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

03 JUN 2014

CESAD-RBT

MEMORANDUM FOR COMMANDER JACKSONVILLE DISTRICT (CESAJ-EN-QC/ LAUREEN A. BOROCHANER)

SUBJECT: Approval of Review Plan for the Aquifer Storage and Recovery Regional Study Technical Data Report

1. References:

a. Memorandum, CESAJ-EN-QC, 5 May 2014, subject: Approval of Review Plan for Aquifer Storage and Recovery Regional Study Technical Data Report (Enclosure).

b. EC 1165-2-214, Civil Works Review, 15 December 2012.

2. The enclosed Review Plan (RP) for the Aquifer Storage and Recovery Regional Study Technical Data Report has been reviewed by this office and is approved in accordance with references b above.

3. We concur with the conclusion of the District Chief of Engineering that a Type II Independent External Peer Review is not required for this data report. The primary basis for this concurrence is that failure or loss of this data report would not pose a significant threat to human life.

4. The district should take steps to post the approved revised RP 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. Subsequent significant changes to this RP, should they become necessary, will require new written approval from this office.

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

Encl

DONALD L. WALKER
COL, EN
Commanding

Rec'd 5/12/2014
JCF

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

REPLY TO
ATTENTION OF

CESAJ-EN-QC

05 May 2014

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

SUBJECT: Approval of Review Plan for Aquifer Storage and Recovery Regional Study Technical Data Report

1. References.

a. EC 1165-2-214, Civil Works Review, 15 December 2012

b. WRDA 2000, Public Law No. 106-541, of the 106th Congress, 11 December 2000

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that a Type I Independent External Peer Review (IEPR) and a Type II IEPR of the subject project are not required. The recommendation to exclude Type I is because the future PIR, that will utilize the Aquifer Storage and Recovery Regional Study Technical Data Report, will require a Type I IEPR. The recommendation to exclude Type II IEPR is based on the EC 1165-2-214 Risk Informed Decision Process, as presented in the Review Plan.

The scope of this review plan addresses the Aquifer Storage and Recovery Regional Study Technical Data Report. The Review Plan complies with applicable policy, provides Agency Technical Review 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 will be withheld from the posted version, in accordance with guidance.

FOR THE COMMANDER:

for LAUREEN A. BOROCHANER, P.E.
Chief, Engineering Division

Encl

REVIEW PLAN

For

ASR Regional Study
Technical Data Report

Jacksonville District

MAY 2014

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 Aquifer Storage and Recovery (ASR) Regional Study Technical Data Report (TDR). Review activities consist of District Quality Control (DQC) and Agency Technical Review (ATR).

The Review Plan was prepared in accordance with the requirements of EC 1165-2-214, Civil Works Review. The related review activities are further defined in ER 1110-1-12, Engineering and Design Quality Management. The *Other Work Products* category was selected since the Technical Data Report is neither a decision document nor an implementation document. The EC 1165-2-214 Risk Informed Decision process was used to determine the appropriate level of review for this report. Upon approval, the review plan will be included in the Project Management Plan as an appendix to the Quality Management Plan, as stipulated in Para. 7.a of EC 1165-2-214.

The ASR Regional Study TDR is written by Project Delivery Team members in the Planning and Engineering Divisions of the Jacksonville District, and with input from the technical staff of the South Florida Water Management District. This report serves several purposes. The original Comprehensive Everglades Restoration Plan (CERP) identified ASR as major water storage component, with construction of 333 ASR wells to recharge, store, and recover 1.6 billion gallons of water per day in permeable zones of the Floridan aquifer that would otherwise be lost to tide. The regional scale proposed for CERP ASR implementation raised concerns among many stakeholders. In response, the Committee on Restoration of the Greater Everglades Ecosystem (CROGEE) identified major concerns that should be addressed during the CERP ASR planning process (National Research Council, 2001). The ASR Regional Study was defined and completed to address these concerns (National Research Council, 2002). The ASR Regional Study TDR presents the findings and recommendations of geotechnical studies, model simulations, and ecological evaluations performed during execution of this project.

b. References.

1. EC 1165-2-214, Civil Works Review, 15 December 2012
2. ER 1110-1-12, Engineering and Design Quality Management, 30 September 2011
3. Water Resources Development Act (WRDA) of 1999, 2000
4. Aquifer Storage and Recovery in the Comprehensive Everglades Restoration Plan, National Research Council, 2001
5. Regional Issues in Aquifer Storage and Recovery for Everglades Restoration, National Research Council, 2002
6. ASR Issue Team Assessment and Comprehensive Strategy: A Report to the South Florida Ecosystem Restoration Working Group, July 1999
7. CERP ASR Pilot Project Technical Data Report, USACE and SFWMD, 2013.
8. Project Management Plan for the ASR Regional Study, USACE 2003.

c. Requirements. This review plan was developed in accordance with EC 1165-2-214, 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, operation, maintenance, repair, replacement, and rehabilitation. 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 applicable 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. See paragraph 5.c below for information concerning ATR management.

2. PROJECT INFORMATION AND BACKGROUND

a. ASR as a Component of the Comprehensive Everglades Restoration Plan.
In the CERP, ASR was envisioned as the largest component of new storage. ASR would be implemented in the CERP to recharge, store, and recover up to 1.66 billion gallons per day (bgd) of treated surface water that otherwise would be lost to tide. Recharge and recovery would occur through approximately 330 wells (Figure 1). The necessity of ASR as a component of the CERP is outlined in the Comprehensive Plan, stating:

> *The purpose of this feature is to: (1) provide additional regional storage while reducing both evaporation losses and the amount of land removed from current land use (e.g. agriculture) that would normally be associated with construction and operation of above-ground storage reservoirs; (2) increase the Lake's water storage capability to better meet regional water supply demands for agriculture, lower East Coast urban areas, and the Everglades; (3) manage a portion of regulatory releases for the Lake primarily to improve Everglades hydropatterns and to meet regulatory discharges to the St. Lucie and Caloosahatchee Estuaries; and (4) maintain and enhance the existing level of flood protection.*

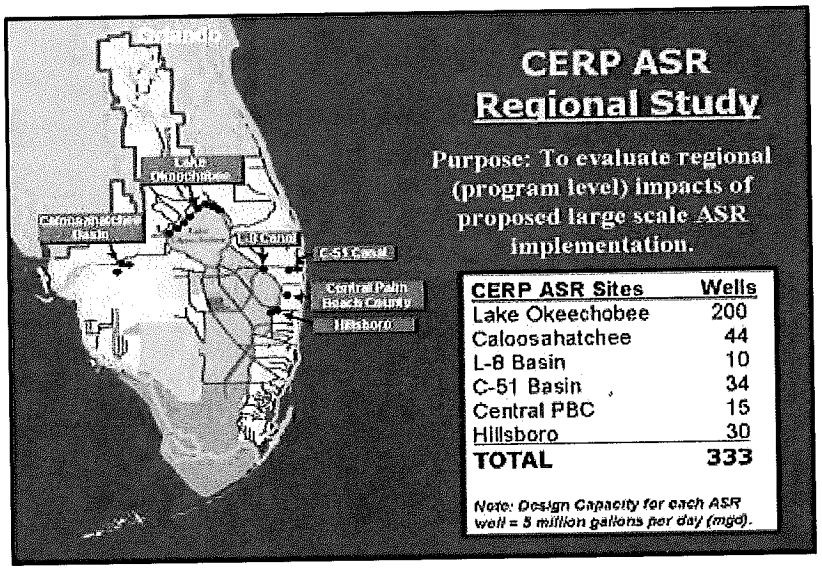

Figure 1 -- Image showing distribution of proposed ASR wells by basin, as defined in the CERP. Figure from USACE (2003).

To evaluate site-specific application of ASR technology, two pilot ASR systems were designed, constructed, and tested: the Kissimmee River ASR system, near Okeechobee, FL and the Hillsboro ASR system, near Boca Raton, FL. The results from operational testing of these two facilities were presented in the CERP ASR Pilot Project Technical Data Report (2013). This document was defined as an "Other Work Product" for review plan development. The review

process required District Quality Control Review, Sponsor Review, and Agency Technical Review (ATR). The ATR panel consisted of five ASR practitioners drawn from state and federal regulatory and permitting agencies, the private sector, and a water utility. The review process was managed in Dr. Checks, with oversight by Dr. Will Logan at the Institute for Water Resources (IWR), and was completed in December 2013.

b. The ASR Regional Study Project Purpose

The ASR Regional Study was developed to address hydrologic, geotechnical, and environmental concerns defined by the ASR Issue Team (1999) and expanded under further review by the Committee on Restoration of the Greater Everglades Ecosystem (NRC, 2002). The committees felt that the state of knowledge of these issues resulted in large uncertainties for regional ASR implementation. Those issues are:

- Characterization of spatial and temporal variation in prospective source waters
- Characterization of the regional hydrogeologic setting of the upper Floridan Aquifer, particularly concerning hydraulic properties and groundwater quality
- Analysis of critical pressure thresholds for rock fracturing
- Analysis of site and regional changes in head and groundwater flow
- Analysis of water quality changes during movement and storage in the aquifer
- ASR potential effects on mercury bioaccumulation
- Relationship between ASR storage interval properties and recovery rates and recharge volume

The ASR Regional Study, broadly defined, consists of three major focus areas: 1) a regional groundwater flow and solute transport model to simulate hydrologic effects during regional-scale ASR implementation; 2) an extensive groundwater monitoring program to evaluate water-quality and hydrogeologic changes during ASR system operations; and 3) studies and additional modeling efforts to predict ecological and ecotoxicological effects that occur when recovered water is distributed into the surface water system.

The ASR Regional Study TDR will have characteristics similar to a feasibility study or project implementation report, with the exception that the data collection efforts and model simulations that support report findings are more extensive. Results and findings presented in this report will define the feasibility of regional ASR implementation. Specifically, the report will show how many ASR wells can be constructed to meet performance measures. The D13R model simulation considered the number and distribution of ASR systems operating, along with the effect of recovered water on the ecosystems of Lake Okeechobee. The findings will provided capacity and environmental guidance for planning and design of future ASR implementation in south Florida.

3. DISTRICT QUALITY CONTROL

District Quality Control (DQC) activities for engineering products are stipulated in ER 1110-1-12, Engineering & Design Quality Management and EC 1165-2-214. The Technical Data Report will be reviewed by appropriate technical personnel in the Engineering and Planning Divisions of the Jacksonville District. To complete the review process in FY14, the DQC and PDT review will be

conducted simultaneously. Review and revisions from the DQCR and PDT review will be completed prior to initiation of the ATR.

4. RISK INFORMED DECISION ON APPROPRIATE LEVEL OF REVIEW AND OTHER WORK PRODUCT DETERMINATION.

EC 1165-2-214, Civil Works Review, directs the project delivery team to make a risk-informed decision regarding the classification of the document and appropriate level of review. Review of the following Risk Informed Process from Para 15.b indicates that this document is an "Other Work Product". The review of the following Risk Informed Process also led to the determination that ATR is deemed appropriate.

(1) **Does it include any design (structural, mechanical, hydraulic, etc)?** There is no specific design element included in the ASR Regional Study TDR. However, results of the groundwater flow model simulations are presented, which show the magnitude of effects from ASR implementation on the hydraulic, hydrogeologic, and ecological conditions in many basins of south Florida. The groundwater flow model was developed step-wise, with each step reviewed and revised according to the comments received by the Interagency Modeling Center. Peer-reviewed documents, and review comments and responses, are all available on Evergladesplan.org. (http://www.evergladesplan.org/pm/projects/pdp_32_33_34_44_asr_combined.aspx)

(2) **Does it evaluate alternatives?** No. The ASR Regional Study TDR reports the best option for regional ASR implementation, and the effects of that option on surface water quality and ecology of regions surrounding Lake Okeechobee.

(3) **Does it include a recommendation?** The number and geographic distribution of ASR wells is proposed in this ASR Regional Study TDR and this constitutes a recommendation based on technical evaluation of aquifer hydraulics and hydrogeology of the Floridan Aquifer System. The effects on groundwater and surface water quality and the ecosystems in Lake Okeechobee and the Kissimmee River that could potentially result from the proposed ASR implementation are also defined.

(4) **Does it have a formal cost estimate? No.** A formal cost estimate is not presented in this report.

(5) **Does it have or will it require a NEPA document?** No NEPA document is required for the ASR Regional Study TDR. The results of the ASR Regional Study TDR will inform subsequent ASR project development. NEPA documents will be developed as necessary for the subsequent ASR projects.

(6) **Does it impact a structure or feature of a structure whose performance involves potential life safety risks?** No. There are no impacts to structures associated with the ASR Regional Study TDR.

(7) **What are the consequences of non-performance**? USACE and the local sponsor are planning to use other water storage methodologies in place of ASR. Although regional ASR

implementation is no longer envisioned as part of the CERP, we are "closing the loop" of this project and documenting our findings should these be utilized for in future water management strategies.

(8) **Does it support a significant investment of public monies?** Yes. Approximately $10M was spent between 2002 and 2014 on the ASR Regional Study.

(9) **Does it support a budget request?** No. Management has directed no further ASR system implementation at this time.

(10) **Does it change the operation of the project?** No. The ASR Regional Study TDR is not an operations study and does not change the operation of any existing project.

(11) **Does it involve ground disturbances?** No. The ASR Regional Study TDR does not include design, construction, or operations components.

(12) **Does it affect any special features, such as cultural resources, historic properties, survey markers, etc, that should be protected or avoided?** No. The ASR Regional Study TDR itself does not does not affect any special features such as cultural resources, historic properties, survey markers, etc. Should the recommendations for regional ASR implementation be applied in part or in full, special features would require consideration.

(13) **Does it involve activities that trigger regulatory permitting such as Section 404 or stormwater/NPDES related actions?** No. State and Federal permits, including the Underground Injection Control, National Pollution Discharge Elimination System, and Comprehensive Everglades Restoration Plan Regulation Act permits would be required only if expanded use of ASR technology is implemented. The permitting process would be implemented only after PIR approval.

(14) **Does it involve activities that could potentially generate hazardous wastes and/or disposal of materials such as lead based paints or asbestos?** No. The ASR Regional Study TDR did not generate or require disposal of hazardous materials.

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

(16) **Does it reference reliance on local authorities for inspection/certification of utility systems like wastewater, stormwater, electrical, etc?** No. ASR Regional Study TDR does not impact local utilities.

(17) **Is there or is there expected to be any controversy surrounding the Federal action associated with the work product?** No controversy is anticipated on the ASR Regional Study TDR.

5. AGENCY TECHNICAL REVIEW

a. Scope. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-214 and ER 1110-1-12. An ATR will be performed on the ASR Regional Study TDR. The ASR Regional Study was initiated in 2001 to address stakeholder concerns about the magnitude of ASR implementation (333 ASR wells) in the CERP. Stakeholders indicated that significant uncertainties existed regarding hydraulic and hydrogeologic effects in the Floridan Aquifer from ASR implementation. In addition, potential effects from ASR recovered water on the Lake Okeechobee ecosystem were not addressed. In response, USACE and the South Florida Water Management District engaged the National Research Council (NRC) to review the project management plan for the ASR Regional Study (NRC, 2002). The ASR Regional Study TDR presents the findings and recommendations of geotechnical studies, model simulations, and ecological evaluations. Due to the unique and specialized nature of this project, and because the project was reviewed initially by the NRC, to the extent practicable the ATR Team assembled to review the ASR Regional Study TDR will contain members from the NRC.

ATR will be conducted by individuals and organizations that are external to the Jacksonville District. The ATR Team Leader is from outside the South Atlantic Division. The required disciplines and experience are described in section below.

ATR comments will be documented in the DrChecks[sm] model review documentation database. DrChecks[sm] is a module in the ProjNet[sm] suite of tools developed and operated at ERDC-CERL (www.projnet.org).

b. ATR Disciplines. ATR members will be sought from the NRC. If NRC members are not available, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines, knowledge, skills and abilities, and experience levels.

Hydrogeology and Subsurface Geology. The team member should be senior hydrogeologist, preferably a registered professional geologist, with 10 years of experience in the geology and hydrogeology of the Floridan Aquifer System.

Groundwater Geochemistry and Quality. The team member should be a senior scientist with 10 years of experience in geochemistry and groundwater quality studies. Experience in groundwater quality applications to State and Federal regulatory criteria and issues also is important.

Hydraulic Engineer. The team member should be a senior hydraulic engineer with 10 years of experience in numerical modeling of groundwater flow and solute transport.

Freshwater Fisheries and/or Wetlands Biologist. The team member should be a senior ecologist with 10 years of experience in system ecology.

Environmental Toxicologist. The team member should be a senior ecotoxicologist with significant experience in watershed and ecological risk assessment methodologies.

ATR Team Leader. The ATR Team Leader will be from outside SAD, and will have experience leading review teams at a national level. The ATR Team Leader may also serve as a technical team member in one of the review disciplines.

c. ATR Review Manager. The USACE Institute of Water Resources (IWR) is designated as the ATR Review Manager for the ASR Regional Study TDR. The IWR will maintain the administrative aspects of this review plan (for example, DrChecks) and will oversee all coordination efforts with the NRC. IWR will complete the ATR report and certification. The IWR point of contact is [redacted]. The ATR team member bios will be submitted to the South Atlantic Division, the RMO representative, for concurrence.

6. INDEPENDENT EXTERNAL PEER REVIEW

a. General. EC 1165-2-214 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007. 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.

Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-214.

b. Type I Independent External Peer Review (IEPR) Determination (Section 2034). This section discusses the factors necessary to determine the appropriate scope and level of review for the decision document as specified in EC 1165-2-214. This information has been used to recommend the appropriate level of review and select the types of expertise represented on the review teams. The risk informed decision discussion is below and considers criteria defined in EC section 11.d.1 and Appendix D. A Type I IEPR is not indicated as needed/recommended for the ASR Regional Study Technical Data Report.

(1) **Does completion of the project pose a significant threat to human life?** No.

(2) **Does the total project cost exceed $45M**. No.

(3) **Is an IEPR requested by the Governor of Florida?** No.

(4) **Is an IEPR requested by a Federal or state agency because the project is likely to have a significant adverse impact on environmental, cultural, or other resources under the jurisdiction of the agency?** An IEPR was not requested specifically. However, the basis for the ASR Regional Study was to reduce uncertainties of regional ASR implementation due to the potential for adverse effects.
(5) **Is there significant public dispute as to size, nature, or effects of the project?** No significant controversy is anticipated on the ASR Regional Study TDR.

(6) **Is there significant public dispute as to the economic or environmental cost or benefit of the project?** No significant controversy is anticipated on the ASR Regional Study TDR.

(7) **Is the project based on novel methods, presents complex challenges for interpretation, contains precedent setting methods or models, or presents conclusions that are likely to change prevailing practices?** Yes. The ASR Regional Study TDR will present a scenario for implementation of an expansive application of ASR. As such, the project presents complex challenges to predict potential hydraulic, hydrogeological, and ecological effects that can occur. The information presented in this ASR TDR will be used in subsequent PIRs should ASR be implemented. Those PIRs will require a Type I IEPR.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035). This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-214) 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. The District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review of the ASR Regional Study TDR. The project/report does not have potential hazards that pose a significant threat to human life. Innovative materials or novel engineering methods will not be used. Redundancy, resiliency, or robustness is not required for design and the report does not directly result in, nor does it support construction activities and scheduling. Therefore, a Type II IEPR is not recommended for the ASR Regional Technical Data Report.

7. MODEL CERTIFICATION AND APPROVAL

Groundwater flow and solute transport simulations are significant components of the ASR Regional Study. These simulations were produced using the regional groundwater flow and solute transport model developed specifically for the ASR Regional Study by the USACE. The USACE used the finite difference, three dimensional, variable-density groundwater flow program SEAWAT v.4. Use of SEAWAT v.4 was approved by the Technical Lead for Groundwater Software in the Hydrology, Hydraulics and Coastal Community of Practice (Dr. Cary Talbot, ERDC, email dated 4 April 2012). Model development, calibration, and simulations will be reviewed internally by the Interagency Modeling Center personnel, prior to completion of the ASR Regional TDR. The Interagency Modeling Center is the single point of service for this type of modeling needs of CERP. All final groundwater modeling reports that are components of the ASR Regional Study are available for download at

http://www.evergladesplan.org/pm/projects/pdp_32_33_34_44_asr_combined.aspx#groundwater

8. BUDGET AND SCHEDULE

a. Project Milestones.

Completion Submittal – May 2014

District Quality Control – June - July 2014

Agency Technical Review – August - December 2014

b. ATR Schedule and Cost. It is envisioned that each reviewer will be afforded 40 hours for the review. This level of effort includes time for actual manuscript review, writing, uploading and back-checking comments into DrChecks, and meetings and conference calls. The cost of NRC involvement for the ATR phase is estimated at $150,000.

9. POINTS OF CONTACT

Per guidance, the names of the following individual will not be posted on the Internet with the Review Plan. Their titles and responsibilities are listed below.

Jacksonville District POCs:

Review Plan and ATR Process:

Project Information:

Project Manager:

South Atlantic Division:

Institute for Water Resources:
Review Plan Coordination, ATR

Attachment A.

ACRONYMS AND ABBREVIATIONS

Acronyms	Defined
ASR	Aquifer Storage and Recovery
ATR	Agency Technical Review
CERP	Comprehensive Everglades Restoration Project
CESAJ	US Army Corps of Engineers, Jacksonville District
CESAJ-EN	US Army Corps of Engineers, Jacksonville District, Engineering Division
DQC	District Quality Control
EC	Engineering Circular
ER	Engineering Regulation
ERCD	Engineer Research and Development Center
ETL	Engineering Technical Lead
FY	Fiscal Year
IEPR	Independent External Peer Review
IWR	Institute for Water Resources
NEPA	National Environmental Policy Act
NRC	National Research Council
PE	Professional Engineer
PG	Professional Geologist
PIR	Project Implementation Report
PL	Public Law
PM	Project Manager
POC	Point of Contact
RMO	Review Management Organization
RTS	Regional Technical Specialists
SAD	South Atlantic Division
SAR	Safety Assurance Review (also referred as Type II IEPR)
SFWMD	South Florida Water Management District
SME	Subject Matter Experts
TDR	Technical Data Report
USACE	United States Army Corps of Engineers
WRDA	Water Resources Development Act

Attachment B

ATR Report Outline and COMPLETION OF AGENCY TECHNICAL REVIEW

ASR Regional Study Technical Data Report

ATR REPORT FORMAT

1. **Introduction:**
2. **ATR Team Members:**
3. **ATR Objective:**
4: **Documents Reviewed:**
5. **Findings and Conclusions:**
6. **Unresolved Issues:**

Attachment C

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the ASR Regional Study Technical Data Report. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214 and ER 1110-1-12. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

_____ _____

[NAME]
ATR Team Leader

Date

_____ _____

[NAME]
Project Manager CESAJ-PM

Date

_____ _____

[NAME]
Review Management Office Representative
CESAD-RBT

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

_____ _____

[NAME]
Chief, Engineering Division Chief
CESAJ-EN

Date