

7  
ORIGINAL

DOCKET NO. 990696-WS - APPLICATION FOR ORIGINAL CERTIFICATES TO OPERATE WATER AND WASTEWATER UTILITY IN DUVAL AND ST. JOHNS COUNTIES BY NOCATEE UTILITY CORPORATION.

DOCKET NO. 992040-WS - APPLICATION FOR CERTIFICATES TO OPERATE A WATER AND WASTEWATER UTILITY IN DUVAL AND ST. JOHNS COUNTIES BY INTERCOASTAL UTILITIES, INC.

WITNESS: DIRECT TESTIMONY OF CAROLINE SILVERS, APPEARING ON BEHALF OF STAFF

DATE FILED: MAY 1, 2000

DOCUMENT NUMBER - DATE

05357 MAY-18

FPSC-RECORDS/REPORTING

1 DIRECT TESTIMONY OF CAROLINE SILVERS

2 Q. Please state your name and business address.

3 A. My name is Caroline Silvers, and I am the lead hydrologist for the St.  
4 Johns River Water Management District's (SJRWMD or District) Jacksonville  
5 Service Center and officially hold the title of Hydrologist IV P.G.. My  
6 address is 7775 Baymeadows Way, Suite 102, Jacksonville, Florida 32256.

7 Q. Please state a brief description of your educational background and  
8 experience.

9 A. I have a Bachelor of Science in Geology (1980) from James Madison  
10 University. I was a Senior Geophysicist, employed by LANDMARK GRAPHICS  
11 CORPORATION (6/84 - 10/84) where I contributed geological and geophysical  
12 expertise towards development of seismic stratigraphic software for use by a  
13 company which manufactured 3D microcomputer graphic workstations now used by  
14 oil industries worldwide. I also designed software architecture to illuminate  
15 structural and tectonic features indicative of hydrocarbon traps, and worked  
16 closely with programmers to ensure accuracy of geophysical functions and ease  
17 of software design. I marketed Landmark Workstation by providing  
18 demonstrations and training to exploration geophysicists with major oil  
19 companies. I was a geophysicist, employed by DIGICON GEOPHYSICAL CORPORATION  
20 (2/81 - 5/84) where I enhanced land and off-shore gas/oil prospect seismic  
21 data for Marathon Oil. I evaluated, tested, and presented newly developed  
22 advanced geophysical software. I also investigated geophysical seismic  
23 modeling problems for sixty geophysicists.

24 Q. How long have you been employed by the SJRWMD?

25 A. It will be 15 years in August, 2000.

1 Q. What are your general responsibilities at the SJWMD?

2 A. My responsibilities include processing complex and resource sensitive  
3 consumptive use permits for the five county Jacksonville Service Center area.  
4 I coordinate multi-party resource and reuse negotiations and mediate divergent  
5 interests among regulatory agencies, developers, utilities, industry,  
6 consultants, and local government. I provide daily supervision and technical  
7 support for the Jacksonville Service Center to two consumptive use permitting  
8 hydrologists, water use compliance and well construction staff. I work  
9 closely with the District surface water engineers and environmental  
10 specialists to incorporate storm water treatment design aspects that minimize  
11 ground water demands and wetland impacts. I collaborate with the District  
12 Ground Water Modeling Group, USGS, Lower Basin SWIM Program, the Florida  
13 Department of Environmental Protection (FDEP) and local government's technical  
14 staff to ensure coordination and consistency with District and other agency  
15 objectives and priorities. I am an active rule development participant (Water  
16 Conservation rule, augmentation rule) and on agency reuse committees.

17 Q. What is the purpose of your testimony in this docket?

18 A. The purpose of my testimony is to identify the concerns the SJRWMD staff  
19 has with respect to the provision of water service within the area included  
20 in the original certificate application of Nocatee Utility Corporation (NUC).  
21 My testimony will address the extent to which NUC, JEA, and Intercoastal  
22 Utilities, Inc. (Intercoastal) are capable of providing potable water service  
23 to the Nocatee development in a manner that is consistent with the goals and  
24 objectives of the SJRWMD.

25 Q. Would you first discuss the issues of concern for the SJRWMD staff that

1 | relate to the provision of potable water service by any utility in the  
2 | District?

3 | A. Yes. The District is primarily concerned with ensuring the availability  
4 | of an adequate and affordable supply of water for all reasonable-beneficial  
5 | uses while protecting the water and related land resources of the District.  
6 | Also, the District is concerned with protecting existing surface and ground  
7 | water quality from degradation and, where appropriate, improving or restoring  
8 | the quality of water not currently meeting State water quality standards.  
9 | With respect to the concern of water supply, the District, through the  
10 | Consumptive Use Permitting process, evaluates whether the utility's proposed  
11 | use of water can be accomplished without causing unacceptable adverse impacts.  
12 | This process involves evaluating each utility for the following: 1) whether  
13 | the requested use is in such quantity as is necessary for economic and  
14 | efficient utilization (evaluated through audit process); 2) whether the use  
15 | is both reasonable and consistent with the public interest; 3) whether the  
16 | source of water is capable of producing the requested amounts of water; 4) the  
17 | environmental or economic harm caused by the consumptive use permit must be  
18 | reduced to an acceptable amount; 5) all available water conservation measures  
19 | must be implemented unless the applicant demonstrates that implementation is  
20 | not economically, environmentally or technologically feasible; 6) when  
21 | reclaimed water is readily available it must be used in place of higher  
22 | quality water sources unless the applicant demonstrates that it is not  
23 | economically, environmentally or technologically feasible; 7) the lowest  
24 | acceptable water quality source, including reclaimed water must be utilized  
25 | for each consumptive use; 8) the consumptive use should not cause significant

1 | saline water intrusion or further aggravate existing saline water intrusion  
2 | problems; 9) the water quality of the source of the water should not be  
3 | seriously harmed by the consumptive use.

4 | Q. Is the area included in NUC's original certificate application located  
5 | within a Priority Water Resource Caution Area?

6 | A. Yes. A Priority Water Resource Caution Area (PWCA) is defined as an  
7 | area where a needs and sources assessment projects resource problems occur if  
8 | existing public water supply plans were implemented. The southeastern Duval  
9 | and northern St. John's County areas were given this designation because both  
10 | have significant planned growth without an identified source of water supply.

11 | Q. What type of water demand is predicted for this area?

12 | A. Public supply water use is expected to increase in this PWCA area, also  
13 | designated as Work Group V in the Water 20/20 Planning process, from about  
14 | 65.9 million gallons per day (mgd) in 1995, to approximately 112.1 mgd in  
15 | 2020, or about 46 mgd (70 percent). The increase in public supply needs is  
16 | a direct result of increases in population. During the same period, the  
17 | population of St. Johns and Duval Counties is expected to increase by a total  
18 | of about 300,900 people, from 816,500 to 1,117,400. By 2020, all other needs  
19 | are also expected to increase by about 11.2 mgd, except for domestic self-  
20 | supply which is projected to decrease by 4.3 mgd in 2020. Therefore, the net  
21 | change in all other use categories is an expected increase of 7 mgd or 11  
22 | percent by 2020. This means that the total water use in the area of Work  
23 | Group V is expected to rise during the planning period by about 53 mgd to a  
24 | total water use of about 180 mgd.

25 | Q. Are there other findings of the Workgroup that would relate to the

1 ability of NUC, JEA, and Intercoastal to provide water and wastewater service  
2 to that area?

3 A. Yes, JEA and Intercoastal have Consumptive Use Permit (CUP) applications  
4 pending with the SJRWMD. In the permit review process for this area, the  
5 District's emphasis is in evaluating each utility's ability to adequately  
6 supply the projected customer base without resulting in harm to water quality  
7 or to native vegetation. Each utility provides a map defining its service  
8 area, the projected population (for each of next 20 years) within that service  
9 area, the requested allocations in million gallons per year (mgd), and the  
10 sources (ground water, surface water, reclaimed water) that will be used to  
11 satisfy its demands. In addition, utilities conduct Reuse Feasibility  
12 Studies, perform audits of distribution systems, develop or update Water  
13 Conservation Plans, and perform aquifer testing programs. The Workgroup V  
14 Plan also assessed each water plant's design capability to satisfy the  
15 projected 2020 water demand and identified potential physical deficits within  
16 each plant. The plan then developed a matrix of utility-specific options to  
17 meet the anticipated demand by the year 2020. Deficit estimates represent the  
18 difference between projected needs for 2020 and the current permitted  
19 capacity. Intercoastal was estimated to have an average day demand deficit  
20 (ADD) of 2.78 mgd and JEA's ADD was 10.20 mgd. NUC is not yet in operation.

21 Q. What were the utility-specific options for these utilities to meet the  
22 deficits?

23 A. The utility-specific options to meet the demand deficits were the  
24 following. For Intercoastal, the study found that it has existing facilities  
25 that will meet the 2020 ADD needs. Its deficit is based on the permitted

1 wellfield capacity and facilities needed to meet maximum daily demand. A  
2 decrease in the system demand ration, possibly through either additional water  
3 conservation or reuse activities may help in reducing the maximum daily  
4 demand. JEA had the largest percentage of needs and deficits in the Duval  
5 County portion of Work Group V. JEA appears to have most of the facilities  
6 required to meet the projected 2020 needs. However, the needs are large  
7 enough to require the development of other sources. Options include new  
8 wellfields in the north grid portion of the JEA system, an interconnect from  
9 the north to the south grid to convey new supply, surface water supply from  
10 the lower Ocklawaha River, seawater desalting, and the potential of acquiring  
11 other private utilities within the south grid service area around the year  
12 2005.

13 Q. Are there any other concerns the SJRWMD staff have in regard to these  
14 utilities providing service in the Nocatee development that are not identified  
15 in the Workgroup V report, such as the ability of a system to satisfy its  
16 water demands without resulting in harm to water quality or to native  
17 vegetation and the ability of a utility to make reclaimed water available for  
18 reuse?

19 A. In the Workgroup V area, ground water quality changes are occurring  
20 rapidly concurrent with growth and increased withdrawals. In southeast Duval,  
21 the concern is primarily with elevated chloride and sulfate concentrations and  
22 the corresponding upward trends, which are evident in many of the wells. In  
23 northeastern St. Johns County, the primary concern is with elevated chlorides.  
24 In north central to north western St. Johns County the concern is primarily  
25 with elevated sulfate and total dissolved solids concentrations in the

1 Floridan wells and harm to native vegetation from use of the surficial aquifer  
2 wells. In central St. Johns County (location of St. Johns Co. wellfield), the  
3 concern is with elevated chlorides and total dissolved solids in the Floridan  
4 wells and harm to native vegetation from withdrawals from the surficial  
5 aquifer.

6 Q. You mentioned that the use of reclaimed water is considered as part of  
7 your CUP application review process. How much consideration will be given to  
8 the ability of any of the aforementioned utilities to provide reclaimed water  
9 for irrigation or other uses?

10 A. In this area of limited water resources, the ability to make reclaimed  
11 water readily available for both golf courses, residential, and commercial  
12 purposes will be a priority. This area is virtually undeveloped and is a  
13 prime candidate for feasibly constructing dual distribution systems within  
14 each large development. Since outside water use (irrigation) comprises  
15 approximately 50-60% of a residential customer's consumption, it is critical  
16 that lower water quality sources be used to offset what would otherwise be a  
17 potable water demand. The provision of reclaimed water for golf course,  
18 residential, and commercial use in new developments would prevent or delay the  
19 need for locating and developing alternative water supplies. In addition, the  
20 District is focusing heavily on reducing wastewater discharges to the lower  
21 basin of the St. Johns River and Intracoastal Waterway. Reuse implementation  
22 will either eliminate or significantly reduce effluent discharges to the St.  
23 Johns River and Intracoastal Waterway. St. Johns County currently provides  
24 reclaimed water for irrigation use to the World Golf Village and the St. Johns  
25 County Golf Course, and is preparing to expand its wastewater treatment

1 facility (WWTF) and has committed to making 100% of its reclaimed water  
2 available for golf course and landscape irrigation. Intercoastal currently  
3 provides reclaimed water to the Sawgrass Country Club for golf course and  
4 landscape irrigation and can make reclaimed water available to The Plantations  
5 for golf course and landscape irrigation. The County's reuse feasibility  
6 study indicated that any effluent in excess of what it could supply to  
7 Sawgrass could be discharged to the lakes at The Plantations for golf course  
8 irrigation, with any further unused portion being discharged to the  
9 Intracoastal Waterway. JEA is proposing to wholesale approximately 1.0 mgd  
10 of potable water to St. Johns County and will be accepting and treating  
11 wastewater produced from the Nocatee development. JEA also recently acquired  
12 Julington Creek Plantation Utilities in St. Johns County where it is retailing  
13 reclaimed water.

14 Q. Will the District require the Nocatee development to do reuse?

15 A. Yes, it will be evaluated pursuant to Chapter 40C-2.30(f), Florida  
16 Administrative Code.

17 Q. In your comments submitted on Nocatee's Development of Regional Impact  
18 (DRI) submitted at the Department of Community Affairs (DCA), did you state  
19 that NUC will be required to obtain a consumptive use permit pursuant to  
20 Chapter 40C-2.041(g), Florida Administrative Code?

21 A. Yes.

22 Q. Will conservation rates be a requirement of the CUP?

23 A. Yes.

24 Q. Would that mean inclining block rates?

25 A. Typically, but not always. There are various methods of designing

1 conservation rate structures.

2 Q. If NUC will be providing reuse water for all irrigation needs, would  
3 that eliminate the need for inclining block rates, at least initially?

4 A. Not necessarily, but that would be a consideration since a conservation  
5 geared rate structure is typically geared towards outdoor or discretionary  
6 uses.

7 Q. According to NUC's application, there will be many large reclaimed water  
8 users, such as golf courses, parks, common areas, etc., correct?

9 A. Yes.

10 Q. Will these large reclaimed water users be required to apply for a CUP?

11 A. Possibly, if the user requires a back-up source to the reclaimed water  
12 system and that source exceeds the Chapter 40C-2, Florida Administrative Code,  
13 permitting thresholds, a CUP will be required.

14 Q. If, pursuant to the Water Management District Rules, these large users  
15 could show that it was not economically feasible to pay NUC's reuse rates,  
16 would the Water Management District issue a CUP?

17 A. Yes, if the large users satisfied all of the other Reasonable Beneficial  
18 Criteria as outlined in Paragraph 10.3 of the Applicant's Handbook.

19 Q. Is the applicant's determination of economic feasibility final by  
20 statute?

21 A. No, the Water Management District makes the final determination as to  
22 whether or not reuse is economically feasible, not the applicant.

23 Q. Does the Water Management District have more leverage in requiring, or  
24 is it better able to require, a brand new versus established golf course  
25 seeking a CUP to use reclaimed water?

1 A. There is really no difference between new and established golf courses  
2 in the leverage that the District holds to require the acceptance of reclaimed  
3 water for irrigation.

4 Q. Is it important to set rates at levels that will encourage the use of  
5 reclaimed water rather than ground water for irrigation?

6 A. Yes.

7 Q. Do you have any guidance as to what that rate level should be?

8 A. Not specifically.

9 Q. Are you aware that NUC proposes to charge all users \$1.41 per thousand  
10 gallons for reclaimed water in addition to a base facility charge based on  
11 meter size?

12 A. Yes.

13 Q. Is this the highest reuse gallonage charge you have seen in your  
14 District?

15 A. Based on my knowledge of reuse rates in the area, these rates are  
16 substantially higher than what is being charged elsewhere in Northeast  
17 Florida. For example, JEA has a base facility and gallonage charge rate  
18 structure for reuse, that is based on meter sizes. Up to 1-1/2" meters pay  
19 \$0.58 per 100 cubic feet. Meters from 2" to 20" pay \$0.20 per cubic feet.  
20 Some of the golf courses that will be obtaining reclaimed water under this  
21 rate schedule are Deerwood, Deercreek, Mill Cove, Glen Kernan, UNF, Hidden  
22 Hills, and the Dunes. St. Johns County recently changed from a rate of \$3.76  
23 per 1,000 gallons to \$0.16 per 1,000 gallons for all large users. There are  
24 no residential reuse customers. Golf courses in St. Johns County obtaining  
25 effluent at the new rate include World Golf Village, King and Bear, Marsh

1 | Creek and a county owned and operated course. Other golf courses in the  
2 | vicinity obtaining free reclaimed water are Sawgrass, Marsh Landing and  
3 | Players Club. Ponte Vedra has an agreement with United Water Florida, but no  
4 | reuse has been delivered yet. Finally, Clay County Utility Authority charges  
5 | golf courses a reuse rate of \$0.20 per 1,000 gallons.

6 | Q. What concerns do you have regarding NUC's reuse rate?

7 | A. I am concerned that the gallonage charge may be too high to encourage  
8 | reclaimed water use.

9 | Q. Why?

10 | A. It is important that there be incentives for use of reclaimed water,  
11 | especially among large users like golf courses. In this case, projected  
12 | irrigation needs of large users are more than double that of residential  
13 | users. In order for the SJRWMD to achieve the goals of its water supply, it  
14 | is extremely important to divert water usage from ground or surface sources  
15 | to reuse.

16 | Q. In reviewing the NUC development and water use plan, do you see any  
17 | inconsistencies with the goals and objectives of the District's 20/20 water  
18 | supply plan?

19 | A. No, other than the fact that the development plan does not address water  
20 | conservation and the efficient use of reclaimed water.

21 | Q. In reviewing Intercoastal's development and water plan, do you see any  
22 | inconsistencies with the goals and objectives of the District's 20/20 water  
23 | supply plan?

24 | A. No, but in the District's 20/20 Water Use Plan, Intercoastal does not  
25 | address service for any areas outside of its existing service area.

1 Q. Do you have any other comments on the ability of the parties to provide  
2 water service to the area in question?

3 A. It is my opinion that JEA has demonstrated at this time that it can  
4 supply the Nocatee development without resulting in further water quality  
5 degradation or harm to native vegetation if the water supply is from the west  
6 side of the St. Johns River.

7 Also, the District is funding a St. Johns County Regional Reuse Study,  
8 which will take a regional approach to addressing the reuse needs of the  
9 entire County. It will incorporate and address the reuse potential of the  
10 County, the City of St. Augustine and all other private utilities providing  
11 service within the County boundaries (Intercoastal, St. Johns Service Co.,  
12 JEA, and others).

13 Q. Does this conclude your testimony?

14 A. Yes.

15

16

17

18

19

20

21

22

23

24

25