DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

REPLY TO
ATTENTION OF

CESAD-RBT

14 December 2011

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT (CESAJ-EN-QC/ LUIS A. RUIZ)

SUBJECT: Approval of the Review Plan for STA-1E – PSTA Decommissioning Project and Environmental Assessment, Palm Beach County, Florida

1. References:

a. Memorandum, CESAJ-EN-QC, 9 November 2011, Subject: Approval of the Review Plan for STA-1E – PSTA Decommissioning Project and Environmental Assessment, Palm Beach County, Florida (Enclosure).

b. EC 1165-2-209, Civil Works Review Policy, 31 January 2010.

2. The enclosed Review Plan for Periodic Nourishment Documents for STA-1E – Periphyton Based Stormwater Treatment Area (PSTA) Decommissioning Project and Environmental Assessment dated 9 November 2011 submitted by reference 1.a, has been reviewed by this office and is approved in accordance with reference 1.b.

3. We concur with the conclusion of the District Chief of Engineering that Type II Independent External Peer Review (Type II IEPR) is not required for this decommissioning of the PSTA which will remove previously constructed components of PSTA and return Cell 2 of STA-1E to the pre-PSTA condition. The primary basis for the concurrence that a Type II IEPR is not required is that the failure or lose of the decommissioning project does not pose a significant threat to human life. We also concur with the conclusion that Agency Technical Review (ATR) is not required on this decommissioning effort since the design returns Cell 2 of STA-1E to pre-PSTA conditions.

4. The District should take steps to post the Review Plan to its web site and provide a link to CESAD-RBT. Before posting to the web site, the names of Corps/Army employees should be removed.

5. The SAD point of contact is Mr. James Truelove, CESAD-RBT, 404-562-5121.

FOR THE COMMANDER:

Encl

CHRISTOPHER T. SMITH, P.E.
Chief, Business Technical Division

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-EN-QC

9 November 2011

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT)

SUBJECT: Approval of Review Plan for STA-1E – PSTA Decommissioning Project and Environmental Assessment, Palm Beach County, Florida

1. References.

a. EC 1165-2-209, Civil Works Review Policy, 31 January 2010

b. WRDA 2007 H. R. 1495 Public Law 110-114, 08 Nov 07

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that Agency Technical Review (ATR) and Type II Independent External Peer Review (IEPR) of this project are not required. The related review activities are defined in EC 1165-2-209, Civil Works Review Policy as review for Other Work Products. The Other Work Products category was selected since the subject project documents are neither decision documents nor implementation documents. The ATR and Type II IEPR determinations were based on the EC 1165-2-209 Risk Informed Decision Process as presented in the Review Plan. The Review Plan complies with applicable policy, provides District Quality Control and has been coordinated with the CESAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by CESAD.

3. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees are withheld from the posted version, in accordance with guidance.

FOR THE COMMANDER:

Encl

LUIS A. RUIZ, P.E.
Chief, Engineering Division

OTHER WORK PRODUCTS REVIEW PLAN

For

STA-1E – PSTA Decommissioning Project and Environmental Assessment, Palm Beach County, Florida

Jacksonville District

9 November 2011

US Army Corps of Engineers ®

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope of review activities for the STA-1E – Periphyton Based Stormwater Treatment Area (PSTA) Decommissioning Project and Environmental Assessment, located in Palm Beach County, Florida. Review activities consist of District Quality Control (DQC). The related project documents consist of Plans and Specifications (P&S), Design Documentation Report (DDR) with Interim Operating Criteria and Environmental Assessment. These documents are classified as Other Work Products since the related work decommissions temporary project features. Upon approval, this review plan will be included into the Project Management Plan (PMP) as an appendix to the Quality Management Plan (QMP).

b. References.

(1). EC 1165-2-209, Civil Works Review Policy, 31 January 2010
(2). ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
(3). ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
(4). STA-1E – PSTA Decommissioning Project, P2#114693.

c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and other work products. The EC outlines three levels of review: District Quality Control, Agency Technical Review, and Independent External Peer Review. Refer to the EC for the definitions and procedures for the three levels of review.

d. Review Management Organization (RMO). The South Atlantic Division is designated as the RMO.

2. PROJECT INFORMATION AND BACKGROUND

STA-1E is one of six large scale stormwater treatment areas that have been designed, constructed, and operated to reduce phosphorous concentrations in runoff from the Everglades Agricultural Area (EAA) and regulatory releases from Lake Okeechobee that discharge into the Everglades Protection Area (EPA). STA-1 which consists of STA-1E and STA-1W is located in Palm Beach County, Florida, at the northeastern tip of Water Conservation Area 1 (WCA-1), otherwise known as the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Figure 1). STA 1E encompasses over 6,500 acres of former agricultural land. The project was designed to enhance the level of flood protection that exists in the C-51 Basin, provide additional clean water to WCA-1, and reduce harmful discharges of freshwater to Lake Worth Lagoon.

The U.S. Army Corps of Engineers (USACE) was responsible for the design and construction of STA-1E. STA-1E was an authorized component of the C-51 West End Flood Control Project. The C-51 West End Flood Control Project was a component of the Central and Southern Florida (C&SF) Flood Control Project and was authorized in Section 315 of the Water Resources Development Act (WRDA) of 1996. The authorized plan was analyzed in a Final Environmental Impact Statement (FEIS) dated February 1998.

STA-1E was authorized as a state of the art macrophyte stormwater treatment area. It was designed and constructed to utilize emergent and submerged aquatic vegetation for the removal of phosphorous from the water column. STA-1E was planned to treat runoff so that the long term flow-weighted average of total phosphorous (TP) would be 50 parts per billion (ppb) or less in water discharged from the STA. Natural TP levels within the Everglades are generally below 10

ppb. Much research has been conducted to determine a cost effective technology which could improve the treatment performance of macrophyte STAs including the use of periphyton based technology.

PSTA is an acronym for "Periphyton Based Stormwater Treatment Area," which is a treatment system in which periphyton is a significant component. Periphyton is an assemblage of green algae, cyanobacteria [blue-green algae], diatoms, and associated microbial communities that collectively remove phosphorous from the water column. The goal of periphyton technology is to create the conditions for calcareous periphyton mats to form.

The USACE was authorized to investigate potential advanced treatment technologies as it related to the construction of C-51/STA-1E. A periphyton applied research facility, known as the Flying Cow Road Test Facility (FCRTF) was designed and constructed by the USACE during 1999-2000. Testing completed at the FCRTF in 2003 demonstrated that the periphyton mat could efficiently remove phosphorous from the water column to concentrations of 10 ppb and less. The promising results led the USACE to investigate ways to test the technology on a larger scale in STA-1E in treatment Cell 2 (Figure 2).

The USACE designed a proposal for proceeding with a field-scale test in Cell 2 of STA-1E to demonstrate the use of periphyton technology to remove phosphorous from the water column to achieve 10 ppb. The purpose of the PSTA Demonstration Project was to further demonstrate the application of periphyton technology on a larger scale to gain information for potential full scale implementation. Specific objectives of the project included: (1) demonstrating the treatment performance of different cell substrates; (2) providing sufficient information to further develop the operations of the PSTA in STA-1E; and (3) establishing design parameters for full scale implementation. The proposal for the PSTA Demonstration Project was approved in November of 2003.

The PSTA Demonstration Project was anticipated to be operated over an 18 to 24 month period to demonstrate the application of periphyton-based technology on a large scale. Construction of the PSTA Demonstration Project was initiated in December of 2005 and completed in October of 2006. Operation of the project began in February of 2007. The lack of sufficient water to establish periphyton and provide flow has been the primary reason for the limited amount of data collected. To date, the USACE has collected approximately 12 months of data since construction completion.

The USACE has decided to conclude data collection at the PSTA Demonstration Project. Construction of the PSTA Demonstration Project in STA-1E consisted of modifications to Cell 2 (Figure 3.0). The project modified approximately 220 acres of Cell 2. The remaining 330 acres were not modified and remained in the original post-construction state. Modifications included the construction of four intermediate levees and 26 water control structures (stop-log riser culverts), grading of a portion of Cell 2 to a consistent elevation, and placement of additional lime rock material in Cell 2.

The objective of the Project Delivery Team "PDT" is to prepare P&S, DDR and EA for the complete removal of all PSTA components and to return Cell 2 back to the pre-PSTA condition for STA-1E.

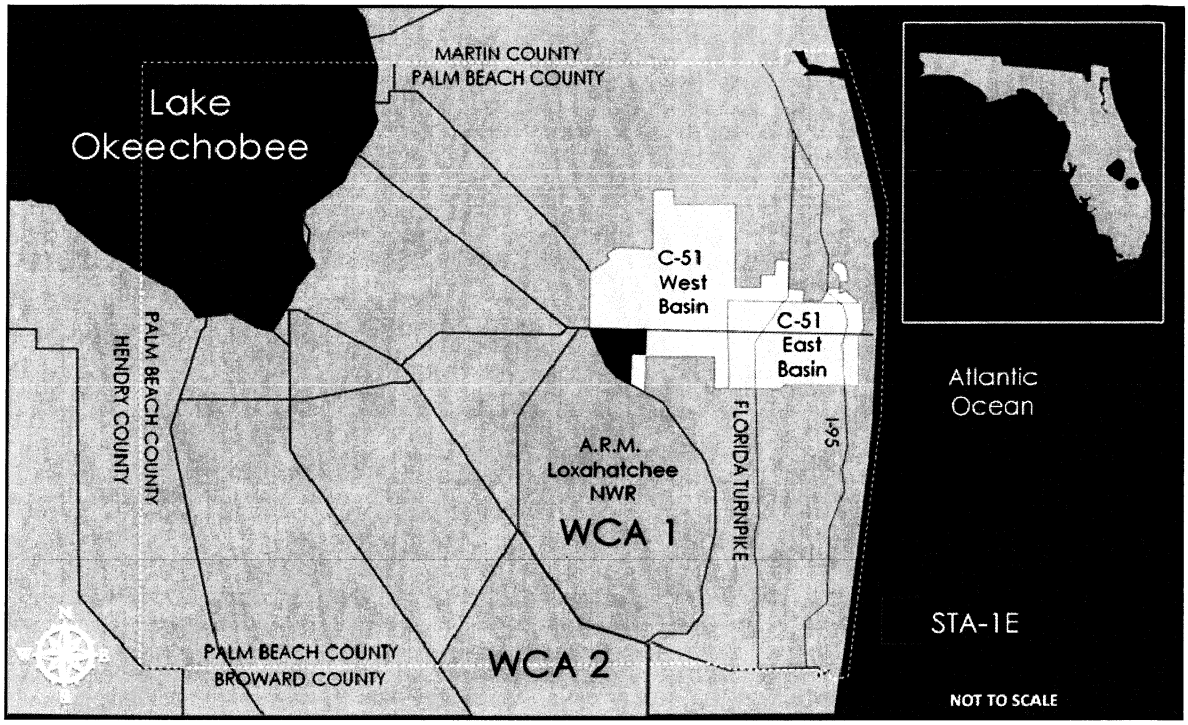

Figure 1 C-51 Basin and STA-1E location.

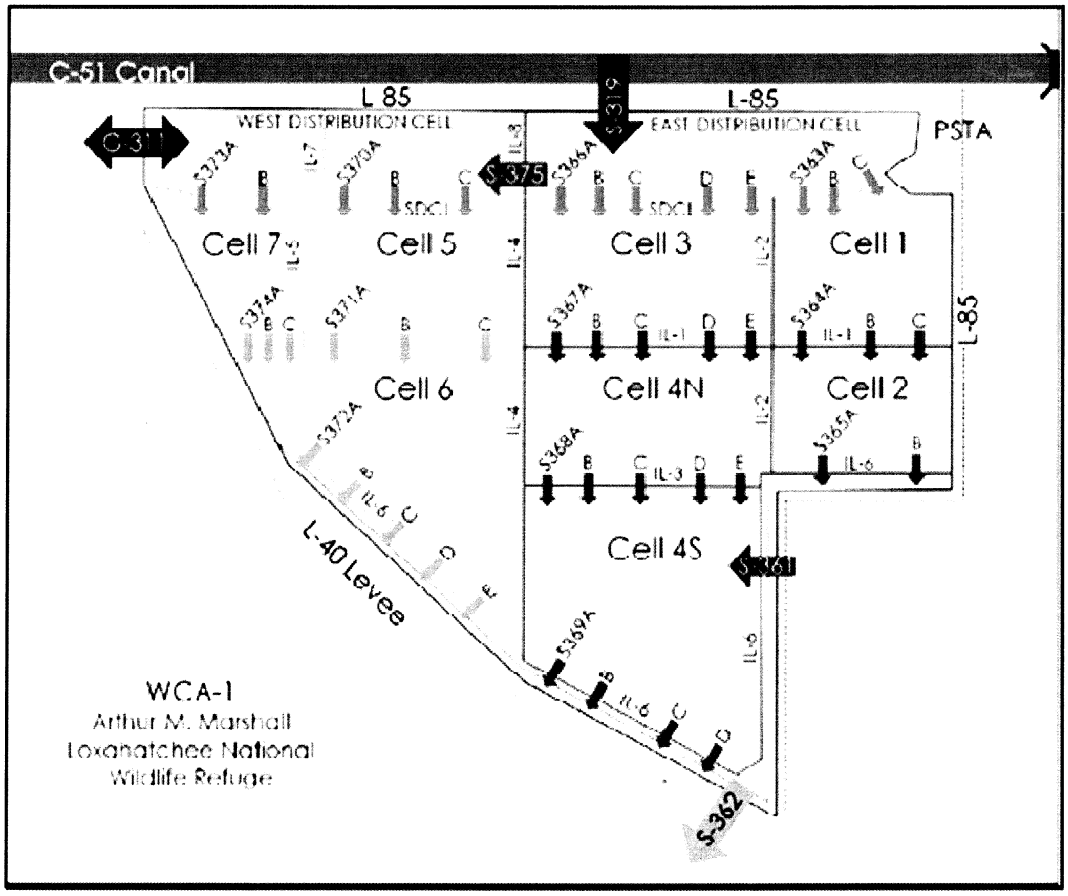

Figure 2 STA-1E cell locations.

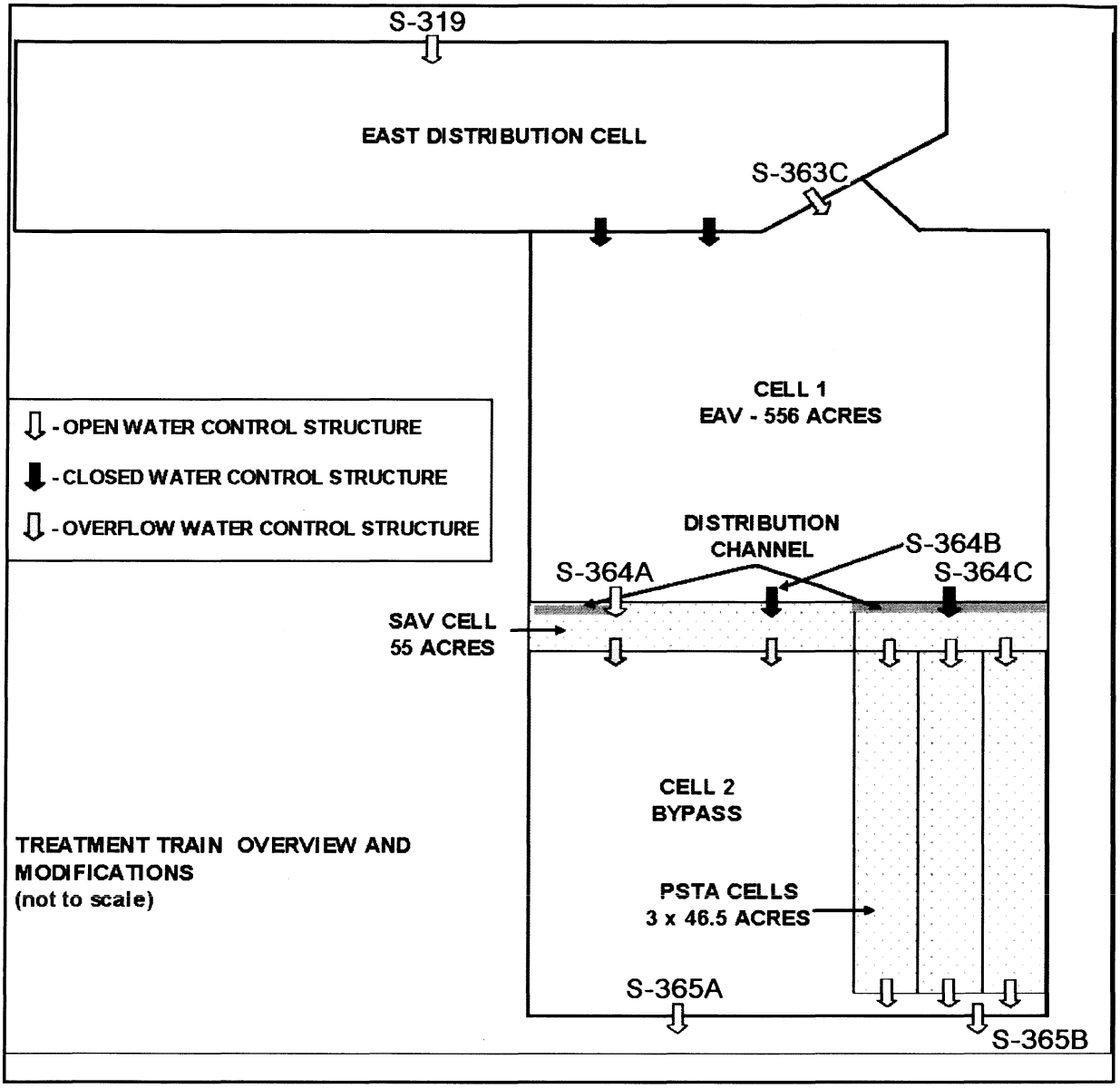

Figure 3 Schematic for PSTA Demonstration Project.

3. DISTRICT QUALITY CONTROL

District Quality Control and Quality Assurance (DQC) activities for Other Work Products are discussed in EC 1165-2-209. The subject project P&S, DDR and EA will be prepared by the Jacksonville District using the SAJ procedures and will undergo DQC and DQC Certification.

4. AGENCY TECHNICAL REVIEW

a. Risk Informed Decision on Appropriate Level of Review

The EC 1165-2-209 for review policy directs the team to make a risk informed decision regarding ATR for other work products (Para 15). Review of the answers to the following questions from Para 15.b indicate that ATR is not deemed appropriate for the subject decommissioning work with Interim Operating Criteria and Environmental Assessment. The District Quality Control and Quality Assurance on the P&S, DDR and Environmental Assessment will be completed prior to the documents being routed for BCOE certification.

(1) Does it include any design (structural, mechanical, hydraulic, etc)? No. This work product does not contain new design work. The project proposes to remove previously designed and constructed components of PSTA.

(2) Does it evaluate alternatives? No. The project proposes to remove previously designed and constructed components of PSTA and return Cell 2 of STA-1E to the pre-PSTA condition.

(3) Does it include a recommendation? No. The project does not propose alternatives.

(4) Does it have a formal cost estimate? Yes. A formal Independent Government Estimate (IGE) to estimate the construction cost of this effort will be completed to be included with the BCOE certification.

(5) Does it have or will it require a NEPA document? Yes. As the implementation of the preferred alternative is technically defined as a federal action, compliance with NEPA is required. The EA for the decommissioning of the PSTA Demonstration Project will be circulated for public and agency review and coordination in compliance with NEPA.

(6) Does it impact a structure or feature of a structure whose performance involves potential life safety risks? No. There is no life safety risk associated with the decommissioning of the PSTA Demonstration Project.

(7) What are the consequences of non-performance? In accordance with the Project Cooperation Agreement (PCA), the USACE transferred operations and maintenance of STA-1E to the South Florida Water Management District (SFWMD) in October of 2005 following construction completion. The USACE has retained use of Cells 1 and 2 for implementation of the PSTA Demonstration Project. The SFWMD has indicated that operation of the PSTA Demonstration Project has limited the operational capacity of the STA. Furthermore, the United States District Court, Southern District of Florida, issued an order directing the United States Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP) to carry out specific steps to meet their mandatory duties to achieve water quality standards in the EPA. The Amended Determination further recognized that Cells 1 and 2 in STA-1E are temporarily operating at a decreased hydraulic capacity as a result of the PSTA Demonstration Project which decreases the effective treatment area of the STA and recommended removal of the project. Decommissioning of the PSTA Demonstration Project has the potential to improve the current performance of STA-1E.

(8) Does it support a significant investment of public monies? No. There is no significant investment of public monies in the decommissioning of the PSTA Demonstration Project. However, there was significant investment of public monies in the construction of STA-1E.

(9) Does it support a budget request? No.

(10) Does it change the operation of the project? No. An Interim Operations Plan will be completed and used during the de-construction of the features associated with the PSTA

Demonstration Project. Following completion of the project, the current operational plan for STA-1E will be followed. No permanent change will be made to the operations of the STA-1E.

(11) Does it involve ground disturbances? Yes, however, the ground was disturbed during the initial construction of the project during 2001-2005. The same footprint would be used for the decommissioning of the PSTA Demonstration Project.

(12) Does it affect any special features, such as cultural resources, historic properties, survey markers, etc, that should be protected or avoided? No. The plans, specifications and DDR do not propose any actions that will affect any cultural resource or historic properties or other related appurtenances. The ground was disturbed during the initial construction of STA-1E during 2001-2005. Decommissioning effects will be limited to the area already disturbed by the constructed project. Consultation with the Florida State Historic Preservation Office will be conducted.

13) Does it involve activities that trigger regulatory permitting such as Section 404 or stormwater/NPDES related actions? No. Initial construction of STA-1W and STA-1E was previously authorized and completed under FDEP Permit No. 0226317-001, FL0177962-001-IW7A, 0195030-001 and FL0304549-002-IW7A. Authorization for the continued operation and maintenance of these facilities was completed under Permit No. 0279499-001-EM. Modifications to existing permits will be acquired prior to construction activities if necessary.

(14) Does it involve activities that could potentially generate hazardous wastes and/or disposal of materials such as lead based paints or asbestos? No. There will be no hazardous wastes and/or disposal thereof generated by this plan.

(15) Does it reference use of or reliance on manufacturers' engineers and specifications for items such as prefabricated buildings, playground equipment, etc? No.

(16) Does it reference reliance on local authorities for inspection/certification of utility systems like wastewater, stormwater, electrical, etc? No. This work product has no affect on any local utilities for inspection/certification of utility systems. All work to be performed is confined to USACE and SFWMD personnel on existing facilities.

(17) Is there or is there expected to be any controversy surrounding the Federal action associated with the work product? No. Pursuant to NEPA a scoping letter was issued for this action to request assistance in gathering information to help define issues and concerns to be addressed. Comments received during the comment period will be addressed in the EA. In addition, prior to the release of the scoping letter, the USACE has considered input on the continuation of the project with state and federal agencies as well as other interested parties through a series of public meetings.

In accordance with 1165-2-209 paragraph 5. "Policy", subparagraph (b), Jacksonville District believes that the DQC is the appropriate level of review consistent with the scale, level of complexity and relative importance of the Plans, Specifications and DDR and Environmental Assessment.

5. INDEPENDENT EXTERNAL PEER REVIEW

a. General. EC 1165-2-209 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases). The EC defines Section 2035 Safety Assurance Review (SAR), Type II Independent External Peer Review (IEPR). The EC also requires Type II IEPR be managed and conducted outside the Corps of Engineers

b. Type I Independent External Peer Review (IEPR) Determination. A Type I IEPR is associated with decision documents. No decision documents are addressed/covered by this Review Plan. A Type I IEPR is not applicable to the Other Work Products and EA covered by this Review Plan.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035). This decommissioning project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209) and therefore, a review under Section 2035 is not required. The factors in determining whether a review of design and construction activities of a project is necessary as stated under Section 2035 along with this review plans applicability statement follow.

(1) The failure of the project would pose a significant threat to human life.

The work is decommissioning work and does not pose a significant threat to human life.

(2) The project involves the use of innovative materials or techniques.

The work does not employee innovative materials or techniques.

(3) The project design lacks redundancy.

The concept of redundancy does not apply to removal of PSTA components and returning Cell 2 back to the pre-PSTA condition for STA-1E.

(4) The project has a unique construction sequencing or a reduced or overlapping design construction schedule.

The methods and procedures are not unique and do not have a reduced or overlapping design construction schedule.

A Type II IEPR is not applicable to the Other Work Products covered by this Review Plan.

6. MODEL CERTIFICATION AND APPROVAL

This project component does not use any engineering models that have not been approved for use by USACE.

7. PROJECT DELIVERY TEAM

Project Manager: Robert Medlock
Engineering Technical Lead: Steve Barth

Civil/Site Work: Stephen Dupries
Civil/Site Work: Steve Barth
Specifications: Jerry Alkire
Geosystems: Melissa Reynolds
Cost Engineering: Alex Saar
NEPA Compliance: Melissa A. Nasuti

8. SCHEDULE

Project Milestones.

District Quality Control Certification – 13 December 2011

Product Quality Control Certification – 13 December 2011

BCOE Review/Certification Complete – 4 April 2012

Advertisement – May 2012

9. POINTS OF CONTACT

Per guidance, the names of the following individual will be posted on the Internet with the Review Plan. Their titles and responsibilities are listed below.

Jacksonville District POCs:

Review Plan, ATR and QM Process,	Jimmy D. Matthews 904-232-2087 Jimmy.D.Matthews@usace.army.mil
Project Information (PM) & (ETL),	Robert Medlock (PM) 904-232-1065 robert.e.medlock@usace.army.mil Steve F. Barth, (ETL) 904-232-1698 Stephe.F.Barth@usace.army.mil
South Atlantic Division,	James C. Truelove 404-562-5121 James.C.Truelove@usace.army.mil