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MARGARET A MENDUNI
M LANE STEPHENS

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01 MAY 24 PM 2:51
RECORDS AND REPORTING

May 24, 2001

Ms. Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Betty Easley Conference Center, Room 110
Tallahassee, Florida 32399-0850

HAND DELIVERY

Re: Docket No. 990696-WS and 992040-WS

Dear Ms. Bayo:

Enclosed for filing on behalf of JEA are the original and fifteen copies of Late-Filed Exhibits 34 and 35 from the hearings held on May 7-9. Please note that the copy of the Technical Staff Report provided to JEA did not include a copy of appendices A or E.

Please acknowledge receipt of these documents by stamping the extra copy of this letter "filed" and returning the same to me. Thank you for your assistance with this filing.

Sincerely,

J. Stephen Menton

J. Stephen Menton

JSM/knb
Enclosures
cc: Counsel of Record

APP
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FPSC-BUREAU OF RECORDS

DOCUMENT NUMBER-DATE
06549 MAY 24 01
FPSC-RECORDS/REPORTING

CERTIFICATE OF SERVICE

I HEREBY certify that a copy of the foregoing was furnished by U.S. Mail to the following this 24th day of May, 2001:

John L. Wharton, Esq.
F. Marshall Deterding, Esq.
Rose, Sundstrom, & Bentley, LLP.
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Tallahassee, Florida 32301

Richard D. Melson, Esq.
Hopping, Green, Sams & Smith, P.A.
P.O. Box 6526
Tallahassee, FL 32301

Suzanne Brownless, Esq.
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Tallahassee, FL 32301

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Korn & Zehmer
6620 Southpoint Drive S., Ste. 200
Jacksonville, FL 32216

Samantha Cibula, Esq.
Counsel for Staff
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Blvd., Room 370
Tallahassee, FL 32399-0850

By: J. Stephen Menton
J. STEPHEN MENTON, ESQ.

Henry Dean, Executive Dir
John R. Wehle, Assistant Executive Dir

ST JOHNS RIVER WATER MANAGEMENT DISTRICT

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-142
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TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-45

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616 E. South Street
Orlando, Florida 32801
407-897-4300
1-877-228-1658
FAX 407-897-4354
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
1-800-852-1563
FAX 904-730-6267
TDD 904-448-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
1-800-295-3264
FAX 407-722-5357
TDD 407-722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-810
407-752-3100
TDD 407-752-3102

February 22, 2001

Jacksonville Electric Authority
Mr. Timothy Perkins
12 W Church Street ; T-8
Jacksonville Fl 32202

RECEIVED
FEB 2 6 2001
SYSTEM PLANNING

Subject: Consumptive Use Permit #677

Enclosed is a copy of the permit and the forms necessary for submitting information to comply with conditions of the permit as authorized by the St. Johns River Water Management District on February 8, 2000.

Permit issuance does not relieve you from the responsibility of obtaining permits for any federal, state, and/or local agencies asserting concurrent jurisdiction over this work.

The enclosed permit is a legal document and should be kept with your other important records. Please read the permit and conditions carefully since the referenced conditions may require submittal of additional information. All information submitted as compliance with permit conditions must be submitted to the nearest District Service Center and should include the above referenced permit number.

I apologize for the delay in forwarding this information to you and hope that it has not caused any unnecessary inconvenience. If you have any questions, please contact either Caroline Silvers, Jacksonville Service Center at (386) 448-7903 or Lynn Minor, Palatka Service Center at (386) 329-4152.

Sincerely,

Gloria Lewis

Gloria Lewis, Director
Division of Permit Data Services

Enclosures: Permit, Conditions for Issuance, Compliance Forms, Map, Well Tags

Cc: District Permit file

William Kerr, CHAIRMAN MELBOURNE BEACH
Ometrias D. Long, VICE CHAIRMAN APOPKA
Jeff K. Jennings, SECRETARY MAITLAND
Duane Ottenstroer, TREASURER SWITZERLAND
Dan Roach FERNANDINA BEACH
William M. Segal MAITLAND
Otis Mason ST. AUGUSTINE
Clay Albright EAST LAKE WEIR
Reid Hughes DAYTONA BEACH

WATER MANAGEMENT DISTRICT

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 SUNCOM 860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-

SERVICE CENTERS

618 E. South Street
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407-897-4300
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7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
TDD 904-448-7900

PERMITTING
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-722-5368

OPERATIONS
2133 N. Wickham Road
Melbourne, Florida 32935-8
407-752-3100
TDD 407-752-3102

February 8, 2000

Jacksonville Electric Authority
Mr Timothy Perkins
21 W Church St T-8 ST
Jacksonville, FL 32202

SUBJECT: Consumptive Use Permit Number 677
Jacksonville Electric Authority

Dear Sir/Madam:

Enclosed is your permit and the forms necessary for submitting information to comply with conditions of the permit as authorized by the St. Johns River Water Management District on February 08, 2000.

Permit issuance does not relieve you from the responsibility of obtaining permits from any federal, state and/or local agencies asserting concurrent jurisdiction over this work.

The enclosed permit is a legal document and should be kept with your other important records. Please read the permit and conditions carefully since the referenced conditions may require submittal of additional information. All information submitted as compliance with permit conditions must be submitted to the nearest District Service Center and should include the above referenced permit number.

Please be advised that the period of time within which a third party may request an administrative hearing on this permit may not have expired by the date of issuance. A potential petitioner has twenty-six (26) days from the date on which the actual notice is deposited in the mail, or twenty-one (21) days from publication of this notice when actual notice is not provided, within which to file a petition for an administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes. Receipt of such a petition by the District may result in this permit becoming null and void.

Sincerely,

Gloria Lewis, Director
Permit Data Services Division

Enclosures: Permit, Conditions for Issuance, Compliance Forms, Map,Well Tags

cc: District Permit File

Agent: Mr Timothy E Perkins
21 W. Church St., T-8 St.
Jacksonville, FL 32202-3139

William Kerr, CHAIRMAN MELBOURNE BEACH
Ometrias D. Long, VICE CHAIRMAN APOPKA
Jeff K. Jennings, SECRETARY MAITLAND
Duane Ottenstroer, TREASURER SWITZERLAND
Dan Roach FERNANDINA BEACH
William M. Segal MAITLAND
Otis Mason ST. AUGUSTINE
Clay Albright EAST LAKE WEIR
Reid Hughes DAYTONA BEACH

PERMIT NO. s
PROJECT NAME: Jacksonville Electric Authority

DATE ISSUED: February 3, 2000

A PERMIT AUTHORIZING:

The District authorizes JEA, as limited by the attached conditions, to use of 23,797.80 millior gallons per year of ground water from the Floridan Aquifer to serve anestimated population of 325,800 people located in the North Grid service area and 19,198.90 million gallons per year of ground water from the Floridan aquifer to serve an estimated population of 307,100 people located in the South Grid service area.

LOCATION:

Site: North Grid
Duval County
Site: South Grid
Duval County

Section(s):	49	Township(s):	1S	Range(s):	26E
	25, 44, 45, 46, 47		2S		26E
	44, 52		2S		27E
	29, 32, 38		2S		28E
	13, 25, 31, 40		3S		27E
	1		3S		28E
	14		4S		26E
	5, 7, 40, 43, 46		4S		27E

ISSUED TO:
Jacksonville Electric Authority
21 W Church St
Jacksonville, FL 32202

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all maps and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights of privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes and 40C-1, Florida Administrative Code.

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated February 8, 2000

AUTHORIZED BY: St. Johns River Water Management District
Department of Resource Management

By: _____
Hal Wilkening
Director

By: _____
Henry Dean
sitant Secretary

Late Filed Exhibit 34
Docket No. 990696-WS
Page 3

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 677
JACKSONVILLE ELECTRIC AUTHORITY
DATED FEBRUARY 8, 2000

1. District Authorized staff, upon proper identification, will have permission to enter, inspect and observe permitted and related facilities in order to determine compliance with the approved plans, specifications and conditions of this permit.

2. Nothing in this permit should be construed to limit the authority of the St. Johns River Water Management District to declare a water shortage and issue orders pursuant to Section 373.175, Florida Statutes, or to formulate a plan for implementation during periods of water shortage, pursuant to Section 373.246, Florida Statutes. In the event a water shortage, is declared by the District Governing Board, the permittee must adhere to the water shortage restriction as specified by the District, even though the specified water shortage restrictions may be inconsistent with the terms and conditions of this permit.

3. Prior to the construction, modification, or abandonment of a well, the permittee must obtain a Water Well Construction Permit from the St. Johns River Water Management District, or the appropriate local government pursuant to Chapter 40C-3, Florida Administrative Code. Construction, modification, or abandonment of a well will require modification of the consumptive use permit when such construction, modification or abandonment is other than that specified and described on the consumptive use permit application form.

4. Leaking or inoperative well casings, valves, or controls must be repaired or replaced as required to eliminate the leak or make the system fully operational.

5. Legal uses of water existing at the time of the permit application may not be interfered with by the consumptive use. If unanticipated interference occurs, the District may revoke the permit in whole or in part to curtail or abate the interference unless the permittee mitigates for the interference. In those cases where other permit holders are identified by the District as also contributing to the interference, the permittee may choose to mitigate in a cooperative effort with these other permittees. The permittee must submit a mitigation plan to the District for approval prior to implementing such mitigation.

6. Off-site land uses existing at the time of permit application may not be significantly adversely impacted as a result of the consumptive use. If unanticipated significant adverse impacts occur, the District shall revoke the permit in whole or in part to curtail or abate the adverse impacts, unless the impacts can be mitigated by the

permittee.

7. The District must be notified, in writing, within 30 days of any sale, conveyance, or other transfer of a well or facility from which the permitted consumptive use is made or within 30 days of any transfer of ownership or control of the real property at which the permitted consumptive use is located. All transfers of ownership or transfers of permits are subject to the provisions of section 40C-1.612, Florida Administrative Code.

8. A District-issued identification tag shall be prominently displayed at each withdrawal site by permanently affixing such tag to the pump, headgate, valve or other withdrawal facility as provided by Section 40C-2.401, Florida Administrative Code. Permittee shall notify the District in the event that a replacement tag is needed.

9. If the permittee does not serve a new projected demand located within the service area upon which the annual allocation was calculated, the annual allocation will be subject to modification.

10. Landscape irrigation is prohibited between the hours of 10:00 a.m. and 4:00 p.m., except as follows:

a) Irrigation using a micro-irrigation system is allowed anytime.

(b) The use of reclaimed water for irrigation is allowed anytime, provided appropriate signs are placed on the property to inform the general public and District enforcement personnel of such use. Such signs must be in accordance with local restrictions.

(c) Irrigation of, or in preparation for planting, new landscape is allowed any time of day for one 30 day period provided irrigation is limited to the amount necessary for plant establishment.

(d) Watering in of chemicals, including insecticides, pesticides, fertilizers, fungicides, and herbicides when required by law, the manufacturer, or best management practices is allowed anytime within 24 hours of application.

(e) Irrigation systems may be operated anytime for maintenance and repair purposes not to exceed ten minutes per hour per zone.

11. If chemicals are to be injected into the irrigation system, the permittee shall install and maintain a backflow prevention device on all wells or surface pumps that are connected to the irrigation system.

12. All submittals made to demonstrate compliance with this permit must include the permit number 677 plainly labeled.
(South Grid)

13. This permit will expire 10 years from the date of issuance. (South Grid)

14. South Grid
Maximum annual ground water withdrawals from the Floridan aquifer on the South Grid, as listed on the application, for household/commercial industrial use must not exceed:
13,304.00 million gallons in 2000,
13,698.00 million gallons in 2001,
14,092.00 million gallons in 2002,
14,486.00 million gallons in 2003,
14,881.00 million gallons in 2004,
15,275.00 million gallons in 2005,
15,669.00 million gallons in 2006,
16,063.00 million gallons in 2007,
16,457.00 million gallons in 2008,
17,279.00 million gallons from 2009 through February 8, 2010.
(South Grid)

15. Maximum annual ground water withdrawals, from South Grid wells, as listed on the application, for unaccounted for water losses must not exceed:

1,478.25 million gallons in 2000,
1,522.05 million gallons in 2001,
1,565.85 million gallons in 2002,
1,609.65 million gallons in 2003,
1,653.45 million gallons in 2004,
1,697.25 million gallons in 2005,
1,741.05 million gallons in 2006,
1,784.85 million gallons in 2007,
1,872.45 million gallons in 2008,
1,919.90 million gallons from 2009 through February 8, 2010.
(South Grid)

16. South Grid:
Maximum daily groundwater withdrawals from the Floridan aquifer for essential use (fire protection) must not exceed 146.772 million gallons.
(South Grid)

17. South Grid:
All existing and proposed wells, as listed on the application, are or prior to withdrawals must be equipped with totalizing flow meters. These meters must

maintain 95% accuracy, be verifiable and be installed according to the manufacturer's specifications.
(South Grid)

18. Total withdrawals from each North and South Grid existing and proposed well, as listed on the application, must be recorded continuously, totaled monthly, and reported to the District at least every six months, for the duration of this permit, using District Form Number EN-50. The reporting dates each year will be as follows:

Reporting Period	Report Due Date
January - June	July 31
July - December	January 31

(South Grid)

19. The permittee must maintain all meters. In case of failure or breakdown of any meter, the District must be notified in writing within 5 days of its discovery. A defective meter must be repaired or replaced within 30 days of its discovery. (South Grid)

20. The permittee must have all flow meters checked for accuracy at least once every 3 years within 30 days of the anniversary date of permit issuance, and recalibrated if the difference between the actual flow and the meter reading is greater than 5%. District Form Number EN-51 must be submitted to the District within 10 days of the inspection/calibration. (South Grid)

21. The use of master meters, within the permittee's service area, to supply potable water to any multi-family or multi-unit structure (excluding hospitals, hotels) constructed, developed or completely renovated after January 1, 2000 is prohibited. All individually owned units must be individually metered for water use. (South Grid)

22. Within one year of permit issuance (February 8, 2001), the permittee must have completed and submitted to the District for review and approval the results of individual, system wide water distribution audits for both the North and South Grid water distribution systems over a one year period (2000). Also, the permittee must submit to the District on or prior to February 8, 2001, individual water distribution system audits for the smaller systems, which are not connected to either the North or South Grid systems and are still active (Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village). (South Grid)

23. The permittee must begin conducting and submitting audits, using the Districts current audit form, every two years for permit duration. The annual audits must span a 12-month period from January 1 through December 31 and must be submitted to the District by February 28 of the following years: 2003, 2005, 2007 and 2009 for permit duration. (South Grid)

24. Water Quality Monitoring:

The permitee must collect a water quality sample from each of the active (has been or is projected to be in use within 2 months of sampling date) Floridan aquifer production wells on both the North and South Grids and wells and at the following individual water treatment facilities: Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village in February, May, August, and November of each year for the duration of this permit and each sample must be analyzed for the following:

Chlorides Total Iron
Sulfates Total Hardness
Calcium Magnesium
Field Temperature Sodium
Specific Conductance Potassium
Field pH Carbonate - lab
Bi-carbonate - total alkalinity if pH is 6.9 or lower
Total dissolved solids

Quality Assurance,

Prior to sample collection a minimum of 3-5 casing volumes must be removed from each well.
All major ion analyses must be checked for anion-cation balance and should balance within 5%. It is recommended that duplicates be taken to allow for laboratory errors or data loss. If the data is lost or a laboratory error occurs and the holding time for the duplicate sample has expired, the permittee must resample the well within 15 days of notification from the laboratory that a loss or laboratory error has occurred.

All sampling and water quality analysis shall be performed by organizations with approved comprehensive or generic quality assurance plans (COMQAPS) on file with the Dept. of Environmental Protection or a laboratory having DHRS certification.

A report including all sample analysis, anion-cation balance, chain of custody forms and an evaluation of the data must be submitted to the District within 30 days of receipt from the laboratory.

If the District determines that unacceptable saline water intrusion is occurring as a result of the withdrawals authorized by this permit, the District shall revoke the permit in whole or in part to curtail or abate the saline water intrusion.
(South Grid)

25. The permittee must continue to implement the Water Conservation Plan measures as submitted in the application dated July 1999 and in subsequent submittals to the District. On or before December 31, 2005, the permittee must submit a report documenting what items in the plan have been implemented. (South Grid)

26. The permittee must implement the Ground Water Monitoring Plan in accordance with the schedule and agreed upon design outlined in Exhibit C which summarizes permittee and District correspondence submitted to the District by JEA dated October 11, 1999, October 18, 1999 ,November 15, 1999 and in subsequent email and phone correspondence. In accordance with these documents the permittee must complete the following:

a.) Within 60 days of permit issuance, the permittee must have met with District staff and the USGS to identify which wells on the South Grid or in an individual wellfield located south and east of the St. Johns River, penetrate the lower Floridan aquifer and are candidates for back plugging (trends indicating declining water quality or excessive drawdowns).
b.) Within 6 months of permit issuance (July 11, 2000) the permittee must have submitted to the District, for review and approval, a detailed implementation schedule for back plugging each lower Floridan aquifer well located on the South Grid or in an individual wellfield south and west of the St. Johns River that the District believes is exhibiting signs of declining water quality.
c.) Submit to the District a Ground Water Monitoring Investigation report (3 hard copies) and a transfer of all data (electronically) by April 30 of each year for permit duration in accordance with the guidelines outlined in Exhibit "C".
(South Grid)

27. Within 3 years of permit issuance (December 31, 2002), the permittee must have constructed and have in operation a water transmission line designed to move water from District approved wells west of the St. Johns River to the South Grid. (South Grid)

28. Within 6 months of permit issuance, the permittee must have submitted to the District for approval a Wellfield Operation and Management Plan (WOMP) for wells in both the North and South Grids. The WOMP development must be completed in accordance with the outline provided in the "Supplemental Information for Consumptive Use Permit Application" dated July 1999 and submitted to the District on September 10, 1999. The permittee must commit to the following schedule for assuring all wells are a functioning part of the Supervisory Control and Data Acquisition (SCADA) system:

a.) Within 24 months all wells on the South Grid that will be operational after 2005 will be equipped with the SCADA package described in the permittee's document "Supplemental Information for Consumptive Use Permit Application"

submitted to the District dated July, 1999
b.) Within 36 months of permit issuance (January 2003), at least one well at each of the North Grid plants that will be operational after 2005 must be equipped with and have in operation a SCADA system. All remaining North Grid wells that will remain in operation after 2005 must be equipped within 48 months of permit issuance (January 2004).
(South Grid)

29. The permittee must continue to implement the Mandarin and Arlington East Wastewater Reclamation Facilities (WRF) public access reuse program in accordance with the document "Supplemental Information for Consumptive Use Permit Application" submitted to the District dated July, 1999 and must submit annual reuse plan progress reports for each WRF to the District by October 1 of each calendar year for permit duration. The progress reports must include the following:

a.) Average daily and monthly wastewater flows (mgd) for each WRF
b.) Status of reuse negotiations to include a history of meetings with potential reclaimed water customers, letters, gridlock or impasses that may require District intervention and a list of any potential new customers (Bartram's Park, Nocatee etc.) not included in original plan
(South Grid)

30. The permittee must continue to implement a District approved water conserving rate structure for both JEA residential and commercial customers for permit duration. (South Grid)

31. The permittee must implement the "Mandarin Community Hall Mitigation Plan" as outlined in Exhibit "D", in accordance with the obligations and schedule contained therein. (South Grid)

32. Within 6 months of permit issuance, the permittee must have submitted to the District for review a current listing of all customers (i.e. names and addresses) that on an annual average purchase over 0.100 mgd of raw or treated water from JEA. (South Grid)

33. All submittals made to demonstrate compliance with this permit must include the permit number 677 plainly labeled.
(North Grid)

34. This permit will expire 10 years from the date of issuance. (North Grid)

35. North Grid
Maximum annual ground water withdrawals from the Floridan aquifer on the North Grid, as listed on the application, for household/commercial industrial use must not exceed:

15,111.00 million gallons in 2000,
15,800.00 million gallons in 2001,
16,490.00 million gallons in 2002,
17,180.00 million gallons in 2003,
17,870.00 million gallons in 2004,
18,560.00 million gallons in 2005,
19,118.00 million gallons in 2006,
20,268.00 million gallons in 2007,
20,826.00 million gallons in 2008,
21,418.00 million gallons through February 8, 2010.
(North Grid)

36. Maximum annual ground water withdrawals, from North Grid wells, as listed on the application, for unaccounted for water losses must not exceed

1,679.00 million gallons in 2000,
1,755.00 million gallons in 2001,
18,32.30 million gallons in 2002,
1,908.95 million gallons in 2003,
1,985.60 million gallons in 2004,
2,062.25 million gallons in 2005,
2,124.30 million gallons in 2006,
2,190.00 million gallons in 2007,
2,252.05 million gallons in 2008,
2,379.80 million gallons from 2009 through February 8, 2010.
(North Grid)

37. North Grid:
Maximum daily groundwater withdrawals from the Floridan aquifer for essential use (fire protection) must not exceed 143,568 million gallons.
(North Grid)

38. North Grid:
All existing and proposed wells, as listed on the application, are or prior to withdrawals must be equipped with totalizing flow meters. These meters must maintain 95% accuracy, be verifiable and be installed according to the manufacturer's specifications.
(North Grid)

39. Total withdrawals from each North and South Grid existing and proposed well, as listed on the application, must be recorded continuously, totaled monthly, and reported to the District at least every six months, for the duration of this permit, using District Form Number EN-50. The reporting dates each year will be as follows:

Reporting Period	Report Due Date
January - June	July 31

July - December January 31
(North Grid)

40. The permittee must maintain all meters. In case of failure or breakdown of any meter, the District must be notified in writing within 5 days of its discovery. A defective meter must be repaired or replaced within 30 days of its discovery. (North Grid)

41. The permittee must have all flow meters checked for accuracy at least once every 3 years within 30 days of the anniversary date of permit issuance, and recalibrated if the difference between the actual flow and the meter reading is greater than 5%. District Form Number EN-51 must be submitted to the District within 10 days of the inspection/calibration. (North Grid)

42. The use of master meters, within the permittee's service area, to supply potable water to any multi-family or multi-unit structure (excluding hospitals, hotels) constructed, developed or completely renovated after January 1, 2000 is prohibited. All individually owned units must be individually metered for water use. (North Grid)

43. Within one year of permit issuance (February 8, 2001), the permittee must have completed and submitted to the District for review and approval the results of individual, system wide water distribution audits for both the North and South Grid water distribution systems over a one year period (2000). Also, the permittee must submit to the District on or prior to February 8, 2001, individual water distribution system audits for the smaller systems, which are not connected to either the North or South Grid systems and are still active (Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village). (North Grid)

44. The permittee must begin conducting and submitting audits, using the Districts current audit form, every two years for permit duration. The annual audits must span a 12-month period from January 1 through December 31 and must be submitted to the District by February 28 of the following years: 2003, 2005, 2007 and 2009 for permit duration. (North Grid)

45. Water Quality Monitoring:

The permitee must collect a water quality sample from each of the active (has been or is projected to be in use within 2 months of sampling date) Floridan aquifer production wells on both the North and South Grids and wells and at the following individual water treatment facilities: Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village in February, May, August, and November of each year for the duration of this permit and each sample must be analyzed for the following:

Chlorides Total Iron
Sulfates Total Hardness
Calcium Magnesium
Field Temperature Sodium
Specific Conductance Potassium
Field pH Carbonate - lab
Bi-carbonate - total alkalinity if pH is 6.9 or lower
Total dissolved solids

Quality Assurance

Prior to sample collection a minimum of 3-5 casing volumes must be removed from each well.
All major ion analyses must be checked for anion-cation balance and should balance within 5%. It is recommended that duplicates be taken to allow for laboratory errors or data loss. If the data is lost or a laboratory error occurs and the holding time for the duplicate sample has expired, the permittee must resample the well within 15 days of notification from the laboratory that a loss or laboratory error has occurred.

All sampling and water quality analysis shall be performed by organizations with approved comprehensive or generic quality assurance plans (COMQAPS) on file with the Dept. of Environmental Protection or a laboratory having DHRS certification.

A report including all sample analysis, anion-cation balance, chain of custody forms and an evaluation of the data must be submitted to the District within 30 days of receipt from the laboratory.

If the District determines that unacceptable saline water intrusion is occurring as a result of the withdrawals authorized by this permit, the District shall revoke the permit in whole or in part to curtail or abate the saline water intrusion.
(North Grid)

46. The permittee must continue to implement the Water Conservation Plan measures as submitted in the application dated July 1999 and in subsequent submittals to the District. On or before December 31, 2005, the permittee must submit a report documenting what items in the plan have been implemented. (North Grid)

47. The permittee must continue to implement a District approved water conserving rate structure for both JEA residential and commercial customers for permit duration. (North Grid)

48. Within 6 months of permit issuance, the permittee must have submitted to the District for review a current listing of all customers (i.e. names and

addresses) that on an annual average purchase over 0.100 mgd of raw or treated water from JEA. (North Grid)

49. Within 6 months of permit issuance, the permittee must have submitted to the District for approval a Wellfield Operation and Management Plan (WOMP) for wells in both the North and South Grids. The WOMP development must be completed in accordance with the outline provided in the "Supplemental Information for Consumptive Use Permit Application" dated July 1999 and submitted to the District on September 10, 1999. The permittee must commit to the following schedule for assuring all wells are a functioning part of the Supervisory Control and Data Acquisition (SCADA) system:

a.) Within 24 months all wells on the South Grid that will be operational after 2005 will be equipped with the SCADA package described in the permittee's document "Supplemental Information for Consumptive Use Permit Application" submitted to the District dated July, 1999
b.) Within 36 months of permit issuance (January 2003), at least one well at each of the North Grid plants that will be operational after 2005 must be equipped with and have in operation a SCADA system. All remaining North Grid wells that will remain in operation after 2005 must be equipped within 48 months of permit issuance (January 2004).
(North Grid)

ST. JOHNS RIVER

WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-142
TELEPHONE 904-329-4500 1-800-451-7106 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-450

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
1-877 228-1658
FAX 407-897-4354
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
1 800-852-1563
FAX 904-730-6267
TDD 904-448-7900

PERMITTING
305 East Drive
Melbourne, Florida 32904
407-984-4940
1-800-295 3264
FAX 407-722-5357
TDD 407 722-5368

OPERATIONS
2133 N. Wickham Road
Melbourne, Florida 32935-810
407-752-3100
TDD 407-752-3102

February 8, 2000

Jacksonville Electric Authority
Attn: Tim Perkins, Vice President, Environmental
21 West Church Street
Jacksonville Fl 32202

RECEIVED
FEB 10 1999
ENVIRONMENTAL GROUP

Re: Notice of Board Consideration of Permit Application Number 677 (Formerly Known As 2-031-0076 and 2-031-0084) In Duval County

Enclosed is a courtesy copy of the **second revised** technical staff report (TSR) which states that staff will recommend approval of the application with the conditions as stated in the TSR. The revisions are located in the following section(s) of the technical staff report:

Permit Application Review No. VII

The governing board will consider this application at 1:00 p.m. February 8, 2000, or as soon thereafter as it may come onto be heard at St. Johns River Water Management District, Palatka, FL 32178. Agenda items scheduled for action on February 8, 2000, may be postponed for consideration at the governing board meeting, which begins at 9:00 a.m. on February 9, 2000.

If you have any questions, please contact Caroline Silvers the Jacksonville Service Center at (904) 448-7903.

Sincerely,

Gloria Lewis, Director
Division of Permit Data Services

Cc: District File
Caroline Silvers
Lynn Minor

William Kerr, CHAIRMAN MELBOURNE BEACH
Ometrias D. Long, VICE CHAIRMAN APOPKA
Jeff K. Jennings, SECRETARY MAITLAND
Duane Ottenstroer, TREASURER SWITZERLAND
Dan Roach FERNANDINA BEACH
William M. Segal MAITLAND
Otis Mason ST. AUGUSTINE
Clay Albright EAST LAKE WEIR
Reid Hughes DAYTONA BEACH

CONSUMPTIVE USE TECHNICAL STAFF REPORT
Public Supply and Commercial Industrial Type Uses
~~January 27, 2000~~February 7, 2000
677
(previously City of Jacksonville's 2-031-0076 and 2-031-0084)

OWNER/
APPLICANT: JEA
21 West Church Street
Jacksonville, Florida 32202
Attn: Tim Perkins, Vice President, Environmental
(407) 665-4520

PROJECT NAME: JEA – North and South Grids

LOCATION: Duval County (see Exhibit "A")

WATER USE:

Requested allocation (public supply, 2010):
North Grid - 23,798.00 mgy of ground water from the Floridan aquifer to serve an estimated population of 325,800 people in year 2010
South Grid - 20,000.00 mgy of ground water from the Floridan aquifer to serve an estimated population of 307,100 people in year 2010

Recommended allocation (public supply, 2010):
North Grid - 23,797.8 mgy of ground water from the Floridan aquifer to serve an estimated population of 325,800 people in year 2010
*South Grid – 19,198.*90 mgy of ground water from the Floridan aquifer to serve an estimated population of 307,100 people in year 2010

Based on: Historic use/Future Growth Projections/Proposed Service Area Acquisitions and Staff recommendations

PREVIOUSLY PERMITTED USE:

North Grid - Permit Number 2-031-0084 – Issued to City of Jacksonville
Expiration date: March 11, 1993
Allocation: Public Supply – 14,300.00 mgy of ground water from the Floridan aquifer to serve an estimated population of 316,695 with water for domestic use and for commercial/industrial uses

South Grid - Permit Number 2-031-0076 – Issued to City of Jacksonville
Expiration date: December 13, 1995
Allocation: Public Supply - 14,066.72 mgy of ground water from the Floridan aquifer to serve an estimated population of 217,871 with water for domestic use and for commercial/industrial uses

Fire Protection – 10.00 million gallons per day, maximum

AUTHORIZATION:

The District authorizes JEA, as limited by the attached permit conditions, to use 23,797.80 million gallons per year of ground water from the Floridan aquifer to serve an estimated population of 325,800 people located in the *North Grid* service area *and* 19,198.90 million gallons per year of ground water from the Floridan aquifer to serve an estimated population of 307,100 people located in the *South Grid* service area.

USE STATUS:
This is a renewal and modification of a previously issued permit to combine two existing permits and with a request for an increase in allocation that is based on a projected increase in population.

TIMEFRAMES:
90th Day – March 8, 2000

PROJECT DESCRIPTION:

In May, 1997, JEA (formerly Jacksonville Electric Authority) acquired water and sewer services from the City of Jacksonville's Public Works Division. JEA is now the largest water and sewer provider in Duval County, with the remainder of the County being served by investor-owned, publicly, and privately owned individual wells. JEA serves about 83 percent of the total water and sewer utility customers in Duval County, and also serves parts of Clay and St. Johns Counties.

JEA's water system serves approximately 350,000 water customers and 127,000 sewer customers. JEA's Water and Sewer System currently consists of approximately 115 wells tapping the Floridan Aquifer, 34 water plants, 2,800 miles of water lines, 2,100 miles of collection lines, and five regional wastewater treatment plants.

The applicant is requesting the following: to combine two consumptive use permits (Number 2-031-0084; *North Grid* and Number 2-031-0076; City of Jacksonville's *South Grid*) into one permit (Number 677), to construct additional wells, to increase the allocation to meet future service area demands, and to supply future demands due to utility acquisitions and interconnections.

JEA's service areas consist primarily of two, unconnected water supply distribution systems designated the "*North and South Grids.*" The *North Grid* is the largest of the two service areas and serves the area north and west of the St. Johns River. The *South Grid* serves the area south and east of the St. Johns River (see Exhibit A).

During the last 3 years, JEA began implementing a water facility consolidation plan that resulted from the findings in their Water System Master Plan. This consolidation plan

will ultimately result in the abandonment and construction of numerous water supply wells and the phasing out of older and smaller water treatment plants (WTP).

To meet increasing demands and to address declining water quality on the *South Grid* and in St. Johns County, JEA is proposing to transport water from the *North Grid* to the *South Grid*. This transport will start within 3 years and JEA will construct an interconnection underneath the St. Johns River to begin supplementing the *South Grid*'s Brierwood WTP and, ultimately, the Deerwood WTP.

WATER SUPPLY SYSTEM:

North Grid:
The *North Grid* consists of 9 large WTPs and 6 smaller capacity WTPs for a total of 60 wells. Although JEA has identified general areas for future wellfields and WTPs, no new wells are being proposed for the *North Grid* in this permit application. In concert with their consolidation plan, JEA is proposing to close 8 *North Grid* WTP's and a total of 17 wells will be decommissioned (either abandoned or converted to monitor wells) within the duration of the permit (see Exhibit "B").

South Grid:
The *South Grid* consists of 14 large water treatment plants and 3 smaller capacity plants. Although no new wellfields are proposed within permit duration, JEA is proposing to expand existing *South Grid* wellfields within the next 10 years. Since specific site locations for proposed wells cannot be provided at this time, any new wells on the *South Grid* will be considered in future permit modifications. Also, through JEA's consolidation and regionalization plan, 11 WTP's will be closed or a total of 21 wells will be decommissioned (abandoned or converted to monitor wells) within the permit duration (see Exhibit "B ").

On March 23, 1999, in order to alleviate inadequate pressure problems which resulted in significant risks to public health and safety, JEA applied for a temporary permit to allow for the construction of 12 wells to serve the Brierwood, Community Hall, Deerwood 1, and Ridenour WTP's. All 12 wells have been constructed and have been considered by the District's Governing Board on a month to month basis since April 1999. These wells are included in this permit application.

WATER USE TRENDS:

North Grid

JEA is projecting population increases in the *North Grid* of approximately 10,500 people per year through 2010 or an increase in demand of approximately 4 % per year. The growth demands coupled with the construction of the *North Grid-South Grid*, St. John's River interconnection, which will allow for the transfer of water from the *North Grid* to the *South Grid*, and interconnections with Clay County will begin an accelerated upward trend in future withdrawals.

South Grid

JEA is projecting population increases in the *South Grid* of approximately 7,200 people per year through 2010 or an increase in demand of approximately 2.9 % per year. Growth, the acquisition of other utilities, and the agreement to wholesale water to St. Johns County will result in increased water demands and increased ground water withdrawals from the *South Grid.* In order to minimize the upward migration of water from lower, more saline flow zones, JEA has agreed to commit to a cap or limit on ground water withdrawals from the *South Grid* to no more than 55.0 mgd. This ground water deficit that will result from the capping of withdrawals on the *South Grid* will be compensated for by increased *North Grid* withdrawals and the transfer of water from the *North Grid* to the *South Grid.* In addition, because of the high number of individual or self supply wells utilizing the Floridan aquifer in the vicinity of the Community Hall wellfield, JEA is committing to not increase the wellfields capacity above the current permitted pump capacity of the wellfield (as outlined in Exhibit B).

North Grid	*2000*	*2010*
Population Served	229,900	325,800
Average daily use (mgd)	41.4	58.68
Water Utility daily use (mgd)	4.6	6.52
Total Average Daily Use (mgd)	46.0	65.2
Average gpcd (household)	180	165
Use Classifications:		
Household and Commercial/Industrial:	90%	
Water Utility & Unaccounted Use:	10%	

South Grid	*2000*	*2010*
Population Served	236,800	307,400
Average daily use (mgd)	36.47	47.34
Water Utility daily use (mgd)	4.051	5.26
Total Average Daily Use (mgd)	40.52	52.60
Average gpcd (household)	154	154
Use Classifications:		
Household and Commercial/Industrial:	90%	
Water Utility & Unaccounted Use:	10%	

PERMIT APPLICATION REVIEW:

Section 373.223, Florida Statutes (F.S.), and Section 40C-2.301, Florida Administrative Code (F.A.C.), require an applicant to establish that the proposed use of water:

(a) is a reasonable-beneficial use;
(b) will not interfere with any presently existing legal use of water; and,
(c) is consistent with the public interest.

In addition, the above requirements are further interpreted in the District's Applicant's Handbook: Consumptive Uses of Water, February 8, 1999. District staff has reviewed this consumptive use permit application pursuant to the above-described requirements

and has determined that the application meets the conditions for issuance of this permit. Highlight's of the staff's review is discussed below.

I. Surface Water Resources: In an attempt to locate lower water quality sources, the District's Water 2020 Supply Plan evaluated the St. Johns River (SJR) as a potential alternative source. Although the River divides the *North Grid* and *South Grid*, and is readily available, the water quality in the River prohibits it from being a feasible alternative to a ground water supply at this time. The salinity, due to the river being tidally influenced, the river's tannic color, and the inconsistency of point and non-point waste streams discharging to the river, are primary factors that make use of the River as a potable water supply source undesirable in the next 20 years.

II. Ground Water Quality Impacts:

- *North Grid*
  - Hydrogeology

    The Floridan aquifer on the *North Grid* occurs at a depth ranging from approximately 400 to 600 feet below land surface. It consists of two primary flow zones, the Upper and Lower Floridan aquifers, which are separated by approximately 400 to 500 feet of the lower producing dolomitic/limestone beds. Water quality in both flow zones west of the St. Johns River appears to be stable and exhibits no changes in salinity resultant from localized withdrawals or regional declines. The Upper and Lower Floridan aquifers in this area consist of high yielding, thick fresh water flow zones overlying the highly saline Fernandina permeable zone. North and east of the St. Johns River, several wells not associated with this application have exhibited upward trends in salinity and have been associated with structural and solution features. In order to see if ground water withdrawals are associated with changes in water quality, JEA will continue to conduct quarterly monitoring for all anions-cations indicative of saline water intrusion for the permit duration (see other condition number 13.

  - Aquifer Management (SCADA)

    JEA has agreed to develop and implement a Wellfield Operation and Management Plan for the wells in the *North* and *South Grid*s. The purpose of the Plan will be to manage the ground water resources in a sustainable manner while meeting the water supply needs of JEA's customers. The Plan will provide recommended goals for operation of the JEA production wells based on instantaneous monitoring data obtained from the Supervisory Control and Data Acquisition (SCADA) system. This Plan will function as a real-time management tool for the water plant operators to monitor individual water levels, specific conductivity, flow rates and run times which will be used to develop individual wellfield optimization plans designed to minimize degradation to water quality.

    The objective of the Plan will be to balance production from the water supply wells to address these goals:

- Maintain multiple small cones of depression around the supply wells in lieu of one large cone of depression for as much of the time as possible
- Operate the supply wells at steady rates and avoid excess cycling of pumps
- Preferentially use *North Grid* wells to meet *South Grid* demands once the grid interconnection is operable
- Operationally limit the average day demand (ADF) from selected wellfields located in the *South Grid* once the grid interconnection is operable
- Minimize operating wells that are adjacent
- Minimize operating deep wells or wells with water quality concerns in the *South Grid*

❖ Ground Water Monitoring Plan (GWMP)

In an attempt to enhance existing ground water flow models and monitor the effects of long term pumping and seasonal changes, JEA worked with the District to develop both a Regional, Sub-regional and Production well Ground Water Monitoring Plan (GWMP) (see Exhibit "C").

The data acquired from the monitoring will allow the District to monitor regional aquifer declines as a result of increased demands while the proposed subregional monitoring will allow the District to evaluate the localized relationship between the various flow zones resultant from pumping.

In the Regional GWMP, JEA will make available to the District all wells planned for abandonment for conversion to monitoring wells.

□ *South Grid*

❖ Hydrogeology

The Floridan aquifer at the *South Grid* occurs at a depth ranging from approximately 300 to 500 feet below land surface. It consists of two primary flow zones characterized by different water qualities or salinities, the Upper Floridan aquifer and the Lower Floridan aquifer, which are separated by lower producing dolomitic/limestone beds. Geological investigations of the Floridan aquifer on the *South Grid* indicate a random distribution of structural features that allow for a hydraulic connection between the two primary flow zones of the Floridan aquifer. This connection allows for the mixing of more saline waters from the lower Floridan aquifer with the fresher or more potable water quality of the upper Floridan aquifer. The driving mechanism that determines

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Docket No. 990696-WS
Page 7

whether and how much flow or interchange of waters between the flow zones will occur is the location and geometry of preferential or structurally driven paths and the artesian pressure differential between these 2 primary production or flow zones.

A lowering of the potentiometric level of the upper Floridan aquifer, either as a result of localized wellfield withdrawals or regional declines, increases the pressure differential between the two flow zones allowing more mineralized water from the lower Floridan aquifer to migrate upwards to the Upper Floridan aquifer.

The increased demand associated with growth on the *South Grid* and the large drawdowns associated with wellfield withdrawals has resulted in a number of wells experiencing increasing trends in chloride, sulfate and total dissolved solid concentrations.

IV. Interference with Existing Legal Uses: Prior to this application submittal there have been no complaints to the District associated with JEA's ground water withdrawals. However, on April 16, 1999, the JEA began testing a new well, the Mandarin Community Hall Well Number 5 (see Exhibit "E"), which was put into production on April 30, 1999. Use of this well was authorized by a temporary consumptive use permit. At the time the well was put into service, the Floridan aquifer was experiencing extremely low regional water levels. Shortly after these dates, the District and JEA began receiving complaints from residents in the Mandarin area who had experienced loss of artesian flow or significant declines in water pressure. The number of complaints received by JEA, as of this date, has been approximately 150.

To address the interference caused by Well Number 5 (as required by District rules), JEA has implemented a comprehensive mitigation program and has mitigated over 100 wells either by installation of drop pipe, submersible pumps, or the construction of a new well (see Exhibit "D"). The community's response to the interference has been large and several public workshops have been conducted by JEA to hear community comments and attempt to inform the homeowners of JEA's commitment to mitigate for any interference caused by JEA's withdrawals. Recently, JEA formed the Mandarin Water Action Committee (MWAC) which consists of concerned citizens, the District and JEA representatives. The committee is meeting monthly and is working to come up with a unified resolution to the interference problem that will ensure an adequate water supply is available to the JEA customers while ensuring that no further interference to existing legal users occurs. The number of private residential potable and irrigation wells within a 2.5-mile radius of well number 5 has been estimated to be approximately 1,500 – 1,800. Staff is recommending that JEA be required to mitigate for all interferences to legal existing uses pursuant to District rules caused by JEA's withdrawals.

V. Wetland Impacts: Since all ground water withdrawals are from the highly confined Floridan aquifer in this area, the projected Floridan aquifer withdrawals will have little, if any, effect on water levels in the surficial aquifer and cannot, therefore, impact any wetlands.

VI. Lowest Water Quality Sources:

In 1997, JEA took over the water and sewer business from the City. At that time JEA committed to the construction of a $10 million dollar, 5.0 mgd, 25.0 mile long transmission line to supply reclaimed water from the Mandarin and Arlington East WRF's to various golf courses, recreational and landscape areas on the *South Grid* for irrigation. This pipeline is currently under design and in the permitting stages. Construction began in early 2000. Currently, JEA along with the District has identified potential customers that will be able to accept at least 2.5 mgd average daily flow of reclaimed water. Reclaimed water is scheduled to become available as a commodity from the Mandarin WRF by the end of 2000. Negotiations with potential reclaimed water recipients are continuously ongoing and JEA has tentative agreements to wholesale reclaimed water to both the Bartram Park and Nocatee DRI's. Pursuant to other condition number 19 JEA will be required to provide continual updates to the District on the status of reclaimed water availability and potential customer updates.

VII. Local Sources First:

JEA provides water to a small portion of Clay County (to the Argyle Development), and will provide water to northern St. Johns County in the future. Since this water comes from wells located in Duval County, this transfer of water occurs across county boundaries and is, therefore, subject to the Local Sources First legislation adopted in 1998. Staff have reviewed this project pursuant to the requirements of Local Sources First set forth in subsection 373.223(3), F.S., and have concluded that the proposed withdrawal and use of water to be authorized in this permit meets the requirements of the Local Sources First legislation. Staff's comments regarding the evaluation are contained in Exhibit E. ~~Letters from Clay and St. Johns Counties regarding their acceptance of staff's recommendations are also set forth in Exhibit E.~~

PERMIT DURATION:

The applicant has requested a 20 year permit pursuant to section 373.236(1), Florida Statutes (F.S.) Section 6.5.1 of the Applicant's Handbook, February 8, 1999 ("A.H."), states that a permit shall have a duration of 20 years when requested if the applicant provides reasonable assurance that the proposed use meets the conditions for issuance in section 40C-2.301 F.A.C., and the criteria in Part II of the A.H. for the requested 20 years. Based on staff's review, a permit duration of 10 years is being recommended for this permit. Staff has concluded that 10 years is necessary to allow the District to verify (1) that JEA's withdrawals are not causing or contributing to significant saline water intrusion or other unacceptable environmental and resource impacts, (2) that JEA is implementing the Wellfield Operation and Management Plan

and Ground Water Monitoring Plan described herein, (3) that JEA is implementing all feasible water conservation measures, (4) that JEA has implemented reuse to the extent that is feasible, and (5) that JEA is not causing interference with existing legal uses without mitigation pursuant to District rules.

In concert with the District, JEA will be developing and implementing a major Wellfield Operation and Management Plan designed to optimize safe drawdown levels, well spacing and depths and withdrawal rates for each individual well on both the North and *South Grid.* This Plan, to be implemented over a period of 4 to 5 years, will ultimately allow JEA to minimize water quality impacts to the resource and any potential interference with existing legal users and begin the transfer of water from the North to the *South Grid.*

WATER CONSERVATION:

I. *Audit:*
In 1995, JEA performed an audit for the periods of January 1993 through December 31, 1994 which resulted in the restructuring of their water utility meter reading, accounting and billing procedures and software to allow for improved accountability of water sold and more efficient future audits. The audit identified areas where leak detection/repair would culminate in the greatest reduction in unaccounted for water losses (estimated at 14.8%). Since this date JEA has not updated or performed any subsequent water audits and their unaccounted for water loss is being estimated at 10%.

Pursuant to other condition number 10, JEA has agreed to perform a Water Audit within the first year of permit issuance. Since JEA anticipates that the audit will take approximately six months to perform; one (1) year is being requested for the audit to be performed and a report prepared for submittal to the St. Johns River Water Management District. Thereafter, the District is recommending that JEA update the Water Audit once every two years (see other condition number 12) for permit duration. The applicant is required to implement conservation measures based on the results of this audit (see below).

II. *Leak Detection:*

Upon completion of the last water audit in 1995, JEA entered into a 5-year contract with their consultants to perform leak detection services, reporting and calibration of equipment. The leak detection services and reporting was conducted on up to 2.25 million feet of water main and well headers.

The leak detection services have been prioritized to address those areas indicated by the audit, the age and size of piping and timing with Ground Works projects that will achieve the greatest water savings. In their most recent survey which was performed from December, 1998 through March 26, 1999 a total of 287 miles of pipe were surveyed and a total of 30 leaks were detected and scheduled for repair. This constitutes a total water loss of 155 gallons per minute (gpm) or a total of 0.223 mgd.

The previous 1995 audit estimated that approximately 561.6 million gallons per year was being lost to leaks. JEA's efforts will target 6-inch or greater diameter transmission mains, which have the greatest potential for water losses and JEA may be required to continue the leak/detection program if the audits indicate that the unaccounted for water is greater than 10%.

III. *Meter Replacement:*

JEA contracted with a meter accuracy testing/replacement company for the purpose of providing JEA with meter replacement and other services for a 10-year period. The service began in July 1998 and is scheduled for completion by August 1999. The scope of work includes:

- Meter replacement for 360 large (3-inch and above) or 33% of their large meters
- Meter replacement for 35,000 small (1-inch or less) meters or 25% of their small meters (meters > 12 years old, meters registering no-flow for 3 mos. and meters registering in gallons (JEA uses ccf))

The results of the effort as of June 26, 1999 are as follows:

- Large Meters (3-inch or >): 84% complete
- Small Meters (1-inch or <): 75% complete

IV. *Water Conserving Rate Structure:*

In 1996, JEA adopted a water conserving, inclining block rate structure for residential customers. Along with a monthly base fee for water and sewer, the customers pay a volumetric charge.

V. *Education Efforts:*

JEA has existing and proposed partnerships developed either independently or jointly with other agencies or community outreach groups, whose main focus is solely to ensure that the public is, kept abreast of current water conservation information tips. Examples of JEA's 1998/99 outreach efforts include:

- Expanded partnership with Tree Hill Nature Center to include:
  - Interactive water/wastewater conservation education services to students
  - Distribution site for JEA's water and wastewater education materials
  - Hosting at least 100 teacher workshops on best way to educate students on water/wastewater resource conservation
  - Education on agricultural water conservation techniques
  - Drought-tolerant gardens and workshops on gardening with native plants

- Continued Partnership with The National Theatre for Children, which provides interactive plays about water conservation to students in Jacksonville area schools. Water Conservation workbooks, teachers' guides and posters are included with the program. Last year, more than 100 plays were conducted at area schools.

- Public Service Announcements – water conservation tips are incorporated into JEA's communication plan, which includes public service announcements in both the print and electronic media

- Website – water conservation tips are now integrated into JEA's website

- Statement Messages – water conservation messages are incorporated into their annual calendar of statement messages and printed 2-3 times a year, reching approx. 335,000 customers.

- Power for Pennies – approximately 20% of the topics on this 2-minute television segment focus on water conservation issues. It is produced by JEA and broadcast on WTLV Ch. 12 on Saturday mornings. Reaches approximately 35,000 households/week.

- Community Events – water conservation information materials are made available to the public when JEA participates in various community events. Last year they participated in 3 community events and distributed conservation information to 1,000 individuals. JEA also sponsors Earth Day.

Future programs to be developed and implemented in the 1999/2000 fiscal year include:

- A Water Conservation Passport Contest – this is a water conservation contest that requires Jacksonville area students and their families to employ water conservation measures into order to complete a "Conservation Passport". Completed passports are then entered into a drawing for a prize.

- Museum of Science & History Partnership – JEA is currently exploring a partnership with MOSH that will allow them to create a permanent, interactive water education/conservation exhibit at the museum. Project is anticipated to be completed over a 3-5 year period and remain on display for a minimum of 7 years. This would reach an audience of at least 1.4 million visitors over this period.

WELL INFORMATION: see Exhibit "B"

RECOMMENDATION: Approval

GENERAL CONDITIONS (see condition sheet): 1-9, 13
SPECIAL CONDITIONS (see condition sheet): 6, 7
OTHER CONDITIONS:

1. All submittals made to demonstrate compliance with this permit must include the CUP number **677** plainly labeled on the submittal.

2. This permit will expire 10 years from the date of issuance.

3. *North Grid*

Maximum annual ground water withdrawals from the Floridan aquifer on the *North Grid*, as listed on the application, for household/commercial industrial use must not exceed:

15,111.00 million gallons in 2000,
15,800.00 million gallons in 2001,
16,490.00 million gallons in 2002,
17,180.00 million gallons in 2003,
17,870.00 million gallons in 2004,
18,560.00 million gallons in 2005,
19,118.00 million gallons in 2006,
20,268.00 million gallons in 2007,
20,826.00 million gallons in 2008,
21,418.00 million gallons through February 8, 2010.

South Grid

Maximum annual ground water withdrawals from the Floridan aquifer on the *South Grid*, as listed on the application, for household/commercial industrial use must not exceed:

13,304.00 million gallons in 2000,
13,698.00 million gallons in 2001,
14,092.00 million gallons in 2002,
14,486.00 million gallons in 2003,
14,881.00 million gallons in 2004,
15,275.00 million gallons in 2005,
15,669.00 million gallons in 2006,
16,063.00 million gallons in 2007,
16,457.00 million gallons in 2008,
17,279.00 million gallons from 2009 through February 8, 2010.

4. Maximum annual ground water withdrawals, from *North Grid* wells, as listed on the application, for unaccounted for water losses must not exceed

1,679.00 million gallons in 2000,
1,755.00 million gallons in 2001,
18,32.30 million gallons in 2002,
1,908.95 million gallons in 2003,
1,985.60 million gallons in 2004,
2,062.25 million gallons in 2005,
2,124.30 million gallons in 2006,

2,190.00 million gallons in 2007,
2,252.05 million gallons in 2008,
2,379.80 million gallons from 2009 through February 8, 2010.

5. Maximum annual ground water withdrawals, from *South Grid* wells, as listed on the application, for unaccounted for water losses must not exceed:

1,478.25 million gallons in 2000,
1,522.05 million gallons in 2001,
1,565.85 million gallons in 2002,
1,609.65 million gallons in 2003,
1,653.45 million gallons in 2004,
1,697.25 million gallons in 2005,
1,741.05 million gallons in 2006,
1,784.85 million gallons in 2007,
1,872.45 million gallons in 2008,
1,919.90 million gallons from 2009 through February 8, 2010.

5. *North Grid:*
Maximum daily groundwater withdrawals from the Floridan aquifer for essential use (fire protection) must not exceed 143,568 million gallons.

South Grid:
Maximum daily groundwater withdrawals from the Floridan aquifer for essential use (fire protection) must not exceed 146.772 million gallons.

6. *North Grid:*
All existing and proposed wells, as listed on the application, are or prior to withdrawals must be equipped with totalizing flow meters. These meters must maintain 95% accuracy, be verifiable and be installed according to the manufacturer's specifications.

South Grid:
All existing and proposed wells, as listed on the application, are or prior to withdrawals must be equipped with totalizing flow meters. These meters must maintain 95% accuracy, be verifiable and be installed according to the manufacturer's specifications.

7. Total withdrawals from each *North* and *South Grid* existing and proposed well, as listed on the application, must be recorded continuously, totaled monthly, and reported to the District at least every six months, for the duration of this permit, using District Form Number EN-50. The reporting dates each year will be as follows:

Reporting Period	Report Due Date
January - June	July 31

July - December January 31

8. The permittee must maintain all meters. In case of failure or breakdown of any meter, the District must be notified in writing within 5 days of its discovery. A defective meter must be repaired or replaced within 30 days of its discovery.

9. The permittee must have all flow meters checked for accuracy at least once every 3 years within 30 days of the anniversary date of permit issuance, and recalibrated if the difference between the actual flow and the meter reading is greater than 5%. District Form Number EN-51 must be submitted to the District within 10 days of the inspection/calibration.

10. The use of master meters, within the permittee's service area, to supply potable water to any multi-family or multi-unit structure (excluding hospitals, hotels) constructed, developed or completely renovated after January 1, 2000 is prohibited. All individually owned units must be individually metered for water use.

11. Within one year of permit issuance (February 8, 2001), the permittee must have completed and submitted to the District for review and approval the results of individual, system wide water distribution audits for both the North and *South Grid* water distribution systems over a one year period (2000). Also, the permittee must submit to the District on or prior to February 8, 2001, individual water distribution system audits for the smaller systems, which are not connected to either the *North* or *South Grid* systems and are still active (Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village).

12. The permittee must begin conducting and submitting audits, using the Districts current audit form, every two years for permit duration. The annual audits must span a 12-month period from January 1 through December 31 and must be submitted to the District by February 28 of the following years: 2003, 2005, 2007 and 2009 for permit duration.

13. Water Quality Monitoring:

The permitee must collect a water quality sample from each of the active (has been or is projected to be in use within 2 months of sampling date) Floridan aquifer production wells on both the North and *South Grid*s and wells and at the following individual water treatment facilities: Mayport, Brierwood Old and Plaza, Blanding, Blount Island, District II, JIA, Ortega Airport and Sheffield Village in February, May, August, and November of each year for the duration of this permit and each sample must be analyzed for the following:

Chlorides	Total Iron
Sulfates	Total Hardness

Calcium	Magnesium
Field Temperature	Sodium
Specific Conductance	Potassium
Field pH	Carbonate – lab

Bi-carbonate – total alkalinity if pH is 6.9 or lower
Total dissolved solids

Quality Assurance

Prior to sample collection a minimum of 3-5 casing volumes must be removed from each well.
All major ion analyses must be checked for anion-cation balance and should balance within 5%. It is recommended that duplicates be taken to allow for laboratory errors or data loss. If the data is lost or a laboratory error occurs and the holding time for the duplicate sample has expired, the permittee must resample the well within 15 days of notification from the laboratory that a loss or laboratory error has occurred.

All sampling and water quality analysis shall be performed by organizations with approved comprehensive or generic quality assurance plans (COMQAPS) on file with the Dept. of Environmental Protection or a laboratory having DHRS certification.

A report including all sample analysis, anion-cation balance, chain of custody forms and an evaluation of the data must be submitted to the District within 30 days of receipt from the laboratory.

If the District determines that unacceptable saline water intrusion is occurring as a result of the withdrawals authorized by this permit, the District shall revoke the permit in whole or in part to curtail or abate the saline water intrusion.

15. The permittee must continue to implement the Water Conservation Plan measures as submitted in the application dated July 1999 and in subsequent submittals to the District. On or before December 31, 2005, the permittee must submit a report documenting what items in the plan have been implemented

16. The permittee must implement the Ground Water Monitoring Plan in accordance with the schedule and agreed upon design outlined in Exhibit C which summarizes permittee and District correspondence submitted to the District by JEA dated October 11, 1999, October 18, 1999 ,November 15, 1999 and in subsequent email and phone correspondence. In accordance with these documents the permittee must complete the following:

a.) Within 60 days of permit issuance, the permittee must have met with District staff and the USGS to identify which wells on the *South Grid* or in an individual wellfield located south and east of the St. Johns River, penetrate the lower

Floridan aquifer and are candidates for back plugging (trends indicating declining water quality or excessive drawdowns).
b.) Within 6 months of permit issuance (July 11, 2000) the permittee must have submitted to the District, for review and approval, a detailed implementation schedule for back plugging each lower Floridan aquifer well located on the *South Grid* or in an individual wellfield south and west of the St. Johns River that the District believes is exhibiting signs of declining water quality.
c.) Submit to the District a Ground Water Monitoring Investigation report (3 hard copies) and a transfer of all data (electronically) by April 30 of each year for permit duration in accordance with the guidelines outlined in Exhibit "C".

17. Within 3 years of permit issuance (December 31, 2002), the permittee must have constructed and have in operation a water transmission line designed to move water from District approved wells west of the St. Johns River to the *South Grid.*

18. Within 6 months of permit issuance, the permittee must have submitted to the District for approval a Wellfield Operation and Management Plan (WOMP) for wells in both the North and *South Grid*s. The WOMP development must be completed in accordance with the outline provided in the "Supplemental Information for Consumptive Use Permit Application" dated July 1999 and submitted to the District on September 10, 1999. The permittee must commit to the following schedule for assuring all wells are a functioning part of the Supervisory Control and Data Acquisition (SCADA) system:

a.) Within 24 months all wells on the *South Grid* that will be operational after 2005 will be equipped with the SCADA package described in the permittee's document "Supplemental Information for Consumptive Use Permit Application" submitted to the District dated July, 1999
b.) Within 36 months of permit issuance (January 2003), at least one well at each of the *North Grid* plants that will be operational after 2005 must be equipped with and have in operation a SCADA system. All remaining *North Grid* wells that will remain in operation after 2005 must be equipped within 48 months of permit issuance (January 2004).

19. The permittee must continue to implement the Mandarin and Arlington East Wastewater Reclamation Facilities (WRF) public access reuse program in accordance with the document "Supplemental Information for Consumptive Use Permit Application" submitted to the District dated July, 1999 and must submit annual reuse plan progress reports for each WRF to the District by October 1 of each calendar year for permit duration. The progress reports must include the following:

a.) Average daily and monthly wastewater flows (mgd) for each WRF
b.) Status of reuse negotiations to include a history of meetings with potential reclaimed water customers, letters, gridlock or impasses that may require

District intervention and a list of any potential new customers (Bartram's Park, Nocatee etc.) not included in original plan

c.) Quantity (average daily and monthly) of reclaimed water being provided for public access irrigation

d.) Name and address of reclaimed water customer(s) and quantity (mgd) of reclaimed water being provided to the project

e.) Community outreach program development to educate public on benefits of reclaimed water

20. The permittee must continue to implement a District approved water conserving rate structure for both JEA residential and commercial customers for permit duration.

21. The permittee must implement the "Mandarin Community Hall Mitigation Plan" as outlined in Exhibit "D", in accordance with the obligations and schedule contained therein.

22. Within 6 months of permit issuance, the permittee must have submitted to the District for review a current listing of all customers (i.e. names and addresses) that on an annual average purchase over 0.100 mgd of raw or treated water from JEA.

Silvers

Exhibit "B"

North Grid Wellfield (Large and Small) Inventory

WATER TREATMENT PLANT	WELL I.D.	TOTAL DEPTH *(feet)*	PUMP RATE *(gpm)*	CEASE USE	WELL ADDITIONS	WELL CONVERSION
Argyle	0901	900	1000	2004		
	0902	900	1000	2004		
Blanding	1001	unknown	1300	2003		
	1002	unknown	1300	2003		
Blount Island	B101	unknown				Fire Protec.
	B102	unknown		2000		
	B103	unknown		2000		
	B104	unknown				Fire Protec.
	B105	unknown				Fire Protec.
District II	D301	1000	1000	2000		
Fairfax	0301	1309	2500	2006		
	0302	1320	2000	2006		
	0303	1362	2000	2006		
	0304	1356	1000	2006		
	0305	1280	1500	2006		
	0306	1300	1400	2006		
	0307	1338	1400	2006		
	0308	1365	900	2006		
Highlands	0601	1211	2500			
	0602	1209	2500			
	0603	1296	2500			
	0604	1257	2500			
	0605	1235	2500			
JIA	AP01			2006		
	AP02			2006		
Lakeshore	0501	1318	2000			
	0502	1332	2000			
	0503	1319	2000			
	0504	1332	2400			
	0505	1259	2000			
Main Street	0101	1276	1600			
	0102	1319	2200			
	0103	1282	3000			
	0104	1302	2000			
	0105	1286	1900			
	0107	1303	2000			
	0108	1248	1550			
	0119	1284	2800			
	0120	1282	2800			

WATER TREATMENT PLANT	WELL I.D.	TOTAL DEPTH *(feet)*	PUMP RATE *(gpm)*	CEASE USE	WELL ADDITIONS	WELL CONVERSION
Marietta	0701	1225	2500			
	0702	1228	2900			
	0703	1250	2500			
	0704	1315	2500			
McDuff	0201	1234	2500			
	0202	1324	3000			
	0203	1300	1500			
	0204	1260	1900			
	0205	1320	2000			
	0206	1303	2000			
Norwood	0401	1341	2250	2006		
	0402	1303	2250	2006		
	0403	1235	2250	2006		
	0404	1200	2700	2006		
Ortega Airport	OA01	unknown	600	2000		
	OA02	unknown	Out service	2000		
Sheffield Village	D101	750	300	2000		
	D102	750	300	2000		
Southwest	0801	1180	3000			
	0802	1162	3000			
	0803	1240	3000			

Exhibit "B"

South Grid Wellfield (Large and Small) Inventory

WATER TREATMENT PLANT	WELL I.D.	TOTAL DEPTH *(feet)*	PUMP RATE *(gpm)*	CEASE USE	WELL ADDITIONS	WELL CONVERSION OR MODIFICATION
Arbor Point	N101	835	1600	2001		
**Arlington*	5402	1350				
	5403	1105				
	5404	814				
	5405	1117				Backplug 2001
Brierwood	01	1100	2500		1998	
	02	1100	2500		1998	
	03	1100	2500		1998	
	04	1100	2500		1999	
	05	1100	2500		1999	
Brierwood (old)	1D01	1104	1650	2000		
	1D02	705	925	2000		
Brierwood Plaza	1D03	865	500	2000		
Community Hall	M501	624	1000			
	M502	900	1000			
	M503	1225	2500			
	M504	1225	2500			
	M505	1100	2000		1999	
Deerwood I	5601	1014	1000	2001		
	5602	1000	2000	2001		
Deerwod 3	5701	980	2000			
	5702	1198	2500			
	5703	1180	2500			
	5704	1000	2500			
	5705	1000	2500			
	5706	970	2500			
Hendricks	5001	1291	2500			
	5002	1297	2500			
	5003	1286	1500			
	5501	1270	1700			
	5502	1262	1700			

Lovegrove	5201	1234	2500	2002		
	5202	1277	2500	2002		
	5203	1005	1400	2002		
	5204	1301	2800	2002		
**Mayport*	8A01	1200	500			
	8A03	1200	500			
Oakridge	5301	1125	2500			Backplug 2000
	5302	1179	2500			Backplug 2001
	5303	1185	Monitor Well			
	5304	1276	2200			Monitor Well ?
	5305	1093	2500			Backplug 2001

WATER TREATMENT PLANT	WELL I.D.	TOTAL DEPTH *(feet)*	PUMP RATE *(gpm)*	CEASE USE	WELL ADDITIONS	WELL CONVERSION
Pickwick	M101	1000	1000	2002		
	M102	680	850	2002		
	M103	700	1000	2002		
	M104	1004	1000	2002		
	M105	1000	1500	2002		
Ridenour	5901	900	2500		1998	
	5902	900	2500		1998	
	5903	920	2500		1997	
Riveroaks	5101	1500	Plugged			
	5102	1343	1900			
	5104	1348	500			
	5105	1062	700			
	5107	1012	1500			
	5108	1296	1500			
	5110	1288	2500			
Southeast	5801	870	2500			
	5802	893	2500			
Sunni Pines	N301	782	1000			
	N302	837	1000			

Exhibit "C"
JEA CUP Monitoring
December 13, 1999

Regional Monitoring

The JEA shall make available to the District all wells planned for abandonment for conversion to regional monitoring wells as requested by the District.

Subregional Monitoring

Monitoring of water levels and quality at each JEA wellfield will be done through monitoring of the production wells and dedicated monitoring well(s). There are three goals of the monitoring. The goals are: (1) determining the effects of wellfield pumpage on the possible movement of lower quality waters into the wellfield: (2) to provide early warning of movement of lower quality waters into the wellfield: and (3) to provide information to document the draw down effects of each wellfield.

All production wells will be monitored via the Supervisory Control and Data Acquisition (SCADA) system as described in the September 10, 1999 Supplemental Information Packet (SIP). Dedicated monitor wells will be monitored by hand or recorder depending on the frequency of measurements. Dedicated monitor wells which require daily monitoring will be equipped with recorders (SCADA or something else). Wells which require less frequent monitoring will be equipped with recorders (SCADA or something else), or measured by manual or other acceptable methods at JEA discretion.

Production well monitoring
Within 3 months of permit issuance (May 8, 2000), the permittee must have performed and submitted to the District for approval an evaluation of all (North & South Grid) production wells to determine which ones can potentially be used for long-term water level monitoring. Within 3 months of the District's approval of the findings, the permittee will make the necessary modifications on the selected wells, which will require manual water level measurements.

Within 24 months of permit issuance (February 8, 2002), all of the wells on the South grid that will be operational after 2005 will be equipped with the SCADA monitoring as described in the SIP. Within 36 months of issuance (February 8, 2003), one well at each of the North grid plants that will be operational after 2005 will be equipped with SCADA monitoring. The rest of the North grid wells to remain in operation after 2005 will be equipped within 48 months of permit issuance (February 8, 2004).

Monitoring of new production wells (via SCADA) must be undertaken as wells are brought on line. All production wells will be monitored quarterly for water quality (major cations and anions as done previously).

The SCADA system will monitor the following to be reported to the District:

1. Conductivity , hourly instantaneous, ± 20 (umhos/cm @ 25C)
2. Flowrate, daily total , ±5% (accuracy of the meter)
3. Water level, hourly instantaneous (NGVD), ±0.1 foot
4. Well pump run time, daily, ±5%

Within 1 month of permit issuance (February 11, 2000) monthly water level measurements (NGVD, ±0.01 foot) will be taken in all permitted wells without SCADA monitoring (even if they are to be abandoned by 2005) until SCADA is installed on the well, or it is abandoned. A notation will be made for each measurement as to whether or not the pump is running.

It is assumed from previous conversations with JEA staff that only 80% of the production wells in a wellfield will be in use at any one time. Thus at least one production well will not be in use and 'static' water levels in the wellfield can be obtained from these wells.

No solely lower Floridan aquifer production wells will be permitted.

Dedicated monitoring

For a new wellfield the dedicated monitoring program (can using existing wells if approved by District and are in vicinity of proposed wellfield, are no longer in use, are comparable in depth and constructed in accordance with Chapter 40C-3) would be fully operational 12 months prior to the start of operations of the wellfield. Water level monitoring would be monthly until the wellfield is in operation and recorders or SCADA (at JEA discretion). Water quality monitoring (after initial sampling at the end of construction) would be initiated within one week of wellfield startup.

Within 6 months of permit issuance (July 11, 2000) the permittee must have submitted to the District, for review and approval, a detailed implementation schedule for implementation of a wellfield (subregional) monitoring plan as outlined in this attachment. The plans will include, but not be limited to:

1. Estimation of the 2010 boundaries of the cones of depression of each wellfield.
2. Regional and wellfield maps showing the locations of existing production wells and existing or proposed monitor wells.
3. Detailed well information to include total depth, casing depth and diameter or all wells and maximum pumpage of production wells.
4. Frequency, method, and accuracy of the data collected
5. QA methodology
6. Data storage and transmittal methodology.

South Grid

At wellfields in the South Grid (those located south and east of the St. Johns River) that will be kept after 2005, JEA must convert an existing production well (or construct a new monitoring well, where necessary) to monitor the lower Floridan aquifer within the wellfield cone of depression.

Within 60 days of permit issuance, the permittee must have met with District staff and the USGS to identify which wells on the South Grid which penetrate the lower Floridan aquifer shall be back plugged.

North Grid

At 2 wellfields in the North Grid (those located north and west of the St. Johns River) that will be kept after 2005, JEA must convert existing production wells (or construct new monitoring wells, where necessary) to monitor the lower and upper Floridan aquifers with in the wellfield cone of depression (a total of 2 wells per wellfield). In the 2 wellfields equipped with the dedicated monitor wells an Aquifer Performance Test of 36 hours minimum duration will be conducted. The aquifer performance tests designed to test the mid-zone will be conducted on wells that are only open to the mid-zone. The mid-zone is defined by the USGS as the upper zone of the Lower Floridan aquifer. Wells penetrating the lower Floridan aquifer in the North Grid which show declining water quality shall become candidates for back plugging.

Water levels will be measured daily and water quality samples will be taken quarterly (the same analyses as on the production wells will be performed). The same data collection criteria will be applied to the dedicated monitoring wells as outlined in the SIP, Aquifer Management Plan, for the production wells.

Transfer of the data to the District

The data from the SCADA system, other recorders, manual water level measurements, pump status, and water quality analyses shall be submitted to the District via electronic data transfer (email, magnetic, or optical media) by spreadsheets, or comma delimited files on an annual frequency. A report showing period of record (monthly medians high and low, or quarterly values) and annual (instantaneous, daily, monthly or quarterly as collected) water levels, water quality, pump run time, and pumpage for each monitor and production well shall be submitted annually to the District. A good example of the report format would be the U.S. Geological Survey's annual wellfield report for the City of Cocoa Beach.

Exhibit "D"
Community Hall WTP Well No. 5 Mitigation Plan

1. JEA will conduct a well survey of all JEA electric customers within 2.5 miles of the Community Hall Water Treatment Plant's Well No. 5 identified as potential self supply well owners based on JEA electric and water account records. This survey will be initiated on January 15th, 2000 and completed by March 31st, 2000. The survey will delineate well location, well owner, well diameter and well depth. The survey results will be submitted to the St. Johns River Water Management District by April 30th, 2000.

2. JEA will mitigate all Floridan aquifer wells within 2.5 miles of Well No. 5 which are experiencing interference as defined by District rules due to changes in aquifer water levels. This mitigation will be performed for a period of one year, beginning on April 16th, 1999, the date that Well No. 5 was placed in service, without evaluating whether JEA is the cause of the water level changes impacting the wells. JEA will continue to be responsible for any ongoing mitigation requirements for all wells that are identified during this first one-year period. After one year, JEA will mitigate additional wells only when those wells exhibit a decrease in the withdrawal capability. Wells constructed prior to Well No. 5 that are found to have been interfered with pursuant to District rules due to impacts directly attributable to Well No. 5 will be mitigated by JEA in perpetuity. JEA is initially mitigating all free-flowing Floridan aquifer wells that experienced pumping or reduced flow or pressure problems and that are within 2.5 miles of Well No.5. ~~Based on JEA's focus on community service and good stewardship, JEA decided to initially mitigate wells that are outside Well No. 5's cone of influence if they are within the 2.5 mile radius described above.~~

3. JEA will prepare and maintain a summary document listing all well owners mitigated by JEA. The summary will include well location, well owner, telephone number, well diameter, well depth (where available), and a description of the specific mitigation required and the cost of mitigation. The summary will be provided to the St. Johns River Water Management District by March 31st, 2000, and will be provided every year thereafter by the month of March for the duration of the permit.

4. JEA will conduct a well field pump test to better characterize and predict the additional effect Well No. 5 has had on the Floridan aquifer in the vicinity of the Community Hall well field. JEA will prepare a report summarizing the findings of this test and submit the findings to the St. Johns River Water Management District by April 30th, 2000.

5. JEA will establish a monitoring well network in the Community Hall well field which includes an upper zone Floridan aquifer well(+/- 600 feet), a lower zone Floridan aquifer well(+/-1,100 feet), an intermediate aquifer well (+/- 120 feet) and a surficial aquifer well (+/- 50 feet). These wells will be constructed and placed in service by

October 1st, 2000. JEA will monitor the water levels in these wells on a monthly basis. Monitoring data will be reported to the St. Johns River Water Management District on an annual basis by fiscal year. The annual report will be submitted to the District by November 1st each year for the preceding fiscal year ending on September 30th.

6. JEA will bear the full capital cost of all well mitigation. In addition, JEA will maintain the pumps installed by JEA to mitigate previously free flowing wells in perpetuity, exclusive of wells or pumps damaged by the well owner through improper operation or maintenance practices. JEA will establish administrative procedures to ensure that owners of previously free flowing wells are made whole for all costs that are due to JEA's interference, including well maintenance and power costs.

7. JEA will distribute door hangers in the 32223 zip code area notifying Mandarin residents of JEA's well mitigation program and informing them of how to contact JEA regarding well mitigation problems.

Definitions:

Pre-existing wells: Those wells existing at the time of application for the initial consumptive use permit..

Floridan Aquifer: A sequence of consolidated carbonate rocks underlying the surficial aquifer system and overlain by the Hawthorne Formation. The top of the Floridan Aquifer system is generally below 400 feet in the Mandarin area. A Floridan well is a well which penetrates the top of this system.

Late Filed Exhibit