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BEFORE THE GOVERNING BOARD OF THE
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

SFWMD No.: 2015-034-DAO-WU

In re:

EMERGENCY FINAL ORDER
AUTHORIZING FLORIDA POWER AND
LIGHT TO WITHDRAW WATER ALONG
AND FROM THE L-31E CANAL SYSTEM;
MIAMI-DADE COUNTY, FLORIDA
_____/

EMERGENCY FINAL ORDER

The Executive Director of the South Florida Water Management District (District), pursuant to Sections 120.569, 373.083, and 373.119(2), Florida Statutes (Fla. Stat.), after considering the recommendations of District staff and being otherwise fully appraised of the matter, issues the following Emergency Final Order containing Findings of Fact, Ultimate Facts and Conclusions of Law:

FINDINGS OF FACT

1. Florida Power & Light (FPL) submitted a request for an immediate, temporary emergency authorization from the District to allow FPL to use water from the L-31E Canal System above that reserved for the Nearshore Central Biscayne Bay and convey this water to its cooling canal system ("CCS") to reduce the temperature and salinity of the surface water within the CCS.

2. The District is a public corporation of the State of Florida, existing pursuant to Chapter 25270, Laws of Florida, 1949, and operating pursuant to Chapter 373, Fla. Stat., and Title 40E, Florida Administrative Code (Fla. Admin. Code), as a multi-purpose water management district with its principal office at 3301 Gun Club Road, West Palm Beach, Florida. The District has the power and duty to protect

Florida's water resources and to administer and enforce the provisions of Chapter 373, Fla. Stat., and the rules promulgated thereunder, Title 40E, Fla. Admin. Code. The District has jurisdiction over the matters addressed in this Emergency Final Order.

3. FPL is a regulated utility that has been granted an exclusive franchise by the Public Service Commission to provide reliable and cost-effective electric service to customers, including critical infrastructure, within its service territory in Florida. FPL's service territory covers all or parts of 35 Florida counties and serves approximately nine million customers.

4. The customers particularly at issue in this matter are those residing in Miami-Dade and Broward counties. In these counties, FPL provides electrical service to two million customer accounts, including critical infrastructure.

Turkey Point

5. FPL owns and operates the electric power generating facility known as the Turkey Point Power Plant ("Turkey Point") that is the subject of this emergency authorization request.

6. Turkey Point is located in unincorporated southeast Miami-Dade County, east of Florida City and the City of Homestead. The Turkey Point site covers approximately 11,000 acres. Turkey Point is located approximately 25 miles south of Miami and about 9 miles east of Florida City. Properties adjacent to the facility are almost exclusively undeveloped land. Turkey Point is bordered to the east by Biscayne Bay and Card Sound. A map showing the location of Turkey Point is attached and incorporated as Exhibit A.

7. Turkey Point consists of five steam electric generating units: three fossil fuel-fired units (Units 1, 2, and 5) and two nuclear units (Units 3 and 4). Units 1 and 2 constructed in the late 1960s each have a continuous generating capacity of approximately 404 megawatts (MW). Operations of Units 1 and 2 are on a standby basis and not routinely in service. Unit 5 has a continuous generating capacity of approximately 1150 MW. Units 3 and 4 each have a continuous generating capacity of over 1,632 MW.

8. Units 3, 4, and 5 are certified under the Florida Electrical Power Plant Siting Act ("PPSA") found at Section 403.501, Fla. Stat., et. seq. The Florida Department of Environmental Protection ("FDEP") issued State License No. PA03-45 to FPL for the operations of Units 3, 4, and 5. Units 1 and 2 pre-date the PPSA and are not certified.

9. FPL owns and operates a cooling canal system, an approximately 5,900-acre network of unlined canals at Turkey Point, to provide cooling water. Construction of the CCS was completed in 1973, and the CCS was closed from the surface waters of both Biscayne Bay and Card Sound. Under routine operations, there are no active surface water inflows utilized to maintain CCS water levels, temperature, or salinity.

10. Water from the CCS cools the condensers of Units 1 (when in operation), 3, and 4. FPL's operating license from the Nuclear Regulatory Commission ("NRC") includes a requirement that the operator take steps to reduce power or shutdown the unit if the CCS intake water temperature approaches or exceeds 104°F.

L-31E Canal System

11. The L-31E Canal System is of particular import to FPL's emergency authorization request. The District has been the designated local sponsor of the Central and Southern Florida Flood Control Project ("C&SF Project") pursuant to Section 373.1501, Fla. Stat. As local sponsor, the District operates C&SF Project components, including the L-31E Canal System and the surface water flow to tide from the associated basins consistent with the guidance provided in the United States Army Corps of Engineers Master Water Control Manual, East Coast Canals, Volume 5 ("Water Control Manual").

12. The L-31E Canal System is part of the C&SF Project. More specifically, it is a borrow canal and levee system that stretches north – south intercepting water as it flows eastward to tide in southeast Dade County and providing storm surge protection. A map depicting the L-31E Canal System is attached and incorporated as Exhibit B. The L-31E Canal runs parallel to the South Central Biscayne Bay and across several drainage basins, six of which are named for the associated major east-west canals: Canal 100 (C-100), C-1, C-102, C-103, North Canal and Florida City Canal. This canal network and coastal levee system is operated in a manner consistent with several C&SF Project purposes, including reducing flood and storm surge damage, as well as limiting saline water intrusion. Water from the L-31E Canal System is discharged to Biscayne Bay at several coastal structures, as depicted on Exhibit B.

13. Operation of the C&SF Project coastal structure gates in this canal network controls the quantity and timing of water discharged into this portion of

Biscayne Bay. Overall, these surface water inflows comprise the largest input of fresh water to Biscayne Bay and Biscayne National Park in this area.

14. Water levels in the L-31E Canal System - the proposed water supply source for this Emergency Final Order - are influenced by the operation of coastal canal structures. Operation of the Structures S-20F, S-20G, and S-21A are performed consistent with guidance from the United States Army Corps of Engineers regulation schedule and Master Water Control Manual. Under normal operating conditions for April 30 – October 15, the S-20F, S-20G, and S-21A structures are operated in the "high range," meaning discharges to tide are conditionally made when stages upstream of the structure, including stages within the L-31E Canal, are 2.2 ft. National Geodetic Vertical Datum ("NGVD") or higher. The structure gates close when headwater stages drop to 1.8 ft. NGVD. During the agriculture drawdown season (October 15th through April 30th), S-21A, S-20G, and S-20F are set to operate with open and close ranges (Open/Close) of 1.4/1.0, 2.2/1.8, and 1.4/1.0 feet NGVD, respectively.

Nearshore Central Biscayne Bay Water Reservation

15. In the 1990s, the U.S. Army Corps of Engineers and the District developed the Comprehensive Everglades Restoration Program ("CERP"), which was approved by Congress in the Water Resources Development Act of 2000 ("WRDA 2000"). A component of CERP includes the Biscayne Bay Coastal Wetlands Phase 1 Project. This project component aims to restore the overland sheetflow in an area of up to 11,000 acres and to improve the ecology of Biscayne Bay, including its freshwater and saltwater wetlands, nearshore bay habitat, marine nursery habitat, and the oyster reef community.

16. Implementation of the Biscayne Bay Coastal Wetlands Phase 1 Project will impound and redistribute freshwater runoff from the existing canal discharges into the coastal wetlands adjoining Biscayne Bay thereby providing a more natural and historical overland flow pattern through existing coastal wetlands and tidal creeks. This redistribution of freshwater runoff will improve the temporal and spatial distribution of inflows to Biscayne Bay.

17. The WRDA 2000 requires that water be reserved from allocation to consumptive uses as an assurance that each CERP project component will meet its goals and objectives. Water is to be reserved consistent with the objectives and information contained within the *Central and Southern Florida Project Comprehensive Everglades Restoration Plan Biscayne Bay Coastal Wetlands Project Phase I Final Integrated Project Implementation Report and Environmental Impact Statement* ("PIR") and other sources of information.

18. To this end, the District conducted technical studies identifying water to be reserved for the protection of fish and wildlife within the western near-shore portion of Central Biscayne Bay, engaged in rule development, and adopted the Nearshore Central Biscayne Bay reservation rule and associated implementation rules. The reservation rules and consumptive use implementing criteria are attached hereto as Exhibit C. The location of the Nearshore Central Biscayne Bay and the associated C&SF Project canal system is depicted in Figure 3-1 of Exhibit C.

19. The determination of the amount of water needed for protection of fish and wildlife in the Nearshore Central Biscayne Bay water reservation rule is based on meeting a year-round salinity target for the nearshore area of central Biscayne Bay of

20 (practical salinity scale) given in the PIR. More detailed analyses were performed to determine the locations and quantities of surface water for the reservation rules. This information is contained in the District's Technical Document to Support a Water Reservation Rule for the Comprehensive Everglades Restoration Plan Biscayne Bay Coastal Wetlands Project (July 2013).

20. Rule 40E-10.061, Fla. Admin. Code, is the water reservation rule for the Nearshore Central Biscayne Bay. Pursuant to this rule, a Target Flow of 504 acre-feet per day of surface water is reserved from allocation. Appendix 3, Figure 3-1 of Chapter 40E-10, Fla. Admin. Code, depicts the Nearshore Central Biscayne Bay Reservation Water Body and Protected Canal Reaches. Figures 3-4A and 3-4B depict surface water flow from the C-102, Military, and C-103 Canals through S-21A, S-20G, S-20F structures into Biscayne Bay during the wet and dry seasons. (See Comp. Ex. C.)

Project History

21. On August 27, 2014, FPL requested the District issue an Emergency Order for temporary authorization to utilize the District's right of way and to divert and use water, above that reserved in Rule 40E-10.061, Fla. Admin. Code, from the L-31E Canal System to help moderate unusually high temperatures and salinity that were occurring in the CCS.

22. District staff reviewed and considered FPL's 2014 request, District's right-of-way, the infrastructure proposal, historic data, District statutory authorizations and rules, and the potential water availability and provided input to the District's Executive Director.

23. After consideration of water resource constraints, such as the Nearshore Central Biscayne Bay water reservation, the District issued an Emergency Order authorizing the withdrawal of water from the L-31E Canal System above what is needed to meet the reservation subject to various conditions, including an operational protocol. The Emergency Order was issued on August 28, 2014. The Governing Board concurred with the Executive Director's Emergency Order on September 11, 2014. The fall 2014 Emergency Order terminated on October 15, 2014.

24. Pursuant to the limitations defined in the fall 2014 Emergency Order, FPL pumped a limited number of days and volumes. The withdrawals, when allowed, ranged from 1 to 103 million gallons per day ("MGD") of water, which equated to 3.69 to 379.61 acre-feet. FPL withdrew a total of 1,135 million gallons ("MG") of water, which equates to approximately 4,183 acre-feet. During the same time the fall 2014 Emergency Order was in effect and FPL was authorized to pump, the District also released a combined average flow of 601 acre-feet per day of freshwater to Biscayne Bay through S-21A, S-20G, and S-20F, or 97 acre-feet of water per day above the target reservation flow.

25. During the term of the fall 2014 Emergency Order, the temperature of the water in the CCS dropped 6.5°F. The salinity of the water within the CCS also dropped from 87.4 to 75.4. The data showed there was a strong correlation between the drop in CCS water temperature and salinity with the addition of surface water.

26. On September 5, 2014, FPL submitted a request to FDEP to modify the conditions for certification contained in State License PA-03-45E, in part, to authorize

the use of 14 MGD from the Floridan aquifer system ("FAS") to reduce the salinity of the CCS.

27. On January 7, 2015, FDEP issued a Notice of Intent to modify the certification and associated conditions of certification, in part, to authorize the use the use of 14 MGD from the FAS to address salinity concerns in the CCS.

28. However, the FDEP approval was challenged by Tropical Audubon Society, Atlantic Civil, Inc., and Miami-Dade County. An administrative hearing on the modification to the site certification is presently scheduled for July 13-17, 2015. Until the administrative hearing is concluded and a final order is issued, FPL is unable to move forward with this method to reduce the temperature and salinity of the CCS.

29. On January 26, 2015, FPL submitted a consumptive use permit application, seeking authorization to divert and use non-reserved water from the L-31E Canal System. The purpose of the diversion is to reduce high temperature and salinities occurring in the water in the CCS.

30. Specifically, FPL sought to divert surface water that was available above the volume of water reserved under Rule 40E-10.061, Fla. Admin. Code, which would otherwise be released to Biscayne Bay via the S-20F, S-20G and S-21A coastal structures for a limited duration.

31. The District understood that FPL's long-term solution to aid in the reduction of salinity of the CCS was the use of 14 MGD of water from the FAS that is presently the subject of the administrative hearing discussed above.

32. On April 9, 2015, the District's Governing Board issued an order (Order No. 2015-020-DAO-WU) authorizing FPL to divert water from the L-31E Canal System

into its CCS for the purpose of lowering the temperature and salinity of the water in the CCS. Given the interim nature of the solution, the duration of the order was limited to the 2015 and 2016 wet seasons and subject to an operational protocol and monitoring requirements.

33. Order No. 2015-020-DAO-WU was challenged by Tropical Audubon, Atlantic Civil, Inc., and the City of Miami. Therefore, until such time as an administrative hearing is held and a final order is issued, FPL is unable to move forward with the actions authorized under Order No. 2015-020-DAO-WU.

FPL's 2015 Emergency Request

34. On May 14, 2015, FPL requested emergency authorization to temporarily connect to the L-31E Canal System and divert water above that which is reserved for the Nearshore Biscayne Bay Coastal Wetlands to reduce temperature and salinity within the CCS.

35. A number of factors are contributing to higher than usual temperatures in the CCS. These factors include high summer temperatures, significantly less rainfall in the vicinity of Turkey Point, including rainfall at the CCS, elevated salinity, and an algae bloom. In support of their emergency authorization request, FPL provided the following information which is contained in Composite Exhibit D and summarized below:

a. Salinity: FPL reports typical annual rainfall totals at Turkey Point range between 50 inches to 75 inches. Normally, summer rainfall is effective in moderating the CCS water temperature and salinity.

i. However, from January 1, 2015 to May 11, 2015, only 4.01 inches of rainfall had occurred at FPL's Met1 weather station located in the center of the

CCS. By comparison, rainfall at the District's S-20F (2.5 miles away) and S-21A (5.2 miles away) structures measured 9.8 and 13.07 inches, respectively, during the same timeframe.

ii. From May to September 2014, FPL data indicates high evaporation, ranging from 50.72 to 60.1 MGD, and losses to groundwater, ranging from 0.1 to 10.7 MGD.

iii. As a result of decreased rainfall and increased evaporation and seepage, salinity levels in the CCS have risen. FPL presented salinity data from 2013, 2014, and 2015. The data showed salinity levels for 2014 ranged 15 to 20 higher than 2013 salinity levels. Historically, salinity levels in the CCS have measured approximately 60.

iv. On January 1, 2015, the average salinity of the CCS measured 75.03. By April 26, 2015, salinity levels measured over 95.

v. From April 27-28, 2015, significant rainfall over the CCS reduced salinities to 77.5. However, no significant levels of rain have occurred since that time and salinity levels have begun to rise again.

b. Algae: FPL indicates the above described conditions have allowed an algal bloom in the CCS to persist and affect Turkey Point Plant operations. These blue green algae, *Aphanothece sp.*, prefer hypersaline conditions.

i. The algae concentrations and turbidity associated with the algae bloom cause solar energy to be absorbed in the CCS and reduce the CCS' ability to dissipate heat. This effect leads to increasing CCS temperatures and evaporative losses.

ii. FPL reports effective treatment of the algae will require the salinity to be reduced to bring the dead algae out of suspension, which is necessary to reduce the CCS water temperature and, thereby, restore the heat exchange capacity of the CCS.

iii. The use of L-31E Canal System water during the term of the 2014 Emergency Order and rainfall resulted in a reduction in salinity – from over 90 to approximately 65. As the hypersaline conditions were reduced, algae concentrations also decreased - from 1,315,000 cells/milliliter (cell/ml) on September 26, 2014 to 683,000 cell/ml on October 27, 2014. By November 10, 2014, algae concentrations measured 237,000 cells/ml.

iv. Recent measurements show an increasing concentration of algae. On January 5, 2015, the algae concentration measured 234,000 cells/ml. Concentrations rose to 967,000 cells/ml by May 4, 2015. This represents a fourfold increase in four months.

c. Temperature: Increased salinity and algae concentrations result in higher overall water temperatures in the CCS.

i. From March 12, 2015 to April 26, 2015, FPL observed higher water temperatures in the CCS than it observed in during 2014. On April 27, 2015, the temperature of the CCS reached 98.2°F.

ii. A large rainfall event occurred over the CCS between April 27 and 28, 2014. The addition of freshwater inflow from rainfall reduced the temperature of the water in the CCS to 81.3°F. However, recent data indicates that

water temperatures within the CCS are rising again. As of May 17, 2015, the CCS water temperature measured 94.6°F.

iii. As stated above, the NRC limits the water temperature of the CCS at the plant intake to 104°F. If the CCS water temperature approaches or exceeds 104°F, FPL must take mitigative measures. Such measures include reducing output or shutting down all or a portion of operations. Upon enacting such measures, FPL would be in Emergency Operation mode requiring it to reduce load in the Miami-Dade area through demand side management programs and, if needed, shed firm customers in the southern portion of Miami-Dade.

36. In support of its consumptive use permit application, FPL provided a water/salt budget model for the Turkey Point CCS developed to quantify the volume of water and mass of salt entering and exiting the CCS over time and to evaluate changes in hydrodynamics associated with operational alternatives. A copy of the water/salt budget model is attached hereto as Exhibit E. The water/salt budget model ran two scenarios at multiple withdrawal rates. The first scenario simulated average weather conditions and the second scenario simulated drier than normal conditions. Each scenario was run four times under different pumping scenarios- no pumping, 30 MGD, 60 MGD, and 100 MGD and for a 2-year timeframe. In each scenario, the results of the modeling showed that the greater the volume of water pumped into the CCS, the greater the drop in salinity of the water in the CCS.

37. Alternative measures to counter the effects of temperature and salinity on the CCS are insufficient or presently unavailable to avoid emergency conditions at Turkey Point.

a. Algae treatments – During the spring of 2014, an algae bloom occurred in the CCS. In mid-summer 2014, FPL began treating the algae bloom with a copper sulfate-based algaecide. At the time of the initial treatment, the algae concentration was as high as 1.6 million cells/ml, far exceeding the historic average value of 50,000 cells/ml. The algaecide treatments that occurred at or near the time of rainfall events have reduced the algae concentrations. However, the data indicate that the introduction of freshwater had a more significant impact than the algaecide treatment alone. Higher dosages of the algaecide treatment, without rainfall or additional freshwater inflows, have only resulted in a stabilization of the algae concentration, not a reduction in algae concentration. It was only during the addition of freshwater flows from the L-31E Canal System in the fall of 2014 that significant reductions in algae concentration were observed.

b. FPL operates an integrated electrical generation and transmission system. During the peak summer months, greater than 50% of the power consumed in the Miami-Dade area is brought in via the transmission system. However, the transmission system capability limits the amount of electricity that can be imported into the area. Local generating capacity within Miami-Dade supplies the need differential as well as assists in maintaining stable voltage conditions on the transmission system, especially at the Turkey Point switchyard. FPL also operates a power generation plant at Port Everglades in southern Broward County. Normally, Port Everglades, with its 1,200 MW generating capacity, would be able to provide some relief to the Miami-Dade area. However, the Port Everglades site is presently offline while it undergoes modernization to utilize natural gas for power generation. Port Everglades will not be

available until the summer of 2016. The unavailability of Port Everglades to meet immediate power demands causes the Miami-Dade area to rely even more heavily on Turkey Point's capabilities.

c. As stated above, FPL proposed to reduce the salinity of the CCS by withdrawing 14 MGD from the FAS and placing that volume of water into the CCS. While FDEP sought to grant the modification to FPL's certification and associated conditions of certification to authorize such use, the authorization was challenged in an administrative proceeding. Until such time as a Final Order is issued and the time to exercise any appellate rights has lapsed, FAS water is not available to resolve this issue. Furthermore, once the administrative proceeding is resolved, the FAS water is not immediately available. FPL estimates the construction of the proposed FAS wells (6 wells drilled to a depth of 1,020 to 1,400 feet below land surface) will take a minimum of 12 months to complete.

38. As stated above, FPL's emergency request seeks authorization from the District to allow FPL to connect to the L-31E Canal System, conditionally withdraw stormwater from the L-31E Canal, and convey this water to the CCS with above-ground piping. Composite Exhibit F contains the design details for FPL's request. FPL's proposed operational plan synchronizes the volumes and rates of its northern and southern pumping operations so as to avert dewatering of wetlands adjacent to the L-31E canal.

39. From 1993 to 2013, the District's operational records show the combined average daily flow from the C-102, Military, and C-103 Canals through Structures S-21A, S-20G, and S-20F, respectively, into this portion of Biscayne Bay are 987 acre-feet

per day from May 1st to October 14th, with daily combined flows ranging from 0 acre-feet per day to more than 5,500 acre-feet per day during these months.

40. From 1993 to 2013, the District's operational records show the combined average daily flow from the C-102, Military, and C-103 canals through Structures S-21A, S-20G, and S-20F, respectively, into this portion of Biscayne Bay are 492 acre-feet per day from October 15th to April 30th, with daily combined flows ranging from 0 acre-feet per day to more than 3,500 acre-feet per day during these months.

41. The combined reserved Target Flow of surface water for structures S-21A, S-20G, and S-20F is 504 acre-feet, suggesting that there is a reasonable expectation that daily flows exceeding the reservation Target Flows will occur during the months of June through mid-October, and potentially even through the month of November if conservative operational criteria for identifying and quantifying the amount of excess water are used. Therefore, the District believes water is available above that reserved under Rule 40E-10.061, Fla. Admin. Code, which could be used by FPL to reduce the temperature and salinity of the CCS.

42. Over the previous 12 months, District radar-rainfall records show the Turkey Point CCS in southeastern Miami-Dade County received 34.94 inches of rainfall, approximately 73% of average. This rainfall represents a 13.06-inch deficit for the 12-month period and a cumulative rainfall deficit of 30.45 inches over the previous 36 months. Portions of eastern Miami-Dade County are in roughly 1-in-5-year drought conditions.

43. South Florida is currently transitioning into the wet season so a cycle of daily afternoon thunderstorm activity is expected for the next few months. Historically,

the 5-month wet season has produced rainfall in the range of 26 to 60 inches over the Turkey Point area but there is not demonstrated skill in forecasts for total wet season rainfall.

ULTIMATE FACTS AND CONCLUSIONS OF LAW

44. Section 373.119(2), Fla. Stat., and Rule 28-106.501, Fla. Admin. Code, authorize the Executive Director of the District, in the event of an emergency requiring immediate action to protect the public health, safety or welfare, with the concurrence of the Governing Board, and without prior notice, to issue an order reciting the existence of such an emergency and requiring that such action be taken as deemed necessary.

45. The Executive Director is authorized to issue an immediate final order if he/she finds an immediate danger to the public health, safety, or welfare. § 120.569(2)(n), Fla. Stat. (2014).

46. Moreover, the District is authorized, in summary, to regulate connections and use of the District's rights of way, use of water, construction of new diversion facilities, initiation of new water uses, diversion and withdrawal facilities pursuant to a variety of statutes. *See e.g.,* §§ 373.083, 373.085, 373.086, 373.1501, 373.171, 373.219, Fla. Stat. (2014).

47. The Governing Board may "[i]ssue orders to implement or enforce any provisions of th[e] chapter or regulations." § 373.083(2), Fla. Stat. (2014).

48. The Governing Board is authorized to issue orders affecting the use of water, as conditions warrant, and forbidding the construction of new diversion facilities or wells, the initiation of new water uses, or the modification of any existing uses,

diversion facilities, or storage facilities within the affected area. § 373.171(1), Fla. Stat. (2014).

49. Pursuant to Sections 373.085, 373.086 and 373.1501, Fla. Stat., the District is authorized to act as local sponsor and operate the C&SF Project, including those structures that are part of the L-31E Canal System and relevant to the subject reservation.

50. The L-31E Canal System is part of the C&SF Project for which the District is the designated local sponsor pursuant to Section 373.1501, Fla. Stat. Pursuant to Sections 373.085 and 373.086, Fla. Stat., the District is authorized to operate the C&SF Project, including the S-20 Structure and the L-31E Canal system.

51. Rule 40E-10.061, Fla. Admin. Code, reserves water for protection of fish and wildlife in the Nearshore Central Biscayne Bay. Seasonal target flows are stated in this rule. Operation of the C&SF Project frequently involves discharge of water from the subject structures to Biscayne Bay and tide in excess of those reserved such that water is periodically available for use.

52. Pursuant to statutory authorizations, FPL's request and supporting documents, and the facts described herein, the Executive Director finds that an emergency exists requiring immediate action necessary to protect the public health, safety, or welfare. The action authorized by this Emergency Final Order is appropriate to address this emergency situation.

ORDER

Based upon the Findings of Fact, Ultimate Facts and Conclusions of Law, the Executive Director orders that FPL is authorized to undertake the following, temporary actions in accordance with the conditions stated herein:

53. **Short-Term Water Withdrawal Authorization**

a. Water Availability Restriction: FPL is prohibited from withdrawing and using water from the L-31E Canal System that is reserved for fish and wildlife by Rule 40E-10.061(2)(c), Fla. Admin. Code, for the Nearshore Central Biscayne Bay. The only water available for the purpose of this Emergency Final Order is that water which would otherwise be discharged to tide through the S-20F, S-20G, and S-21A structures and is sufficiently in excess of the flows reserved for protection of fish and wildlife in Rule 40E-10.061, Fla. Admin. Code. This available surface water may, for the duration of this Emergency Final Order, be withdrawn and used within FPL's cooling canal system in accordance with the conditions as set forth below. There are no assurances provided by this Emergency Final Order that water will be available for FPL's withdrawal and use on any given day. Water availability is determined by a two-step process: Step 1) satisfaction of the calendar constraint criteria; and Step 2) the delivery of 504 acre-feet per day to the Nearshore Central Biscyane Bay from S-21A, S-20G, and S-20F each day prior to the daily withdrawal of excess water from the C-103 Basin.

b. Step 1 - Calendar Constraint: FPL may potentially withdraw water from June 1 to November 30 ("Calendar Constraint"). No withdrawals are authorized from December 1st through May 31st by this Order.

c. Step 2 - Withdrawal of Excess Water from the L-31E Canal System: If the Calendar Constraint (Step 1) is met, the following procedure shall be used to identify when FPL can withdraw water from the L-31E Canal System:

i. Part 1 – All pumps start each day off.

ii. Part 2 – All pumps remain off until the combined discharge from S-21A, S-20G, and S-20F equals or exceeds 504 acre-feet. FPL shall monitor a data feed (i.e., web page) maintained by the District that provides real time estimates of the discharges from S-21A, S-20G, and S-20F. The data populating this site will be collected by the District SCADA system and communication in the normal time frames (e.g., updates ranging in frequency from 15 minutes to an hour).

iii. Part 3 – Once the data feed confirms that the combined discharge from S-21A, S-20G, and S20F equals or exceeds 504 acre-feet, FPL may withdraw water from the L-31E Canal System for the remainder of the day at up to the maximum capacity provided that the Criterion to Prevent Over-Withdrawal or Hydraulic Slope Impact is met.

iv. Part 4 – End of the Day. By the end of the Day (11:59 p.m.), FPL shall turn off all pumps. Once the pumps are secured for the day, FPL shall record the daily flow totalizer for each pump.

54. **Criterion to Prevent Over-Withdrawal or Hydraulic Slope Impact**: FPL shall maintain a volume within the L-31E that is sufficient to ensure that there is no net withdrawal based on the expected measurement uncertainty of the flow totalizers.

a. FPL shall calculate the daily volume pumped from the C-103 Basin into the L-31E as well as the daily volume pumped from the L-31E into the CCS. The

volume of water pumped from the C-103 Basin into L-31E must exceed the daily volume pumped from the L-31E into the CCS. The difference in volume shall account for any calibration errors between the two flowmeters.

b. The pumps withdrawing water from the C-103 Basin and discharging into the L-31E Canal (North Pumps) shall always be started at least five minutes before the pumps withdrawing water from the L-31E and discharging into the CCS (South Pumps). At the close of pumping for the day, the South Pumps shall be stopped at least 5 minutes before the North Pumps. In addition to this proactive measure, FPL shall evaluate the stage response of the L-31E for drawdowns due to a net withdrawal or hydraulic slope or a combination of both and reduce the L-31E withdrawals as required to eliminate any drawdowns caused by FPL pumping.

55. **Communication of Water Availability Determination:** Data on the daily discharges from S-20F, S-21A, S-20G will be available on a web page for FPL to determine when it can pump excess water from the L-31E Canal System between June 1 and November 30 each calendar year. In the event the District's real-time or specific web page are inoperable on a given day or time period, FPL shall contact the District's Operation Control Center at: 561-682-6116 and occ@sfwmd.gov to report that the information is not updating so that the District can issue a remedy ticket to diagnose and correct the problem. FPL may not commence any daily withdrawal operations until the District's data feed is operable or FPL receives written (e.g., e-mail) approval to pump. The District will provide written approval only for extended (multi-day) outages of the data feed. FPL will be solely responsible for accessing the District's data and FPL own data

(e.g., pumping rates) to perform the calculations required to assess the criteria and calculate the correct pumping rates and durations.

56. **Monitoring and Reporting:** FPL shall monitor and report the amount of water diverted from the L-31E Canal System to its cooling canal system on a weekly basis.

a. When FPL withdraws water, FPL shall generate a daily report that includes the following detailed information:

i. The water availability determination for each day based on the data from the District-provided web page;

ii. Identification of which pump(s) were used over the course of the day;

iii. The time on and time off, per pump;

iv. The RPM setting, per pump, if variable;

v. The calculated volume of water pumped, per pump; and,

vi. The cumulative log flows at each pump station.

b. FPL shall collect temperature and salinity data prior to initiation of pumping pursuant to this Emergency Final Order and once a week thereafter for the duration of this Order during the operational period. These samples shall be collected at monitoring station TPSWCCS-1 and TPSWCCS-2 in the CCS, and the results submitted to the District by noon on the following Tuesday after their collection.

c. FPL shall prepare a weekly report which summarizes the daily reports for the preceding week (Monday at midnight through Sunday at 11:59 p.m.) and includes the following additional information:

i. Hourly stage data for the L-31E Canal measured at TPSW-1 and TPSW-2 for the weekly reporting period, whether or not the pumps operated. The report shall include a table of the weekly data and a graph of the stages.

ii. The weekly report shall include a table and graph of the hourly staff gage readings from SG-N (North of Palm Drive), SG-S (South of Palm Drive), and SG-PSS (South Pump Station).

iii. The weekly report shall be submitted by noon on the following Tuesday of each week

d. The reports shall be e-mailed to Simon Sunderland, P.G., Section Leader at ssunder@sfwmd.gov or Maria Clemente, P.E., Bureau Chief at mclement@sfwmd.gov. Both reports shall reference this Emergency Final Order. Upon District review of the daily and weekly reports, conference calls may be required.

e. Additionally, the District may request available monitoring data at any time and FPL shall provide the same within 2 hours of the District's request.

57. **Special Pump Station Criteria:**

a. The District may require FPL to terminate pumping at any time. Upon receipt of any oral or written request from the District to terminate pumping, FPL must cease pumping within 2 hours.

b. FPL shall coordinate the pumping at both stations to assure that, from a non-flow condition, the north station pumps shall be started first. The south station pumps shall be started within 5 minutes of the north station pumps start, with an equivalent flow. Similarly, when pump operation ceases, the south station pumps shall cease first and the north station pumps shall cease within 5 minutes.

c. FPL shall prepare a storm/hurricane contingency plan that includes securing the pump stations and ancillary equipment during a major weather event, plans to empty all fuel lines from the storage tanks to the pumps. A copy of the plan should be available for the District to review, if requested. FPL is required to monitor the weather and hurricane forecasts and make the appropriate timely preparations.

58. **Pump Requirements:**

a. The pump stations shall be staffed on a 24-hour basis.

b. Pump Discharge Curves: Pump discharge curves used in determining rates of discharge while pumps are operating, as deployed in the field, shall be provided to the District prior to pump operation for the purpose of calculating flow rates and volumes.

c. Totalizing Hour Meters: FPL shall install totalizing flow meters at each pump authorized by this Emergency Final Order and such meters shall be available for periodic District inspection and verification. Documentation of an up-to-date and accurate calibration for each of the totalizers shall be provided before pumping commences.

59. **Miscellaneous Conditions:**

a. This Emergency Final Order authorizes FPL to take actions under Chapter 373, Fla. Stat., as provided herein. This Order does not relieve FPL from the requirements to obtain any other federal, state, or local authorizations, certifications, or modifications.

b. This Emergency Final Order does not constitute a water use or right-of-way permit or grant any legal right to water as set forth in Chapter 373 Fla. Stat.,

and associated District rules and regulations over the water intercepted and stored under this Order.

c. The District has previously authorized the use of its Right of Way under Permit No. 14429. FPL shall comply with the conditions contained in Right of Way Permit No. 14429.

d. This Emergency Final Order does not convey any property right to FPL, nor any rights and privileges other than those specified in this Order. This Order shall not be construed as an abandonment or any other such impairment or disposition of the District's property rights.

e. This Emergency Final Order shall not be construed as a substitute for, or waiver of, any right-of-way, surface water management, water use, or other permits required of FPL under the FDEP's or District's rules and regulations.

f. FPL shall insure that harmful impacts to the water resources, off-site land uses, or existing legal uses of water do not occur as a result of this Emergency Final Order. In the event such harmful impacts result from actions authorized by this Emergency Final Order, FPL shall implement all actions, as directed by the District, to cease such harmful impacts and, if necessary, to mitigate such impacts. Failure to comply with this requirement shall be considered a violation of this Order.

g. Failure to comply with the terms of this Emergency Final Order shall constitute a violation of a District Order under Chapter 373, Fla. Stat., and enforcement proceedings may be brought in any appropriate administrative or judicial forum.

h. The District reserves the right to initiate appropriate legal action, to impose civil penalties, and collect attorney's fees and costs to enforce the terms of this Emergency Final Order.

i. This Emergency Final Order may be modified or amended at any time, as appropriate for the protection of the public health, safety, and welfare and the water resources of south Florida by the Governing Board, Executive Director, or Executive Director's designee.

j. The Executive Director or Executive Director's designee may require FPL to cease withdrawal and/or use activities under this Emergency Final Order at any time.

k. The District's immunity from liability under Section 373.443, Fla. Stat., for any damages that might result from the activities authorized under this Emergency Final Order, shall not be diminished by the terms of this Order, or any activities taken pursuant to this Emergency Final Order.

l. Failure to comply with the conditions contained within this Emergency Final Order shall constitute a violation of a District Order under Chapter 373, Fla. Stat., and enforcement proceedings may be brought in any appropriate administrative or judicial forum.

m. If the District petitions or sues for enforcement of the terms of this Emergency Final Order, the District reserves the right to initiate appropriate legal action, to impose civil penalties and collect attorney's fees and costs.

60. This Emergency Final Order shall terminate on the earliest of: 1) failure to receive Governing Board concurrence at their next regularly scheduled meeting; 2)

11:59 p.m. on November 30, 2015; or 3) at any time upon written notice from the District's Executive Director or the Executive Director's designee.

61. This Emergency Final Order shall take effect upon execution by the Executive Director of the District and shall expire as provided herein. This Emergency Final Order is subject to the Governing Board's concurrence at its next regularly scheduled Governing Board meeting.

62. A Notice of Rights attached hereto as Exhibit G.

DONE AND SO ORDERED in West Palm Beach, Florida, on this 19th day of May, 2015.

BOARD OF SOUTH FLORIDA WATER MANAGEMENT DISTRICT • STATE OF FLORIDA SEAL Established 1949

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
By its Executive Director

Blake C. Guillory, P.E.

Attested:

Marcia Kivett
District Clerk/Assistant Secretary
May 19, 2015

Legal Form Approved:

Jennifer D. Brown, Esq.

FPL TURKEY POINT COOLING CANAL FRESHWATER RECHARGE

MIAMI-DADE COUNTY, FLORIDA

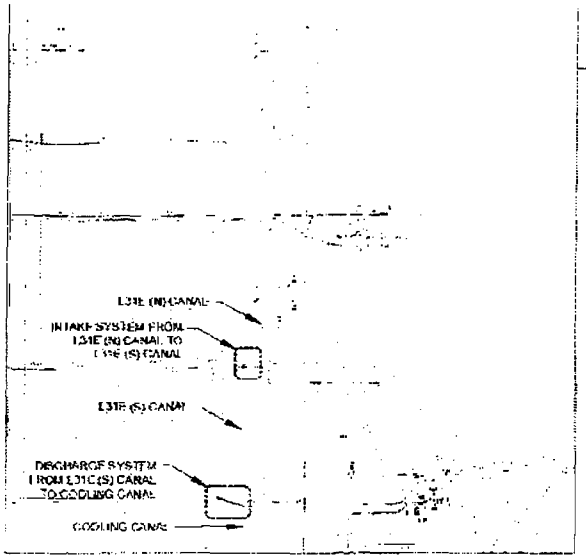
PROJECT LOCATION

LOCATION MAP

N.T.S.

FPL

DRAWING INDEX



VICINITY MAP

1"= 2000' (22x34)
1"= 4000' (11x17)

Sunshine811.com

TAYLOR ENGINEERING INC

FPL TURKEY POINT COOLING CANAL FRESHWATER RECHARGE
MIAMI-DADE COUNTY, FLORIDA

C-1

EXHIBIT A

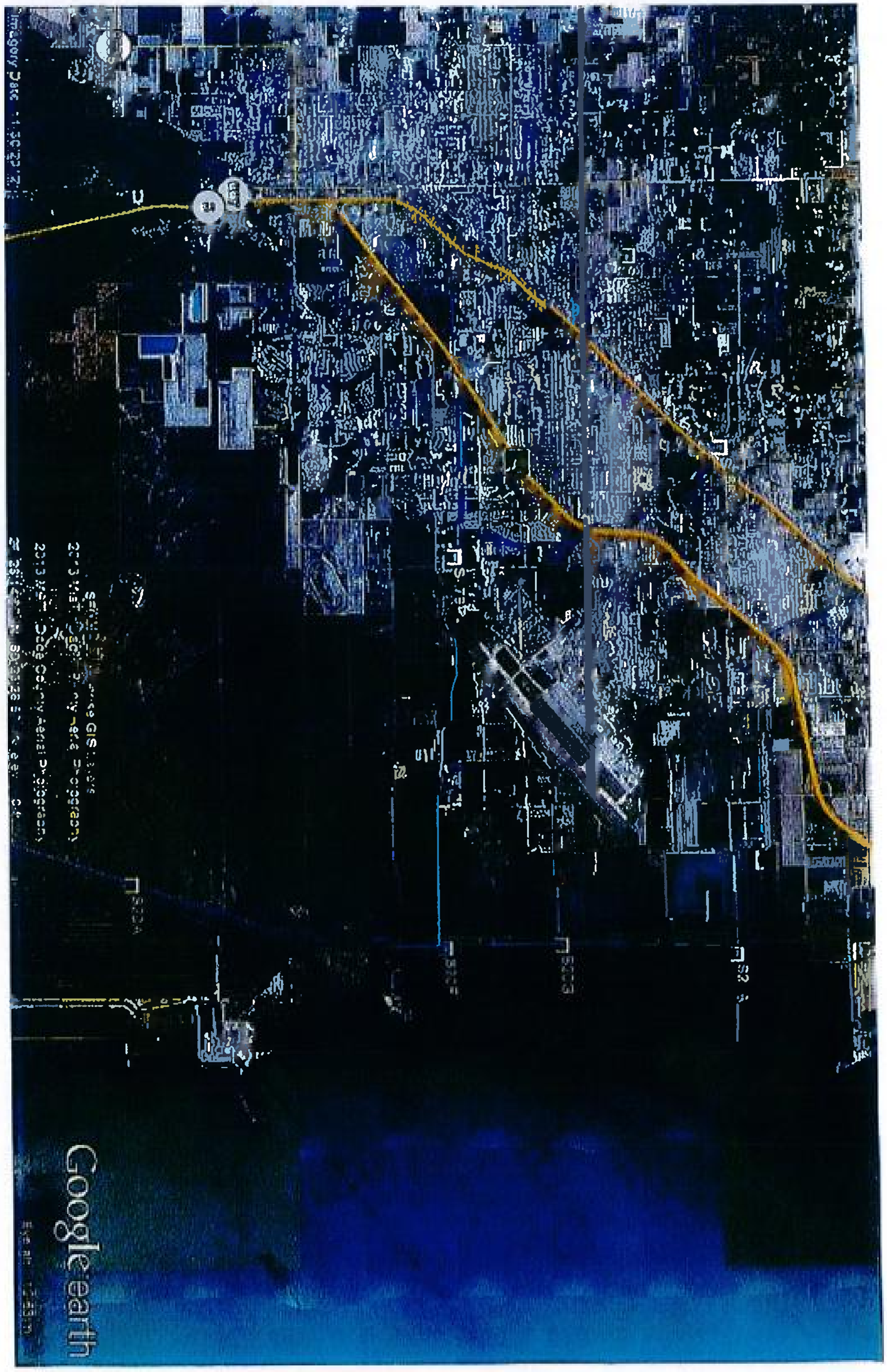


EXHIBIT B

CHAPTER 40E-10
WATER RESERVATIONS

40E-10.011 Policy and Purpose.

The purpose of this chapter is to define the quantity, location and timing of waters reserved from allocation for the protection of fish and wildlife pursuant to Section 373.223(4), F.S., for specified waterbodies. Water reservations are implemented in the water use program pursuant to Chapter 40E-2, F.A.C.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-2-09, Amended 7-14-14.

40E-10.021 Definitions.

(1) *Fakahatchee Estuary* – The area within the Ten Thousand Islands region including the following river/bay systems, from west to east: Blackwater River/Blackwater Bay, Whitney River/Buttonwood Bay, Pumpkin River/Pumpkin Bay, Wood River, Little Wood River and Faka Union Canal/Faka Union Bay, and Fakahatchee Bay as depicted in Figure 1-3 Fakahatchee Estuary.

(2) *Picayune Strand* – The area located southwest of the Florida Panther National Wildlife Refuge, north of the Ten Thousand Islands NWR, east of the South Belle Meade State Conservation and Recreation Lands (CARL) Project, west of the Fakahatchee Strand Preserve State Park, and northeast of Collier-Seminole State Park as depicted in Figure 1-2 Picayune Strand. The legal description of the Picayune Strand is contained in Appendix 1.

(3) *North Fork of the St. Lucie River* – The area that extends from the Gordy Road structure (state plane coordinates, x851212.831, y1116105.7470), to the confluence of the North Fork of the St. Lucie River and the C-24 canal (state plane coordinates, x873,712.20, y1064,390.41) as depicted in Appendix 2, Figure 2-1.

(4) *Nearshore Central Biscayne Bay* – The area within Biscayne Bay up to 1640 feet (500 meters) from the shoreline beginning south of Shoal Point extending southward to north of Turkey Point as depicted in Figure 3-1.

(5) Caloosahatchee River – The surface waters that flow through the S-79 structure, combined with tributary contributions below S-79 that collectively flow southwest to San Carlos Bay, as defined in subsection 40E-8.021(2), F.A.C.

(6) Caloosahatchee River (C-43) West Basin Storage Reservoir – A reservoir located in Hendry County, Florida, west of the City of LaBelle on the east side of the Townsend Canal and south of SR 80 as described in Appendix 1-12, and depicted in Figure 1-13 (also known as the 'C-43 Reservoir').

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-2-09, Amended 3-18-10, 7-21-13, 7-16-14.

40E-10.031 Water Reservations Implementation.

(1) Applicants for consumptive use permits shall meet the requirements of this rule by providing reasonable assurances that Rule 40E-2.301, F.A.C., and Section 3.11 of the "Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District," incorporated by reference in Rules 40E-2.091, F.A.C., are met.

(2) Water reserved for the protection of fish and wildlife contained within the Picayune Strand and Fakahatchee Estuary is defined in subsections 40E-10.041(1)-(2), F.A.C.

(3) Water reserved for the protection of fish and wildlife contained within the North Fork of the St. Lucie River is defined in subsection 40E-10.051(1), F.A.C.

(4) Water reserved for the protection of fish and wildlife contained within Nearshore Central Biscayne Bay is defined in subsections 40E-10.061(1)-(2), F.A.C.

(5) Water reserved for the protection of fish and wildlife contained within and released, via operation, from the Caloosahatchee River (C-43) west Basin Storage Reservoir is defined in subsection 40E-10.041(3), F.A.C.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-2-09, Amended 3-18-10, 7-21-13, 7-14-14, 7-16-14.

40E-10.061 Water Reservation Areas: Lower East Coast Planning Area.

(1) Nearshore Central Biscayne Bay as defined in subsection 40E-10.021(6), F.A.C.:

All surface water contained within Nearshore Central Biscayne Bay is reserved from allocation (see Figure 3-1).

(2) Surface water flowing into Nearshore Central Biscayne Bay as identified below is reserved from allocation:

(a) Surface water flows depicted on Figures 3-2.A and 3-2.B through S-123 derived from the following contributing canal reaches:

1. The C-100A canal upstream of S-123 to S-120 including all integrated conveyance canals.
2. The C-100C canal upstream of S-123 to S-119 including all integrated conveyance canals.
3. The C-100B canal upstream of S-123 to S-122 including all integrated conveyance canals.
4. The C-100 canal upstream of S-123 to S-118 including all integrated conveyance canals.

(b) Surface water flows depicted on Figures 3-3.A and 3-3.B through S-21 derived from the following contributing canal reaches:

1. The L-31E borrow canal upstream of S-21 to the canal terminus.
2. The C-1 canal upstream of S-21 to S-122 and S-149 including all integrated conveyance canals.
3. The C-1 canal upstream of S-21 to the C-1W canal and S-338 including all integrated conveyance canals.

(c) Surface water flows depicted on Figures 3-4.A and 3-4.B which is the combined flow through S-21A, S-20G, and S-20F as derived from the following contributing canal reaches:

1. The C-102 canal connecting to the C-102 N canal upstream of S-21A to S-195.
2. The C-102 canal upstream of S-21A to S-165.
3. The L-31E borrow canal upstream of S-21A to its terminus near S-21 including the Gould's Canal.
4. The L-31E borrow canal upstream of S-21A south to S-20G.
5. The Military canal upstream of S-20G.
6. The C-103 canal upstream of S-20F to S-179.
7. The L-31E borrow canal upstream of S-20F to S-20G including all integrated conveyance canals.
8. The L-31E borrow canal from S-20F south to the North Canal.
9. The North Canal.
10. The L-31E borrow canal from S-20F south to the Florida City Canal.
11. The Florida City Canal from Southwest 107th Avenue to its confluence with the L-31E borrow canal.

Notwithstanding the above, presently existing legal uses for the duration of a permit existing on July 18, 2013, are determined to be not contrary to the public interest pursuant to Section 373.223(4), F.S.

Reservations contained in the section shall be reviewed in light of changed conditions or new information.

Rulemaking Authority 373.044, 373.113, 373.171 FS. Law Implemented 373.016, 373.026, 373.036, 373.1501, 373.1502, 373.219, 373.223, 373.4592, 373.4595, 373.470 FS. History–New 7-21-13.

Figure 3-1 Nearshore Central Biscayne Bay Reservation Waterbody and Protected Canal Reaches

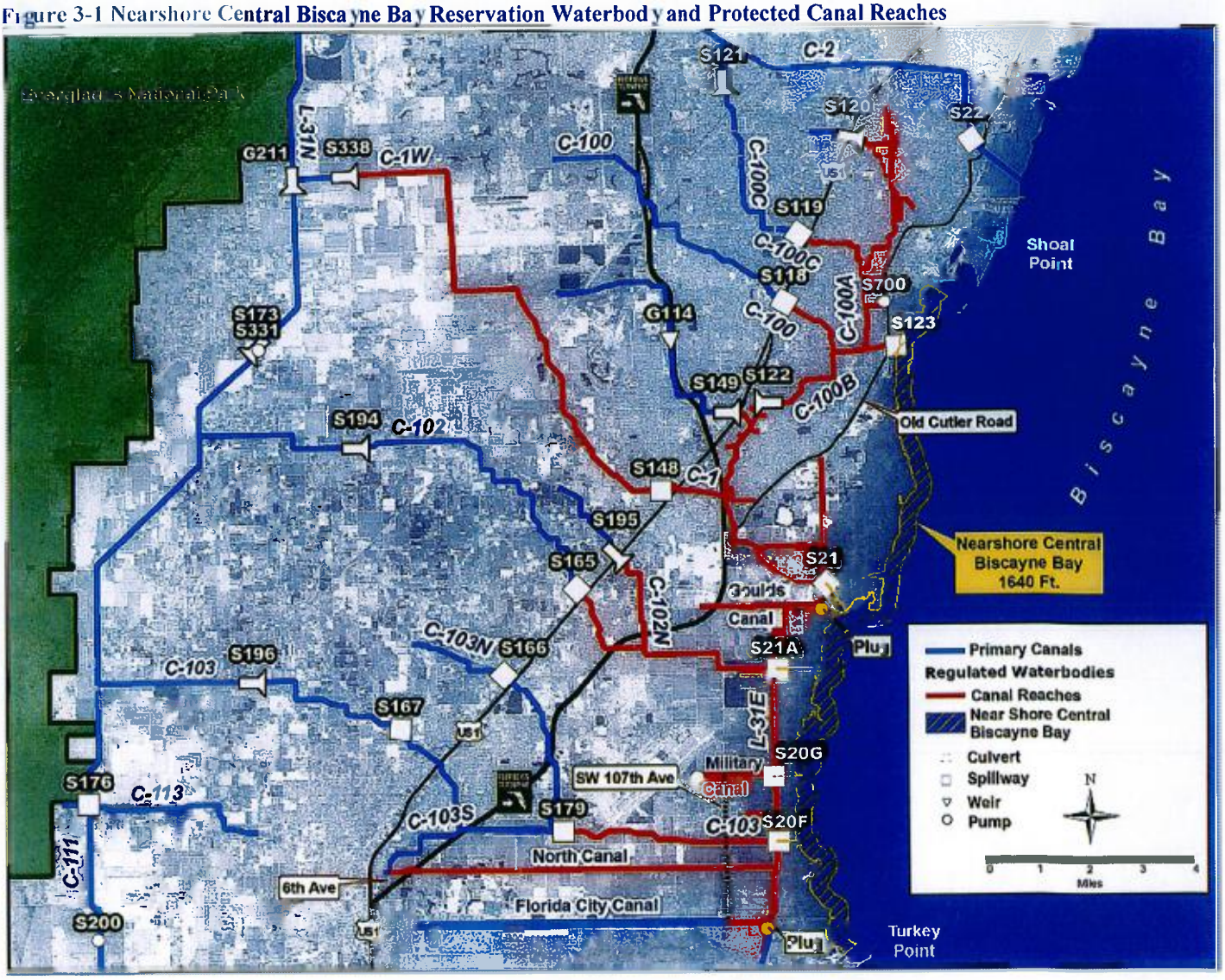


Figure 3-2.A Surface Water Flow from the C-100 canal through S-123 into Biscayne Bay during the Wet Season (June-October) (1986-2011)

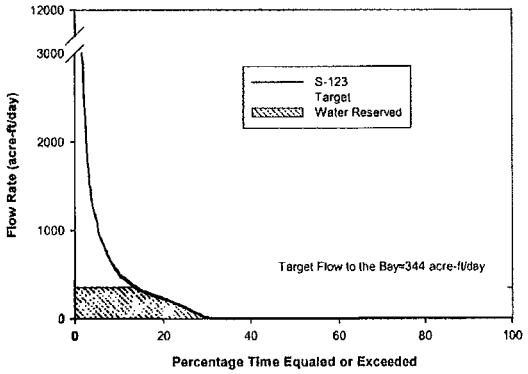


Figure 3-2.B Surface Water Flow from the C-100 canal through S-123 into Biscayne Bay during the Dry Season (November-May) (1986-2011)

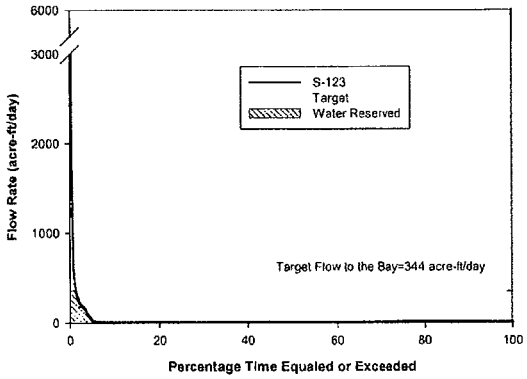


Figure 3-3.A Surface Water Flow from the C-1 canal through S-21 into Biscayne Bay during the Wet Season (June-October) (1986-2011)

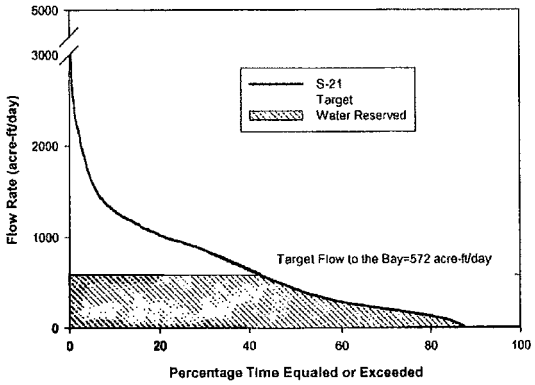


Figure 3-3.B Surface Water Flow from the C-1 canal through S-21 into Biscayne Bay during the Dry Season (November-May) (1986-2011)

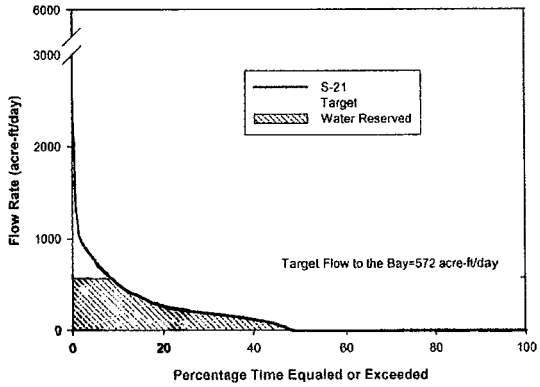


Figure 3-4.A Surface Water Flow from the C-102+Military+C-103 Canal through S-21A+S-20G+S-20F into Biscayne Bay during the Wet Season (June-October) (1986-2011)

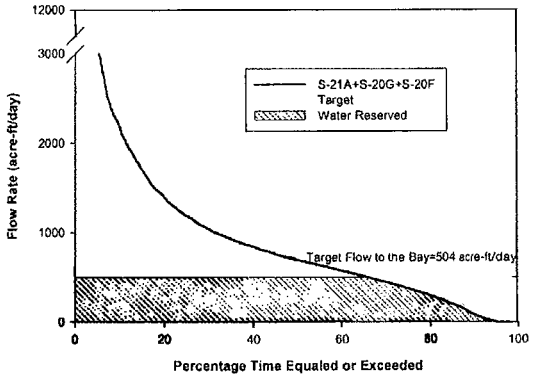
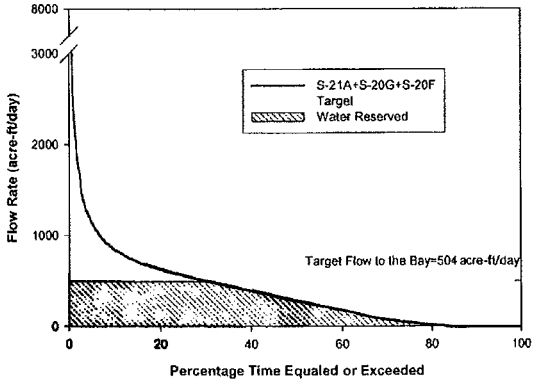


Figure 3-4.B Surface Water Flow from the C-102+Military+C-103 Canal through S-21A+S-20G+S-20F into Biscayne Bay during the Dry Season (November-May) (1986-2011)



Matthew J. Raffenberg, Director
Environmental Licensing and Permitting
Florida Power & Light Company
700 Universe Blvd.
Juno Beach, FL 33408-0420
(561) 691-2808

13

May 14, 2015

VIA ELECTRONIC AND HAND DELIVERY
Mr. Blake Guillory, P.E.
Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach FL 33416-4680

RE: Request for Emergency Authorization for Temporary Withdrawal of Excess Stormwater from the L-31E Canal and Use of District Right of Way

Dear Mr. Guillory:

Pursuant to sections 120.569(2)(n) and 373.119(2), Florida Statutes, Florida Power & Light Company (FPL) respectfully submits this request for emergency authorization from the South Florida Water Management District to temporarily access the District's right of way, connect to the L-31E canal and seasonally transfer stormwater in excess of the water reserved from allocation for the Nearshore Biscayne Bay Coastal Wetlands (40E-10.061(1), F.A.C.) to control temperatures and salinity in the Turkey Point Complex Cooling Canal System (CCS), an industrial wastewater system.

The Turkey Point Power Complex is located in unincorporated southeast Miami-Dade County, approximately 25 miles south of Miami and contains five steam generating electric units: three fossil fuel-fired units (Units 1, 2 and 5) and two nuclear units (Units 3 and 4). The CCS, occupying approximately 5,900 acres, provides essential cooling to Units 3 and 4, as well as Unit 1 when in operation (Unit 2 operates in synchronous mode only). Turkey Point Units 3 and 4 operate under a license from the U. S. Nuclear Regulatory Commission (NRC). The NRC license includes a requirement that the operator take steps to reduce power or shutdown the units if the CCS intake water temperature exceeds 104°F.

The emergency authorization is necessary to allow the continued reliable operation of the Turkey Point Complex during periods of peak electricity demand in a population-dense area at the southern tip of the state. As a result of lower-than-average rainfall, temperature and salinity levels in the CCS are higher than this time last year, and are projected to increase as summer in South Florida approaches. Increased salinity and corresponding increased temperature in the CCS threaten the continued operation of the Turkey Point Complex given that the units use the CCS as cooling water for the secondary, or non-nuclear, side of the plants. Therefore, the additional excess stormwater is needed to decrease CCS salinity and maintain CCS temperatures below operational limits.

Requests for approvals to access this solution in 2015 have been delayed due to litigation initiated by Tropical Audubon Society (TAS), Atlantic Civil, Inc. (ACI), and the City of Miami. Inability to maintain temperatures below operational limits will result in the need to reduce power, or potentially shutdown, Turkey Point Units 3 and 4 during periods of peak demand, potentially impacting the reliability of the grid. Concurrent with the increases in salinity, the concentrations of a saline tolerant blue green algae and turbidity have been increasing and exceed the levels measured this time last year. High algae and turbidity significantly affect the cooling capabilities of the CCS.

Turkey Point Units 3 and 4 are primary contributors to meeting the demand for continuously available generation in South Florida. These units provide over 1,632 megawatts of summer generation capacity and are therefore a principal component of the FPL system. Loss of this generation at the peak of the summer season, located at the southernmost part of Florida's high voltage transmission system, would impact system reliability. Those impacts would directly affect the public health, safety and welfare of the citizens of Miami-Dade and Broward counties. The emergency authorization, therefore, is directly tied to protecting public health, safety, and welfare.

FPL is, and has been, aggressively exploring, pursuing, and investing in a comprehensive suite of actions to reduce salinity and temperature in the CCS to ensure the continued operation of necessary generation at the Turkey Point Complex. To this end, FPL has been adding unused allocation from the existing Floridan aquifer system (FAS) wells on site and an existing marine water test well to the CCS to moderate increasing salinity. In addition FPL received approval to construct new wells and release 14 million gallons per day of FAS (non-drinking) water into the CCS; however this action has been delayed indefinitely pending resolution of administrative challenges filed by third party interests. Unfortunately, using proven methods, to date, FPL's efforts to reduce the algae concentrations have been unsuccessful. However, the algae concentrations have been found to drop significantly in response to inflows of excess stormwater. In addition, excess stormwater inflows from the L-31E canal were successful in reducing salinity and temperatures within the CCS during 2014.

In order to help control salinity in the CCS, especially during the summer months of the next two years, FPL needs to install the equipment to begin pumping excess storm water during the high rainfall period that begins June 1, 2015. FPL applied to the District for a right of way permit and a water use permit for a period of two years. On April 9, 2015 the Governing Board voted unanimously to issue a water use order authorizing the temporary withdrawals from the L-31E canal and a right of way permit authorizing use of District lands. While FPL has been working with all interested parties since September 2014, the SFWMD water use authorization has been challenged by TAS, ACI, and the COM. While FPL has been working since last year to secure all approvals needed to utilize excess storm water from the L-31E, due to the litigation initiated by TAS, ACI, and the COM, we have been unable to obtain final approvals in a timeframe that would allow for the completion of the work necessary to avoid potential shutdown of generation at Turkey Point. FPL anticipates the need to operate under the emergency authorization for approximately two years or until necessary final approvals are obtained.

The District is authorized to issue an emergency final order providing FPL with full approval needed to pump and pipe excess storm water from the L31E canal in the face of an "immediate danger to the public health, safety, or welfare." § 120.569(2)(n), Fla. Stat. In addition, section 373.119(2), Florida Statutes, provides the water management districts with the authority to issue emergency authorizations when, inter alia, "an emergency exists requiring immediate action to protect the public health, safety, or welfare."

FPL has evaluated and pursued all other options prior to seeking an emergency authorization. However, due to pending litigation, an emergency authorization is necessary to allow FPL to fulfill its obligation to provide its customers with safe, reliable, and affordable electricity and to protect the public health, safety and welfare. Data and information supporting this request are attached as Exhibit A. These data, along with the information, plans, and drawings submitted to the District dated January 23, 2015, and supplemental information, support this request for emergency authorization.

Sincerely,

Matthew J. Raffenberg
Director, Environmental Licensing and Permitting

EXHIBIT A

TECHNICAL INFORMATION SUPPORTING FPL'S MAY 14, 2015
REQUEST FOR ISSUANCE OF AN EMERGENCY ORDER

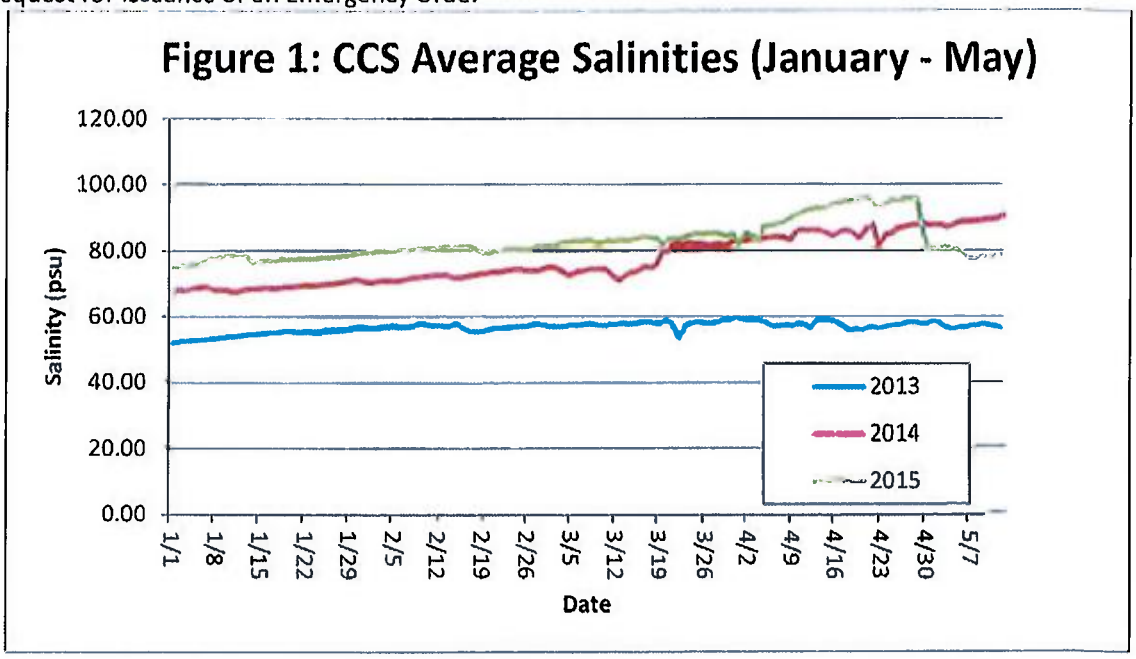
Introduction

The recent observations of salinity, temperature and algae levels in the Turkey Point Cooling Canal System (CCS) lead FPL to conclude that conditions similar to that observed in 2014 will recur in the summer of 2015 and potentially 2016. These conditions challenge continuous operation of Turkey Point Units 3 and 4 as the overall water and thermal balance of the CCS is affected. During the summer of 2014, the combination of elevated salinity and algae concentrations reduced the effectiveness of the CCS in releasing heat, resulting in elevated temperatures and the need to reduce unit output to insure compliance with U.S. Nuclear Regulatory Commission requirements. The following provides information illustrating the changed conditions of the CCS between 2013 (a normal year) and 2014, and the recurrence of those conditions in the months preceding the summer of 2015 and potentially 2016.

Salinity

Normal observations of salinity in the system show rising salinity during the dry season (November through May) when evaporation generally exceeds water coming into the system, and decreasing salinity during the rainy season. The range of increasing or decreasing salinity during the seasons is primarily dependent on the amount of rainfall experienced. In general, rainfall over the past three years has been average or below average, with notably below average rainfall in dry seasons of 2014 and 2015.

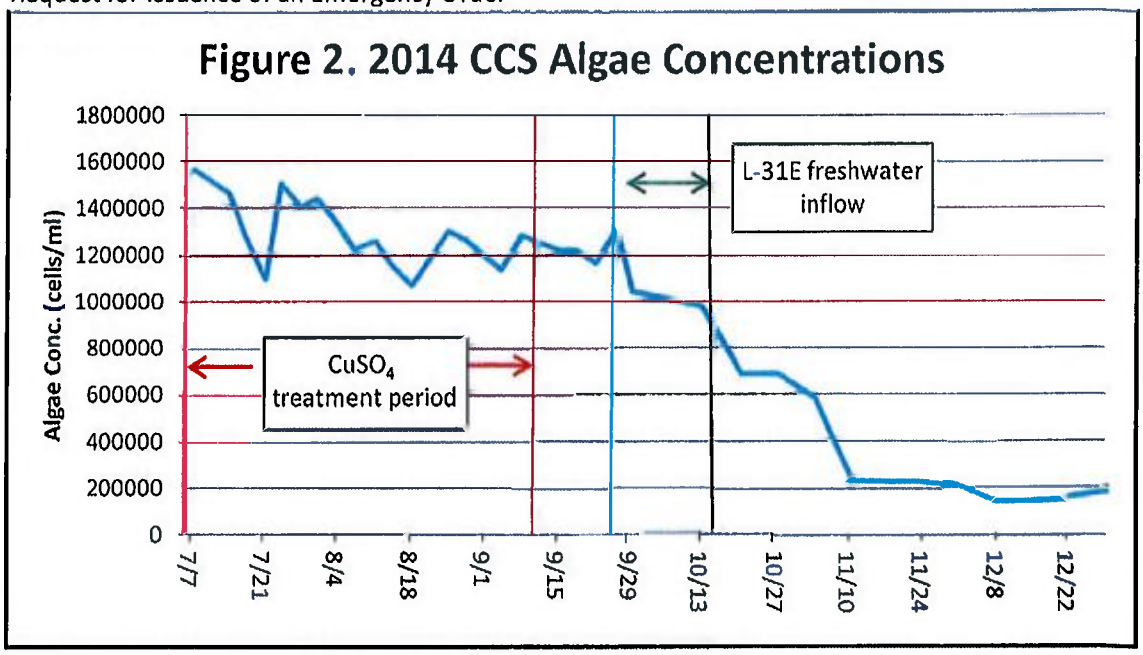
Figure 1 illustrates the normal increasing salinity trend in the dry season. Of note, the salinity levels for 2014 ranged from 15 psu to 20 psu above the same period in 2013. Similarly, we have observed a higher year-over-year salinity for 2015 as compared to 2014.

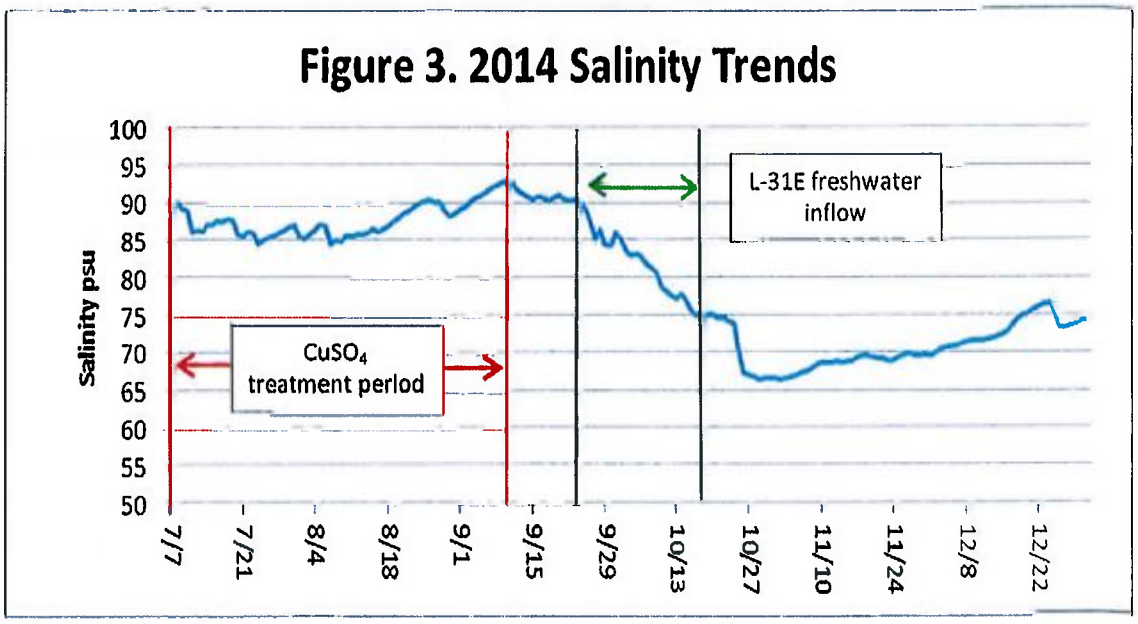


Algae Concentrations

Elevated algae concentrations and the associated increased turbidity act to retain solar radiation and reduce radiative heat losses, thereby reducing the ability of the CCS to dissipate heat. This contributes to additional heat retention and larger than average evaporative losses. Prior to 2013 the CCS had observed limited short term algal bloom events, generally in early summer (periods with the highest combined temperature and salinity). Based on this experience, routine monitoring for algae was not commonly conducted prior to 2014.

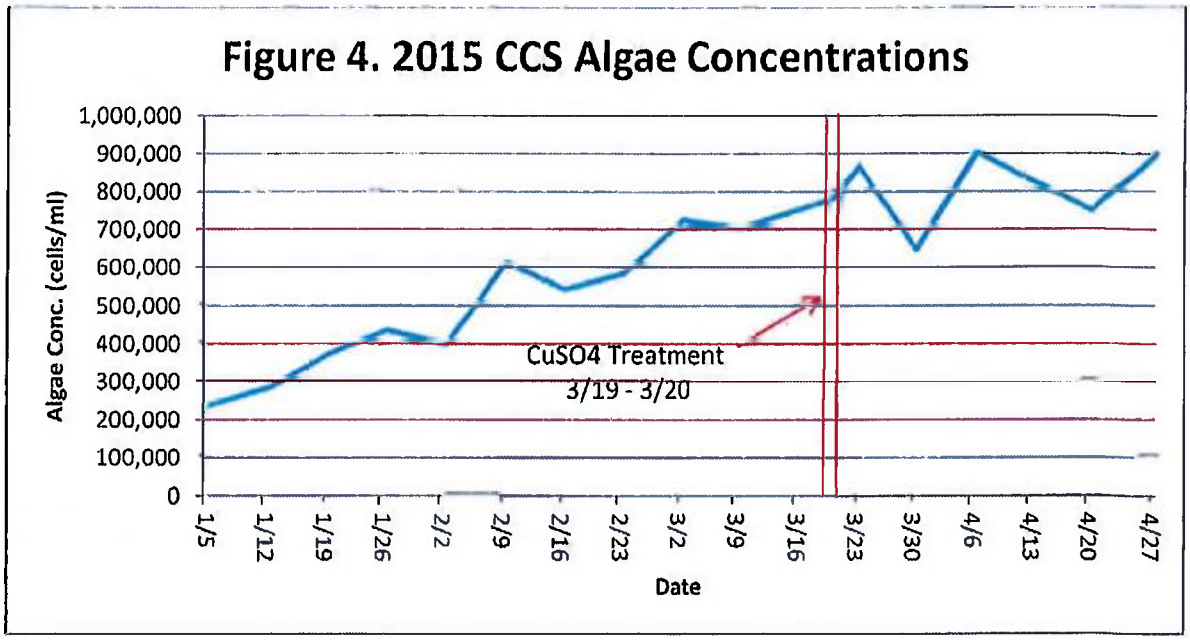
Following abnormally low rainfall at the Turkey Point complex in the spring of 2014, a noticeable algae bloom began and was sustained. FPL researched alternatives and selected a copper sulfate based algaecide to treat the persistent algal bloom. Figure 2 shows the treatment period, and corresponding response observed.





The particular dominant species of blue green algae in the CCS (Aphanothece sp.) favors a hypersaline environment. The introduction of L-31E water from September 23rd through October 14th, 2014 and subsequent rainfall resulted in a notable drop in salinity from over 90 to approximately 65 psu (Figure 3) which had a more significant impact on the hypersaline tolerant algae than the algaecide treatment. The combined reduction in salinity and algae concentrations due to the inflow of L-31 E water resulted in a decline in water temperature of approximately 6 degrees Fahrenheit.

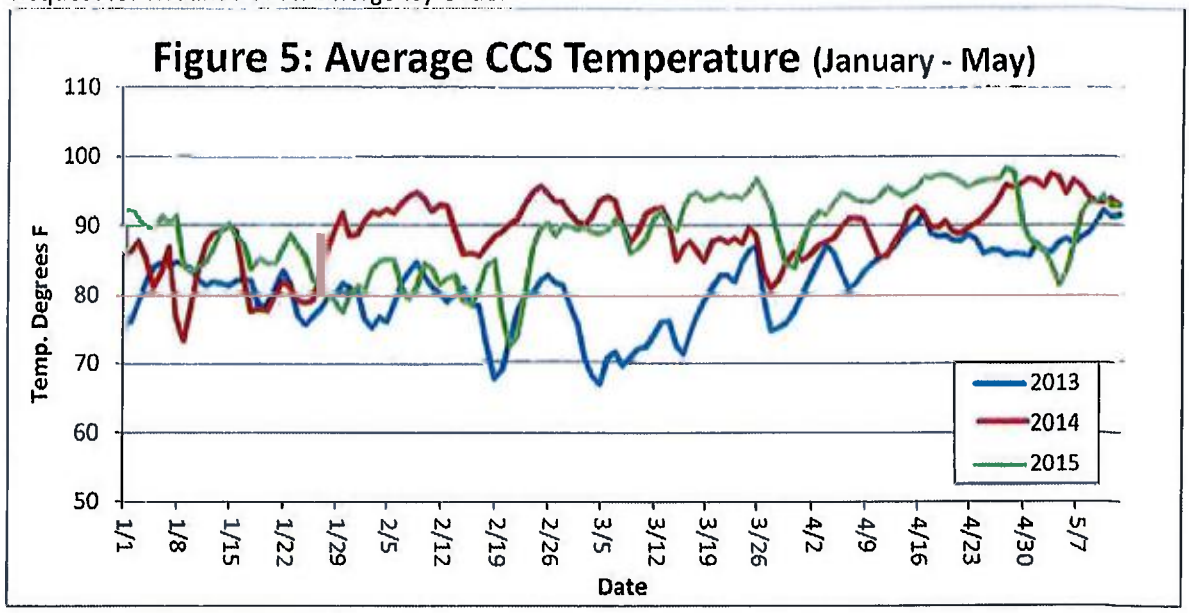
Figure 4 shows the resurgent algae concentrations in 2015 commensurate with the increased salinity (Figure 1) despite additional algaecide treatment (3/19/15 -3/20/2015). As was the case in 2014 copper sulfate had limited success in reducing the algae in the CCS while at high salinity levels.



Temperature

As discussed, the elevated salinity and algae concentrations create negative conditions in the CCS resulting in higher overall temperatures. Figure 5 provides CSS temperature trends from January 1st through April 30th for the years 2013 (a problem free year), 2014 (a year in which record algae and temperature occurred in the CCS during the early summer), and 2015.

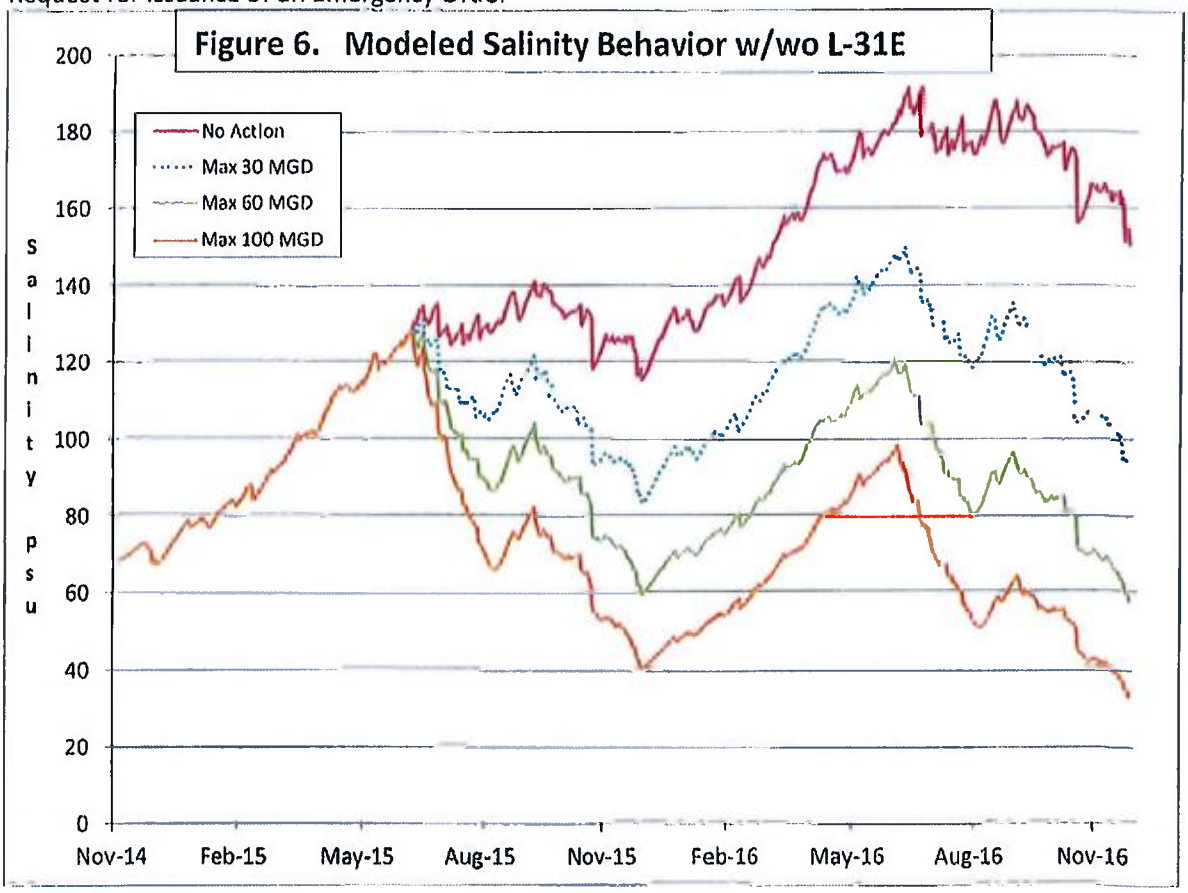
As can be seen, average CCS temperature in 2014 was above that seen in 2013, and temperatures being observed this year, particularly in the past two months exceed those observed in 2015. While different factors of weather and operations can influence these trends, the reason for FPL's overall concern is evident.



Need for Excess Storm Water

As can be seen from these observations, conditions in the CCS are no better than in the same months leading into the summer of 2014, and in some cases worse. Water input from rainfall and L-31E are clearly beneficial to reducing salinity and algae concentrations, and are correlated to reduced CCS temperatures.

FPL has engaged a consulting firm to model the potential future scenarios with and without the L-31E water inputs in the summer of 2015 and 2016. The results (based on initial conditions that occurred in March 2015) are provided in Figure 6 with a base scenario without L-31E water and a scenario with L-31E water. Figure 6 is the same as Figure 8 from FPL's Water Use Permit application response to request for additional information dated March 13, 2015. The base case assumes a dry weather scenario (consistent with recent years) and base inputs from the existing saline well (10 MGD) and Upper Floridan well (4 MGD). Alternative scenarios assume an average of 30, 60 and 100 MGD is able to be harvested from the excess storm water in L-31E. A seasonal variation persists, as described above, however the scenarios that include withdrawals from L-31E during the rainy seasons demonstrate the ability to make sustained progress in reducing CCS salinity.



System Reliability

FPL must operate the integrated electrical generation and transmission system in accordance with North American Electric Reliability Corporation (NERC), Florida Reliability Coordinating Council (FRCC) and NRC requirements to ensure reliable grid operation for the FPL system. These standards establish the ratings for the amount of electricity that can be transmitted on our system. During peak summer periods, over 50% of the power consumed in the Miami-Dade area is brought in via the transmission system. However, the transmission system capability limits the amount of electricity that can be imported into the Miami-Dade area. Local generating capacity in the Miami-Dade area supplies the remaining power demand in the region. The generating capacity in the Miami-Dade area also plays an important balancing role by maintaining stable voltage conditions on the transmission system, especially at the Turkey Point switchyard.

While the generating resources at Turkey Point play the primary role in providing customers reliable service in the Miami-Dade area, other generating resources in southern Broward County have a less direct, but nevertheless positive impact. This generation, in close proximity to the Miami-Dade area, is operated to maintain reliable service. However, there is approximately 1,200 MW of generation at Port Everglades that is not available until the summer of 2016 as this site is modernized to provide clean and

efficient natural gas generation. The short term unavailability of the generation at Port Everglades results in the Miami-Dade area being even more dependent on the generating resources at Turkey Point during the summer of 2015.

If Turkey Point were required to reduce output or shutdown, the region would experience a significant shortfall in electricity supply and FPL would have reduced resources and flexibility with which to address this shortfall. Under these conditions, FPL would need to reduce load in the Miami-Dade area, first through Demand Side Management (DSM) programs, and then if needed, by shedding of firm customer load in the south. As a result of these actions FPL would be declaring itself in Emergency Operations, pursuant to NERC Reliability Standards EOP-002 (Emergency Operations – Capacity and Energy Emergencies).

Conclusion

The observations provided herein illustrate that the negative CCS conditions experienced in 2014 are recurring in the prelude to summer 2015. Further, the observations demonstrate the effectiveness of excess storm water inputs to the CCS as a means to reduce salinity, algae and temperature for 2015 and 2016. This will help ensure FPL can continue operations at the Turkey Point facility. Ensuring Turkey Point can maintain electrical generation throughout the summer of 2015 is critical to being able to providing reliable power to Florida's major load center in Miami-Dade and Broward County and avoid Emergency Operations.

TETRA TECH

TECHNICAL MEMORANDUM

From: Peter F. Andersen and James L. Ross, Tetra Tech

To: Stacy Foster and Scott Burns, Florida Power & Light Company

Date: March 13, 2015

Subject: Evaluation of L-31E Water Addition Impacts on CCS Salinity Reduction

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Introduction

This technical memorandum describes water and salt balance modeling of the addition of L-31E water as a salinity reduction measure in the Florida Power & Light (FPL) Cooling Canal System (CCS), located at the Turkey Point Nuclear Power Plant. The modeling was conducted to provide an assessment of the effects of adding L-31E water to the CCS between June 1 and November 30 in 2015 and 2016 in an effort to reduce the salinity of the CCS. Knowledge of the effects of adding this water will help to identify how effective it is at reducing CCS salinity under different assumptions of water availability and maximum daily withdrawals.

A spreadsheet-based water and salt balance model was employed for this analysis. This model was developed as a part of the Turkey Point Uprate monitoring program. The South Florida Water Management District has reviewed the model at various stages of its development and application. The version of this model employed for the predictive analysis is transient and calibrated to 45 months of hydrologic and water quality data collected within the CCS and in the surrounding environment (Ecology and Environment, 2014). This model was modified and executed to provide estimates of the effect of adding various amounts of L-31E water in an effort to attain reductions in CCS salinity.

Background

The CCS is a constructed surface water body that receives heated water from Turkey Point Power-Generating Units 1, 3, and 4. As the heated water travels southward along the discharge canals and northward back to the plant along return canals, it is cooled by evaporation and mixing with inflowing water from the Biscayne Aquifer. Due to the evaporative process, which is facilitated by the elevated temperature of the water, a portion of the water from the CCS is lost to the atmosphere, leaving dissolved solids behind in the CCS and producing hypersaline conditions in the CCS. Hypersaline water exhibits salinities greater than that of seawater, which has a salinity of approximately 35 PSU. Over the 10 years prior to 2014, salinity in the CCS has ranged between 42 and 69 PSU. During 2014, salinity in the CCS increased to a maximum daily average of approximately 99 PSU (monitoring station TPSWCCS-4, September 9, 2014). Subsequent to that peak, salinities reduced and varied between 65 and 75 PSU in the fall of 2014. Part of this salinity reduction is attributable to measures undertaken by FPL that included addition of L-31E water and groundwater from a Floridan well associated with Unit 5.

In order to mitigate the contribution of hypersaline water to the underlying Biscayne Aquifer, and return the CCS to equilibrium consistent with pre-2014 conditions, FPL is evaluating remedial measures to moderate CCS salinities and prevent significant increases in the near future. In the course of prior evaluations conducted to investigate the response of CCS salinity to

the addition of less saline water, an inspection of monitoring data between 2010 and 2012 revealed a correlation between daily rainfall on the CCS and CCS salinity, where rainfall events were generally followed by short term reductions in CCS salinity. Two phenomena were evident in this review of CCS monitoring data: 1) CCS salinities generally reduce during rainy months (May through October); 2) significant rainfall events produce notable reductions in CCS salinity The latter phenomenon is effectively illustrated by a large (> 7 inches) rainfall event in late-September 2010 that induced an approximate 10 PSU drop in the average CCS salinity.

Because precipitation events are simply freshwater inflows to the CCS, they effectively dilute the water and reduce salinity. Based on the effectiveness of such low-salinity inflows in reducing salinity, the addition of L-31E water to the CCS was proposed during times when such water was available. The water and salt balance model mentioned above was reconfigured to evaluate this salinity reduction measure with respect to its effectiveness in mitigating high CCS salinity in the near future. These evaluations and associated results and conclusions are discussed below.

Reconfiguration of Water Balance to Represent Future Predictions

Calibrated Water and Salt Balance Model

Based on monitoring data in and outside of the CCS, Tetra Tech constructed a transient water and salt balance model of the CCS and calibrated it to 45 months of hydrologic and salinity data collected from the CCS between September 1, 2010 and May 31, 2014 (Ecology and Environment, 2014) This model calculates inflows to the CCS (e.g. precipitation, seepage from groundwater) and outflows from the CCS (e.g. evaporation, seepage to groundwater) on a daily timestep using hydrologic, water quality, and meteorological data. These data were collected at intervals ranging from 15-minute to 1-day throughout Biscayne Aquifer, Biscayne Bay, the CCS, and nearby canals. The model uses the calculated daily inflows and outflows to effectively simulate daily changes in CCS water and salt storage. These changes in storage are then employed to calculate daily changes in CCS water levels and salinity.

This model was later revised to incorporate data and simulate conditions through October 2014. Because this timeframe witnessed significant stresses on the CCS, including elevated evaporative losses from the CCS, relatively low precipitation-based inflows, and the influx of pumped L-31E water, it was determined that a model calibrated to the extended timeframe would be robust and a better predictive tool With minor changes to model parameter values, the calibrated 45-month model was extended and re-calibrated to effectively simulate the 50-month timeframe through October 2014. The quality of the model is illustrated by the reasonably accurate simulation of daily changes in average CCS water levels and salinity over the 50-month period (Figure 1) It should be noted that the model correctly simulates reductions in salinity that result from both large rainfall events (e.g. October 1, 2010) and the addition of L-31E water (late September through mid-October 2014) The ability to match the response of salinity to the addition of a known quantity and quality of water provides confidence that the model is able to predict changes in CCS salinity due to prescribed CCS salinity reduction measures.

Predictive Water and Salt Balance Model

In order to predict future changes in CCS water level and salinity, the approach used to calculate CCS inflows and outflows was changed relative to that employed for the historical timeframe in the following manner. During the 50-month historical period (September 2010 through October

2014), the calculation of water and salt exchanges between the CCS and the surrounding environment relied on *measured* CCS water levels and salinities. Because future CCS conditions are unknown, predicted CCS inflows and outflows are calculated using *simulated* CCS water levels and salinities.

As previously mentioned, the calibrated water and salt balance model simulates daily changes in CCS water level and salinity through October 31, 2014. As such, the predictive simulation commences on November 1, 2014; this simulation extends over 2 years through November 30, 2016. The initial predictive water levels throughout the CCS are based on CCS water levels observed on October 31, 2014 and the change in water level due to the balance of water flows calculated for that day. In other words, the simulated November 1, 2014 water levels throughout the CCS are the sum of the measured CCS water levels on October 31 and the calculated change in water level due to the calculated CCS inflows and outflows for that day. The initial salinity conditions for the predictive model are calculated in an analogous manner; the simulated salinities throughout the CCS on November 1 are the sum of the average observed CCS salinities on October 31 and the calculated change in salinity due to the balance of salt flows calculated for that day. The daily exchanges of water and salt between the CCS and the surrounding environment for November 1 are determined using the calculated initial water levels and salinities throughout the CCS. The balance of these flows informs the predicted CCS water level and salinity, respectively, for the next day. The model continues step-wise calculations of water levels and salinity in this manner throughout the 25-month predictive simulation.

Predictive Scenarios

In order to represent conditions outside of the CCS, observed data from the historical period was repeated and acted as a surrogate for future hydrologic, water quality, and meteorological conditions in Biscayne Aquifer, Biscayne Bay, nearby canals, and the atmosphere. Additionally, the model does not currently evaluate a CCS thermal balance, so CCS water temperatures observed during the historical period were employed to represent future thermal conditions. Because external conditions and, especially, CCS water temperatures play a large role in inducing changes to CCS water levels and salinity, two baseline predictive scenarios were evaluated; each scenario is distinct in what historical data were used to represent future conditions. Predictive Scenario A assumes future conditions mimic those observed between November 1, 2010 and October 31, 2012. Conditions during this timeframe reflected normal weather patterns and were conducive to moderating CCS salinity. Predictive Scenario B assumes future conditions mimic those observed between November 1, 2013 and October 31, 2014, a time during which environmental conditions (e.g. precipitation, CCS water temperatures) reflected dry weather patterns and produced dramatic increases in CCS salinity. This 1-year timeframe was repeated to produce a 2-year predictive simulation. In both scenarios, the conditions observed during the first November (2010, 2013) were repeated to create surrogate conditions for the last month (November 2016) of the 25-month predictive simulation.

Predicted water levels and salinities simulated by Scenario A are shown in Figure 2; Scenario B predictions are illustrated in Figure 3. Comparison of these figures reveals differences in how the CCS would respond to assumed future conditions. Predicted CCS salinity generally decreases over the 2-year timeframe under Scenario A, whereas CCS salinity generally rises during the 2-year predictive simulation under Scenario B. The reason for the disparity between these two predictive scenarios with respect to simulated salinity and water levels is, as previously

mentioned, the different historically observed external conditions and CCS water temperatures assumed to persist over the next two years; Scenario A assumes conditions consistent with those observed between November 2010 and October 2012, whereas Scenario B assumes conditions consistent with the November 2013 through October 2014 timeframe occurring twice sequentially. Between November 2010 and October 2012, observed CCS salinities averaged 54.8 PSU and peaked at 68.2 PSU (at station TPSWCCS-6). Between November 2013 and October 2014, salinity in the CCS averaged 79.8 PSU and reached a peak of approximately 98.5 PSU (at station TPSWCCS-4). Water levels between November 2010 and October 2012 were generally higher than those between November 2013 and October 2014. It is clear from this comparison that environmental conditions during the first two year period were more effective at moderating CCS salinity than those conditions observed between November 2013 and October 2014.

Thus, construction and simulation of two predictive scenarios is predicated on two motivations. First, predicted CCS water levels and salinity made with model Scenarios A and B will provide a range of anticipated conditions in the CCS in the near future. Predictions made with Scenario A will reflect environmental conditions that are conducive to relatively low and stable salinities in the CCS, whereas predictions made with Scenario B will reflect the deleterious conditions that can coerce the CCS into a new equilibrium with higher salinity and lower water levels. Second, the two predictive scenarios will help to elucidate the relative effectiveness of L-31E water additions under different environmental conditions. Predictions with both scenarios will help to provide a realistic range of CCS salinity changes due to the proposed remedial measures. These salinity reduction measures and their respective outcomes are discussed below.

Simulation of L-31E Water

Determination of Available Water

In order to provide an estimate of potentially available water in L-31E consistent with the two predictive scenarios, daily combined stormwater discharge volumes through S-21A, S-20G, and S-20F into L-31E were determined for the historical periods that inform both Scenario A (November 2010 through October 2012) and Scenario B (November 2013 through October 2014). The daily reservation flow volume (254 cfs) was then subtracted from the combined daily discharge. The resulting daily L-31E flow volumes represent water that can potentially be added to the CCS as a salinity reduction measure. On days between June 1 and November 30 where the reservation flow exceeded combined daily discharge, it was assumed that no L-31E water was available for allocation to the CCS. In addition to using historical L-31E stormwater discharge volumes, L-31E salinities observed during the two historical timeframes were used to define the assumed future salinity of L-31E water added to the CCS.

In order to evaluate the effect of adding the excess L-31E stormwater water under different assumptions of availability, feasibility, and permitted allocations, three constraint criteria were applied to the excess flow volumes. These additional constraints defined a maximum daily volume of available L-31E water that could be allocated to the CCS; the three constraint volumes evaluated are 30 MGD, 60 MGD, and 100 MGD. The 100 MGD constraint reflects a situation in which the volume of L-31E that can be allocated to the CCS is limited only by the withdrawal pump capacity. Of the three flow constraints, the 100 MGD constraint results in the greatest volume of water added to the CCS from L-31E. Excess daily stormwater discharges to L-31E for the two historical periods evaluated, constrained to a maximum of 100 MGD, are plotted in

Figure 4.

Simulation Results

The addition of L-31E flow volumes were modeled by the predictive water and salt balance models (both Scenario A and Scenario B). The modeled actions comprising the added water, and associated changes to simulated CCS conditions, were represented by incorporating the additional prescribed flow and associated mass into the daily water and salt balance equations, respectively. These modeled actions changed the simulated CCS water levels and salinities from the base model results in Figures 2 and 3. In general, simulated CCS water levels increased and simulated CCS salinities decreased relative to the base case predictive simulations.

The simulated water levels in each of the three added water assumptions, as well as the simulated water levels for the base case, for predictive Scenario A are plotted in Figure 5. The water levels associated with predictive Scenario B are plotted in Figure 6. Both figures demonstrate that L-31E water added to the CCS results in an increase in the CCS stage. Table 1 provides the average CCS water levels over the 25-month predictive timeframe for the base (no action) case and constrained L-31E flow assumptions under both average and dry environmental conditions. These results show that the average CCS stage increases by a maximum of 0.22 feet and 0.18 feet for Scenarios A and B, respectively (both for the 100 MGD maximum L-31E allocation). Note that these averages are taken over the entire 25-month period and deviations in stage relative to the base case are more pronounced between June 1 and November 30 when L-31E water is permitted to be added to the CCS, as evident in Figures 5 and 6.

Table 1. 25-month averaged CCS water levels under different assumptions of L-31E additions (in feet, NAVD88)

Environmental Conditions	Base Case (No Action)	Maximum of 30 MGD	Maximum of 60 MGD	Maximum of 100 MGD
Scenario A (average)	-0.65	-0.57	-0.50	-0.43
Scenario B (dry)	-0.70	-0.63	-0.58	-0.52

Simulated CCS salinities in response to the added L-31E water, as well as the simulated salinities for the base case, for predictive Scenario A are plotted in Figure 7. The predicted salinities for Scenario B are plotted in Figure 8. Both figures demonstrate that more L-31E water added to the CCS results in a greater decrease in salinity. Table 2 provides the average CCS salinities over the 25-month predictive timeframe for the base (no action) case and the constrained L-31E flow assumptions under both average and dry environmental conditions. The greatest decrease in average salinity occurs when the L-31E water added to the CCS is constrained only by the withdrawal pump capacity (maximum of 100 MGD). In this remedial case, the 25-month average salinity reduces by 28.7 PSU relative to the base case for Scenario A and by 61 PSU relative to the base case for Scenario B. As in the case of additional stage, these salinities are averaged over the entire 25-month predictive timeframe. The impact of added water on salinity is most

pronounced when the L-31E water is assumed to be added to the CCS (between June 1 and November 30).

Table 2. 25-month averaged CCS salinity under different assumptions of L-31E additions (in PSU)

Environmental Conditions	Base Case (No Action)	Maximum of 30 MGD	Maximum of 60 MGD	Maximum of 100 MGD
Scenario A (average)	71.9	59.1	49.8	43.2
Scenario B (dry)	135.1	109.3	90.4	74.1

Summary

This analysis evaluates the effectiveness of L-31E discharge-based salinity reduction measures for the Turkey Point CCS. The transient water and salt balance developed for the Uprate Project was used in a predictive, forward looking, sense. Each remedial measure was modeled using two different assumptions for future conditions. The two scenarios provide a bound on expected responses and show any differences in effectiveness that result from using different future background conditions. Details regarding the reconfiguration of the model to simulate the two future conditions are presented in the memorandum.

This analysis suggests that the addition of L-31E water to the CCS is an effective means of reducing CCS salinities over the predictive 2-year timeframe in light of both average and dry environmental conditions. One of the key reasons that L-31E water is so effective at ameliorating elevated CCS salinities is the fact that the addition of this water compensates for evaporative losses from the CCS. Because evaporation removes freshwater (and leaves suspended solids in the CCS), this outflow of water increases the salinity of the CCS. The addition of L-31E water can help to replace freshwater lost to evaporation and keep salinity relatively low. This is particularly true during dry conditions where precipitation is low and freshwater inflows are more critical. The pronounced effect of L-31E additions during dry conditions is illustrated in Figure 8 and Table 2.

References

Ecology and Environment, 2014, Turkey Point Plan Comprehensive Post-Uprate Monitoring Report: Unit 3 & 4 Uprate Project, Prepared for Florida Power & Light, August 2014.

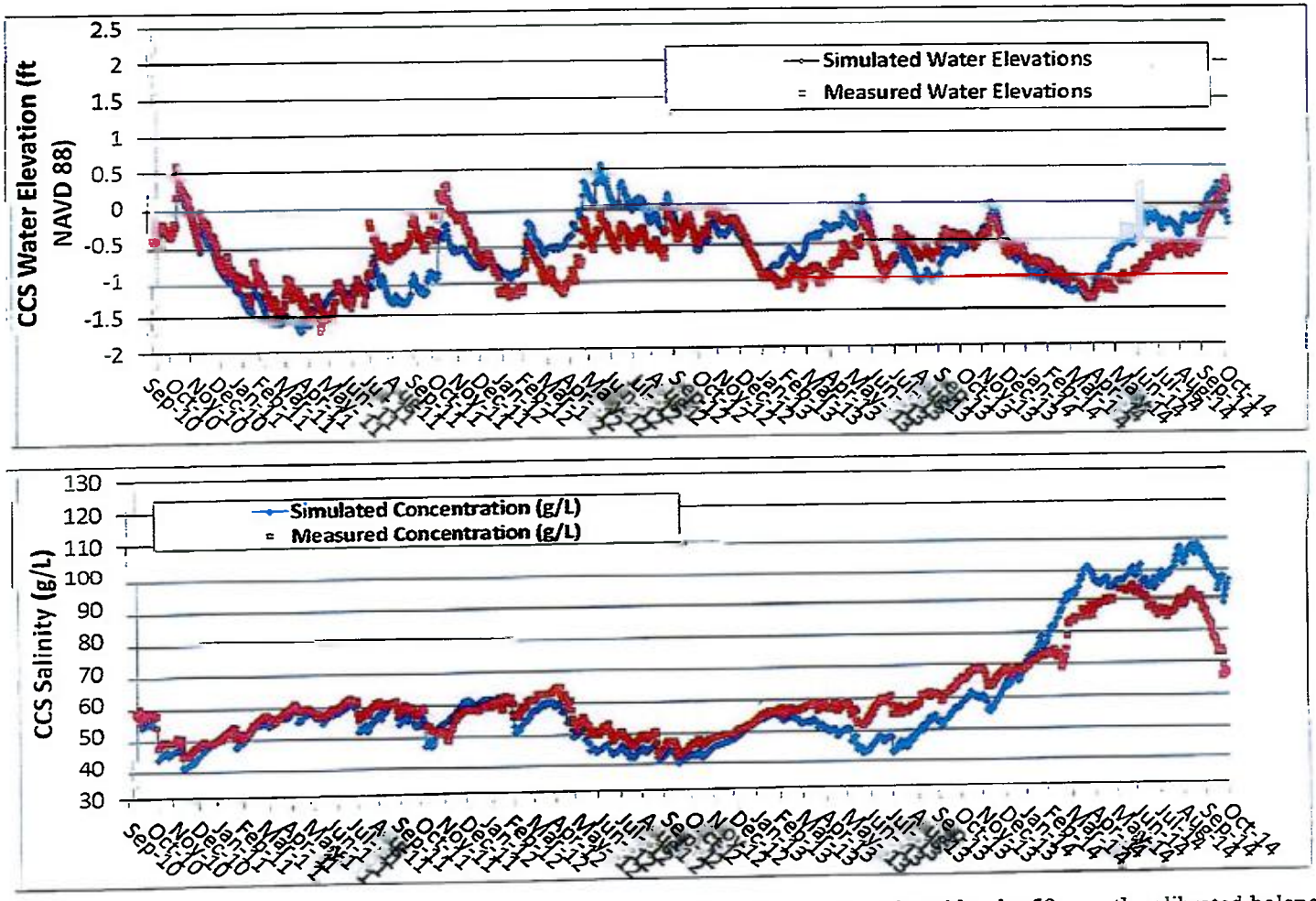


Figure 1. Observed and simulated CCS water levels (top) and salinity (bottom) produced by the 50-month calibrated balance model

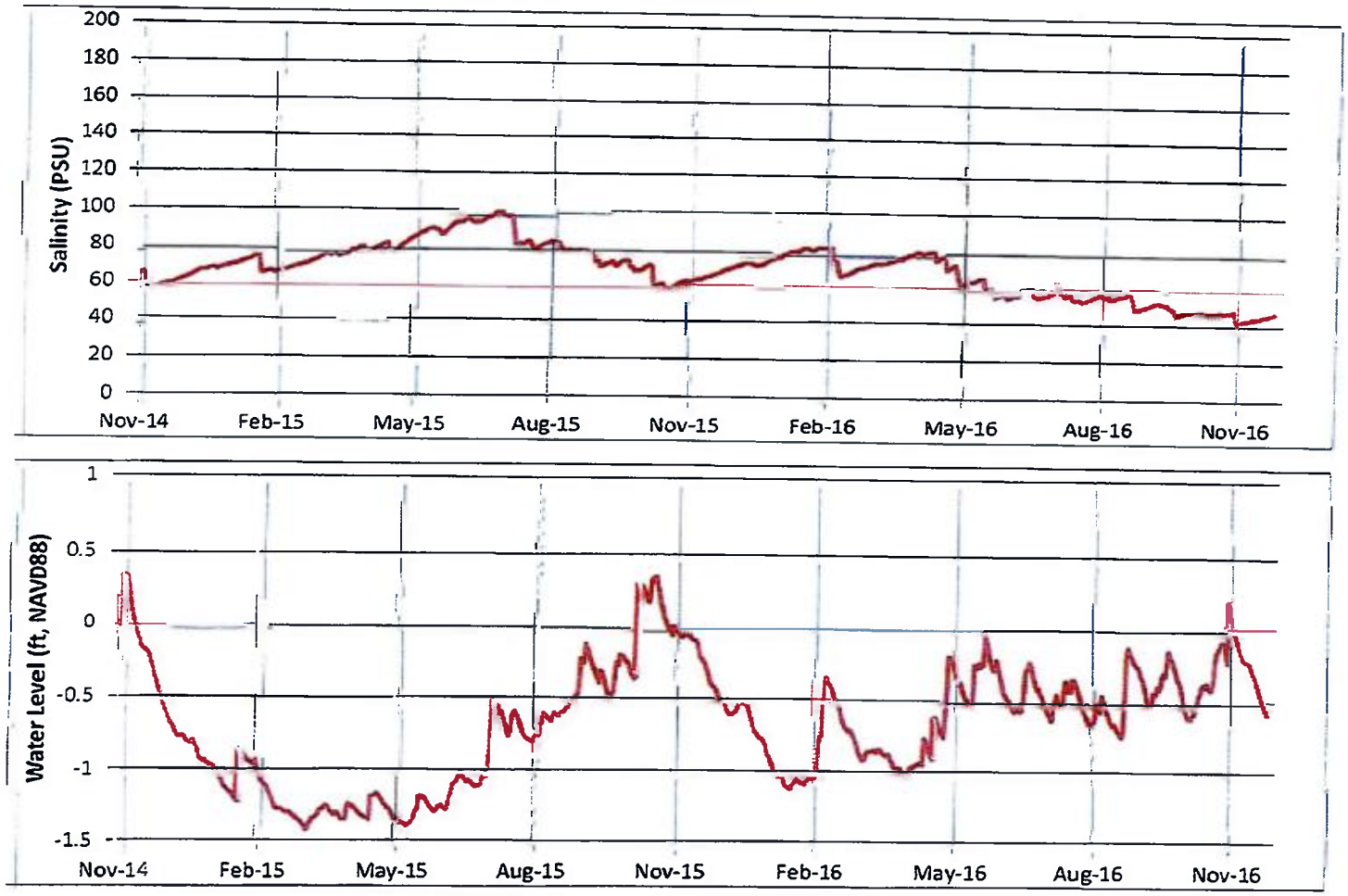


Figure 2. Predictions of salinity (top) and water level (bottom) for model Scenario A

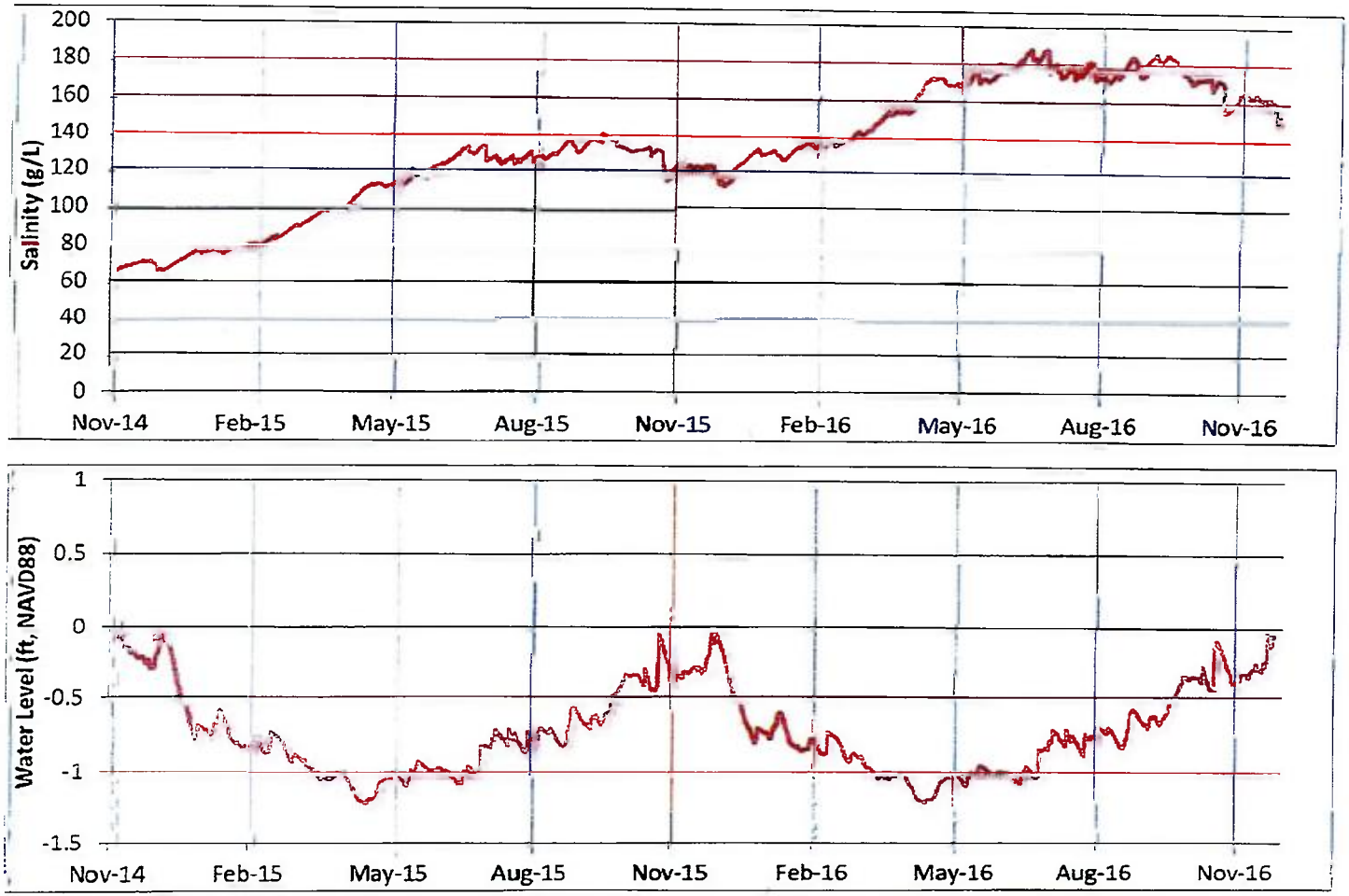


Figure 3. Predictions of salinity (top) and water level (bottom) for model Scenario B

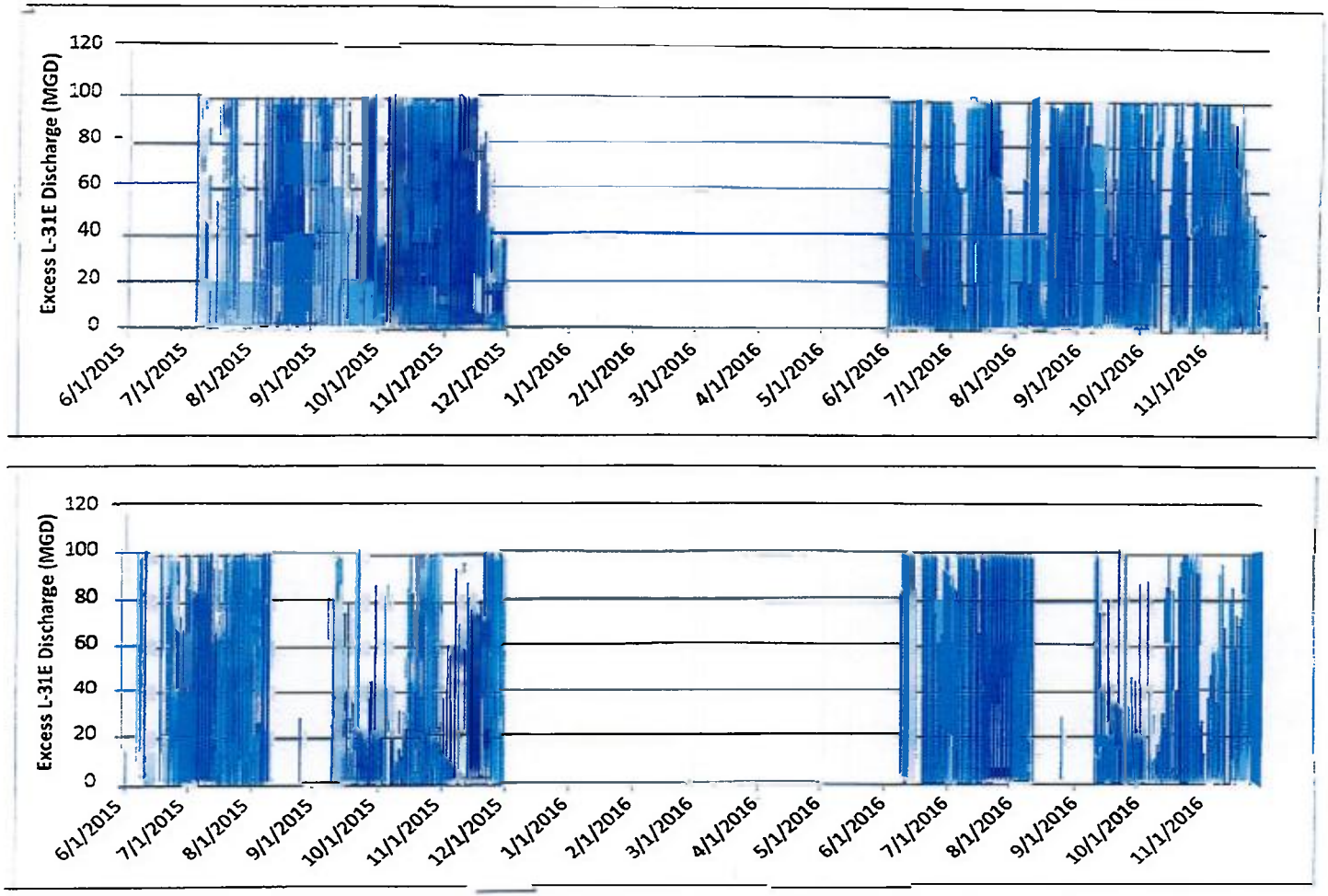


Figure 4. Maximum allocatable L-31E stormwater discharge for Scenario A (top) and Scenario B (bottom). Note: The predictive simulation begins in November 2014, though the flow allocations are not assumed to commence until June 2015.

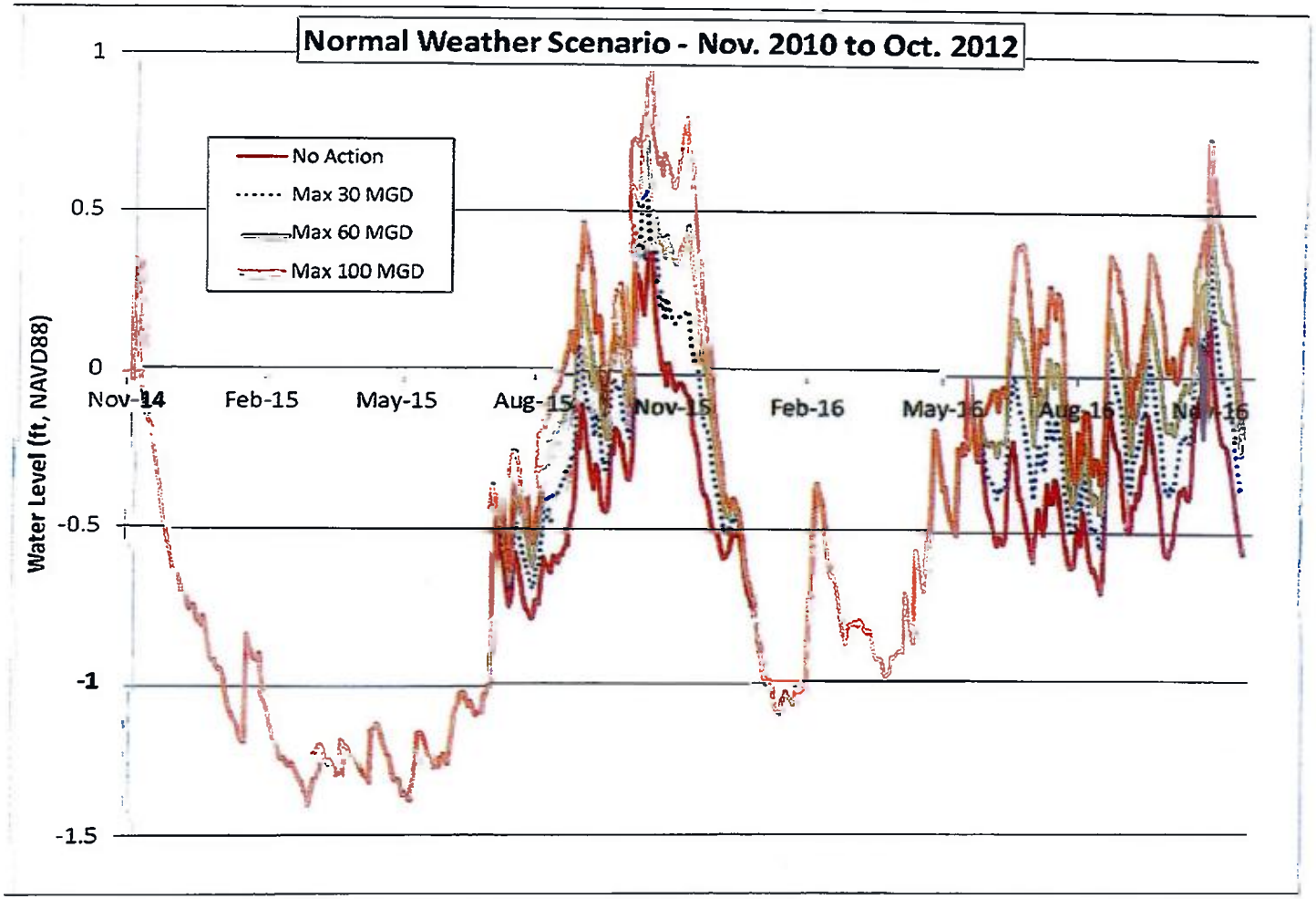


Figure 5. Simulated CCS water levels for predictive Scenario A base case and the constrained L-31E allocations

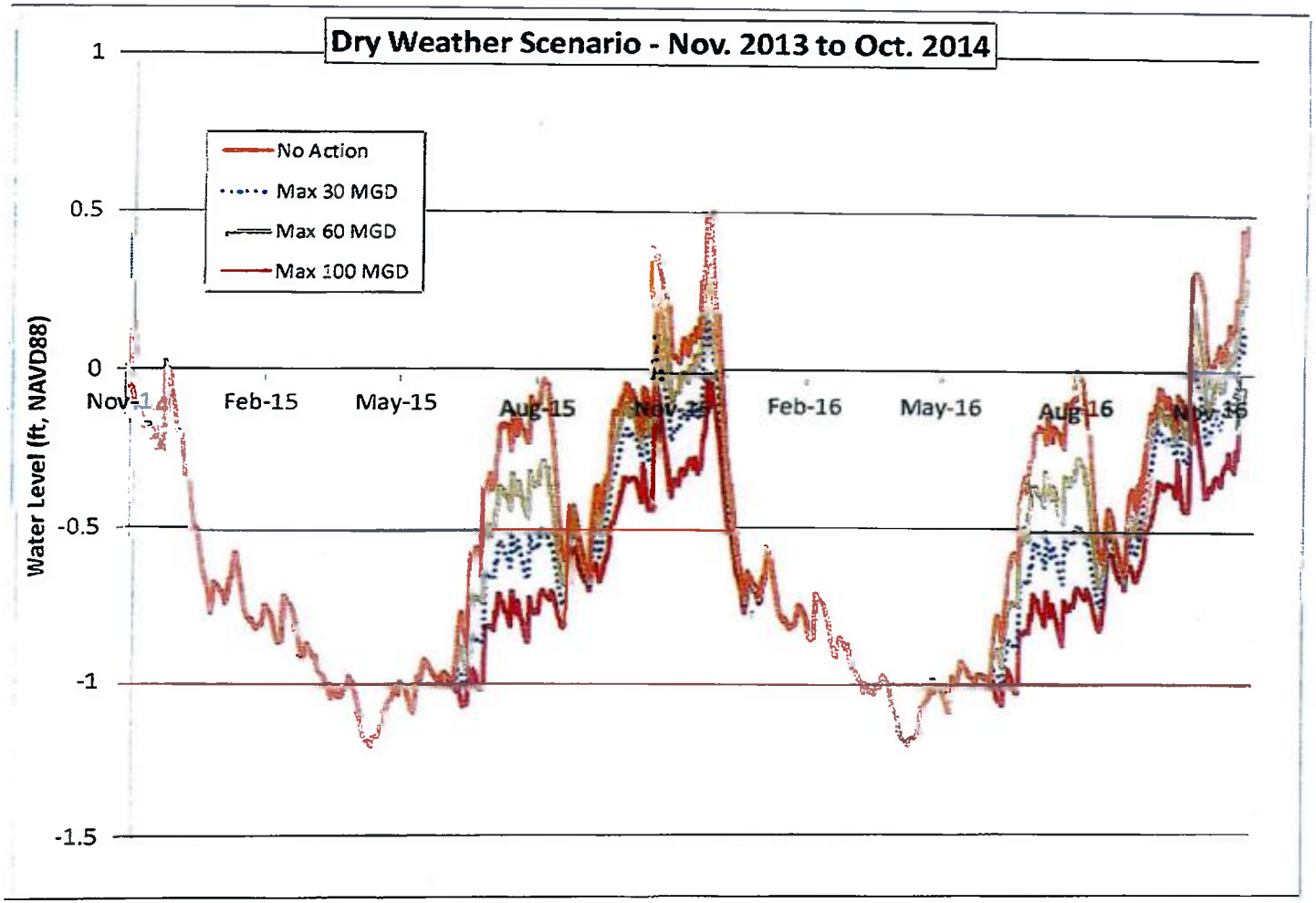


Figure 6. Simulated CCS water levels for predictive Scenario B base case and the constrained L-31E allocations

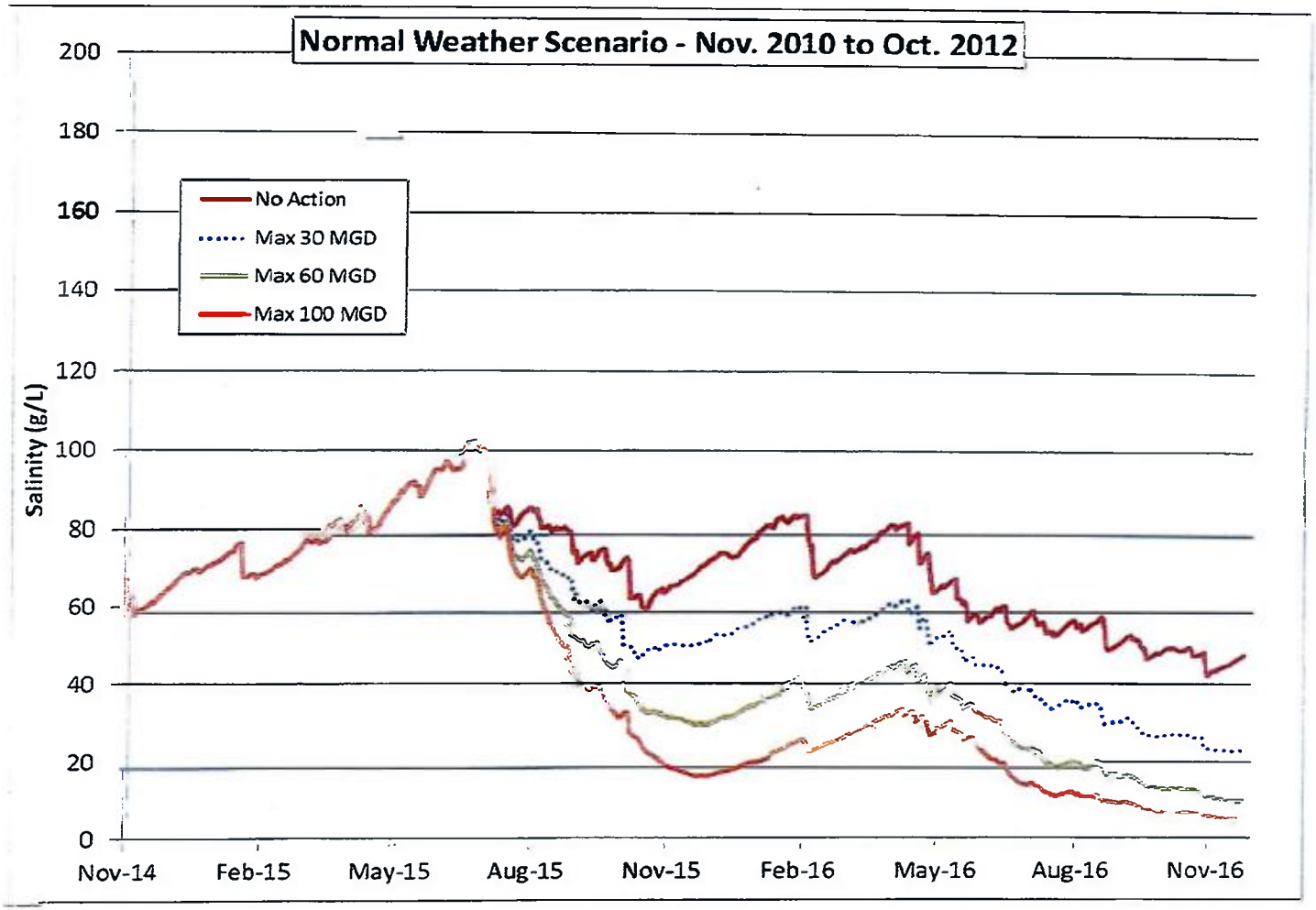


Figure 7. Simulated CCS salinities for predictive Scenario A base case and the constrained L-31E allocations

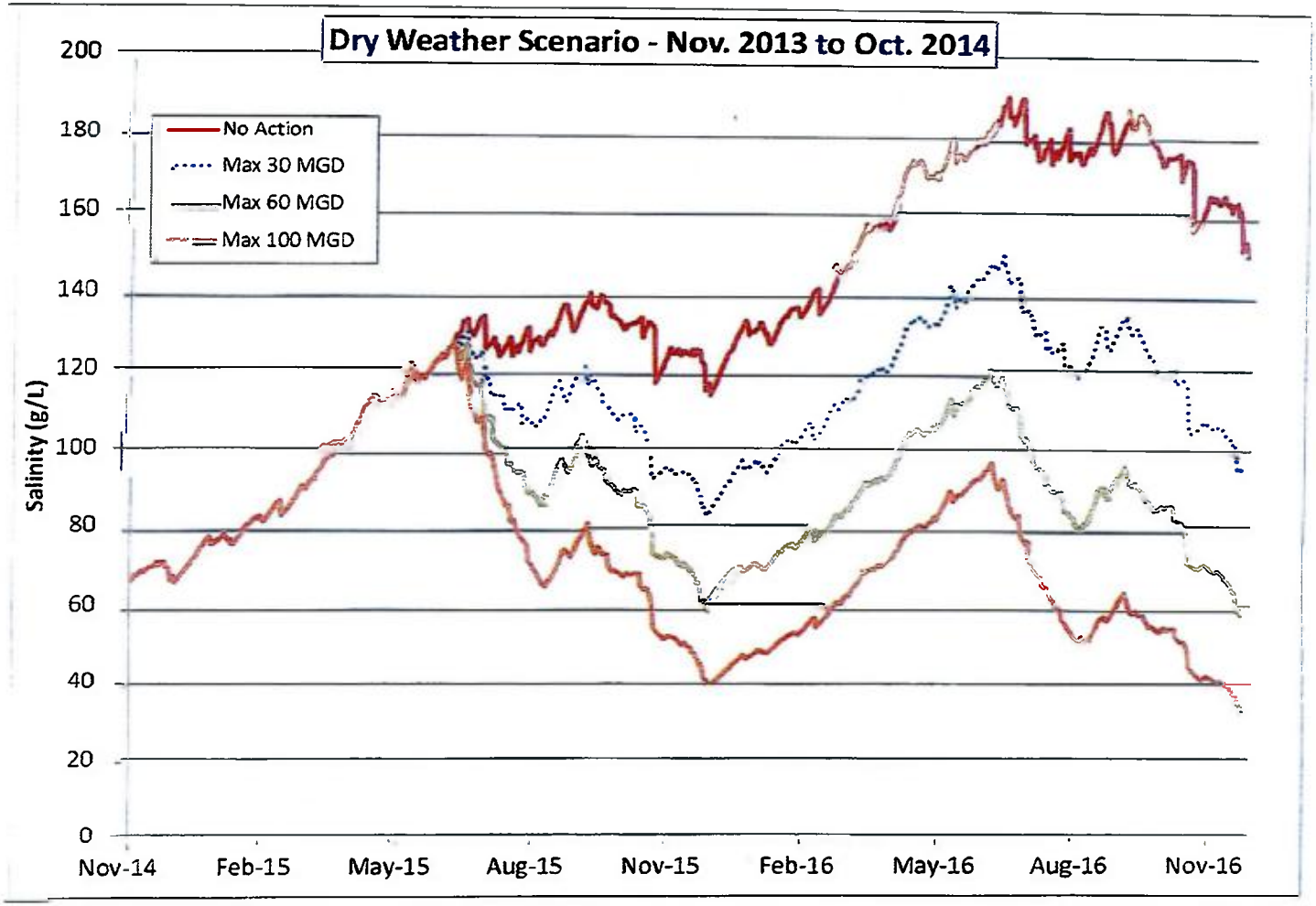
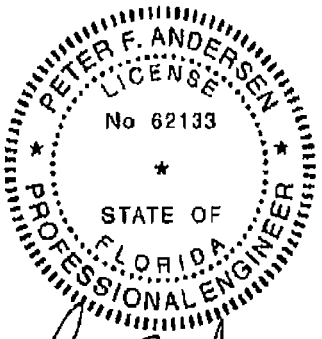


Figure 8. Simulated CCS salinities for predictive Scenario B base case and the constrained L-31E allocations

CERTIFICATION

The work documented in this memorandum has been performed by or under the direct supervision of the undersigned Florida Registered Professional Engineer. Either I or engineering staff working under my supervision completed all work described herein and I have expertise in the discipline used in the production of this document. This report has been prepared in accordance with commonly accepted procedures consistent with applicable standards of practice, and is not a guaranty or warranty, either expressed or implied.



Peter F. Andersen
Principal Engineer
Registered Professional Engineer
Florida License No. 62133

Date: 3/13/2015

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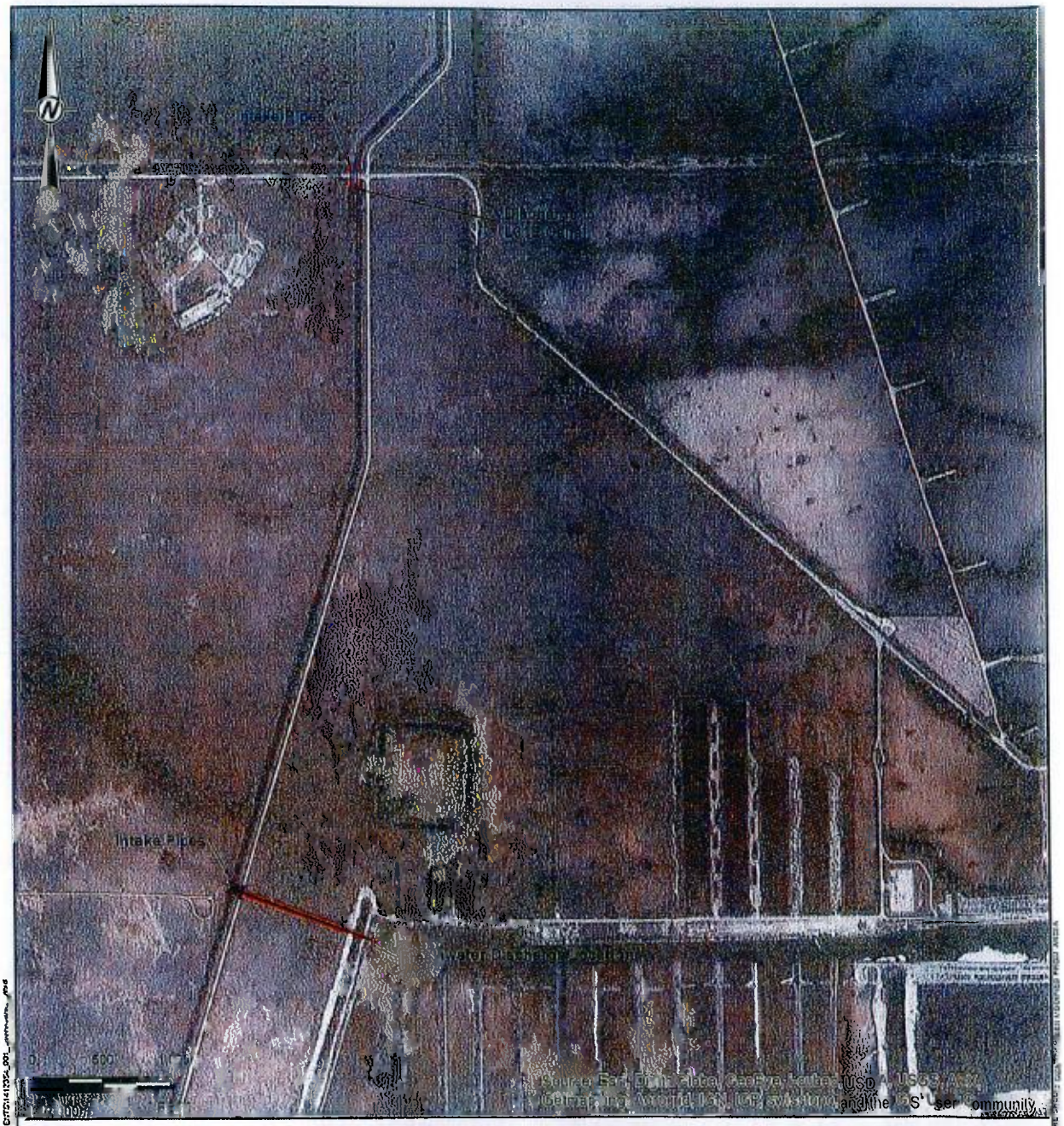

LEGEND

Temporary Cooling Canal Augmentation Pipeline & Equipment

Area of Temporary Wetland Impact

TABLE 1 - TEMPORARY WETLAND IMPACT ACREAGE[1]

Wetland ID	Habitat Type	Acreage
HW	510 - Canal	0.04
P	612 - Mangrove Swamps	0.32
R	510 - Canal	0.04
	641 - Freshwater Marshes	0.03
	6411 - Marsh Sawgrass	0.02
	Grand Total	0.45

CLIENT
FPL

RECEIVED
JAN 2 1 2015
WATER RESOURCE REGULATION

PROJECT
FPL TURKEY POINT
COOLING CANAL
FRESHWATER RECHARGE

TITLE
PROJECT OVERVIEW MAP

NOTES

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

[1]SEE ATTACHED SHEETS FOR DETAIL

REFERENCE

PIPELINE ROUTE, TAYLOR ENGINEERING INC., 2014
TEMPORARY WETLAND IMPACTS, GOLDER ASSOCIATES INC., 2014

CONSULTANT
Golder Associates

YYYY-MM-DD	2015-01-20
PREPARED	NRL
DESIGN	NRL
REVIEW	KAB
APPROVED	KAB

PROJECT	CONTROL	Rev	FIGURE
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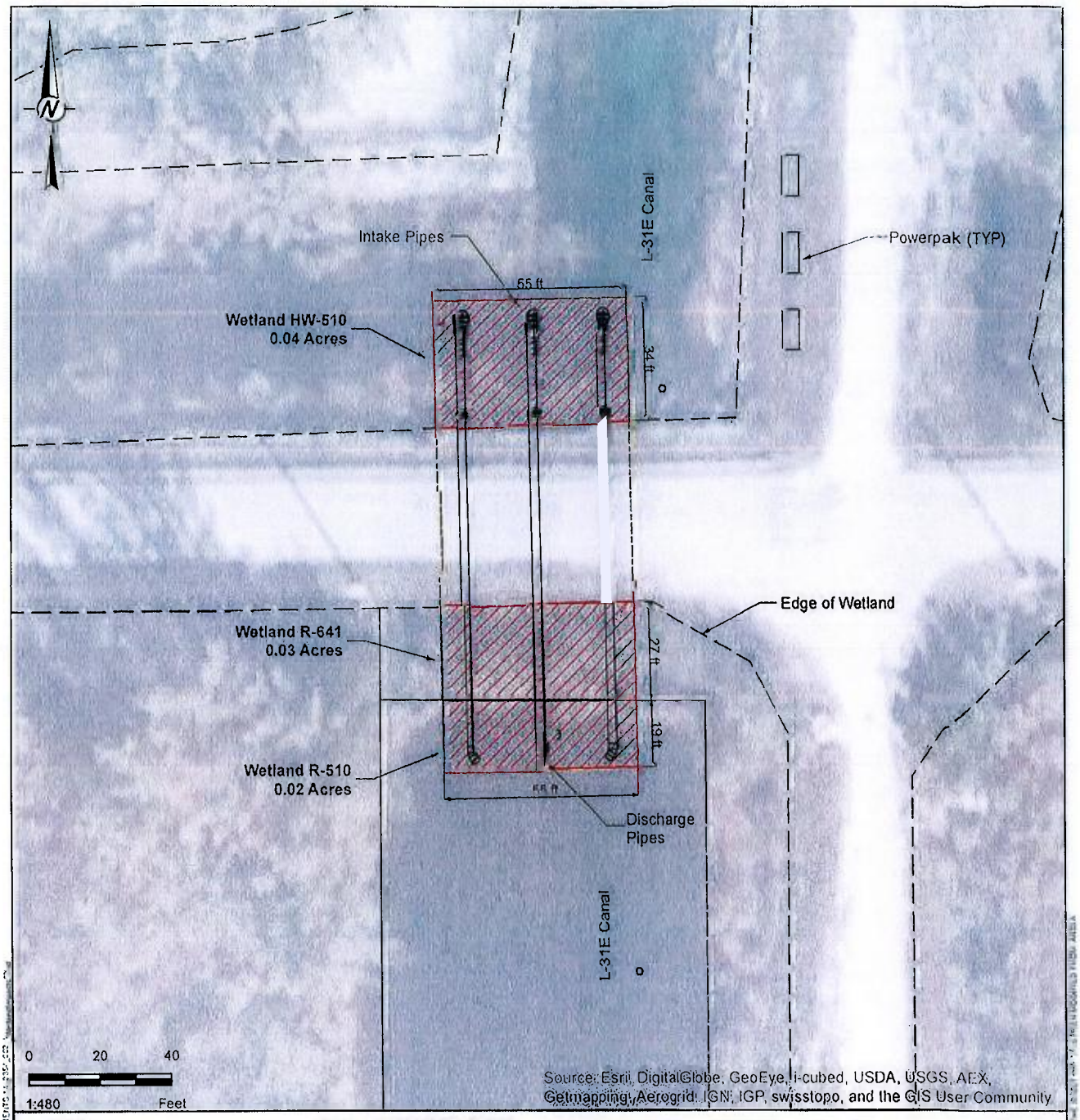
COMPOSITE EXHIBIT F



LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
- Area of Temporary Disturbance
- Limits of Temporary Construction Matting
- Area of Temporary Wetland Impact

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TEMPORARY WETLAND IMPACTS, GOLDER ASSOCIATES INC., 2014

CLIENT
FPL

PROJECT
FPL TURKEY POINT
COOLING CANAL
FRESHWATER RECHARGE

TITLE
INTAKE SYSTEM
TEMPORARY WETLAND IMPACTS

CONSULTANT
Golder Associates

YYYY-MM-DD	2015-01-21
PREPARED	NRL
DESIGN	NRL
REVIEW	KAB
APPROVED	KAB

PROJECT	CONTROL	Rev	FIGURE
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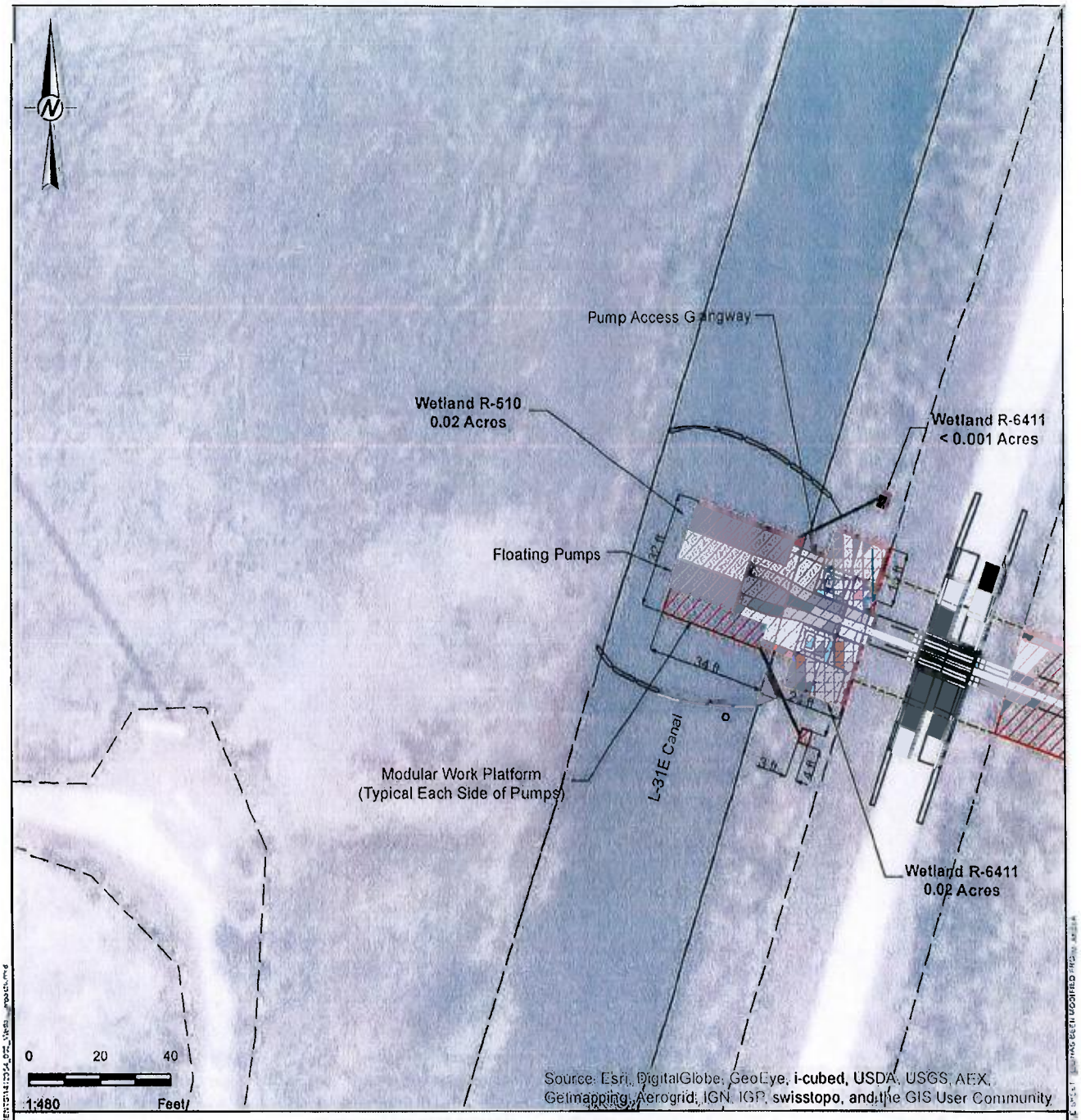

LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
- Area of Temporary Disturbance
- Limits of Temporary Construction Matting
- Area of Temporary Wetland Impact

TABLE 1 - TEMPORARY WETLAND IMPACT ACREAGE

Wetland ID	Habitat Type	Acreage
HW	510 - Canal	0.04
P	612 - Mangrove Swamps	0.32
R	510 - Canal	0.04
	641 - Freshwater Marshes	0.03
	6411 - Marsh Sawgrass	0.02
	Grand Total	0.45

NOTES

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW

REFERENCE

PIPELINE ROUTE, TAYLOR ENGINEERING INC., 2014
TEMPORARY WETLAND IMPACTS, GOLDER ASSOCIATES INC., 2014

CLIENT
FPL

PROJECT
FPL TURKEY POINT
COOLING CANAL
FRESHWATER RECHARGE

TITLE
DISHCARGE SYSTEM
TEMPORARY WETLAND IMPACTS

CONSULTANT
Golder Associates

YYYY-MM-DD	2015-01-21
PREPARED	NRL
DESIGN	NRL
REVIEW	KAB
APPROVED	KAB

PROJECT	CONTROL	Rev	FIGURE
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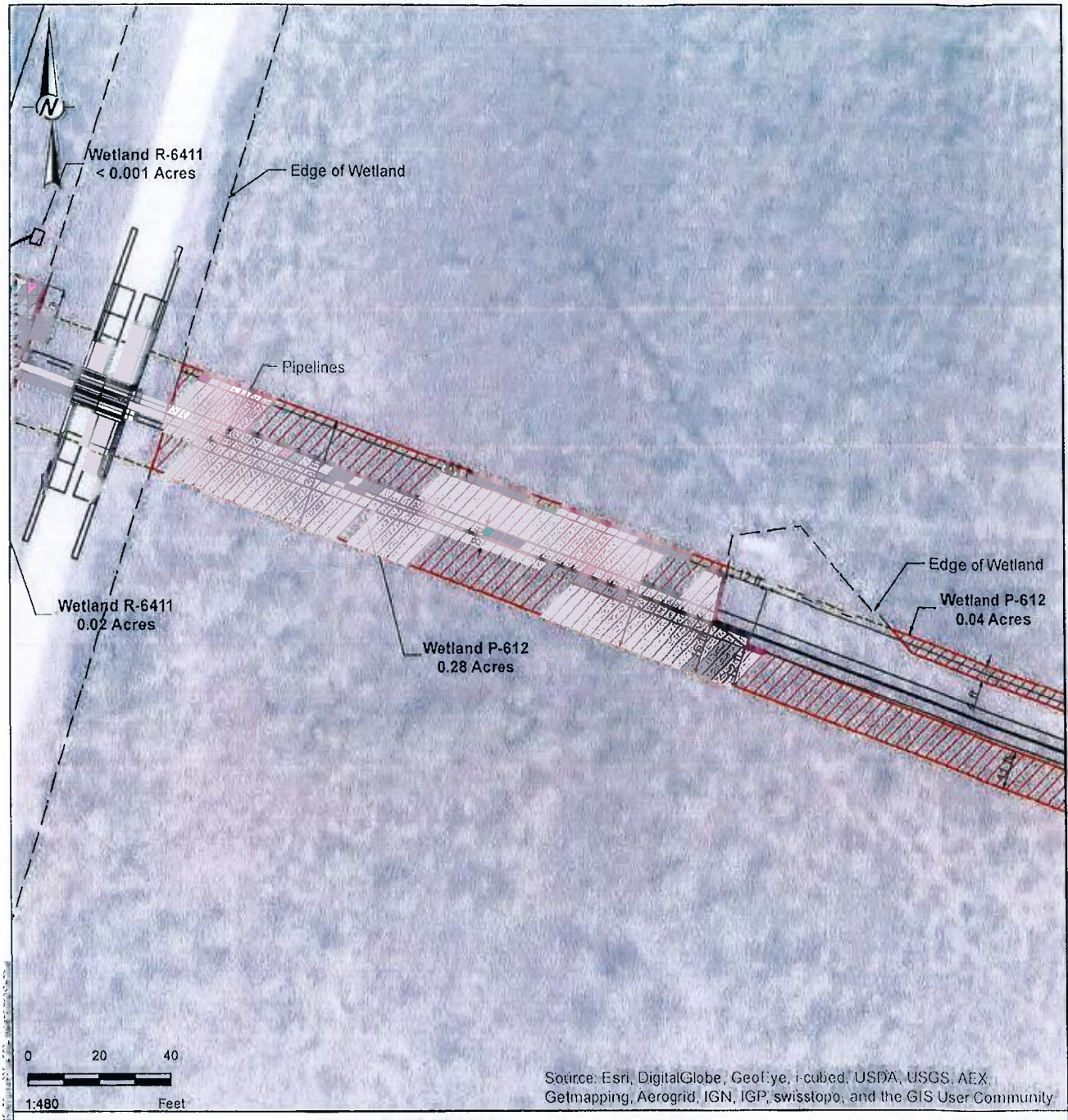

LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
- Area of Temporary Disturbance
- Limits of Temporary Construction Matting
- Area of Temporary Wetland Impact

TABLE 1 - TEMPORARY WETLAND IMPACT ACREAGE

Wetland ID	Habitat Type	Acreage
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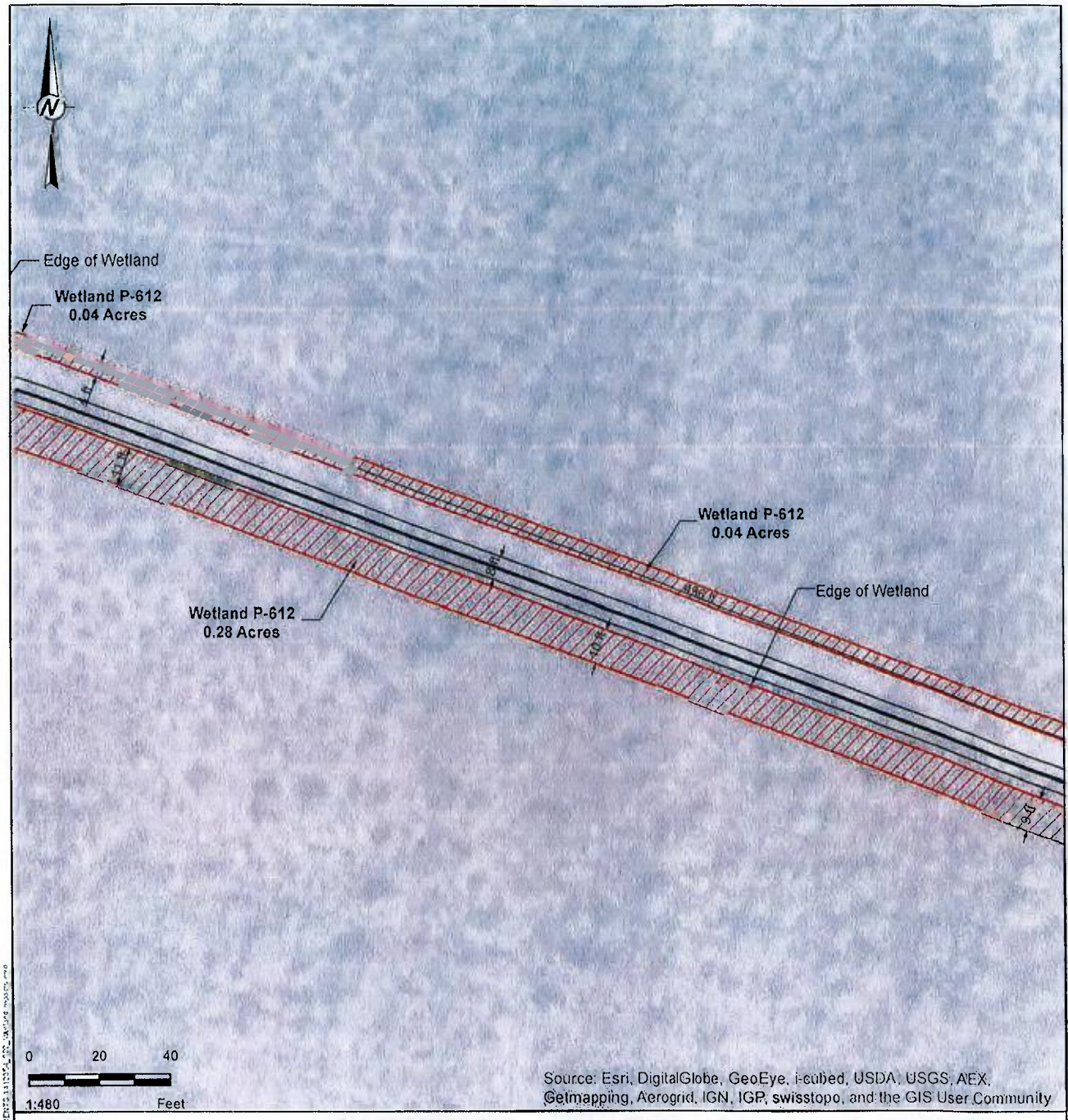
PROJECT	CONTROL	Rev	FIGURE
1412354	002	0	4



LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
- Area of Temporary Disturbance
- Limits of Temporary Construction Matting
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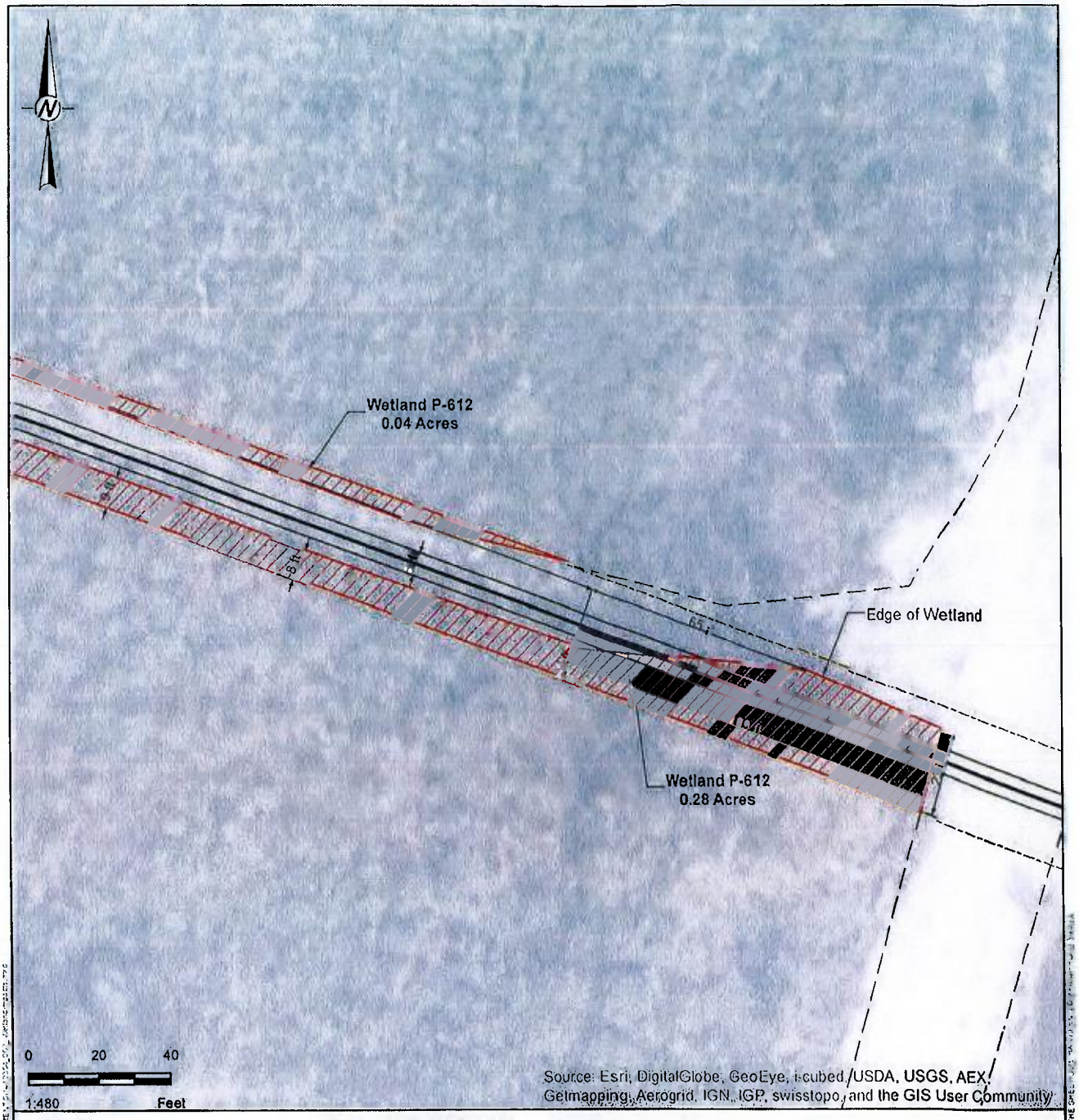
PROJECT	CONTROL	Rev	FIGURE
1412354	002	0	5



LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
- Area of Temporary Disturbance
- Limits of Temporary Construction Matting
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YYYY-MM-DD	2015-01-21
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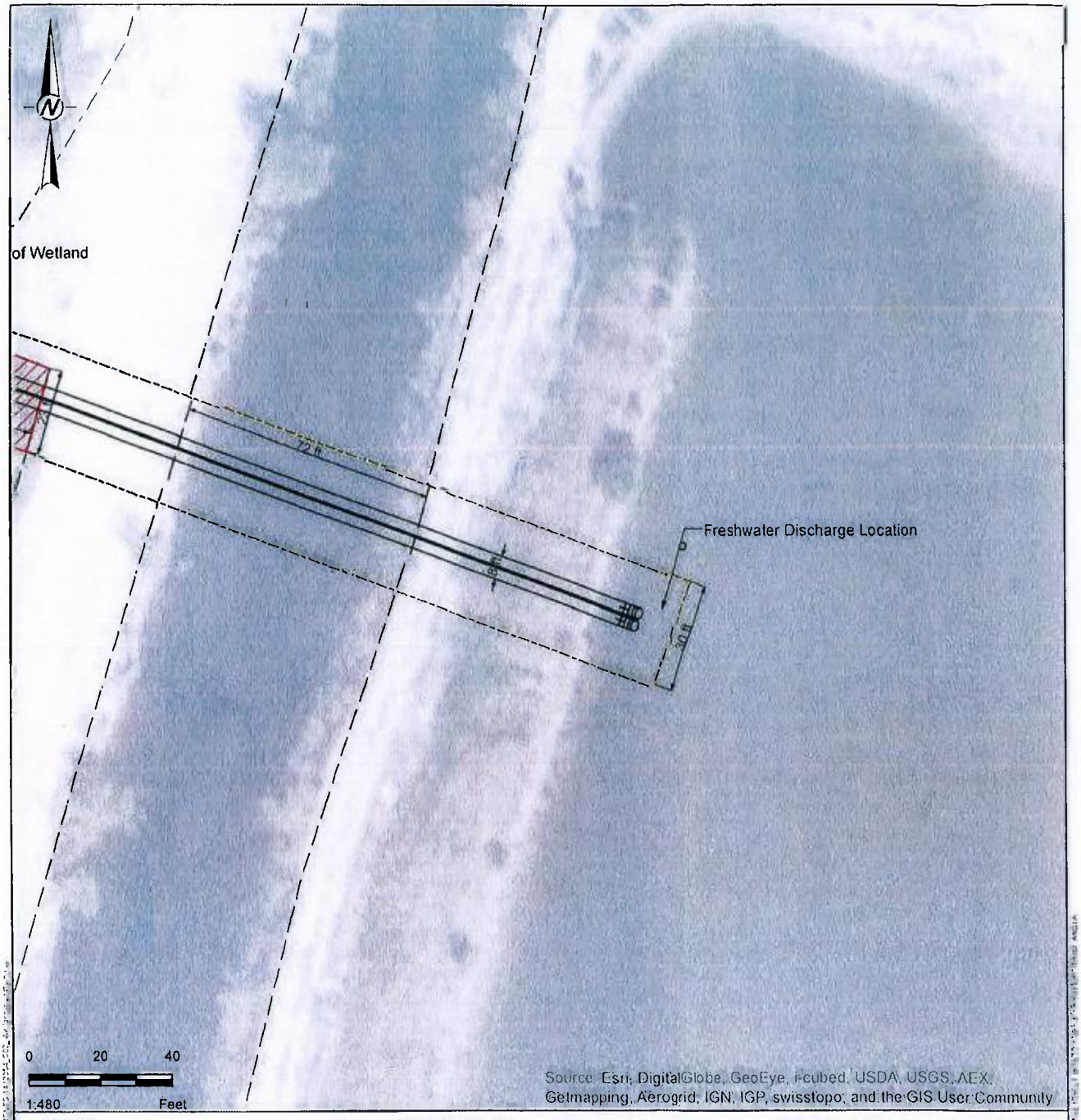
APPROVED	KAB

PROJECT	CONTROL	Rev	FIGURE
1412354	002	0	6



LEGEND

- Temporary Cooling Canal Augmentation Pipeline & Equipment
- Wetland Line
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YYYY-MM-DD	2015-01-21
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APPROVED	KAB

PROJECT	CONTROL	Rev	FIGURE
1412354	002	0	7

NOTICE OF RIGHTS

Pursuant to Section 120.569(2)(n), Florida Statutes, any party adversely affected by this Order has the right to seek an injunction of this Order in circuit court or judicial review of it under Section 120.68, Florida Statutes. Judicial review must be sought by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the District, 3301 Gun Club Road, West Palm Beach, FL 33406 and by filing a copy of the notice of appeal, accompanied by the applicable filing fees with the appropriate district court of appeal. This notice of appeal must be filed within thirty (30) days after this Order is filed with the Clerk of the District.

Pursuant to Section 373.119(3), Florida Statutes, any person to whom an emergency order is directed pursuant to subsection 373.119(2), Florida Statutes, shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

Pursuant to Section 373.114, Florida Statutes, review of this Order by the Governor and Cabinet sitting as the Land and Water Adjudicatory Commission may be sought in accordance with the procedures stated in Section 373.114, Florida Statutes, and Chapter 42-2, Florida Administrative Code.

DISTRICT FILING INSTRUCTIONS

Filings with the District Clerk may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** Documents are deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. **Delivery of a document to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office**. An employee of the SFWMD's Clerk's office will receive and file the document.
- Filings by e-mail must be transmitted to the District Clerk's Office at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.