
Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man- induced discharge activities	Х

Discussion: The Proposed Action would not increase the levels of contaminated materials in the aquatic environment. Any short-term and long-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures during construction. Refer to Appendix 1 for additional information and analysis.

It has been determined that testing is not required because the discharge and extraction sites are adjacent, subject to the same sources of contaminants and have substantially similar materials. Although the discharge material may be a carrier of contaminants, it is not likely to degrade the disposal site.

A2-6.0 Evaluation and testing (Subpart G, 40 CFR 230.61)

Discussion: Provide appropriate discussion of the above factors in Table A2-5 as appropriate.

A2-7.0 Actions to minimize adverse impacts (Subpart H)

The following actions, as appropriate, have been taken through application of 40 CFR 230.70-230.77 to ensure no more than minimal adverse effects of the proposed discharge (see Table A-6):

Table A2-6 – Actions to Minimize Adverse Effects

Actions concerning the location of the discharge	Х
Actions concerning the material to be discharged	Х
Actions controlling the material after discharge	Х
Actions affecting the method of dispersion	Х
Actions related to technology	Х
Actions affecting plant and animal populations	Х
Actions affecting human use	Х
Other actions	Х

Discussion: The Proposed Action incorporates avoidance and minimization measures to ensure the minimization of any adverse effects during construction and as a result of

the implementation of the Proposed Project. Refer to Appendix 1 for additional information and analysis.

A2-8.0 Factual Determinations (Subpart B, 40 CFR 230.11)

The following determinations are made based on the applicable information above, including actions to minimize effects and consideration for contaminants (see Table A-7):

Site	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Physical substrate					Х	
Water circulation, fluctuation and salinity					Х	
Suspended particulates/turbidity				х		
Contaminants				Х		
Aquatic ecosystem and organisms					Х	
Proposed disposal site					Х	
Cumulative effects on the aquatic ecosystem				х		
Secondary effects on the aquatic ecosystem				Х		

 Table A2-7 – Factual Determinations of Potential Effects

Discussion: The Proposed Action would have beneficial effects on the aquatic environment. Refer to Appendix 1 for detailed analysis. Any short-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures. The LOP Procedures require each subsequent permit application to include a statement to document compliance with the 404(b)(1) Guidelines.

A2-9.0 Findings of compliance or non-compliance with the restrictions on discharges (40 CFR 230.10(a-d) and 230.12)

Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur (see Table A2-8):

Subject	Yes	No
1. Is there a practicable alternative to the proposed discharge that would be less damaging to the environment (any alternative with less aquatic resource effects, or an alternative with more aquatic resource effects that avoids other significant adverse environmental consequences?)		х
2. Will the discharge cause or contribute to violations of any applicable water quality standards?		Х
3. Will the discharge violate any toxic effluent standards (under Section 307 of the Clean Water Act)?		Х
4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?		Х
5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?		Х
6. Will the discharge cause or contribute to significant degradation of waters of the United States?		Х
7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	Х	

Discussion: The Proposed Action would have beneficial effects on the aquatic environment. The State shall obtain water quality certification from the appropriate Certifying Authority for each project phase. Any short-term adverse effects would be mitigated by implementation of appropriate avoidance and minimization measures. The LOP Procedures require each subsequent permit application to include a statement to document compliance with the 404(b)(1) Guidelines. Refer to Appendix 1 for additional information and analysis.