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BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

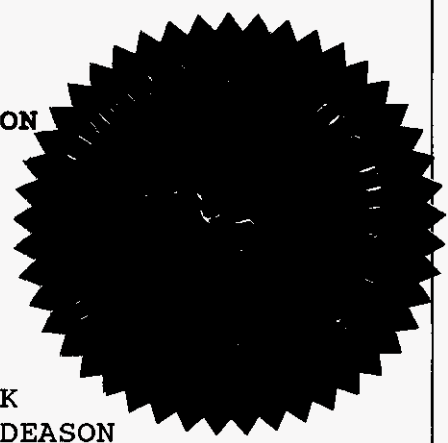
In the Matter of :
Application for a rate increase and :
increase in service availability charges: :
by SOUTHERN STATES UTILITIES, INC. for :
Orange-Osceola Utilities, Inc. in :
Osceola County, and in Bradford, Brevard:
Charlotte, Citrus, Clay, Collier, Duval, :
Highlands, Lake, Lee, Marion, Martin, :
Nassau, Orange, Osceola, Pasco, Putnam, :
Seminole, St. Johns, St. Lucie, Volusia :
and Washington Counties. :

DOCKET NO.
950495-WS

SIXTH DAY - LATE-MORNING SESSION

VOLUME 23

Pages 2417 through 2534



PROCEEDINGS: HEARING
BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA
DATE: Monday, May 6, 1996
TIME: Commenced at 9:00 a.m.
PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida
REPORTED BY: JOY KELLY, CSR, RPR
Chief, Bureau of Reporting
(904) 413-6732
APPEARANCES:

(As heretofore noted.)

05096-96

DOCUMENT NUMBER-DATE

FLORIDA PUBLIC SERVICE COMMISSION MAY-6 96

FPSC-RECORDS/REPORTING

WITNESSES

1	2 NAME	PAGE NO.
3	ROBERTO C. ANSAG	
4	Prefiled Direct Testimony Inserted into the Record by Stipulation	2422
5	W.E.DARLING	
6	Prefiled Direct Testimony Inserted	2447
7	into the Record by Stipulation	
8	DEBRA LAISURE	
9	Prefiled Direct Testimony Inserted	2463
10	into the Record by Stipulation	
11	GEORGE E. SAWAYA	
12	Prefiled Direct Testimony Inserted	2478
13	into the Record by Stipulation	
14	into the Record by Stipulation	
15	TED L. BIDDY	
16	Direct Examination By Mr. Reilly	2491
17	Prefiled Direct Testimony Inserted	2495
18	Cross Examination By Mr. Jacobs	2528
19	Cross Examination By Mr. Twomey	2533

EXHIBITS

20	NUMBER	ID.	ADMTD.
21	169 (Laisure) DL-1 through 3	2421	
22	170 (Composite) (Biddy) TLB-1 through 4, and 3.1 and 4.1	2494	

P R O C E E D I N G S

1
2 (Transcript follows in sequence from
3 Volume 23.)

4 CHAIRMAN CLARK: I guess under my -- the
5 next thing we should probably perhaps do is go ahead
6 and stipulate the rest of the testimony for the
7 witnesses who were from Orlando who were going to
8 appear today. Okay?

9 MS. O'SULLIVAN: From Orlando only or from
10 the entire list? We could do that at the same time if
11 you'd like.

12 CHAIRMAN CLARK: For my purposes, let's just
13 do the Orlando because those are the ones I have
14 gotten out.

15 MS. O'SULLIVAN: All right. The Office of
16 Public Counsel has agreed to stipulate in the
17 remaining witnesses that will be submitted in with the
18 following stipulation, that we'd like to add to the
19 stipulation list. I'm going to read that out loud at
20 this time.

21 CHAIRMAN CLARK: Go ahead.

22 MS. O'SULLIVAN: The primary purpose of the
23 DEP HRS witness testimony is to address the Utility's
24 compliance with state regulations for water and
25 wastewater facilities. As such, these witnesses did

1 not review the transcripts of the service hearings
2 held in this case, review the specific service
3 complaints raised by customers at those hearings or
4 review the service complaints contained in letters
5 sent to the Commission concerning this case which have
6 been placed in the correspondence file maintained by
7 the Division of Records and Reporting.

8 As of March 31st, 1996, over 4,000 letters
9 have been sent to the Commission concerning this case
10 and have been placed in the correspondence side of the
11 file.

12 CHAIRMAN CLARK: And with that
13 understanding, they are stipulating the evidence into
14 the record.

15 MS. O'SULLIVAN: That's correct.

16 CHAIRMAN CLARK: Roberto Ansag,
17 W.E. Darling; Debra Laisure and George Sawaya and we
18 have an exhibit attached to one of those individual's
19 testimony. I'd like to have identified Exhibit
20 No. DL-1 through DL-3 with the next available number.

21 CHAIRMAN CLARK: All right. Is that which
22 is attached to Debora Laisure?

23 MS. O'SULLIVAN: That's correct.

24 CHAIRMAN CLARK: Give me those numbers
25 again.

1 MS. O'SULLIVAN: DL-1 through DL-3.

2 CHAIRMAN CLARK: That will be marked as
3 Exhibit 169 and will be admitted into the record
4 without objection.

5 (Exhibit No. 169 marked for identification.)

6 CHAIRMAN CLARK: Just so the record is
7 clear, at this point we're entering into the record
8 the prefiled direct testimony of Roberto Ansag, W.E.
9 Darling, Debra Laisure and George Sawaya. The
10 testimony of those witnesses will be inserted in the
11 record as though read without objection.

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1 DIRECT TESTIMONY OF ROBERTO C. ANSAG

2 Q. Please state your name and business address.

3 A. Roberto C. Ansag, State of Florida, Department of Environmental
4 Protection (FDEP), 3319 Maguire Boulevard, Suite 232, Orlando, Florida, 32803-
5 3767.

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

8 A. I Graduated from Rollins College with a degree in Environmental Science
9 on February 15, 1983. I have worked with FDEP since 1985 in the Drinking
10 Water Program.

11 Q. By whom are you presently employed?

12 A. I am employed by the Florida Department of Environmental Protection.
13 (FDEP)

14 Q. How long have you been employed with the FDEP and in what capacity?

15 A. I have been employed by FDEP nine years and ten months.

16 Q. What are your general responsibilities at FDEP?

17 A. My general responsibilities are compliance and enforcement in the
18 drinking water program.

19 Q. Are you familiar with the Southern States Utilities, Inc. water systems
20 located in the Central District?

21 A. Yes.

22 Q. Were these systems inspected by you, or by FDEP staff under your
23 supervision?

24 A. Yes, they were inspected by me.

25 Holiday Heights Water System

1 Q. Does the utility have a current construction permit from the FDEP for
2 Holiday Heights Water System (Holiday Heights)?

3 A. No. One is not needed.

4 Q. Are the utility's treatment facilities and distribution system
5 sufficient to serve its present customers?

6 A. Yes.

7 Q. Does the utility maintain the required 20 psi minimum pressure
8 throughout the distribution system?

9 A. Yes.

10 Q. Does the utility have an adequate auxiliary power source in the event
11 of a power outage?

12 A. Yes.

13 Q. Are the utility's water wells for Holiday Heights located in compliance
14 with Rule 62-555, Florida Administrative Code?

15 A. Yes.

16 Q. Does the utility have certified operators as required by Rule 61E12-41,
17 Florida Administrative Code?

18 A. Yes.

19 Q. Has the utility established a cross-connection control program in
20 accordance with Rule 62-555.360, Florida Administrative Code?

21 A. Yes.

22 Q. Is the overall maintenance of the treatment plant and distribution
23 facilities satisfactory?

24 A. Yes.

25 Q. Does the water produced by the utility meet the State and Federal

1 | maximum contaminant levels for primary and secondary water quality standards?

2 | A. Yes.

3 | Q. Does the utility monitor the organic contaminants listed in Rule
4 | 62-550.410, Florida Administrative Code?

5 | A. Yes.

6 | Q. Do recent chemical analyses of raw and finished water, when compared to
7 | regulations, suggest the need for additional treatment?

8 | A. No.

9 | Q. Does the utility maintain the required chlorine residual or its
10 | equivalent throughout the distribution system?

11 | A. Yes.

12 | Q. Are the plant and distribution systems in compliance with all the other
13 | provisions of Chapter 62, Florida Administrative Code, not previously
14 | mentioned?

15 | A. Yes.

16 | Q. Has Holiday Heights been the subject of any FDEP enforcement action
17 | within the past two years?

18 | A. No.

19 | **Holiday Haven Water System**

20 | Q. Does the utility have a current construction permit from the FDEP for
21 | Holiday Haven Water System (Holiday Haven)?

22 | A. No. None is needed.

23 | Q. Are the utility's treatment facilities and distribution system
24 | sufficient to serve its present customers?

25 | A. There is no treatment on site. This is a consecutive water system. The

- 1 master metered primary water source is Astor-Astor Park Water Association.
- 2 Q. Does the utility maintain the required 20 psi minimum pressure
- 3 throughout the distribution system?
- 4 A. Yes.
- 5 Q. Does the utility have an adequate auxiliary power source in the event
- 6 of a power outage?
- 7 A. No. One is not needed.
- 8 Q. Are the utility's water wells for Holiday Haven located in compliance
- 9 with Rule 62-555, Florida Administrative Code?
- 10 A. There are no wells on site.
- 11 Q. Does the utility have certified operators as required by Rule 61E12-41,
- 12 Florida Administrative Code?
- 13 A. Yes.
- 14 Q. Has the utility established a cross-connection control program in
- 15 accordance with Rule 62-555.360, Florida Administrative Code?
- 16 A. Yes.
- 17 Q. Is the overall maintenance of the treatment plant and distribution
- 18 facilities satisfactory?
- 19 A. No treatment on site.
- 20 Q. Does the water produced by the utility meet the State and Federal
- 21 maximum contaminant levels for primary and secondary water quality standards?
- 22 A. Yes.
- 23 Q. Does the utility monitor the organic contaminants listed in Rule
- 24 62-550.410, Florida Administrative Code?
- 25 A. Yes.

1 Q. Do recent chemical analyses of raw and finished water, when compared to
2 regulations, suggest the need for additional treatment?

3 A. No.

4 Q. Does the utility maintain the required chlorine residual or its
5 equivalent throughout the distribution system?

6 A. Yes.

7 Q. Are the plant and distribution systems in compliance with all the other
8 provisions of Chapter 62, Florida Administrative Code, not previously
9 mentioned?

10 A. Yes.

11 Q. Has Holiday Haven been the subject of any FDEP enforcement action within
12 the past two years?

13 A. No.

14 Imperial Mobile Terrace Water System

15 Q. Does the utility have a current construction permit from the FDEP for
16 Imperial Mobile Terrace Water System (Imperial Mobile Terrace)?

17 A. No.

18 Q. Are the utility's treatment facilities and distribution system
19 sufficient to serve its present customers?

20 A. Yes.

21 Q. Does the utility maintain the required 20 psi minimum pressure
22 throughout the distribution system?

23 A. Yes.

24 Q. Does the utility have an adequate auxiliary power source in the event
25 of a power outage?

1 A. Yes.

2 Q. Are the utility's water wells for Imperial Mobile Terrace located in
3 compliance with Rule 62-555, Florida Administrative Code?

4 A. Yes.

5 Q. Does the utility have certified operators as required by Rule 61E12-41,
6 Florida Administrative Code?

7 A. Yes.

8 Q. Has the utility established a cross-connection control program in
9 accordance with Rule 62-555.360, Florida Administrative Code?

10 A. Yes.

11 Q. Is the overall maintenance of the treatment plant and distribution
12 facilities satisfactory?

13 A. Yes.

14 Q. Does the water produced by the utility meet the State and Federal
15 maximum contaminant levels for primary and secondary water quality standards?

16 A. Yes.

17 Q. Does the utility monitor the organic contaminants listed in Rule
18 62-550.410, Florida Administrative Code?

19 A. Yes.

20 Q. Do recent chemical analyses of raw and finished water, when compared to
21 regulations, suggest the need for additional treatment?

22 A. No.

23 Q. Does the utility maintain the required chlorine residual or its
24 equivalent throughout the distribution system?

25 A. Yes.

1 Q. Are the plant and distribution systems in compliance with all the other
2 provisions of Chapter 62, Florida Administrative Code, not previously
3 mentioned?

4 A. Yes.

5 Q. Has Imperial Mobile Terrace been the subject of any FDEP enforcement
6 action within the past two years?

7 A. No.

8 Piney Woods Water System

9 Q. Does the utility have a current construction permit from the FDEP for
10 Piney Woods Water system (Piney Woods)?

11 A. Yes.

12 Q. Are the utility's treatment facilities and distribution system
13 sufficient to serve its present customers?

14 A. Yes.

15 Q. Does the utility maintain the required 20 psi minimum pressure
16 throughout the distribution system?

17 A. Yes.

18 Q. Does the utility have an adequate auxiliary power source in the event
19 of a power outage?

20 A. Yes.

21 Q. Are the utility's water wells for Piney Woods located in compliance with
22 Rule 62-555, Florida Administrative Code?

23 A. Yes.

24 Q. Does the utility have certified operators as required by Rule 61E12-41,
25 Florida Administrative Code?

1 | A. Yes.

2 | Q. Has the utility established a cross-connection control program in
3 | accordance with Rule 62-555.360, Florida Administrative Code?

4 | A. Yes.

5 | Q. Is the overall maintenance of the treatment plant and distribution
6 | facilities satisfactory?

7 | A. Yes.

8 | Q. Does the water produced by the utility meet the State and Federal
9 | maximum contaminant levels for primary and secondary water quality standards?

10 | A. Yes.

11 | Q. Does the utility monitor the organic contaminants listed in Rule
12 | 62-550.410, Florida Administrative Code?

13 | A. Yes.

14 | Q. Do recent chemical analyses of raw and finished water, when compared to
15 | regulations, suggest the need for additional treatment?

16 | A. No.

17 | Q. Does the utility maintain the required chlorine residual or its
18 | equivalent throughout the distribution system?

19 | A. Yes.

20 | Q. Are the plant and distribution systems in compliance with all the other
21 | provisions of Chapter 62, Florida Administrative Code, not previously
22 | mentioned?

23 | A. Yes.

24 | Q. Has Piney Woods been the subject of any FDEP enforcement action within
25 | the past two years?

1 A. No.

2 Silver Lake Estates/Western Shores Water System

3 Q. Does the utility have a current construction permit from the FDEP for
4 Silver Lake Estates/Western Shores Water System (Silver Lake Estates/Western
5 Shores)?

6 A. Yes.

7 Q. Are the utility's treatment facilities and distribution system
8 sufficient to serve its present customers?

9 A. Yes.

10 Q. Does the utility maintain the required 20 psi minimum pressure
11 throughout the distribution system?

12 A. Yes.

13 Q. Does the utility have an adequate auxiliary power source in the event
14 of a power outage?

15 A. No. Need one.

16 Q. Are the utility's water wells for Silver Lake Estates/Western Shores
17 located in compliance with Rule 62-555, Florida Administrative Code?

18 A. Yes.

19 Q. Does the utility have certified operators as required by Rule 61E12-41,
20 Florida Administrative Code?

21 A. Yes.

22 Q. Has the utility established a cross-connection control program in
23 accordance with Rule 62-555.360, Florida Administrative Code?

24 A. Yes.

25 Q. Is the overall maintenance of the treatment plant and distribution

1 facilities satisfactory?

2 A. Yes.

3 Q. Does the water produced by the utility meet the State and Federal
4 maximum contaminant levels for primary and secondary water quality standards?

5 A. Yes.

6 Q. Does the utility monitor the organic contaminants listed in Rule
7 62-550.410, Florida Administrative Code?

8 A. Yes.

9 Q. Do recent chemical analyses of raw and finished water, when compared to
10 regulations, suggest the need for additional treatment?

11 A. No.

12 Q. Does the utility maintain the required chlorine residual or its
13 equivalent throughout the distribution system?

14 A. Yes.

15 Q. Are the plant and distribution systems in compliance with all the other
16 provisions of Chapter 62, Florida Administrative Code, not previously
17 mentioned?

18 A. Yes.

19 Q. Has Silver Lake Estates/Western Shores been the subject of any FDEP
20 enforcement action within the past two years?

21 A. No.

22 Daetwyler Shores Water System

23 Q. Does the utility have a current construction permit from the FDEP for
24 Daetwyler Shores Water System (Daetwyler Shores)?

25 A. It does not.

1 Q. Are the utility's treatment facilities and distribution system
2 sufficient to serve its present customers?

3 A. Yes. This is a consecutive water system, master metered and buying its
4 water from O.U.C.

5 Q. Does the utility maintain the required 20 psi minimum pressure
6 throughout the distribution system?

7 A. Yes.

8 Q. Does the utility have an adequate auxiliary power source in the event
9 of a power outage?

10 A. No. The primary source of power is O.U.C.

11 Q. Are the utility's water wells for Daetwyler Shores located in compliance
12 with Rule 62-555, Florida Administrative Code?

13 A. No. The utility company has no wells on site.

14 Q. Does the utility have certified operators as required by Rule 61E12-41,
15 Florida Administrative Code?

16 A. Yes.

17 Q. Has the utility established a cross-connection control program in
18 accordance with Rule 62-555.360, Florida Administrative Code?

19 A. Yes.

20 Q. Is the overall maintenance of the treatment plant and distribution
21 facilities satisfactory?

22 A. Yes.

23 Q. Does the water produced by the utility meet the State and Federal
24 maximum contaminant levels for primary and secondary water quality standards?

25 A. Yes.

1 Q. Does the utility monitor the organic contaminants listed in Rule
2 62-550.410, Florida Administrative Code?

3 A. No. O.U.C., the primary source, does.

4 Q. Do recent chemical analyses of raw and finished water, when compared to
5 regulations, suggest the need for additional treatment?

6 A. No.

7 Q. Does the utility maintain the required chlorine residual or its
8 equivalent throughout the distribution system?

9 A. Yes.

10 Q. Are the plant and distribution systems in compliance with all the other
11 provisions of Chapter 62, Florida Administrative Code, not previously
12 mentioned?

13 A. Yes.

14 Q. Has Daetwyler Shores been the subject of any FDEP enforcement action
15 within the past two years?

16 A. No.

17 Lake Conway Park Water System

18 Q. Does the utility have a current construction permit from the FDEP for
19 Lake Conway Park Water System (Lake Conway Park)?

20 A. One is not needed.

21 Q. Are the utility's treatment facilities and distribution system
22 sufficient to serve its present customers?

23 A. Yes. There is no treatment on this site. This is a consecutive water
24 system, master metered and buying water from O.U.C.

25 Q. Does the utility maintain the required 20 psi minimum pressure

1 | throughout the distribution system?

2 | A. Yes.

3 | Q. Does the utility have an adequate auxiliary power source in the event
4 | of a power outage?

5 | A. No. It is master metered and buying water from O.U.C., the primary
6 | source which has auxiliary power.

7 | Q. Are the utility's water wells for Lake Conway Park located in compliance
8 | with Rule 62-555, Florida Administrative Code?

9 | A. No. The utility company has no wells on site.

10 | Q. Does the utility have certified operators as required by Rule 61E12-41,
11 | Florida Administrative Code?

12 | A. Yes.

13 | Q. Has the utility established a cross-connection control program in
14 | accordance with Rule 62-555.360, Florida Administrative Code?

15 | A. Yes.

16 | Q. Is the overall maintenance of the treatment plant and distribution
17 | facilities satisfactory?

18 | A. Yes.

19 | Q. Does the water produced by the utility meet the State and Federal
20 | maximum contaminant levels for primary and secondary water quality standards?

21 | A. Yes.

22 | Q. Does the utility monitor the organic contaminants listed in Rule
23 | 62-550.410, Florida Administrative Code?

24 | A. Yes.

25 | Q. Do recent chemical analyses of raw and finished water, when compared to

1 | regulations, suggest the need for additional treatment?

2 | A. No.

3 | Q. Does the utility maintain the required chlorine residual or its
4 | equivalent throughout the distribution system?

5 | A. Yes.

6 | Q. Are the plant and distribution systems in compliance with all the other
7 | provisions of Chapter 62, Florida Administrative Code, not previously
8 | mentioned?

9 | A. Yes.

10 | Q. Has Lake Conway Park been the subject of any FDEP enforcement action
11 | within the past two years?

12 | A. No.

13 | University Shores/Suncrest Water System

14 | Q. Does the utility have a current construction permit from the FDEP for
15 | University Shores/Suncrest Water System (University Shores/Suncrest)?

16 | A. One is not needed.

17 | Q. Are the utility's treatment facilities and distribution system
18 | sufficient to serve its present customers?

19 | A. Yes.

20 | Q. Does the utility maintain the required 20 psi minimum pressure
21 | throughout the distribution system?

22 | A. Yes.

23 | Q. Does the utility have an adequate auxiliary power source in the event
24 | of a power outage?

25 | A. Yes.

- 1 Q. Are the utility's water wells for University Shores/Suncrest located in
2 compliance with Rule 62-555, Florida Administrative Code?
- 3 A. Yes.
- 4 Q. Does the utility have certified operators as required by Rule 61E12-41,
5 Florida Administrative Code?
- 6 A. Yes.
- 7 Q. Has the utility established a cross-connection control program in
8 accordance with Rule 62-555.360, Florida Administrative Code?
- 9 A. Yes.
- 10 Q. Is the overall maintenance of the treatment plant and distribution
11 facilities satisfactory?
- 12 A. Yes.
- 13 Q. Does the water produced by the utility meet the State and Federal
14 maximum contaminant levels for primary and secondary water quality standards?
- 15 A. Yes.
- 16 Q. Does the utility monitor the organic contaminants listed in Rule
17 62-550.410, Florida Administrative Code?
- 18 A. Yes.
- 19 Q. Do recent chemical analyses of raw and finished water, when compared to
20 regulations, suggest the need for additional treatment?
- 21 A. No.
- 22 Q. Does the utility maintain the required chlorine residual or its
23 equivalent throughout the distribution system?
- 24 A. Yes.
- 25 Q. Are the plant and distribution systems in compliance with all the other

1 | provisions of Chapter 62, Florida Administrative Code, not previously
2 | mentioned?

3 | A. Yes.

4 | Q. Has University Shores/Suncrest been the subject of any FDEP enforcement
5 | action within the past two years?

6 | A. No.

7 | Q. Do you have anything further to add?

8 | A. The ground storage tank is still leaking. This system is inter-
9 | connected with Suncrest.

10 | Westmont Water System

11 | Q. Does the utility have a current construction permit from the FDEP for
12 | Westmont Water System (Westmont)?

13 | A. One is not needed.

14 | Q. Are the utility's treatment facilities and distribution system
15 | sufficient to serve its present customers?

16 | A. No. There is no treatment on this site. This is a consecutive water
17 | system, master metered and buying water from O.C.P.U.

18 | Q. Does the utility maintain the required 20 psi minimum pressure
19 | throughout the distribution system?

20 | A. Yes.

21 | Q. Does the utility have an adequate auxiliary power source in the event
22 | of a power outage?

23 | A. No. O.C.P.U. has the auxiliary power source.

24 | Q. Are the utility's water wells Westmont located in compliance with Rule
25 | 62-555, Florida Administrative Code?

- 1 A. No. There are no wells on site.
- 2 Q. Does the utility have certified operators as required by Rule 61E12-41,
3 Florida Administrative Code?
- 4 A. Yes.
- 5 Q. Has the utility established a cross-connection control program in
6 accordance with Rule 62-555.360, Florida Administrative Code?
- 7 A. Yes.
- 8 Q. Is the overall maintenance of the treatment plant and distribution
9 facilities satisfactory?
- 10 A. Yes.
- 11 Q. Does the water produced by the utility meet the State and Federal
12 maximum contaminant levels for primary and secondary water quality standards?
- 13 A. Yes.
- 14 Q. Does the utility monitor the organic contaminants listed in Rule
15 62-550.410, Florida Administrative Code?
- 16 A. Yes.
- 17 Q. Do recent chemical analyses of raw and finished water, when compared to
18 regulations, suggest the need for additional treatment?
- 19 A. No.
- 20 Q. Does the utility maintain the required chlorine residual or its
21 equivalent throughout the distribution system?
- 22 A. Yes.
- 23 Q. Are the plant and distribution systems in compliance with all the other
24 provisions of Chapter 62, Florida Administrative Code, not previously
25 mentioned?

1 A. Yes.

2 Q. Has Westmont been the subject of any FDEP enforcement action within the
3 past two years?

4 A. No.

5 Fern Terrace Water System

6 Q. Does the utility have a current construction permit from the FDEP for
7 Fern Terrace Water System (Fern Terrace)?

8 A. One is not needed.

9 Q. Are the utility's treatment facilities and distribution system
10 sufficient to serve its present customers?

11 A. Yes.

12 Q. Does the utility maintain the required 20 psi minimum pressure
13 throughout the distribution system?

14 A. Yes.

15 Q. Does the utility have an adequate auxiliary power source in the event
16 of a power outage?

17 A. Yes.

18 Q. Are the utility's water wells for Fern Terrace located in compliance
19 with Rule 62-555, Florida Administrative Code?

20 A. Yes.

21 Q. Does the utility have certified operators as required by Rule 61E12-41,
22 Florida Administrative Code?

23 A. Yes.

24 Q. Has the utility established a cross-connection control program in
25 accordance with Rule 62-555.360, Florida Administrative Code?

1 A. Yes.

2 Q. Is the overall maintenance of the treatment plant and distribution
3 facilities satisfactory?

4 A. Yes.

5 Q. Does the water produced by the utility meet the State and Federal
6 maximum contaminant levels for primary and secondary water quality standards?

7 A. Yes.

8 Q. Does the utility monitor the organic contaminants listed in Rule
9 62-550.410, Florida Administrative Code?

10 A. Yes.

11 Q. Do recent chemical analyses of raw and finished water, when compared to
12 regulations, suggest the need for additional treatment?

13 A. No.

14 Q. Does the utility maintain the required chlorine residual or its
15 equivalent throughout the distribution system?

16 A. Yes.

17 Q. Are the plant and distribution systems in compliance with all the other
18 provisions of Chapter 62, Florida Administrative Code, not previously
19 mentioned?

20 A. Yes.

21 Q. Has Fern Terrace been the subject of any FDEP enforcement action within
22 the past two years?

23 A. No. However, there was an enforcement action in 1992.

24 Grand Terrace Water System

25 Q. Does the utility have a current construction permit from the FDEP for

- 1 Grand Terrace Water System (Grand Terrace)?
- 2 A. No.
- 3 Q. Are the utility's treatment facilities and distribution system
- 4 sufficient to serve its present customers?
- 5 A. Yes.
- 6 Q. Does the utility maintain the required 20 psi minimum pressure
- 7 throughout the distribution system?
- 8 A. Yes.
- 9 Q. Does the utility have an adequate auxiliary power source in the event
- 10 of a power outage?
- 11 A. Yes.
- 12 Q. Are the utility's water wells for Grand Terrace located in compliance
- 13 with Rule 62-555, Florida Administrative Code?
- 14 A. Yes.
- 15 Q. Does the utility have certified operators as required by Rule 61E12-41,
- 16 Florida Administrative Code?
- 17 A. Yes.
- 18 Q. Has the utility established a cross-connection control program in
- 19 accordance with Rule 62-555.360, Florida Administrative Code?
- 20 A. Yes.
- 21 Q. Is the overall maintenance of the treatment plant and distribution
- 22 facilities satisfactory?
- 23 A. Yes.
- 24 Q. Does the water produced by the utility meet the State and Federal
- 25 maximum contaminant levels for primary and secondary water quality standards?

1 A. Yes.

2 Q. Does the utility monitor the organic contaminants listed in Rule
3 62-550.410, Florida Administrative Code?

4 A. Yes.

5 Q. Do recent chemical analyses of raw and finished water, when compared to
6 regulations, suggest the need for additional treatment?

7 A. No.

8 Q. Does the utility maintain the required chlorine residual or its
9 equivalent throughout the distribution system?

10 A. Yes.

11 Q. Are the plant and distribution systems in compliance with all the other
12 provisions of Chapter 62, Florida Administrative Code, not previously
13 mentioned?

14 A. Yes.

15 Q. Has Grand Terrace been the subject of any FDEP enforcement action within
16 the past two years?

17 A. No. However, there was an enforcement action in 1992.

18 Hobby Hills Water System

19 Q. Does the utility have a current construction permit from the FDEP for
20 Hobby Hills Water System (Hobby Hills)?

21 A. No.

22 Q. Are the utility's treatment facilities and distribution system
23 sufficient to serve its present customers?

24 A. Yes.

25 Q. Does the utility maintain the required 20 psi minimum pressure

1 throughout the distribution system?

2 A. Yes.

3 Q. Does the utility have an adequate auxiliary power source in the event
4 of a power outage?

5 A. No. One is not required at this time.

6 Q. Are the utility's water wells for Hobby Hills located in compliance with
7 Rule 62-555, Florida Administrative Code?

8 A. Yes.

9 Q. Does the utility have certified operators as required by Rule 61E12-41,
10 Florida Administrative Code?

11 A. Yes.

12 Q. Has the utility established a cross-connection control program in
13 accordance with Rule 62-555.360, Florida Administrative Code?

14 A. Yes.

15 Q. Is the overall maintenance of the treatment plant and distribution
16 facilities satisfactory?

17 A. Yes.

18 Q. Does the water produced by the utility meet the State and Federal
19 maximum contaminant levels for primary and secondary water quality standards?

20 A. Yes.

21 Q. Does the utility monitor the organic contaminants listed in Rule
22 62-550.410, Florida Administrative Code?

23 A. Yes.

24 Q. Do recent chemical analyses of raw and finished water, when compared to
25 regulations, suggest the need for additional treatment?

1 A. No.

2 Q. Does the utility maintain the required chlorine residual or its
3 equivalent throughout the distribution system?

4 A. Yes.

5 Q. Are the plant and distribution systems in compliance with all the other
6 provisions of Chapter 62, Florida Administrative Code, not previously
7 mentioned?

8 A. Yes.

9 Q. Has Hobby Hills been the subject of any FDEP enforcement action within
10 the past two years?

11 A. No.

12 Carlton Village Water System

13 Q. Does the utility have a current construction permit from the FDEP for
14 Carlton Village Water System (Carlton Village)?

15 A. One is not needed.

16 Q. Are the utility's treatment facilities and distribution system
17 sufficient to serve its present customers?

18 A. Yes.

19 Q. Does the utility maintain the required 20 psi minimum pressure
20 throughout the distribution system?

21 A. Yes.

22 Q. Does the utility have an adequate auxiliary power source in the event
23 of a power outage?

24 A. Yes.

25 Q. Are the utility's water wells for Carlton Village located in compliance

1 | with Rule 62-555, Florida Administrative Code?

2 | A. Yes.

3 | Q. Does the utility have certified operators as required by Rule 61E12-41,
4 | Florida Administrative Code?

5 | A. Yes.

6 | Q. Has the utility established a cross-connection control program in
7 | accordance with Rule 62-555.360, Florida Administrative Code?

8 | A. Yes.

9 | Q. Is the overall maintenance of the treatment plant and distribution
10 | facilities satisfactory?

11 | A. Yes.

12 | Q. Does the water produced by the utility meet the State and Federal
13 | maximum contaminant levels for primary and secondary water quality standards?

14 | A. Yes.

15 | Q. Does the utility monitor the organic contaminants listed in Rule
16 | 62-550.410, Florida Administrative Code?

17 | A. Yes.

18 | Q. Do recent chemical analyses of raw and finished water, when compared to
19 | regulations, suggest the need for additional treatment?

20 | A. No.

21 | Q. Does the utility maintain the required chlorine residual or its
22 | equivalent throughout the distribution system?

23 | A. Yes.

24 | Q. Are the plant and distribution systems in compliance with all the other
25 | provisions of Chapter 62, Florida Administrative Code, not previously

1 | mentioned?

2 | A. Yes.

3 | Q. Has Carlton Village been the subject of any FDEP enforcement action
4 | within the past two years?

5 | A. No. However, there was an enforcement action in 1992.

6 | Q. Do you have anything further to add?

7 | A. No, I do not.

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DIRECT TESTIMONY OF W. E. DARLING

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Q. Please state your name and business address.

A. W. E. Darling, 3319 Maguire Boulevard, Suite 232, Orlando, Florida, 32803.

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

A. I have a Bachelor of Science degree in Biology. I have worked over 20 years in state and local environmental regulatory agencies.

Q. By whom are you presently employed?

A. I am employed by the Florida Department of Environmental Protection. (FDEP)

Q. How long have you been employed with the FDEP and in what capacity?

A. I have been employed by FDEP fifteen years in total, the past four and a half years in potable water.

Q. What are your general responsibilities at the FDEP?

A. I am supervisor of the potable water monitoring and reporting section, with responsibility for monitoring and reporting, enforcement and inspections of potable water systems.

Q. Are you familiar with the Southern States Utilities, Inc. water systems located in the Central District?

A. Yes.

Q. Were these systems inspected by you, or by FDEP staff under your supervision?

A. They were inspected by me.

Sunshine Parkway Water System

1 Q. Does the utility have a current construction permit from the FDEP for
2 Sunshine Parkway Water System (Sunshine Parkway)?

3 A. It does not, to my knowledge.

4 Q. Are the utility's treatment facilities and distribution system
5 sufficient to serve its present customers?

6 A. Yes.

7 Q. Does the utility maintain the required 20 psi minimum pressure
8 throughout the distribution system?

9 A. Yes.

10 Q. Does the utility have an adequate auxiliary power source in the event
11 of a power outage?

12 A. Yes.

13 Q. Are the utility's water wells for Sunshine Parkway located in compliance
14 with Rule 62-555, Florida Administrative Code?

15 A. Yes.

16 Q. Does the utility have certified operators as required by Rule 61E12-41,
17 Florida Administrative Code?

18 A. Yes.

19 Q. Has the utility established a cross-connection control program in
20 accordance with Rule 62-555.360, Florida Administrative Code?

21 A. Yes.

22 Q. Is the overall maintenance of the treatment plant and distribution
23 facilities satisfactory?

24 A. Yes.

25 Q. Does the water produced by the utility meet the State and Federal

1 | maximum contaminant levels for primary and secondary water quality standards?

2 | A. Yes.

3 | Q. Does the utility monitor the organic contaminants listed in Rule
4 | 62-550.410, Florida Administrative Code?

5 | A. Yes.

6 | Q. Do recent chemical analyses of raw and finished water, when compared to
7 | regulations, suggest the need for additional treatment?

8 | A. No.

9 | Q. Does the utility maintain the required chlorine residual or its
10 | equivalent throughout the distribution system?

11 | A. Yes.

12 | Q. Are the plant and distribution systems in compliance with all the other
13 | provisions of Chapter 62, Florida Administrative Code, not previously
14 | mentioned?

15 | A. Yes.

16 | Q. Has Sunshine Parkway been the subject of any FDEP enforcement action
17 | within the past two years?

18 | A. No.

19 | Stone Mountain Water System

20 | Q. Does the utility have a current construction permit from the FDEP for
21 | Stone Mountain Water System (Stone Mountain)?

22 | A. It does not, to my knowledge.

23 | Q. Are the utility's treatment facilities and distribution system
24 | sufficient to serve its present customers?

25 | A. Yes.

- 1 Q. Does the utility maintain the required 20 psi minimum pressure
2 throughout the distribution system?
- 3 A. Yes.
- 4 Q. Does the utility have an adequate auxiliary power source in the event
5 of a power outage?
- 6 A. Yes.
- 7 Q. Are the utility's water wells for Stone Mountain located in compliance
8 with Rule 62-555, Florida Administrative Code?
- 9 A. Yes.
- 10 Q. Does the utility have certified operators as required by Rule 61E12-41,
11 Florida Administrative Code?
- 12 A. Yes.
- 13 Q. Has the utility established a cross-connection control program in
14 accordance with Rule 62-555.360, Florida Administrative Code?
- 15 A. Yes.
- 16 Q. Is the overall maintenance of the treatment plant and distribution
17 facilities satisfactory?
- 18 A. Yes.
- 19 Q. Does the water produced by the utility meet the State and Federal
20 maximum contaminant levels for primary and secondary water quality standards?
- 21 A. Yes.
- 22 Q. Does the utility monitor the organic contaminants listed in Section
23 62-550.410, Florida Administrative Code?
- 24 A. Yes.
- 25 Q. Do recent chemical analyses of raw and finished water, when compared to

1 | regulations, suggest the need for additional treatment?

2 | A. No.

3 | Q. Does the utility maintain the required chlorine residual or its
4 | equivalent throughout the distribution system?

5 | A. Yes.

6 | Q. Are the plant and distribution systems in compliance with all the other
7 | provisions of Chapter 62, Florida Administrative Code, not previously
8 | mentioned?

9 | A. Yes.

10 | Q. Has Stone Mountain been the subject of any FDEP enforcement action
11 | within the past two years?

12 | A. No.

13 | Palms Mobile Home Park Water System

14 | Q. Does the utility have a current construction permit from the FDEP for
15 | Palms Mobile Home Park Water System (Palms Mobile Home Park)?

16 | A. It does not, to my knowledge.

17 | Q. Are the utility's treatment facilities and distribution system
18 | sufficient to serve its present customers?

19 | A. Yes.

20 | Q. Does the utility maintain the required 20 psi minimum pressure
21 | throughout the distribution system?

22 | A. Yes.

23 | Q. Does the utility have an adequate auxiliary power source in the event
24 | of a power outage?

25 | A. Yes.

- 1 Q. Are the utility's water wells for Palms Mobile Home Park Water System
2 located in compliance with Rule 62-555, Florida Administrative Code?
- 3 A. Yes.
- 4 Q. Does the utility have certified operators as required by Rule 61E12-41,
5 Florida Administrative Code?
- 6 A. Yes.
- 7 Q. Has the utility established a cross-connection control program in
8 accordance with Rule 62-555.360, Florida Administrative Code?
- 9 A. Yes.
- 10 Q. Is the overall maintenance of the treatment plant and distribution
11 facilities satisfactory?
- 12 A. Yes.
- 13 Q. Does the water produced by the utility meet the State and Federal
14 maximum contaminant levels for primary and secondary water quality standards?
- 15 A. Yes.
- 16 Q. Does the utility monitor the organic contaminants listed in Rule
17 62-550.410, Florida Administrative Code?
- 18 A. Yes.
- 19 Q. Do recent chemical analyses of raw and finished water, when compared to
20 regulations, suggest the need for additional treatment?
- 21 A. No.
- 22 Q. Does the utility maintain the required chlorine residual or its
23 equivalent throughout the distribution system?
- 24 A. Yes.
- 25 Q. Are the plant and distribution systems in compliance with all the other

1 | provisions of Chapter 62, Florida Administrative Code, not previously
2 | mentioned?

3 | A. Yes.

4 | Q. Has Palms Mobile Home Park been the subject of any FDEP enforcement
5 | action within the past two years?

6 | A. No.

7 | Palisades Country Club Water System

8 | Q. Does the utility have a current construction permit from the FDEP for
9 | Palisades Country Club Water System (Palisades Country Club)?

10 | A. It does not, to my knowledge.

11 | Q. Are the utility's treatment facilities and distribution system
12 | sufficient to serve its present customers?

13 | A. Yes.

14 | Q. Does the utility maintain the required 20 psi minimum pressure
15 | throughout the distribution system?

16 | A. Yes.

17 | Q. Does the utility have an adequate auxiliary power source in the event
18 | of a power outage?

19 | A. Yes.

20 | Q. Are the utility's water wells for Palisades Country Club located in
21 | compliance with Rule 62-555, Florida Administrative Code?

22 | A. Yes.

23 | Q. Does the utility have certified operators as required by Rule 61E12-41,
24 | Florida Administrative Code?

25 | A. Yes.

- 1 Q. Has the utility established a cross-connection control program in
2 accordance with Rule 62-555.360, Florida Administrative Code?
- 3 A. Yes.
- 4 Q. Is the overall maintenance of the treatment plant and distribution
5 facilities satisfactory?
- 6 A. Yes.
- 7 Q. Does the water produced by the utility meet the State and Federal
8 maximum contaminant levels for primary and secondary water quality standards?
- 9 A. Yes.
- 10 Q. Does the utility monitor the organic contaminants listed in Rule
11 62-550.410, Florida Administrative Code?
- 12 A. Yes.
- 13 Q. Do recent chemical analyses of raw and finished water, when compared to
14 regulations, suggest the need for additional treatment?
- 15 A. No.
- 16 Q. Does the utility maintain the required chlorine residual or its
17 equivalent throughout the distribution system?
- 18 A. Yes.
- 19 Q. Are the plant and distribution systems in compliance with all the other
20 provisions of Chapter 62, Florida Administrative Code, not previously
21 mentioned?
- 22 A. Yes.
- 23 Q. Has Palisades Country Club been the subject of any FDEP enforcement
24 action within the past two years?
- 25 A. No.

Morningview Water System

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2 | Q. Does the utility have a current construction permit from the FDEP for
3 | Morningview Water System (Morningview)?

4 | A. It does not, to my knowledge.

5 | Q. Are the utility's treatment facilities and distribution system
6 | sufficient to serve its present customers?

7 | A. Yes.

8 | Q. Does the utility maintain the required 20 psi minimum pressure
9 | throughout the distribution system?

10 | A. Yes.

11 | Q. Does the utility have an adequate auxiliary power source in the event
12 | of a power outage?

13 | A. Yes.

14 | Q. Are the utility's water wells for Morningview located in compliance with
15 | Rule 62-555, Florida Administrative Code?

16 | A. Yes.

17 | Q. Does the utility have certified operators as required by Rule 61E12-41,
18 | Florida Administrative Code?

19 | A. Yes.

20 | Q. Has the utility established a cross-connection control program in
21 | accordance with Rule 62-555.360, Florida Administrative Code?

22 | A. Yes.

23 | Q. Is the overall maintenance of the treatment plant and distribution
24 | facilities satisfactory?

25 | A. Yes.

1 Q. Does the water produced by the utility meet the State and Federal
2 maximum contaminant levels for primary and secondary water quality standards?

3 A. Yes.

4 Q. Does the utility monitor the organic contaminants listed in Rule
5 62-550.410, Florida Administrative Code?

6 A. Yes.

7 Q. Do recent chemical analyses of raw and finished water, when compared to
8 regulations, suggest the need for additional treatment?

9 A. No.

10 Q. Does the utility maintain the required chlorine residual or its
11 equivalent throughout the distribution system?

12 A. Yes.

13 Q. Are the plant and distribution systems in compliance with all the other
14 provisions of Chapter 62, Florida Administrative Code, not previously
15 mentioned?

16 A. Yes.

17 Q. Has Morningview been the subject of any FDEP enforcement action within
18 the past two years?

19 A. No.

20 Friendly Center Water System

21 Q. Does the utility have a current construction permit from the FDEP for
22 Friendly Center Water System (Friendly Center)?

23 A. It does not, to my knowledge.

24 Q. Are the utility's treatment facilities and distribution system
25 sufficient to serve its present customers?

1 A. Yes.

2 Q. Does the utility maintain the required 20 psi minimum pressure
3 throughout the distribution system?

4 A. Yes.

5 Q. Does the utility have an adequate auxiliary power source in the event
6 of a power outage?

7 A. Yes.

8 Q. Are the utility's water wells for Friendly Center located in compliance
9 with Rule 62-555, Florida Administrative Code?

10 A. Yes.

11 Q. Does the utility have certified operators as required by Rule 61E12-41,
12 Florida Administrative Code?

13 A. Yes.

14 Q. Has the utility established a cross-connection control program in
15 accordance with Rule 62-555.360, Florida Administrative Code?

16 A. Yes.

17 Q. Is the overall maintenance of the treatment plant and distribution
18 facilities satisfactory?

19 A. Yes.

20 Q. Does the water produced by the utility meet the State and Federal
21 maximum contaminant levels for primary and secondary water quality standards?

22 A. Yes.

23 Q. Does the utility monitor the organic contaminants listed in Rule
24 62-550.410, Florida Administrative Code?

25 A. Yes.

1 Q. Do recent chemical analyses of raw and finished water, when compared to
2 regulations, suggest the need for additional treatment?

3 A. No.

4 Q. Does the utility maintain the required chlorine residual or its
5 equivalent throughout the distribution system?

6 A. Yes.

7 Q. Are the plant and distribution systems in compliance with all the other
8 provisions of Chapter 62, Florida Administrative Code, not previously
9 mentioned?

10 A. Yes.

11 Q. Has Friendly Center been the subject of any FDEP enforcement action
12 within the past two years?

13 A. No.

14 East Lake Harris Estates Water System

15 Q. Does the utility have a current construction permit from the FDEP for
16 East Lake Harris Estates Water System (East Lake Harris Estates)?

17 A. It does not, to my knowledge.

18 Q. Are the utility's treatment facilities and distribution system
19 sufficient to serve its present customers?

20 A. Yes.

21 Q. Does the utility maintain the required 20 psi minimum pressure
22 throughout the distribution system?

23 A. Yes.

24 Q. Does the utility have an adequate auxiliary power source in the event
25 of a power outage?

1 A. Yes.

2 Q. Are the utility's water wells for East Lake Harris Estates located in
3 compliance with Rule 62-555, Florida Administrative Code?

4 A. Yes.

5 Q. Does the utility have certified operators as required by Rule 61E12-41,
6 Florida Administrative Code?

7 A. Yes.

8 Q. Has the utility established a cross-connection control program in
9 accordance with Rule 62-555.360, Florida Administrative Code?

10 A. Yes.

11 Q. Is the overall maintenance of the treatment plant and distribution
12 facilities satisfactory?

13 A. Yes.

14 Q. Does the water produced by the utility meet the State and Federal
15 maximum contaminant levels for primary and secondary water quality standards?

16 A. Yes.

17 Q. Does the utility monitor the organic contaminants listed in Rule
18 62-550.410, Florida Administrative Code?

19 A. Yes.

20 Q. Do recent chemical analyses of raw and finished water, when compared to
21 regulations, suggest the need for additional treatment?

22 A. No.

23 Q. Does the utility maintain the required chlorine residual or its
24 equivalent throughout the distribution system?

25 A. Yes.

1 Q. Are the plant and distribution systems in compliance with all the other
2 provisions of Chapter 62, Florida Administrative Code, not previously
3 mentioned?

4 A. Yes.

5 Q. Has East Lake Harris Estates been the subject of any FDEP enforcement
6 action within the past two years?

7 A. No.

8 Venetian Village Water System

9 Q. Does the utility have a current construction permit from the FDEP for
10 Venetian Village Water System (Venetian Village)?

11 A. It does not, to my knowledge.

12 Q. Are the utility's treatment facilities and distribution system
13 sufficient to serve its present customers?

14 A. Yes.

15 Q. Does the utility maintain the required 20 psi minimum pressure
16 throughout the distribution system?

17 A. Yes.

18 Q. Does the utility have an adequate auxiliary power source in the event
19 of a power outage?

20 A. Yes.

21 Q. Are the utility's water wells for Venetian Village located in compliance
22 with Rule 62-555, Florida Administrative Code?

23 A. Yes.

24 Q. Does the utility have certified operators as required by Rule 61E12-41,
25 Florida Administrative Code?

1 A. Yes.

2 Q. Has the utility established a cross-connection control program in
3 accordance with Rule 62-555.360, Florida Administrative Code?

4 A. Yes.

5 Q. Is the overall maintenance of the treatment plant and distribution
6 facilities satisfactory?

7 A. Yes.

8 Q. Does the water produced by the utility meet the State and Federal
9 maximum contaminant levels for primary and secondary water quality standards?

10 A. Yes.

11 Q. Does the utility monitor the organic contaminants listed in Rule
12 62-550.410, Florida Administrative Code?

13 A. Yes.

14 Q. Do recent chemical analyses of raw and finished water, when compared to
15 regulations, suggest the need for additional treatment?

16 A. No.

17 Q. Does the utility maintain the required chlorine residual or its
18 equivalent throughout the distribution system?

19 A. Yes.

20 Q. Are the plant and distribution systems in compliance with all the other
21 provisions of Chapter 62, Florida Administrative Code, not previously
22 mentioned?

23 A. Yes.

24 Q. Has Venetian Village been the subject of any FDEP enforcement action
25 within the past two years?

1 | A. No.

2 | Q. Do you have anything further to add?

3 | A. No, I do not.

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DIRECT TESTIMONY OF DEBRA LAISURE

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2 | Q. Please state your name and business address.

3 | A. Debra Laisure, 3319 Maguire Boulevard, Suite 232, Orlando, Florida,
4 | 32803.

5 | Q. Please state a brief description of your educational background and
6 | experience.

7 | A. I have a B.S. in Biology 1978, University of Central Florida (UCF); an
8 | M.S. in Environmental Science (Engineering) 1993, UCF. My work experience
9 | consists of 15 years in environmental chemistry and 20 months as an engineer.

10 | Q. By whom are you presently employed?

11 | A. I am employed by the Florida Department of Environmental Protection.
12 | (FDEP)

13 | Q. How long have you been employed with the FDEP and in what capacity?

14 | A. I have been employed for 20 months by the FDEP as a Field Compliance
15 | Engineer.

16 | Q. What are your general responsibilities at the FDEP?

17 | A. My general responsibilities include inspecting drinking water facilities
18 | in the Central District to determine compliance with applicable state
19 | regulations.

20 | Q. Are you familiar with the Southern States Utilities, Inc. water systems
21 | located in the Central District?

22 | A. Yes.

23 | Q. Were these systems inspected by you, or by FDEP staff under your
24 | supervision?

25 | A. I have inspected two systems owned and operated by Southern States

1 Utilities. These systems are Kingswood Manor and Oakwood Manor, both of which
2 are in Brevard County. I review the inspection reports of the remaining
3 systems.

4 Fern Park Water System

5 Q. Does the utility have a current construction permit from the FDEP for
6 Fern Park Water System (Fern Park)?

7 A. Yes. The utility has permit WD 59-258170, issued September 27, 1994,
8 partial clearance issued February 8, 1995.

9 Q. Are the utility's treatment facilities and distribution system
10 sufficient to serve its present customers?

11 A. Yes.

12 Q. Does the utility maintain the required 20 psi minimum pressure
13 throughout the distribution system?

14 A. Yes.

15 Q. Does the utility have an adequate auxiliary power source in the event
16 of a power outage?

17 A. Yes.

18 Q. Are the utility's water wells for Fern Park located in compliance with
19 Rule 62-555, Florida Administrative Code?

20 A. No. According to the Compliance Inspection Report (CI) dated January
21 31, 1995 (Exhibit DL-1, copy attached), a septic tank is located at 75 feet
22 and wastewater plumbing ¹⁶⁹ 60 feet from a well. Note, however, that, in the FDEP
23 sanitary survey dated January 27, 1993, (Exhibit DL-2, copy of page 2
24 attached) this well was drilled before 1958. ¹⁶⁹

25 Q. Does the utility have certified operators as required by Rule 61E12-41,

1 Florida Administrative Code?

2 A. Yes.

3 Q. Has the utility established a cross-connection control program in
4 accordance with Section 62-555.360, Florida Administrative Code?

5 A. Yes. A Cross-Connection Control Program (CCCP) dated December 17, 1992,
6 is on file in this office.

7 Q. Is the overall maintenance of the treatment plant and distribution
8 facilities satisfactory?

9 A. Yes.

10 Q. Does the water produced by the utility meet the State and Federal
11 maximum contaminant levels for primary and secondary water quality standards?

12 A. Yes.

13 Q. Does the utility monitor the organic contaminants listed in Rule
14 62-550.410, Florida Administrative Code?

15 A. Yes.

16 Q. Do recent chemical analyses of raw and finished water, when compared to
17 regulations, suggest the need for additional treatment?

18 A. No.

19 Q. Does the utility maintain the required chlorine residual or its
20 equivalent throughout the distribution system?

21 A. Yes.

22 Q. Are the plant and distribution systems in compliance with all the other
23 provisions of Chapter 62, Florida Administrative Code, not previously
24 mentioned?

25 A. Yes. However, 1995 lead and copper sampling results have not yet been

1 | received.

2 | Q. Has Fern Park been the subject of any FDEP enforcement action within the
3 | past two years?

4 | A. No.

5 | Lake Harriet Estates Water System

6 | Q. Does the utility have a current construction permit from the FDEP for
7 | Lake Harriet Estates Water System (Lake Harriet Estates)?

8 | A. No.

9 | Q. Are the utility's treatment facilities and distribution system
10 | sufficient to serve its present customers?

11 | A. Yes.

12 | Q. Does the utility maintain the required 20 psi minimum pressure
13 | throughout the distribution system?

14 | A. Yes.

15 | Q. Does the utility have an adequate auxiliary power source in the event
16 | of a power outage?

17 | A. Yes.

18 | Q. Are the utility's water wells for Lake Harriet Estates located in
19 | compliance with Rule 62-555, Florida Administrative Code?

20 | A. Yes.

21 | Q. Does the utility have certified operators as required by Rule 61E12-41,
22 | Florida Administrative Code?

23 | A. Yes.

24 | Q. Has the utility established a cross-connection control program in
25 | accordance with Rule 62-555.360, Florida Administrative Code?

- 1 A. Yes. CCCP dated December 17, 1992, is on file in this office.
- 2 Q. Is the overall maintenance of the treatment plant and distribution
3 facilities satisfactory?
- 4 A. Yes, it is with the exception of deficiencies cited in CI dated May 18,
5 1995 (Exhibit DL-3, copy attached).
- 6 Q. Does the ¹⁶⁹water produced by the utility meet the State and Federal
7 maximum contaminant levels for primary and secondary water quality standards?
- 8 A. Yes.
- 9 Q. Does the utility monitor the organic contaminants listed in Rule
10 62-550.410, Florida Administrative Code?
- 11 A. Yes.
- 12 Q. Do recent chemical analyses of raw and finished water, when compared to
13 regulations, suggest the need for additional treatment?
- 14 A. No.
- 15 Q. Does the utility maintain the required chlorine residual or its
16 equivalent throughout the distribution system?
- 17 A. Yes.
- 18 Q. Are the plant and distribution systems in compliance with all the other
19 provisions of Chapter 62, Florida Administrative Code, not previously
20 mentioned?
- 21 A. Yes. However, 1995 lead and copper sampling results have not yet been
22 received.
- 23 Q. Has Lake Harriet Estates been the subject of any Department of
24 Environmental Protection enforcement action within the past two years?
- 25 A. No.

1 Lake Brantley Water System

2 Q. Does the utility have a current construction permit from the FDEP for
3 Lake Brantley Water System (Lake Brantley)?

4 A. No.

5 Q. Are the utility's treatment facilities and distribution system
6 sufficient to serve its present customers?

7 A. Yes.

8 Q. Does the utility maintain the required 20 psi minimum pressure
9 throughout the distribution system?

10 A. Yes.

11 Q. Does the utility have an adequate auxiliary power source in the event
12 of a power outage?

13 A. This is not required for this system.

14 Q. Are the utility's water wells for Lake Brantley located in compliance
15 with Rule 62-555, Florida Administrative Code?

16 A. Yes.

17 Q. Does the utility have certified operators as required by Rule 61E12-41,
18 Florida Administrative Code?

19 A. Yes.

20 Q. Has the utility established a cross-connection control program in
21 accordance with Section 62-555.360, Florida Administrative Code?

22 A. Yes. CCCP dated December 17, 1992, is on file in this office.

23 Q. Is the overall maintenance of the treatment plant and distribution
24 facilities satisfactory?

25 A. Yes.

1 Q. Does the water produced by the utility meet the State and Federal
2 maximum contaminant levels for primary and secondary water quality standards?

3 A. Yes.

4 Q. Does the utility monitor the organic contaminants listed in Rule
5 62-550.410, Florida Administrative Code?

6 A. Yes. Currently, the system has a waiver for Group II unregulated
7 organic contaminants.

8 Q. Do recent chemical analyses of raw and finished water, when compared to
9 regulations, suggest the need for additional treatment?

10 A. No.

11 Q. Does the utility maintain the required chlorine residual or its
12 equivalent throughout the distribution system?

13 A. Yes.

14 Q. Are the plant and distribution systems in compliance with all the other
15 provisions of Chapter 62, Florida Administrative Code, not previously
16 mentioned?

17 A. Yes.

18 Q. Has Lake Brantley been the subject of any FDEP enforcement action within
19 the past two years?

20 A. No.

21 Meredith Manor Water System

22 Q. Does the utility have a current construction permit from the FDEP for
23 Meredith Manor Water System (Meredith Manor)?

24 A. No.

25 Q. Are the utility's treatment facilities and distribution system

1 | sufficient to serve its present customers?

2 | A. Yes. However, according to the monthly operating reports, the system
3 | exceeded its max-day design capacity on two occasions (May 8, 1995 and April
4 | 24, 1995) in the past twelve months.

5 | Q. Does the utility maintain the required 20 psi minimum pressure
6 | throughout the distribution system?

7 | A. Yes.

8 | Q. Does the utility have an adequate auxiliary power source in the event
9 | of a power outage?

10 | A. Yes.

11 | Q. Are the utility's water wells for Meredith Manor located in compliance
12 | with Rule 62-555, Florida Administrative Code?

13 | A. Yes.

14 | Q. Does the utility have certified operators as required by Rule 61E12-41,
15 | Florida Administrative Code?

16 | A. Yes.

17 | Q. Has the utility established a cross-connection control program in
18 | accordance with Rule 62-555.360, Florida Administrative Code?

19 | A. Yes. CCCP dated December 17, 1992, is on file in this office.

20 | Q. Is the overall maintenance of the treatment plant and distribution
21 | facilities satisfactory?

22 | A. Yes.

23 | Q. Does the water produced by the utility meet the State and Federal
24 | maximum contaminant levels for primary and secondary water quality standards?

25 | A. Yes.

1 Q. Does the utility monitor the organic contaminants listed in Section
2 62-550.410, Florida Administrative Code?

3 A. Yes.

4 Q. Do recent chemical analyses of raw and finished water, when compared to
5 regulations, suggest the need for additional treatment?

6 A. No.

7 Q. Does the utility maintain the required chlorine residual or its
8 equivalent throughout the distribution system?

9 A. Yes.

10 Q. Are the plant and distribution systems in compliance with all the other
11 provisions of Chapter 62, Florida Administrative Code, not previously
12 mentioned?

13 A. Yes. However, 1995 lead and copper sampling results have not yet been
14 received.

15 Q. Has Meredith Manor been the subject of any FDEP enforcement action
16 within the past two years?

17 A. None.

18 Harmony Homes Water System

19 Q. Does the utility have a current construction permit from the FDEP for
20 Harmony Homes Water System (Harmony Homes)?

21 A. No.

22 Q. Are the utility's treatment facilities and distribution system
23 sufficient to serve its present customers?

24 A. Yes.

25 Q. Does the utility maintain the required 20 psi minimum pressure

1 | throughout the distribution system?

2 | A. Yes.

3 | Q. Does the utility have an adequate auxiliary power source in the event
4 | of a power outage?

5 | A. Yes.

6 | Q. Are the utility's water wells for Harmony Homes located in compliance
7 | with Rule 62-555, Florida Administrative Code?

8 | A. Yes.

9 | Q. Does the utility have certified operators as required by Rule 61E12-41,
10 | Florida Administrative Code?

11 | A. Yes.

12 | Q. Has the utility established a cross-connection control program in
13 | accordance with Rule 62-555.360, Florida Administrative Code?

14 | A. Yes. CCCP dated December 17, 1992, is on file in this office.

15 | Q. Is the overall maintenance of the treatment plant and distribution
16 | facilities satisfactory?

17 | A. Yes.

18 | Q. Does the water produced by the utility meet the State and Federal
19 | maximum contaminant levels for primary and secondary water quality standards?

20 | A. Yes.

21 | Q. Does the utility monitor the organic contaminants listed in Rule
22 | 62-550.410, Florida Administrative Code?

23 | A. Yes. Currently, the system has a waiver for Group II unregulated
24 | organic contaminants.

25 | Q. Do recent chemical analyses of raw and finished water, when compared to

1 regulations, suggest the need for additional treatment?

2 A. No.

3 Q. Does the utility maintain the required chlorine residual or its
4 equivalent throughout the distribution system?

5 A. Yes.

6 Q. Are the plant and distribution systems in compliance with all the other
7 provisions of Chapter 62, Florida Administrative Code, not previously
8 mentioned?

9 A. Yes. However, 1995 lead and copper sampling results have not yet been
10 received.

11 Q. Has Harmony Homes been the subject of any FDEP enforcement action within
12 the past two years?

13 A. No.

14 Kingswood Water System

15 Q. Does the utility have a current construction permit from the FDEP for
16 Kingswood Water System (Kingswood)?

17 A. No.

18 Q. Are the utility's treatment facilities and distribution system
19 sufficient to serve its present customers?

20 A. Yes.

21 Q. Does the utility maintain the required 20 psi minimum pressure
22 throughout the distribution system?

23 A. Yes.

24 Q. Does the utility have an adequate auxiliary power source in the event
25 of a power outage?

- 1 A. Yes. Water is purchased from North Broward County (3050834). The
2 utility has auxiliary power.
- 3 Q. Are the utility's water wells for Kingswood located in compliance with
4 Rule 62-555, Florida Administrative Code?
- 5 A. The system is a consecutive water system program. The utility has no
6 wells.
- 7 Q. Does the utility have certified operators as required by Rule 61E12-41,
8 Florida Administrative Code?
- 9 A. No. The system is a consecutive system with no additional treatment.
10 A certified operator is not required.
- 11 Q. Has the utility established a cross-connection control program in
12 accordance with Rule 62-555.360, Florida Administrative Code?
- 13 A. The system is a consecutive system with no additional treatment. A
14 cross-connection control program is not required.
- 15 Q. Is the overall maintenance of the treatment plant and distribution
16 facilities satisfactory?
- 17 A. Yes.
- 18 Q. Does the water produced by the utility meet the State and Federal
19 maximum contaminant levels for primary and secondary water quality standards?
- 20 A. Yes. Note: Only bacteria, asbestos, lead and copper are required to
21 be monitored.
- 22 Q. Does the utility monitor the organic contaminants listed in Rule
23 62-550.410, Florida Administrative Code?
- 24 A. No. A consecutive system utility is only required to monitor for
25 bacteria, lead and copper, and asbestos.

1 Q. Do recent chemical analyses of raw and finished water, when compared to
2 regulations, suggest the need for additional treatment?

3 A. No.

4 Q. Does the utility maintain the required chlorine residual or its
5 equivalent throughout the distribution system?

6 A. Yes.

7 Q. Are the plant and distribution systems in compliance with all the other
8 provisions of Chapter 62, Florida Administrative Code, not previously
9 mentioned?

10 A. Yes. However, 1995 lead and copper sampling results have not yet been
11 received.

12 Q. Has Kingswood been the subject of any FDEP enforcement action within the
13 past two years?

14 A. No.

15 Oakwood Water System

16 Q. Does the utility have a current construction permit from the FDEP for
17 Oakwood Water System (Oakwood)?

18 A. No.

19 Q. Are the utility's treatment facilities and distribution system
20 sufficient to serve its present customers?

21 A. Yes.

22 Q. Does the utility maintain the required 20 psi minimum pressure
23 throughout the distribution system?

24 A. Yes.

25 Q. Does the utility have an adequate auxiliary power source in the event

1 | of a power outage?

2 | A. Yes. Water is purchased from North Broward County (3050834). The
3 | utility has auxiliary power.

4 | Q. Are the utility's water wells for Oakwood located in compliance with
5 | Rule 62-555, Florida Administrative Code?

6 | A. The system is a consecutive water system. The utility has no wells.

7 | Q. Does the utility have certified operators as required by Rule 61E12-41,
8 | Florida Administrative Code?

9 | A. No. The system is a consecutive system with no additional treatment.
10 | A certified operator is not required.

11 | Q. Has the utility established a cross-connection control program in
12 | accordance with Rule 62-555.360, Florida Administrative Code?

13 | A. The system is a consecutive system with no additional treatment. A
14 | cross-connection control program is not required.

15 | Q. Is the overall maintenance of the treatment plant and distribution
16 | facilities satisfactory?

17 | A. Yes.

18 | Q. Does the water produced by the utility meet the State and Federal
19 | maximum contaminant levels for primary and secondary water quality standards?

20 | A. Yes. Note: Only bacteria, asbestos, lead and copper are required to
21 | be monitored.

22 | Q. Does the utility monitor the organic contaminants listed in Rule
23 | 62-550.410, Florida Administrative Code?

24 | A. No. A consecutive system utility is only required to monitor for
25 | bacteria, lead and copper, and asbestos.

1 Q. Do recent chemical analyses of raw and finished water, when compared to
2 regulations, suggest the need for additional treatment?

3 A. No.

4 Q. Does the utility maintain the required chlorine residual or its
5 equivalent throughout the distribution system?

6 A. Yes.

7 Q. Are the plant and distribution systems in compliance with all the other
8 provisions of Chapter 62, Florida Administrative Code, not previously
9 mentioned?

10 A. Yes. However, 1995 lead and copper sampling results have not yet been
11 received.

12 Q. Has Oakwood been the subject of any FDEP enforcement action within the
13 past two years?

14 A. No.

15 Q. Do you have anything further to add?

16 A. No, I do not.

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DIRECT TESTIMONY OF GEORGE E. SAWAYA

- 1
- 2 Q. Please state your name and business address.
- 3 A. George E. Sawaya, 3319 Maguire Boulevard, Suite 232, Orlando, Florida,
4 32803.
- 5 Q. Please state a brief description of your educational background and
6 experience.
- 7 A. I have a Bachelor of Science in Civil Engineering, University of Central
8 Florida.
- 9 Q. By whom are you presently employed?
- 10 A. I am employed by the Florida Department of Environmental Protection.
11 (FDEP)
- 12 Q. How long have you been employed with the FDEP and in what capacity?
- 13 A. I have been employed by FDEP two years as an Engineer I.
- 14 Q. What are your general responsibilities at the Department of
15 Environmental Protection?
- 16 A. The general responsibilities are to perform sanitary surveys (complete
17 engineering evaluations) of public water systems and determine compliance with
18 state and federal drinking water standards.
- 19 Q. Are you familiar with the Southern States Utilities, Inc. water systems
20 located in the Central District?
- 21 A. Yes.
- 22 Q. Were these systems inspected by you, or by FDEP staff under your
23 supervision?
- 24 A. Yes.
- 25

Druid Hills Water System

- 1 Q. Does the utility have a current construction permit from the FDEP for
2 Druid Hills Water System (Druid Hills)?
- 3 A. No.
- 4 Q. Are the utility's treatment facilities and distribution system
5 sufficient to serve its present customers?
- 6 A. Yes.
- 7 Q. Does the utility maintain the required 20 psi minimum pressure
8 throughout the distribution system?
- 9 A. Yes.
- 10 Q. Does the utility have an adequate auxiliary power source in the event
11 of a power outage?
- 12 A. Yes.
- 13 Q. Are the utility's water wells for Druid Hills located in compliance with
14 Rule 62-555, Florida Administrative Code?
- 15 A. Yes.
- 16 Q. Does the utility have certified operators as required by Rule 61E12-41,
17 Florida Administrative Code?
- 18 A. Yes.
- 19 Q. Has the utility established a cross-connection control program in
20 accordance with Rule 62-555.360, Florida Administrative Code?
- 21 A. The utility provides a copy of its cross-connection control program to
22 each resident.
- 23 Q. Is the overall maintenance of the treatment plant and distribution
24 facilities satisfactory?
- 25 A. Yes.

1 Q. Does the water produced by the utility meet the State and Federal
2 maximum contaminant levels for primary and secondary water quality standards?

3 A. Yes.

4 Q. Does the utility monitor the organic contaminants listed in Rule
5 62-550.410, Florida Administrative Code?

6 A. Yes.

7 Q. Do recent chemical analyses of raw and finished water, when compared to
8 regulations, suggest the need for additional treatment?

9 A. No.

10 Q. Does the utility maintain the required chlorine residual or its
11 equivalent throughout the distribution system?

12 A. Yes.

13 Q. Are the plant and distribution systems in compliance with all the other
14 provisions of Chapter 62, Florida Administrative Code, not previously
15 mentioned?

16 A. Yes.

17 Q. Has Druid Hills been the subject of any FDEP enforcement action within
18 the past two years?

19 A. No.

20 Chuluota Water System

21 Q. Does the utility have a current construction permit from the FDEP of
22 Chuluota Water System (Chuluota)?

23 A. No.

24 Q. Are the utility's treatment facilities and distribution system
25 sufficient to serve its present customers?

1 A. Yes.

2 Q. Does the utility maintain the required 20 psi minimum pressure
3 throughout the distribution system?

4 A. Yes.

5 Q. Does the utility have an adequate auxiliary power source in the event
6 of a power outage?

7 A. Yes.

8 Q. Are the utility's water wells for Chuluota located in compliance with
9 Rule 62-555, Florida Administrative Code?

10 A. Yes.

11 Q. Does the utility have certified operators as required by Rule 61E12-41,
12 Florida Administrative Code?

13 A. Yes.

14 Q. Has the utility established a cross-connection control program in
15 accordance with Rule 62-555.360, Florida Administrative Code?

16 A. The utility provides a copy of its cross-connection control program to
17 each resident.

18 Q. Is the overall maintenance of the treatment plant and distribution
19 facilities satisfactory?

20 A. Yes.

21 Q. Does the water produced by the utility meet the State and Federal
22 maximum contaminant levels for primary and secondary water quality standards?

23 A. Yes.

24 Q. Does the utility monitor the organic contaminants listed in Rule
25 62-550.410, Florida Administrative Code?

1 A. Yes.

2 Q. Do recent chemical analyses of raw and finished water, when compared to
3 regulations, suggest the need for additional treatment?

4 A. No.

5 Q. Does the utility maintain the required chlorine residual or its
6 equivalent throughout the distribution system?

7 A. Yes.

8 Q. Are the plant and distribution systems in compliance with all the other
9 provisions of Chapter 62, Florida Administrative Code, not previously
10 mentioned?

11 A. Yes.

12 Q. Has Chuluota been the subject of any FDEP enforcement action within the
13 past two years?

14 A. No.

15 Apple Valley Water System

16 Q. Does the utility have a current construction permit from the FDEP for
17 Apple Valley Water System (Apple Valley)?

18 A. No.

19 Q. Are the utility's treatment facilities and distribution system
20 sufficient to serve its present customers?

21 A. Yes.

22 Q. Does the utility maintain the required 20 psi minimum pressure
23 throughout the distribution system?

24 A. Yes.

25 Q. Does the utility have an adequate auxiliary power source in the event

1 | of a power outage?

2 | A. Yes.

3 | Q. Are the utility's water wells for Apple Valley located in compliance
4 | with Rule 62-555, Florida Administrative Code?

5 | A. Yes.

6 | Q. Does the utility have certified operators as required by Rule 61E12-41,
7 | Florida Administrative Code?

8 | A. Yes.

9 | Q. Has the utility established a cross-connection control program in
10 | accordance with Rule 62-555.360, Florida Administrative Code?

11 | A. The utility provides a copy of its cross-connection control program to
12 | each resident.

13 | Q. Is the overall maintenance of the treatment plant and distribution
14 | facilities satisfactory?

15 | A. Yes.

16 | Q. Does the water produced by the utility meet the State and Federal
17 | maximum contaminant levels for primary and secondary water quality standards?

18 | A. Yes.

19 | Q. Does the utility monitor the organic contaminants listed in Rule
20 | 62-550.410, Florida Administrative Code?

21 | A. Yes.

22 | Q. Do recent chemical analyses of raw and finished water, when compared to
23 | regulations, suggest the need for additional treatment?

24 | A. No.

25 | Q. Does the utility maintain the required chlorine residual or its

1 equivalent throughout the distribution system?

2 A. Yes.

3 Q. Are the plant and distribution systems in compliance with all the other
4 provisions of Chapter 62, Florida Administrative Code, not previously
5 mentioned?

6 A. Yes.

7 Q. Has Apple Valley been the subject of any FDEP enforcement action within
8 the past two years?

9 A. No.

10 Salt Springs Water System

11 Q. Does the utility have a current construction permit from the FDEP for
12 Salt Springs Water System (Salt Springs)?

13 A. No.

14 Q. Are the utility's treatment facilities and distribution system
15 sufficient to serve its present customers?

16 A. Yes.

17 Q. Does the utility maintain the required 20 psi minimum pressure
18 throughout the distribution system?

19 A. Yes.

20 Q. Does the utility have an adequate auxiliary power source in the event
21 of a power outage?

22 A. Yes.

23 Q. Are the utility's water wells for Salt Springs located in compliance
24 with Rule 62-555, Florida Administrative Code?

25 A. Yes.

- 1 Q. Does the utility have certified operators as required by Rule 61E12-41,
2 Florida Administrative Code?
- 3 A. Yes.
- 4 Q. Has the utility established a cross-connection control program in
5 accordance with Rule 62-555.360, Florida Administrative Code?
- 6 A. The utility provides a copy of its cross-connection control program to
7 each resident.
- 8 Q. Is the overall maintenance of the treatment plant and distribution
9 facilities satisfactory?
- 10 A. Yes.
- 11 Q. Does the water produced by the utility meet the State and Federal
12 maximum contaminant levels for primary and secondary water quality standards?
- 13 A. Yes.
- 14 Q. Does the utility monitor the organic contaminants listed in Rule 62-
15 550.410, Florida Administrative Code?
- 16 A. Yes.
- 17 Q. Do recent chemical analyses of raw and finished water, when compared to
18 regulations, suggest the need for additional treatment?
- 19 A. No.
- 20 Q. Does the utility maintain the required chlorine residual or its
21 equivalent throughout the distribution system?
- 22 A. Yes.
- 23 Q. Are the plant and distribution systems in compliance with all the other
24 provisions of Chapter 62, Florida Administrative Code, not previously
25 mentioned?

1 A. Yes.

2 Q. Has Salt Springs been the subject of any FDEP enforcement action within
3 the past two years?

4 A. No.

5 Citrus Park Water System

6 Q. Does the utility have a current construction permit from the FDEP for
7 Citrus Park Water System (Citrus Park)?

8 A. No.

9 Q. Are the utility's treatment facilities and distribution system
10 sufficient to serve its present customers?

11 A. Yes.

12 Q. Does the utility maintain the required 20 psi minimum pressure
13 throughout the distribution system?

14 A. Yes.

15 Q. Does the utility have an adequate auxiliary power source in the event
16 of a power outage?

17 A. Yes.

18 Q. Are the utility's water wells for Citrus Park located in compliance with
19 Rule 62-555, Florida Administrative Code?

20 A. Yes.

21 Q. Does the utility have certified operators as required by Rule 61E12-41,
22 Florida Administrative Code?

23 A. Yes.

24 Q. Has the utility established a cross-connection control program in
25 accordance with Rule 62-555.360, Florida Administrative Code?

1 A. The utility provides a copy of its cross-connection control program to
2 each resident.

3 Q. Is the overall maintenance of the treatment plant and distribution
4 facilities satisfactory?

5 A. Yes.

6 Q. Does the water produced by the utility meet the State and Federal
7 maximum contaminant levels for primary and secondary water quality standards?

8 A. Yes.

9 Q. Does the utility monitor the organic contaminants listed in Rule
10 62-550.410, Florida Administrative Code?

11 A. Yes.

12 Q. Do recent chemical analyses of raw and finished water, when compared to
13 regulations, suggest the need for additional treatment?

14 A. No.

15 Q. Does the utility maintain the required chlorine residual or its
16 equivalent throughout the distribution system?

17 A. Yes.

18 Q. Are the plant and distribution systems in compliance with all the other
19 provisions of Chapter 62, Florida Administrative Code, not previously
20 mentioned?

21 A. Yes.

22 Q. Has Citrus Park been the subject of any FDEP enforcement action within
23 the past two years?

24 A. No.

25 DoI Ray Manor Water System

- 1 Q. Does the utility have a current construction permit from the FDEP for
2 Do1 Ray Manor Water System (Do1 Ray Manor)?
- 3 A. No.
- 4 Q. Are the utility's treatment facilities and distribution system
5 sufficient to serve its present customers?
- 6 A. Yes.
- 7 Q. Does the utility maintain the required 20 psi minimum pressure
8 throughout the distribution system?
- 9 A. Yes.
- 10 Q. Does the utility have an adequate auxiliary power source in the event
11 of a power outage?
- 12 A. One is not required, because there are less than 150 connection and less
13 than 350 people.
- 14 Q. Are the utility's water wells for Do1 Ray Manor located in compliance
15 with Rule 62-555, Florida Administrative Code?
- 16 A. Yes.
- 17 Q. Does the utility have certified operators as required by Rule 61E12-41,
18 Florida Administrative Code?
- 19 A. Yes.
- 20 Q. Has the utility established a cross-connection control program in
21 accordance with Rule 62-555.360, Florida Administrative Code?
- 22 A. The utility provides a copy of its cross-connection control program to
23 each resident.
- 24 Q. Is the overall maintenance of the treatment plant and distribution
25 facilities satisfactory?

1 A. Yes.

2 Q. Does the water produced by the utility meet the State and Federal
3 maximum contaminant levels for primary and secondary water quality standards?

4 A. Yes.

5 Q. Does the utility monitor the organic contaminants listed in Rule
6 62-550.410, Florida Administrative Code?

7 A. Yes.

8 Q. Do recent chemical analyses of raw and finished water, when compared to
9 regulations, suggest the need for additional treatment?

10 A. No.

11 Q. Does the utility maintain the required chlorine residual or its
12 equivalent throughout the distribution system?

13 A. Yes.

14 Q. Are the plant and distribution systems in compliance with all the other
15 provisions of Chapter 62, Florida Administrative Code, not previously
16 mentioned?

17 A. Yes.

18 Q. Has Do1 Ray Manor been the subject of any FDEP enforcement action within
19 the past two years?

20 A. No.

21 Q. Do you have anything further to add?

22 A. No, I do not.

23

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1 MS. O'SULLIVAN: Thank you.

2 CHAIRMAN CLARK: Thank you.

3 MR. ARMSTRONG: Madam Chair, regarding the
4 stipulation, the amendment to it by Public Counsel, I
5 have a question on behalf of Southern States with
6 regard to the correspondence side of the docket and
7 any letters therein. Obviously, those letter aren't
8 in evidence. And it's my understanding that that is
9 not part of the evidence in this case.

10 CHAIRMAN CLARK: Mr. Armstrong, we have
11 traditionally allowed it to be in the correspondence
12 side. Its not testimony that is under oath and it is
13 there for review and follow up as part of this case.

14 MR. ARMSTRONG: Okay.

15 MR. BECK: I think the purpose on the
16 stipulation is to show that these witnesses did not
17 look at the customer complaints there so their
18 testimony doesn't address that.

19 CHAIRMAN CLARK: And I think that's clear.
20 With that, we are back to Mr. Bidy; is that correct?

21 Mr. Reilly, Commissioner, you've got one --

22 CHAIRMAN CLARK: Go ahead, Mr. Reilly.

23

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1 **TED L. BIDDY**

2 was called as a witness on behalf of the Citizens of
3 the State of Florida and, having been duly sworn,
4 testified as follows:

5 **DIRECT EXAMINATION**

6 BY MR. REILLY:

7 Q Good morning, Mr. Biddy.

8 A Good morning.

9 Q Would you please state your name and
10 business address for the record.

11 A My name is Ted L. Biddy. Business address
12 is 2878 Remington Green Circle, Tallahassee.

13 Q Did you prefile direct testimony in this
14 docket?

15 A Yes, I did.

16 Q Do you have any corrections or amendments
17 you would like to make concerning that prefiled
18 testimony?

19 A Yes, sir. We have prepared revised
20 testimony and included four items of revision.

21 No. 1, Southern States Utilities has
22 furnished fire flow information for seven systems
23 which we requested and we have made revisions for a
24 fire flow allowance on those systems.

25 No. 2, there were arithmetic corrections to

1 eight systems for supply wells used and useful
2 calculations for systems with storage and high service
3 pumps.

4 No. 3, the deep well injection wells used
5 and useful adjustments on Marco Island were made based
6 on information received from Southern States
7 Utilities.

8 And No. 4, we had a wrong citation in our
9 direct testimony before it was revised in connection
10 with construction permit and operating permit
11 capacities. We cited the Environmental Resource Rule
12 when we should have referred to the NPDES permit
13 delegation from EPA to FDEP which combines a
14 construction and operating permanent. No change in
15 the numbers, just is a wrong citation.

16 MR. REILLY: Madam Chairman, we republished
17 his testimony and the changes he spoke of are
18 underlined in the 5-3-96 version which is and that
19 version was furnished to all of the parties last
20 Friday. And I believe it's my understanding that
21 that's the version Southern States will be using in
22 cross examination today.

23 CHAIRMAN CLARK: Let me ask a question, is
24 there any objection to using the testimony as revised
25 on 5-3-96?

1 MR. FEIL: No, ma'am.

2 CHAIRMAN CLARK: The direct testimony of
3 Ted L. Bidy as revised on May 3rd, 1996, will be
4 inserted into the record as though read.

5 MR. REILLY: Okay. I didn't ask for that
6 but thank you.

7 CHAIRMAN CLARK: Well, Mr. Reilly, is there
8 something I need to change? It's my understanding you
9 want the revised testimony to appear --

10 MR. REILLY: Absolutely. I just wanted to
11 go through the "if I was to ask you the same
12 questions" -- do you want me to do that?

13 CHAIRMAN CLARK: You better do that.

14 Q (By Mr. Reilly) Mr. Bidy, if I were to ask
15 you the same questions posed in your prefiled direct
16 testimony, would your answers be the same as outlined
17 in your 5-3-96 amended testimony?

18 A Yeah.

19 Q In your prefiled testimony you also sponsor
20 and refer to certain exhibits; is that correct?

21 A Yes, it is.

22 Q TLB-1, 2, 3 and 4?

23 A Also 3.1 and 4.1.

24 Q Okay. And do you have any corrections or
25 amendments, are there fallout schedules to reflect the

1 testimony as amended?

2 A Yes, sir, there are.

3 Q Do you continue to endorse and sponsor those
4 exhibits as amended on 5-3-96?

5 A Yes.

6 MR. REILLY: Okay. At this time I was ging
7 to move that the testimony be read into the record as
8 though read.

9 CHAIRMAN CLARK: The revised testimony dated
10 May 3rd, 1996, will be inserted into the record as
11 though read.

12 MR. REILLY: And that exhibits be
13 identified?

14 CHAIRMAN CLARK: Exhibits listed listed as
15 TLB-1 through 4, including 3.1 and 4.1 will be
16 identified as composite Exhibit 170.

17 (Exhibit No. 170 marked for identification.)

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1 Q. **WHAT IS YOUR NAME AND BUSINESS ADDRESS?**

2 A. My name is Ted L. Bidy. My business address is Baskerville-Donovan, Inc.
3 (BDI), 2878 Remington Green Circle, Tallahassee, Florida 32308.

4 Q. **BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?**

5 A. I am Vice-President of Baskerville-Donovan, Inc. and Regional Manager of the
6 Tallahassee Office.

7 Q. **WHAT IS YOUR EDUCATIONAL BACKGROUND AND WORK
8 EXPERIENCE?**

9 A. I graduated from the Georgia Institute of Technology with a B.S. degree in Civil
10 Engineering in 1963. I am a registered professional engineer and land surveyor in
11 Florida, Georgia and Mississippi and several other states. Before joining BDI in
12 1991, I had operated my own civil engineering firm for 21 years. My areas of
13 expertise include civil engineering, structural engineering, sanitary engineering,
14 soils and foundation engineering and precise surveying. During my career, I have
15 designed and supervised the master planning, design and construction of thousands
16 of residential, commercial and industrial properties. My work has included: water
17 and wastewater design; roadway design; parking lot design; stormwater facilities
18 design; structural design; land surveys; and environmental permitting.

19 I have served as principal and chief designer for numerous utility projects.
20 Among my major water and wastewater facilities designs have been a 2,000 acre
21 development in Lake County, FL; a 1,200 acre development in Ocean Springs, MS;
22 a 4 mile water distribution system for Talquin Electric Cooperative, Inc. and a 320

1 lot subdivision in Leon County, FL.

2 **Q. WHAT ARE YOUR PROFESSIONAL AFFILIATIONS?**

3 A. I am a member of the Florida Engineering Society, National Society of Professional
4 Engineers, and Florida Society of Professional Land Surveyors.

5 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE FLORIDA PUBLIC
6 SERVICE COMMISSION (FPSC)?**

7 A. Yes. I have testified in the St. George Island Utilities, Ltd. case in Docket No.
8 940109-WU.

9 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE A STATE OR FEDERAL
10 COURT AS AN ENGINEERING EXPERT WITNESS?**

11 A. Yes, I have had numerous court appearances as an expert witness for cases
12 involving roadways, utilities, drainage, stormwater, water and wastewater facilities
13 designs.

14 **Q. HAVE YOU REVIEWED ANY RATE FILING DOCUMENTS FILED WITH
15 THE FLORIDA PUBLIC SERVICE COMMISSION REGARDING USED
16 AND USEFUL ANALYSIS AND OTHER ENGINEERING ISSUES?**

17 A. Yes, I have reviewed the FPSC staff final recommendations on engineering issues
18 for Docket No. 920733-WS and No. 900718-WU. Docket No. 920733-WS was
19 filed by the General Development Utilities, Inc. for its Silver Springs Shores
20 Division which has lime softening treatment facilities. Docket No. 900718-WU
21 was filed by Gulf Utility Company for its reverse osmosis plant expansion.

22 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. The purpose of my testimony is to provide comments on methods of used and
2 useful analysis used by Southern States Utilities, Inc. (SSU) for this rate increase
3 filing.

4 **Q. WERE THE MATERIALS YOU ARE SPONSORING PREPARED BY YOU**
5 **OR BY PERSONS UNDER YOUR DIRECT SUPERVISION AND**
6 **CONTROL?**

7 A. Yes, they were.

8 **Q. DO YOU AGREE WITH THE MARGIN RESERVE PROPOSED BY SSU**
9 **FOR USED AND USEFUL CALCULATIONS?**

10 A. No, I do not think margin reserve used by SSU in this rate filing is appropriate.
11 Besides the testimony provided by Witness Mr. Larkin, I have some comments to
12 add especially on 3 years and 5 years of margin reserve for water and wastewater
13 treatment facilities, respectively. Chapter 62-600.405, Florida Administrative Code
14 (F.A.C.) requires all wastewater utilities to submit capacity analysis reports (CAR)
15 to the Florida Department of Environmental Protection (FDEP) at different
16 conditions. The five year time frame mentioned in the rules is mainly used as the
17 interval for submitting a CAR. We should not translate that five year time frame
18 as the actual time required for new plant expansions. The rule is simply trying to
19 mandate wastewater treatment plant (WWTP) owners to prepare plans for possible
20 future expansion. The five year submittal will be reduced to annual update when
21 the permitted capacity will be equaled or exceeded within the next 10 years. The
22 utilities may have to expand WWTP quickly, it depends on how soon the flow is

1 anticipated to reach the permitted capacity. If the wastewater flow is not
2 anticipated to reach the permitted capacity within 10 years, on the other hand, the
3 utilities are only required to submit a CAR every 5 years and nothing else.

4 FDEP has no similar rules on water treatment facilities. The need for plant
5 expansion again is dependent upon when the future flow will reach existing
6 capacities. Sometimes it does not take a long time to increase capacity for water
7 treatment, such as adding a new well and filters. Therefore, the 3-year and 5-year
8 margin reserves requested by SSU are not justified or mandated by regulation.

9 In addition, a well planned phased development and plant expansion can
10 reduce and eventually eliminate the need of margin reserve. This is feasible and
11 can be done. The construction permit DC432-219274 of Marion Oaks WWTP is
12 a good example in this filing. In that permit, the 0.2 MGD Type I extended aeration
13 sewage treatment plant was permitted to expand in four phases to a 1.0 MGD plant.
14 Actually, the utility should have new customers or developers to pay for new plant
15 expansion through contribution or prepaid CIAC (contribution in aid of
16 construction) and other ways. Collection of these prepaid fees from future
17 customers should render a margin reserve allowance, paid by current customers, to
18 be unnecessary.

19 Under Florida conditions of tightening environmental regulation, increasing
20 water costs and water conservation concern, it is reasonable to believe that the
21 water consumption and wastewater generation of existing customers will not
22 increase. Therefore, the margin reserve requested by SSU is solely for new

1 customers. If the PSC allows margin reserve in the used and useful calculations,
2 then it will penalize existing customers by burdening them to pay extra cost for new
3 customers. Allowing margin reserve will further increase water and wastewater
4 rates to existing customers. High utility rates reduce the financial ability for
5 customers and will hinder future development. Therefore, the PSC should
6 eliminate margin reserve allowance in used and useful analysis. The utility should
7 recover the costs of plant addition from new customers or developers through other
8 measures.

9 **Q. DO YOU HAVE ANY COMMENTS ON THE FIRE FLOW**
10 **REQUIREMENT SOUTHERN STATES UTILITIES, INC. (SSU) APPLIED**
11 **IN USED AND USEFUL CALCULATIONS?**

12 A. Fire flow capacity should be included in used and useful calculation only if fire
13 flow provision was proven by sufficient fire flow test records. SSU did not provide
14 this information in the original filing, therefore, no fire flow was applied in my used
15 and useful calculation. However, OPC has request SSU to provide the fire flow test
16 information. Revised used and useful calculation will be submitted if SSU does
17 provide adequate information.

18 In the response to OPC Document Request No. 298, SSU provided fire flow
19 test records for seven water systems and appropriate fire flow allowance was
20 included in the revised Exhibit TLB-3 of used and useful calculations. Exhibit
21 TLB-3.1 summarizes fire flow records and adjustments of fire flow allowance.

22 Many components of a water distribution system dictate the delivery of fire

1 flow. They include high service pumps, distribution storage tanks (elevated or
2 ground) and water mains. Because of economic concerns, for many systems fire
3 flows are provided partially by high service pumps and partially by storage. See
4 Exhibit TLB-1₁₇₀ excerpted from AWWA M31 Manual for examples.

5 No fire flow should be applied to high service pumps, finished water storage
6 or water supply wells without confirming the fire fighting capability of each
7 system. Installing a fire hydrant in the distribution system does not guarantee the
8 required fire flow. As mentioned above SSU was asked to prove the fire flow
9 capability by providing fire flow test records. However, that information was not
10 available at the time of preparing this testimony. Therefore, no fire flow
11 requirement requested by SSU was included in my used and useful calculations in
12 Exhibit TLB-3₁₇₀. When fire flow test documentation becomes available, the used
13 and useful schedules may be revised and provided to the Commission.

14 If a system is not designed or proved to provide required fire flow, it is
15 dangerous and unfair to assume the fire flow requirement in used and useful
16 analysis. Residents and business owners are paying higher property insurance
17 premiums because of inadequate fire fighting provision. It is not cost effective to
18 use source of supply to meet instantaneous demands, such as peak hourly flows and
19 fire flows. Normally a small water system without storage tanks does not have the
20 capability for fire fighting.

21 In addition, AWWA Manual M31 Page 33 states "Generally, water system
22 components are out of service for short periods of time, so the probability of a

1 component being out of service when a fire occurs is low.Fortunately, fires that
2 severely stress a distribution system occur only a few times a year in large systems
3 and only once every few years in small systems. Therefore, the probability of a
4 major fire occurring while more than one water system component is out of service
5 is so low that the utility should not be expected to meet required fire flow at such
6 times."

7 **Q. SSU REQUESTED A 12.5% COMPANY-WIDE LEVEL OF**
8 **UNACCOUNTED FOR WATER. DO YOU AGREE WITH THIS**
9 **REQUEST?**

10 A. No. A company-wide unaccounted for water percentage can not represent actual
11 unaccounted for water level of each system. Some systems with high levels of
12 unaccounted for water, like Oak Forest, St. Johns Highlands, and Stone Mountain,
13 are averaged out by large numbers of low unaccounted for water systems.
14 Therefore, the company-wide approach provides a shelter to high unaccounted for
15 water systems and does not encourage operation improvement. PSC should
16 evaluate the level of unaccounted for water on an individual basis. To achieve low
17 levels of unaccounted for water, PSC should allow no more than 10% for each
18 water system. Proper adjustments have been made in Exhibit TLB-3 water system
19 used and useful calculations, to account for excess unaccounted for water.

20 **Q. DO YOU RECOMMEND THAT A SINGLE MAXIMUM DAY FLOW**
21 **SHOULD BE USED IN USED AND USEFUL CALCULATIONS?**

22 A. No, the single maximum day flows should not be used in used and useful

1 calculations in this filing. The single maximum day flows may include undetected
2 or unrecorded leaks, flushing and unusual usage, in addition to the PSC allowed
3 unaccounted for water. Normally, a water main leaks for days before detection and
4 that amount of water loss is hard to keep track of. Main breaks and line flushing
5 have similar situations because good records are hard to keep.

6 When engineers review historic flow data and evaluate for maximum daily
7 demands, any unusual and excessive uses of water should be excluded as provided
8 by AWWA M31, *Distribution System Requirement for Fire Protection*, on Page 16.
9 In this filing, SSU did not exclude any unusual and excessive water use for the
10 single maximum day flows. Therefore, an average of the five highest maximum
11 daily flows in the maximum month is justified and should be used for all used and
12 useful and engineering issues. This has been the policy historically used by the
13 Commission.

14 **Q. IS IT JUSTIFIED TO USE THE PERMITTED CAPACITIES IN**
15 **OPERATION PERMITS INSTEAD OF CONSTRUCTION PERMITS FOR**
16 **USED AND USEFUL CALCULATIONS?**

17 A. Normally the operation permit has the same capacity as construction permit for
18 each treatment facility. However, sometimes the same treatment facility has less
19 permit capacity in its operation permit than construction permit. For example, a
20 one MGD contact stabilization type sewage treatment plant could be rated at 0.5
21 MGD for operating in extended aeration treatment. The Beacon Hills WWTP
22 provides an actual example. According to FDEP permit number DO16-213087,

1 that facility is permitted as a 0.836 MGD extended aeration WWTP, which can also
2 be operated as a 1.78 MGD contact stabilization WWTP. I have adjusted the used
3 and useful calculation for the Beacon Hill wastewater treatment plant to reflect its
4 1.78 MGD capacity in Exhibit TLB-4. Adjustments would be appropriate for the
5 other systems if their plant capacities are similarly understated.

6 Therefore, construction permit capacities should be used unless the
7 operation permit has permanently changed the original permit capacities. This
8 question will not be an issue when SSU applies for permit renewals in the future.
9 According to the NPDES permit delegation from EPA, FDEP will combine the
10 construction and operation permits into one permit application.

11 **Q. IS IT REASONABLE TO USE "FIRM RELIABLE CAPACITIES" TO**
12 **CALCULATE USED AND USEFUL PERCENTAGES FOR SUPPLY**
13 **WELLS, HIGH SERVICE PUMPS AND WATER TREATMENT**
14 **FACILITIES?**

15 **A.** No, it is not justified to use firm reliable capacity on more than one component.
16 The firm reliable capacity is the total capacity of supply wells, high service pumps,
17 filters, or other treatment plant facilities without the largest unit in operation. That
18 largest unit is assumed to be out of service for routine maintenance or emergency
19 repair.

20 Most of the time, facilities are scheduled in advance to be out of service for
21 maintenance or repair. It is very unlikely that two facility components will be
22 scheduled for service at the same time. The chance of having two facility

1 breakdowns, simultaneously, is slim. Therefore, it is not economically justified to
2 calculate used and useful percentages for supply wells, water treatment facilities
3 and high service pumps all with "firm reliable capacity." Adjustments have been
4 made in my used and useful calculations in Exhibit TLB-3, based on the above
5 discussion.

6 **Q. DO YOU HAVE ANY COMMENTS ON WATER SUPPLY WELL USED**
7 **AND USEFUL CALCULATIONS PROPOSED BY SSU?**

8 A. SSU used so called "firm reliable capacity" in calculating used and useful
9 percentage for water supply wells. The firm reliable capacity excludes the largest
10 well capacity by assuming it to be out of service. When there are more than ten
11 wells, the largest two wells are assumed to be out of service. The combined
12 capacity of remaining supply wells is the "firm reliable capacity." If a system has
13 only supply wells and no storage facilities or high service pumps, then the well
14 pumps also serve as high service pumping facilities. For this type water system, the
15 "firm reliable capacity" proposed by SSU is acceptable.

16 However, when storage or high service pumping facilities are available, the
17 "firm reliable capacity" method is not applicable. According to Section 3.2.1.1
18 Source capacity of *Recommended Standards For Water Works*:

19 "The total developed groundwater source capacity shall equal or exceed the
20 design maximum day demand and equal or exceed the design average day demand
21 with the largest producing well out of service."

22 This design criteria should be used to calculate used and useful percentage

1 for supply wells. For the above reason, the "firm reliable capacity" method should
2 not be applied to supply wells where the water system is also equipped with storage
3 and high service pumping facilities. Adjustments have been made according to the
4 above principles in Exhibit TLB-3.
170

5 **Q. DO YOU HAVE ANY COMMENTS REGARDING USED AND USEFUL**
6 **CALCULATIONS OF THE FINISHED WATER STORAGE?**

7 A. The peak hour domestic demands calculations proposed by SSU is unjustified
8 without document support and clear explanation. SSU assumed the peak hour
9 demand is two times of the maximum day demand and the peak hour demand is
10 four hours long. AWWA M32, *Distribution Network Analysis for Water Utilities*,
11 suggests a peak factor range of 1.3 to 2.0 for peak-hour demand to maximum-day
12 demand. I believe 1.3 should be used because it is the minimum requirement.

13 In MFRs Volume VI Book 1 of 2 Pages 14 and 15, "maximum day gallons
14 pumped" was used instead of "maximum day gallons pumped/24 hours." The time
15 unit was omitted and an abnormal large storage for domestic peak hour demand will
16 be erroneously calculated. Though SSU did not make mistakes in this calculation,
17 it is better to clarify that the "maximum day gallons pumped" means "maximum
18 day gallons pumped within 24 hours" in the record. Normally to compute the
19 required peak hour storage, a mass diagram or hydrograph indicating the hourly rate
20 of consumption is required.

21 SSU requested an 8-hour emergency storage for large water systems,
22 including: Amelia Island, Burnt Store, Citrus Springs, Deltona Lakes, Lehigh,

1 Marco Shores, Marco Island, and Sugar Mill Country Club. Emergency storage is
2 not a design criteria in the *Recommended Standards for Water Works*. Just as
3 AWWA M32 stated, the amount of emergency storage is an owner option to be
4 included within a particular water system. It depends on an assessment of risk and
5 the desired degree of system dependability. Emergency storage is seldom included
6 in designs because of costs. SSU was unable to confirm the emergency storage in
7 the original plant design. Therefore, no emergency storage was applied in my used
8 and useful calculations.

9 SSU also requested ten percent of the total finished water storage to be
10 "dead storage" because of floor suction and vortexing effect. These concerns are
11 not true for all storage facilities, especially for elevated tanks. For ground storage
12 facilities, as-built drawings should be able to reveal the minimum operating level.
13 It is not justified to assume 10% of the storage capacity is dead storage for every
14 single storage tank. In addition, SSU has used more than 10% dead storage in the
15 used and useful calculations for most of the systems. Further, SSU provides no
16 supporting explanation to justify dead storage allowance for each storage tank.

17 When designing storage tanks and high service pumps, engineers have to
18 check the available net positive suction head (NPSH) and ensure that it is greater
19 than the net required positive suction head to avoid cavitation problems. Therefore,
20 the vortex situation is rare because high service pumps are always placed at a low
21 grade to obtain the maximum NPSH. Full storage tank capacity was applied in my
22 used and useful calculations, per Exhibit TLB-2 and Exhibit TLB-3.

170

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1 Q. DO YOU HAVE ANY COMMENTS TO ADD ABOUT THE PROPOSED
2 HIGH SERVICE PUMPS USED AND USEFUL CALCULATIONS?

3 A. High service pumps are normally designed to handle maximum daily flows. Any
4 demands beyond maximum daily flows should be met by distribution storage tanks
5 (AWWA M32 P.41). Distribution storage means elevated storage tank or a ground
6 storage tank with booster pumps in the distribution system. Distribution storage is
7 a part of the finished water storage. Finished water storage usually means ground
8 storage tanks that store finished water to be supplied to high service pumps which
9 push the finished water to the distribution system. However, many water systems
10 have elevated storage tanks in addition to the ground storage tanks to meet the
11 system demands. According to SSU witness Mr. Bliss, Keystone Heights and
12 Lehigh are the only two water systems in this rate filing that have elevated storage
13 tanks. It is not cost effective to use high service pumps to handle peak hourly flows
14 and fire flows. If fire flows are provided by distribution storage, no fire flow
15 should be included in high service pump used and useful calculations. However,
16 SSU was unable to confirm whether fire flow is provided by elevated storage tanks
17 in Keystone Heights and Lehigh. For that reason fire flow demands will be applied
18 to high service pumps only when fire flow provision is properly proven.

19 A water system with no elevated distribution storage facilities is less cost
20 effective because both high service pumps and on site finished water storage need
21 to meet extra peak hourly demands above maximum daily flows or fire flows.
22 Without the capability of replenishing elevated storage, high service pumps need

1 to operate in a higher and wider range of pumping head. Therefore, the capital
 2 costs are higher and less cost effective to operate, compared to water systems with
 3 elevated storage tanks. During the peak demands, the elevated tank will first
 4 provide water to the system and high service pumps will provide the remaining
 5 excess water demands. For that reason a smaller high service pump can be used.
 6 Examples in Exhibit TLB-1 clearly address these situations.

7 When distribution storage is not available, but the system is designed to
 8 provide fire flows, engineers will size up high service pumps for fire flow
 9 provision. However, the design flows used should be maximum day demands
 10 (average 5 maximum days of maximum month) plus fire flows or peak hourly
 11 demands, which ever is greater. This design criteria is used in AWWA M31
 12 because the chance of having a fire outbreak during peak hourly demands is very
 13 slim. Therefore, designing high service pumps to meet fire flows, plus peak hourly
 14 flows, is not economically justified. Adjustments have been made in my used and
 15 useful calculations in Exhibit TLB-3. See Exhibit TLB-2 for calculation key
 16 summary.

17 **Q. DO YOU AGREE WITH THE 100% USED AND USEFUL REQUEST ON**
 18 **FACILITY LANDS, HYDRO TANKS, AND AUXILIARY POWER?**

19 A. No, PSC should not grant 100% used and useful on facility lands, auxiliary power
 20 and hydro tanks without individual analysis. Every system has different sizes of
 21 facility lands, auxiliary power, and hydro tanks. The current demands and
 22 available capacities are also unique between systems. These factors all dictate the

1 facility usage. Therefore, a used and useful calculation is really required for every
2 facility land, auxiliary power, and hydro tank. Adjustments should be made to the
3 used and useful percentages because all facility land, auxiliary power, and hydro
4 tank are part of the system, and they are designed to serve the whole system. The
5 higher the existing demand, the higher the used and useful percentage.

6 From the response to OPC Interrogatory No. 341, SSU stated that 50 water
7 and 11 wastewater systems have auxiliary power equipment. Unfortunately SSU
8 cannot specify what facilities are supported by each auxiliary power equipment.
9 Therefore, OPC has to assume that auxiliary power has the same used and useful
10 percentage as supply wells or wastewater treatment plants. Adjustments to
11 auxiliary power have been made in Exhibit TLB-3 and Exhibit TLB-4. See Exhibit
12 TLB-2 for calculation key and rationale summary. Marco Shores water system has
13 no supply wells, and the used and useful percentage of high service pumps was
14 used for auxiliary power equipment.

15 **Q. IS IT APPROPRIATE TO USE HYDRAULIC ANALYSIS IN**
16 **CALCULATING THE USED AND USEFUL PERCENTAGES OF WATER**
17 **TRANSMISSION AND DISTRIBUTION SYSTEMS?**

18 A. No, it is not appropriate to use hydraulic analysis modeling to calculate the used
19 and useful percentage for water transmission and distribution system. The
20 hydraulic analysis method indeed is a reliable design tool for designing water
21 transmission and distribution systems. However, it does not follow that hydraulic
22 analysis is also appropriate and applicable for the used and useful analysis in

1 economic regulations.

2 The used and useful analysis for a water transmission and distribution
3 system is not a flow measurement or flow projection technique. Used and useful
4 analysis is about allocating construction costs fairly to both existing and future
5 customers. Hydraulic analysis modeling proposed by SSU unfairly shifts the
6 majority of the cost burden to existing customers, especially in new or sparsely
7 developed areas. For example, in the same subdivision customers in densely
8 developed areas will have to pay for water mains which are less used in newly or
9 sparsely developed areas. The reason is that the distribution system will supply
10 water to high demands from densely developed areas through looped water mains
11 in sparsely developed areas. The fire flow provision also makes the water mains
12 in sparsely developed areas highly used and useful. It is the responsibility of
13 developers and utility owners to prevent scattered development. Utility owners
14 should bear the risk and costs of acquiring systems serving sparse developments.
15 Sunny Hills is a good example of the above conditions. The example below
16 illustrates the unfair used and useful determination because the flow measurement
17 technique utilized in a hydraulic analysis tends to inflate used and useful percentage
18 for sparsely developed systems.

19 Assume a water distribution system is designed to serve 1,000 single family
20 homes with a 750 gpm fire flow provision, and assume that the system currently
21 serves only 100 homes with 350 gallons per home average daily consumption.
22 Using peaking factors of 2 for maximum daily flows from average daily flows and

1 1.3 for peak hourly flows from maximum daily flows, the existing 100 homes will
2 be required to pay for 58.84% of the total water mains laid for 1,000 homes. See
3 the following calculation.

$$4 \quad \text{Used and useful \%} = \frac{[(100 \times 350 \times 2 \times 1.3/1440) + 750]}{[(1000 \times 350 \times 2 \times 1.3/1440) + 750]} = 58.84\%$$

6 This example clearly demonstrates that the hydraulic analysis method
7 unfairly allocates cost sharing between existing customers and future customers.
8 In the filing, SSU has requested a 28.09% used and useful on the Sunny Hills Well
9 5 transmission and distribution system. In that subdivision, only four customers are
10 connected to the system with a 491 lot capacity. Due to the inclusion of fire flow,
11 those customers who represent less than one percent of the system, are responsible
12 for 28.09% of the water mains cost. An economic regulatory agency like PSC
13 should not accept such a disparity created by hydraulic analysis methods. If PSC
14 accepts hydraulic analysis for used and useful calculations, future development will
15 be intimidated by highly inflated rates.

16 Hydraulic analysis modeling is too complicated and time consuming to
17 apply to water transmission and distribution used and useful analysis. Any change
18 in high service pumps, distribution storage, customer demands and water main size
19 will increase or decrease water flows in water pipes. For example, by using a larger
20 size high service pump for build out conditions, more water will pass through the
21 same water main. Therefore, a change in the system operating parameters will
22 create a different hydraulic analysis result. The build out flows presented by SSU

1 in the MFR's are not the ultimate capacities of the water mains, and they are subject
2 to change. For examples, a lot of "dry" water mains in the original "Deltona"
3 systems are not connected to existing distribution systems. Once the "dry" mains
4 are connected, the build out flow of each main will be changed. If PSC accepts the
5 use of hydraulic analysis, there will be numerous sets of used and useful
6 percentages, and it can unduly complicate the used and useful analysis.
7 Consequently customers will be paying more than their fair share on the water
8 transmission and distribution system.

9 In addition, to validate the hydraulic analysis computer model for an
10 existing distribution system, detailed calibrations are required, which includes
11 comparing system pressures with computer output and checking roughness
12 coefficient of water mains. A slight change on the roughness coefficient can affect
13 the results significantly. Calibrating a hydraulic model basically is a trial and error
14 process until the model prediction is close to field measurements. Trying to adopt
15 hydraulic modeling for used and useful analysis is not appropriate because of
16 complexity and time consumption. It is economically unfeasible for most utilities
17 to perform hydraulic modeling for rate increase filings. Due to numerous variables,
18 the enormous staff time required to verify hydraulic computer models is an
19 unnecessary burden for PSC.

20 On the other hand, the "lot count" method allocates the water main costs
21 evenly to all customers, after engineers have properly designed the whole system.
22 The lot count method assigns a fair share of the total construction cost to every

1 customer. The lot count method does not fail to recognize water main cost to
2 accommodate fire flow and looped lines, because it allocates the total cost through
3 used and useful percentages. Existing customers do not get a free ride because the
4 construction costs of fire flow accommodation and looped lines are included in the
5 total cost.

6 Water transmission and distribution systems are designed for all existing
7 and future customers. The hydraulic analysis method clearly tilts the burden to
8 existing customers. The lot count method tends to give an equal cost share to all
9 customers. Therefore, the lot count method will not discourage future development,
10 as opposed to the way hydraulic modeling will probably discourage future
11 development. For some instances, however, the lot count method still favors future
12 customers. For example, without future development, engineers would design a
13 smaller size system for existing customers. However, most of the time water
14 transmission and distribution mains are oversized for existing customers to
15 accommodate future phases of development. Lot count method does not reduce the
16 used and useful percentage for existing customers for the over sized mains.
17 Therefore, existing customers are carrying extra costs for laying larger sizes of
18 water mains that will be connected for future development. The burden on future
19 customers are therefore less than existing customers.

20 "Fill-in-lots" should not be a problem in the lot count method. When a
21 system is reaching built out, fill-in lots probably will be sold at appreciated values
22 and increase the used and useful percentages. A mass development without proper

1 phasing creates sparse development and scatters customers. Low used and useful
 2 percentages of the water transmission and distribution are apparent and
 3 unavoidable. Developers and utility owners should bear the risk for not preventing
 4 sparse development from happening. Existing customers should not pay for the
 5 consequence of low used and useful percentage on a water distribution system.
 6 SSU should recover the cost of unused water mains by collecting contributions
 7 from new customers. Adjustments have been made to appropriate systems in the
 8 Exhibit TLB-3,
 170

9 **Q. SHOULD RATE BASE INCLUDE WATER MAINS LAID IN THE**
 10 **GROUND BUT NOT CONNECTED TO THE EXISTING DISTRIBUTION**
 11 **SYSTEM?**

12 A. Any water mains constructed in place but which do not connect to the existing
 13 system should be considered non-used and useful. Apparently those "dry" mains
 14 are reserved for future customers. Any investment in these "dry" water mains
 15 should be removed from rate base. When SSU provides the dollar investments in
 16 these "dry" water mains, these amounts should be removed from rate base.

17 According to the Late Filed Deposition Exhibit No. 8 of Mr. Bliss, the
 18 following dollar amounts should be removed from the rate base of each system:
 19 \$913,386.25 from Citrus Spring; \$204,309.60 from Marion Oaks; \$45,144.00 from
 20 Pine Ridge; and \$686,711.20 from Sunny Hills.

21 **Q. SHOULD EXCESS INFLOW AND INFILTRATION BE INCLUDED IN**
 22 **ENGINEERING SCHEDULE F-2(S) GALLONS OF WASTEWATER**

1 **TREATED?**

2 A. No. The amount of wastewater treated should not include any excessive inflow and
3 infiltration. Engineering Schedules F-2(S) filed by SSU did not show the inflow
4 and infiltration amount. The inflow/infiltration information should be presented to
5 show the condition of collection system. Many guideline criteria are available and
6 can be used for infiltration allowance on gravity sewers. In the *Recommended*
7 *Standards for Wastewater Facilities*, 200 gallons per inch of pipe diameter per mile
8 per day is the recommended guideline and that criteria is generally used by the
9 FDEP staff.

10 Any excessive inflow and infiltration should be excluded from the amount
11 of wastewater treated. The used and useful analysis should be adjusted accordingly.
12 From the response to OPC Document Request No. 279, SSU indicated that eight
13 out of the forty WWTP have excess inflow and infiltration, as shown by Appendix
14 DR 279-A. The excess amounts were excluded from the used and useful
15 calculations in Exhibit TLB-4.

170

16 **Q. DO YOU AGREE THAT THE NEW RAW WATER SUPPLY SITE OF**
17 **MARCO ISLAND IS 100% USED AND USEFUL WITHOUT**
18 **EVALUATION?**

19 A. No. An evaluation of total water supply capacity should be conducted before
20 claiming 100% used and useful on the raw water supply site. Currently, it does not
21 seem feasible that this facility will be put into service for the projected test year
22 1996 because no facilities have been constructed on the site. In addition, witness

1 Mr. Terrero mentioned that SSU does not yet have the easement and right of way
2 to connect the new water supply site and Marco Island. Therefore, the cost of 160
3 acres new water supply site should be eliminated from the rate base in this filing.

4 **Q. DO YOU AGREE WITH THE 100% USED AND USEFUL REQUEST FOR**
5 **ALL EFFLUENT REUSE FACILITIES WITHOUT EVALUATION?**

6 A. No. Though effluent reuse is encouraged by environmental regulatory agencies
7 and the utilities are allowed to recover the costs through rate structures, it does not
8 automatically mean all effluent reuse facilities are 100% used and useful. Existing
9 customers should not pay for extra reuse capacity, just as existing customers should
10 not pay for excess capacities of wastewater treatment plants and percolation ponds.
11 In addition, the effluent reuse customers also are paying costs for using the treated
12 effluent. SSU should perform used and useful calculations on all systems that have
13 reuse facilities: Amelia Island, Deltona Lakes, Florida Central Commerce Park,
14 Lehigh, Marco Island, Point O'Woods, and University Shores. It is unjustified to
15 ask existing customers to pay for future customers. Currently no specific used and
16 useful calculations have been made due to lack of effluent reuse flow data. Under
17 this circumstance, the used and useful percentage of reuse facilities was assumed
18 the same percentage as used for percolation ponds.

19 Some systems have two or more effluent disposal measures other than
20 reuse. For example, Marco Island wastewater system has golf course irrigation,
21 percolation ponds, and deep injection well for its effluent disposal. Used and useful
22 calculations may be revised when relevant information is provided by SSU.

1 Q. DO YOU AGREE THAT AN ADJUSTMENT SHOULD BE MADE TO THE
2 DEEP INJECTION WELL ON MARCO ISLAND?

3 A. Yes. The used and useful percentage of the deep injection well on Marco Island
4 depends on the flow data that will be provided by SSU in the near future. Proper
5 adjustment may be made and filed to the Commission when necessary information
6 is provided.

7 According to the Late Filed Deposition Exhibits No. 4, 5, and 6 of Mr.
8 Tererro and Response to OPC Document Request No. 289, the deep injection well
9 on Marco Island is 37.24% used and useful. See Exhibit TLB-4 for the revised
10 used and useful percentages, and Exhibit TLB-4.1 for effluent disposal calculation
11 summary.

12 Q. DO YOU HAVE ANY SPECIFIC COMMENTS CONCERNING THE
13 BURNT STORE WATER SYSTEM?

14 A. Yes. I believe the capacity of the Burnt Store reverse osmosis water plant should
15 be 380 gallons per minute (gpm) instead of 333 gpm. The SSU response to Staff
16 Interrogatory No. 91 indicated that there are two membrane skids in service. Each
17 skid is rated for 167 gpm. However, this pure product water (167 gpm) is blended
18 with ten percent (10%) of the 223 gpm feed water. Therefore, the whole plant
19 output capacity should be as follows:

20
$$\text{Total Capacity} = 2 \times [167 \text{ gpm} + (10\% \times 223 \text{ gpm})] = 378.6 \text{ gpm}$$

21 However, at his deposition SSU witness Mr. Terrero confirmed that he considered
22 each skid to have a capacity of 190 gpm, resulting in a total capacity of 380 gpm

1 for Burnt Store's reverse osmosis water plant. Proper adjustment has been made in
2 my used and useful calculation in Exhibit TLB-3.
170

3 **Q. DID YOU PREPARE ANY USED AND USEFUL CALCULATIONS IN THIS**
4 **TESTIMONY?**

5 A. Yes, I have recalculated the used and useful percentages for all water and
6 wastewater systems, according to my positions on the above issues. However,
7 some information was not provided by SSU, and I had to make many assumptions
8 in the calculations. For example, fire flow provision was not included because no
9 confirmation is available. Auxiliary power is normally designed to operate supply
10 wells in water systems. In wastewater systems, auxiliary power is usually designed
11 to operate the wastewater treatment plant.

12 All numbers filed by SSU were used, and assumed to be genuine and
13 correct. The calculated used and useful percentages of water and wastewater
14 systems are presented in Exhibit TLB-3₁₇₀ and Exhibit TLB-4₁₇₀, respectively. A
15 summary of calculation key and rationale is also included in Exhibit TLB-2.
170
16 However, these used and useful numbers are subject to change pending further
17 responses to discovery.

18 **Q. DOES THIS CONCLUDE YOUR PREFILED TESTIMONY?**

19 A Yes, that concludes my testimony filed on February 12, 1996.

1 Q (By Mr. Reilly) At this time, Mr. Bidy,
2 would you like to provide any summary of your
3 testimony?

4 A Yes, I have a summary.

5 The following will be a summary of my
6 testimony for the Office of Public Counsel in the
7 Southern States Utilities company rate case.

8 My testimony will provide comments on
9 methods of used and useful analysis by Southern States
10 Utilities and present more reasonable and fair
11 alternatives for these analysis with revised used and
12 useful calculations.

13 Firstly, on the subject of margin reserve.
14 I do not agree with the margin reserve proposed by
15 Southern States Utilities for used and useful
16 calculations: namely, three years for water treatment
17 facilities and five years for wastewater treatment
18 facilities. There's nothing in DEP rule under Chapter
19 62600.405 of the Florida Administrative Code that
20 requires a five year future capacity for wastewater
21 facilities. That rule only deals with filing of
22 capacity analysis reports, and there is no similar
23 companion rule for water treatment facilities.

24 No. 2, all margin reserve should be
25 eliminated from used and useful calculations,

1 therefore, forcing utilities to do real world
2 projections of utility need growth, and eliminating
3 the purchase of sparcely developed areas with the
4 utility's request for higher rates on existing
5 customers to pay for an unused and useful facility. A
6 well planned phased development would eliminate all
7 any need for margin reserve.

8 PSC has methods or compensating for such
9 excess capacity such as contributions in aid of
10 construction, allowance for funds prudently invested,
11 which the utility should seek, rather than margin
12 reserve, so that existing customers are not burdened
13 with costs of capacity for future customers. With
14 this method, new customers and developers would pay
15 for the new plant expansion.

16 The Utility has made a business decision
17 when they buy up and have bought up sparcely developed
18 utility systems and they assume the risk for the
19 future growth when they bought those systems up. Now
20 they should not be allowed to shift this risk and cost
21 to future customers to existing customers. Allowing a
22 margin reserve and used and useful calculation would
23 penalize existing customers by forcing them to pay
24 extra cost for future customers. Higher rates would
25 hinder further build-out of these sparce developments.

1 Next on fire flow. Fire flow capacity
2 should be allowed in used and useful calculations only
3 in fire flow provision has been proven by sufficient
4 fire flow test results. The Office of Public Counsel
5 requested the Utility to provide the fire flow test
6 information during the discovery. The utility
7 provided such data for only seven systems out of 98
8 systems. I allowed the fire flow and used and useful
9 calculations for these seven systems but not in the
10 remaining systems.

11 Simply citing a local ordinance requirement
12 for fire flow is in no grounds for allowing fire flow
13 in used and useful calculations. All elements of the
14 water system such as the high service pumps,
15 distribution, storage tanks, water mains must be
16 probably sized for fire flow before fire flow should
17 be allowed in the used and useful calculations.

18 Installing fire hydrants on a distribution
19 system does not guarantee the required fire flow.
20 There is no authority for fire flow provision from
21 supply wells and hydropneumatic tanks.

22 Next, unaccounted-for water, my testimony
23 will say that each system should be individually
24 evaluated and excess unaccounted-for water greater
25 than 10% should not be allowed in the used and useful

1 calculations. This will encourage low levels of
2 unaccounted-for water.

3 Next, on maximum day flow. Maximum day flow
4 should be taken as the average of the five highest
5 maximum day flow in the maximum month. This is a
6 position historically applied with the PSC, therefore,
7 excluding any unusual or excessive water use for a
8 single maximum day. Using a single maximum day could
9 include undetected or unrecorded leaks, flushing or
10 other unusual uses.

11 On construction permit versus operating
12 permit capacity in used and useful calculations, the
13 original construction permit capacity should be used
14 unless the operating permit has permanently changed
15 the original permit capacity. An example of that
16 would be a 1 million gallon contact stabilization
17 plant that was permitted for 1 MGD operating at a half
18 a million gallon per day in extended aeration
19 treatment, which would be half the capacity that it
20 would be permitted for.

21 On firm reliable capacities used and useful
22 calculations, which determine that you should use firm
23 reliable capacity on only one component of a water
24 system supply well; a water system supply well, high
25 service pumps and water treatment facilities. It's

1 unlikely that two facility components would be
2 scheduled for service at the same time. It's also
3 very unlikely that two components would have
4 simultaneous breakdowns.

5 On water wells firm reliable capacity, the
6 firm reliable capacity method proposed by the Utility
7 for systems with only supply wells and no storage, or
8 high service pump, is acceptable. That simply
9 excludes the largest well in service. But when
10 storage or high service pumps are available, the firm
11 reliable capacity method is not applicable.

12 On finished water storage used and useful
13 calculations, Southern States Utilities used peak hour
14 demand as two times the maximum day demand. AWWA
15 Manual 32, Distribution Network Analysis for Water
16 Utilities, suggests a peak factor of 1.3 to 2.0 for
17 peak hour demand. I believe that 1.3 peaking factor
18 should be used since it is the minimum requirement.

19 On emergency storage, Southern States
20 requested eight hours emergency storage. We contend
21 this should not be used and useful calculations.
22 Number one, it's not a design criteria in the
23 recommended standards for waterworks. Number two, the
24 American Waterworks Association Manual 32 states that
25 the amount of emergency story is an owner option

1 depending on the assessment of risk and the desired
2 degree of system reliability. And the Utility was
3 unable to confirm that the emergency storage was in
4 the original plant design.

5 Similarly, Southern States Utilities
6 requested 10% dead storage for all of their storage
7 facilities. We contend, No. 1, that that is not
8 applicable at all for elevated tanks. No. 2, that the
9 floor suction and vortex in effect is not a concern
10 when high service pumps are placed at a low grade.
11 And No. 3, the Utility provided no supporting
12 documentation such as as-built drawings to justify any
13 dead storage allowance.

14 Next on high service pumps used and useful
15 calculation, the high service pumps are normally
16 designed to handle maximum daily flow with any demand
17 beyond daily flow met by distribution storage tanks.
18 This is AWWA Manual 32, at Page 41. Distribution
19 storage means elevated storage or ground storage with
20 booster pumps. According to Southern States
21 Utilities, only Keystone Heights and Lehigh have
22 elevated storage. It is not cost effective to use
23 high service pumps to handle peak hourly flow and fire
24 flow. Fire flow demands are applied to high service
25 pump only where fire flow provision was proven for the

1 seven systems.

2 For systems with fire flow, I used maximum
3 day demand which is the average of five maximum days
4 of the maximum month, plus fire flow or peak hourly
5 demand, whichever is greater, and that is a design
6 criteria for America Waterworks Associate, Manual 31.

7 Concerning used and useful calculations for
8 facilities, land, hydropneumatic tanks and auxiliary
9 power, the Utility asked for 100% used and useful on
10 all of these without any individual analysis. We
11 contend that a used and useful is required for each
12 land parcel hydrotank or auxiliary power. Information
13 we received from Southern States Utilities stated that
14 50 water and 11 wastewater systems had auxiliary power
15 but they did not specify which facilities were
16 supported by this auxiliary power.

17 OPC had to assume the auxiliary power has
18 the same used and useful percentage as the supply
19 wells or waste treatment plants.

20 The hydraulic analysis method is not
21 appropriate for use in calculating used and useful
22 percentage of water transmission and distribution
23 system because the hydraulic analysis modeling
24 unfairly shifts the majority of cost burden to the
25 existing customers, especially in new and

1 undeveloped -- sparcely developed areas.

2 Now, a clear example of this is the Sunny
3 Hills Well 5 transmission and distribution system,
4 where Southern States has requested a 28.09 used and
5 useful percentage for a system having only four
6 customers on a system with a 491 lot capacity. Based
7 on the lot count analysis, the lot-to-lot analysis
8 this system is less than 1% used and useful.

9 The lot count method assigns a fair share of
10 the total construction cost to every customer. Any
11 water main not connected to an existing system should
12 be considered nonused and useful.

13 On excess inflow and infiltration, it should
14 not be included in the wastewater treated. Ten States
15 Standard recommends a guideline of 200 gallons per
16 inch of pipe diameter per mile of pipe per day for the
17 maximum inflow/infiltration. EPA is a little more
18 liberal and allows 120 gallons per capita per day.
19 Southern States Utilities reported eight out of their
20 40 wastewater treatment plants at excessive I&I per
21 the EPA standard. And I took that, excluded that
22 excessive I&I from the used and useful calculations.

23 The 160 acre raw water supply of Marco
24 Island with no facilities constructed should be
25 eliminated from the rate base in this filing. All

1 effluent reuse use facilities must be individually
2 analyzed for an used and useful percentage.

3 Now, in summary, the Utility in one of their
4 testimonies have said that I have applied every
5 conceivable negative presumption against Southern
6 States Utilities. My answer to that statement is that
7 I have only applied the minimum standards to each item
8 of used and useful calculations. And if all of these
9 standards proved to be negative to Southern States's
10 position, it only goes to prove that SSU is requesting
11 far too high used and useful percentages. That
12 concludes my summary.

13 MR. REILLY: Madam Chairman, there is some
14 question whether this witness has been sworn in yet.
15 If possible, could we swear him in as to the testimony
16 he has just given and as to the testimony he's about
17 to be given.

18 CHAIRMAN CLARK: Mr. Bidy, you haven't been
19 sworn in yet?

20 WITNESS BIDDY: No, ma'am, I have not.

21 (Sworn by Commissioner Clark.)

22 CHAIRMAN CLARK: The testimony and
23 summary -- is testimony that was prefiled and the
24 summary you have just given the truth?

25 WITNESS BIDDY: Yes, it is.

1 MR. REILLY: Thank you.

2 Okay. We'd like to tender Mr. Bidy.

3 CHAIRMAN CLARK: Mr. Jacobs.

4 MR. JACOBS: Thank you, Madam Chairman.

5 CROSS EXAMINATION

6 BY MR. JACOBS:

7 Q Mr. Bidy, first let me tell you my name is
8 Buddy Jacobs. I'm a lawyer representing the users of
9 this utility located in Nassau County, Amelia Island.

10 In your testimony you state that used and
11 useful is based upon many things, but also upon -- as
12 in this case, where a utility company has purchased
13 utility companies and not necessarily built them -- on
14 prudent investments made. Is that your testimony?
15 That you look at how prudent an investment is made as
16 to their ability to receive some benefit for used and
17 useful.

18 A Yes, sir, that would be true.

19 Q And so you noted in your investigation of
20 this particular utility company's acquisition that
21 these have been purchased over relatively short
22 periods of time?

23 A That's what I understand.

24 Q So when they go in and make it -- is it not
25 true when they go in to make an investment, if it's

1 going to be a prudent investment, they look at the
2 utility -- I don't mean this in a disparaging way --
3 but as a previously owned automobile, you would go in
4 and look at the price of the automobile and then
5 whether or not it needed new tires and perhaps the
6 engine to be redone; is that not correct?

7 A I would think they would be evaluating the
8 condition of the utility in detail, yes.

9 Q And so when they go in to buy a utility
10 company, they look at the capital improvements that
11 would perhaps be necessary. And then in their
12 negotiation deducted those in that negotiation and see
13 the price would be reduced to meet those capital
14 needs; is that not correct?

15 MR. ARMSTRONG: Madam Chair, at this point I
16 wonder if we could have some voir dire on the witness.
17 This is way beyond the scope of his testimony, and if
18 we could have a some voir dire -- I don't think it's
19 been established he has any basis to give testimony
20 about what utilities look at or consider when they are
21 purchasing facilities.

22 CHAIRMAN CLARK: Mr. Jacobs, would you
23 indicate to me where in his prefiled direct testimony
24 you are asking questions, what does it relate to?

25 MR. JACOBS: Basically he's talking about,

1 and he said in his opening statement, he talks about
2 how this is investment prudently made; these are
3 investments prudently made; they should receive the
4 benefits of them.

5 CHAIRMAN CLARK: Where is that in his
6 testimony?

7 MR. JACOBS: I just made a note of it here.
8 It's -- I can't put my hand on it and I just made a
9 note here that he said in his statement all margin
10 reserve should be eliminated; that they would be
11 benefitted better by having well planned phased
12 development, and amongst those things they could
13 receive credit for investments prudently made. That
14 was just my notes.

15 CHAIRMAN CLARK: What was your question?

16 MR. JACOBS: My question is that when talks
17 about prudently made doesn't that really indicate that
18 a company, when they are buying a utility company,
19 would anticipate the capital needs that company would
20 have at the time they purchased it. And his answer
21 was yes. I've looked at his resume. It seems to me
22 he's certainly qualified to answer these questions.

23 CHAIRMAN CLARK: And your objection,
24 Mr. Armstrong?

25 MR. ARMSTRONG: The objection is, as I

1 stated number one, this goes beyond the scope of his
2 testimony. Number two, he hasn't been qualified at
3 all as to any knowledge or experience having to do
4 with utility acquisitions of facilities. And his no
5 experience regarding what utilities consider. And
6 we've gone beyond that, far beyond what was just
7 represented at --

8 CHAIRMAN CLARK: I'll allow him to answer
9 the question and you can pursue that on redirect, on
10 cross examination.

11 MR. ARMSTRONG: Right. Thank you.

12 MR. JACOBS: Thank you, Madam Chairman.
13 He's answered the question so I'll move on, if I
14 might.

15 Q (By Mr. Jacobs) You stated that this
16 type -- in other words, if they are allowed to have
17 too much used and useful this would penalize the
18 existing customers. We're talking in this case about
19 uniform rates versus stand-alone rates. Certainly if
20 they would have been penalized existing customers it
21 would mean it would penalize even more so the
22 stand-alone customers versus the ones that require
23 uniform rates to make their rates lower; is that not
24 correct?

25 A Well, the Office of Public Counsel has taken

1 no position on uniform rates versus the individual
2 system rates. But any increase in rates would
3 obviously penalize the users thereof.

4 Q So whenever this utility company purchased
5 these utility -- these separate companies and if some
6 of them were in bad condition, they didn't anticipate
7 the capital needs, now placing those capital needs
8 upon the backs of existing customers throughout the
9 entire system who can stand alone, that would occur
10 then if they did not anticipate the proper capital
11 need at the time they purchased these other utility
12 companies; is that not correct.

13 MR. ARMSTRONG: Madam Chair, I'm going on
14 object again. This is far beyond used and useful
15 testimony.

16 CHAIRMAN CLARK: I think it is, Mr. Jacobs.

17 MR. JACOBS: Okay. All right. I'll ask
18 another question then, if I might.

19 Q (By Mr. Jacobs) You stated that in your
20 testimony that these -- if you gave them too much for
21 the used and useful, that this would promote higher
22 rates and that would curtail the growth of these
23 particular companies; is that correct?

24 A That is correct.

25 Q So if you curtail the growth, then you

1 really have a double problem for all existing
2 customers throughout the entire system because then
3 those needs for capital improvements cannot be spread
4 upon a larger user base; is that not correct?

5 A That's correct.

6 Q So if that larger user base is then put
7 beyond just that particular utility company but
8 utilized throughout the entire system, that then
9 creates then even a bigger problem for those people
10 throughout the entire system; is that not correct?

11 A Yes, it does.

12 Q I have no further questions.

13 CHAIRMAN CLARK: Thank you. Mr. Twomey how
14 much do you have?

15 MR. TWOMEY: Probably three minutes.

16 CHAIRMAN CLARK: Go ahead.

17 **CROSS EXAMINATION**

18 BY MR. TWOMEY:

19 Q Isn't it correct that iron removal filters
20 are considered as water treatment components?

21 A Yes, sir, they are.

22 Q Isn't it correct that the capacity of iron
23 removal filters are not limited by supply wells,
24 though they are operated under pressure.

25 MR. FEIL: Objection. I think this is

1 outside the scope of his direct testimony as well. I
2 don't believe he makes any statement regarding iron
3 removal filters.

4 CHAIRMAN CLARK: Mr. Twomey.

5 MR. TWOMEY: Well, I have to look for it.
6 The.

7 CHAIRMAN CLARK: Mr. Twomey, I've just
8 looked at his testimony. I don't think it's in there.
9 Do you really -- is it in there?

10 MR. TWOMEY: I'd have to look. If you say
11 it's not in there --

12 CHAIRMAN CLARK: I didn't see it.

13 MR. TWOMEY: Then it's not.

14 CHAIRMAN CLARK: Good. Would you move on.

15 MR. TWOMEY: Well, that's my last question.

16 CHAIRMAN CLARK: Okay. What we'll do is
17 we'll go ahead and take a break until 12:30. And if
18 in that time you locate it, then let me know. Then
19 when we come you be allowed to ask that question.

20 MR. TWOMEY: Fair enough.

21 CHAIRMAN CLARK: Thank you.

22 (Lunch recess taken at 11:55 a.m.)

23 - - - - -

24 (Transcript continues in sequence in
25 Volume 24.)

EXHIBIT NO. 169

CASE NO. 2/28/95 State of Florida Department of Environmental Protection Central District

FLD 01 1770

DX-3/9/95 96-04227

WATER TREATMENT PLANT COMPLIANCE INSPECTION REPORT

Plant name FERN PARK S/D County SEMINOLE PWS ID 3590368
Address 129 E. LAURENCE + Franklin DR. Tanks Phone 407/880-0100
Owner name SSU - ITNC 792730 Contact LYN CORDER
Owner address 1000 OODLE PLAYS, APOPKA, FL 32704 Phone 407/880-0100
This inspection date 1-31-95 Last C.I. date 2-11-94 Last survey date 1-27-93
PWS Type: X Community Non-Transient Non-Community Non-Community
Service area characteristics SUBDIVISION No. of service connections 270
Food service? Yes No Served population

OPERATION & MAINTENANCE Ex/ok and
Certified operator: Yes No N/A
Operator & certification class number: JIM Phason C-4354
O&M log: X yes No

STORAGE TANKS
(G) Ground (C) Clearwell (E) Elevated
(B) Bladder (H) Hydropneumatic/flow-through

Table with columns: Tank type, Capacity, Gravity drain, By-pass piping, Pressure gauge, On/Off pressure, Sight glass, Fittings for sight glass, Air release valve, Pressure relief valve, Access padlocked. Includes handwritten values like 5000, 5875, YES, etc.

WELL
Number of wells 1 Standby well?
Auxiliary power.. yes no N/A
6' x 6' x 4" pad X yes no
Sanitary seal..... X OK
Raw water tap: X yes no
not smooth nosed
Check valve..... X yes no
Fence/housing.... X yes no
Sanitary hazards septic tank 75'

CHLORINATION WASTE WATER 60'
Chlorinator type: X Gas Hypo
Cl2 residual: Plant 1.4 Remote 0.5
DPD-type test kit..... X yes no
Gas cylinder scale..... X yes no
Gas cylinder chained..... X yes no
Adequate air-pak..... X yes no
Fresh ammonia solution.. X yes no
Adequate ventilation..... X yes no
Dual chlorination..... no yes X no
Auto-switchover..... no yes X no
Alarm no yes X no

DEFICIENCIES / COMMENTS

(H) NEW 2 WEEKS AGO.
24 OBRIAN, Fern Px.
1) AIR REGULATING VALVE NEEDS MESH SCREEN.
2) GST - LEAKS NOTED. TO BE REPAIRED AFTER THIS INSPECTION (FOR OPERATOR)
3) MUST INSTALL HUNG BIBBS FROM SU VACUUM BREAKERS ON ALL EXTERIOR OUTLETS.

AERATION: Type CASCADE Condition SUFFICIENT
OTHER TREATMENT PROCESSES: NONE

OTHER
Flow measuring device: X meter elapsed time clock none
Backflow prevention devices: no yes no
Cross-connections NONE OBSERVED

THE ABOVE 2 INTERCONNECT WILL BE REPAIRED.

PLEASE CORRECT THE INDICATED DEFICIENCIES AND PROVIDE A WRITTEN STATEMENT TO THE DEPARTMENT NO LATER THAN 2-28-95 STATING THAT ALL LISTED DEFICIENCIES HAVE BEEN CORRECTED; FAILURE TO DO SO WILL RESULT IN THE TAKING OF APPROPRIATE ENFORCEMENT ACTION BY THE DEPARTMENT. Send your response to: Department of Environmental Protection, 3319 Maguire Blvd, Suite 232, Orlando, Florida 32803. Phone:(407)894-7555

Inspector: [Signature] Title: AS / Date: 1/31/95
Received by: [Signature] Title: Plant Operator II Date: 1/31/95

Form left: X on site with water plant operator

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 950495-WS EXHIBIT NO 169
COMPANY/ WITNESS: SSU / LAISURE
DATE: 4/29/96

DOCUMENT NUMBER-DATE
02364 FEB 26 95
FPSC-RECORDS/REPORTING

FERN PARK

1. Air release valve needs 20 mesh screen.

RESPONSE

Air release valve has been covered with 20 mesh screen.

2. Ground storage tank leaks noted to be repaired after the interconnect is completed.

RESPONSE

New interconnect was placed in service on February 24, 1995. Materials to repair leaks in storage tank are being ordered. We expect repairs to be completed by April 28, 1995.

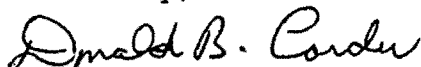
3. Hose bibb vacuum breakers must be installed on all exterior outlets.

RESPONSE

An initial customer survey was performed in 1993 on this system in accordance with SSU's approved cross connection control program. I have been informed that our backflow prevention technician expects to send out notifications to the customers, and follow-up inspections, enforcement and testing schedules will be made as specified in our backflow prevention policy on file with FDEP.

We trust the above corrective measures meet with your approval. Should you require any additional information, please do not hesitate to contact me.

Sincerely,



Donald B. Corder
Area Supervisor

DBC/plb

GROUND WATER SOURCE

Well number	1						
Year drilled*	BEFORE 1958						
Depth drilled*	385'						
Drilling method*	UNKNOWN						
Type of grout*	UNKNOWN						
Static water level*	UNKNOWN						
Pumping water level*	UNKNOWN						
Design well yield*	UNKNOWN						
Test yield*	UNKNOWN						
Strainer*	UNKNOWN						
Length (outside casing)*	UNKNOWN						
Diameter (outside casing)	8"						
Material (outside casing)	G.I.						
Well contamination history	YES						
Is inundation of well possible?	No						
6'x 6'x 4" concrete pad	YES						
SET	Septic tank	75'					
	Reuse water	No					
BACKS	WW plumbing	60'					
	other sanitary hazard	NONE					
PUMP	Type	VERTICAL TURBINE					
	Manufacturer name	DEMINQ					
	Model number	UNKNOWN					
	Rated capacity	300GPM					
	Motor HP	30HP					
Well casing sanitary seal	YES						
Raw water sampling tap	YES						
Above ground check valve	YES						
Fence/housing	YES						
Well vent protection	YES						
Comments: MOTOR FOR PUMP REPLACED. LINE INTRODUCED TO DISINFECT WELL ABOUT 2YRS BACK BECAUSE OF BAD BACTERIOLOGICAL RESULTS.							

* Fill in only when there is no record on file.

State of Florida
 Department of Environmental Protection
 Central District

see 3111
 A follow up if may be
 MAY 15 1995
 necessary - be

WATER TREATMENT PLANT COMPLIANCE INSPECTION REPORT

Plant name: Dale Harriet Estates County: Seminole PWS ID: 3590699
 Address: 10000 Lake Harriet Drive Springs 32704 Phone: 407-880-0058
 Owner name: Southern States Utilities Contact: Don Carter
 Owner address: 1000 Lake Harriet Place APOKA 32703 Phone: 80-0100
 This inspection date: 5-18-95 Last C.I. date: 8-3-94 Last survey date: 3-18-93
 PWS Type: Community Non-Transient Non-Community Non-Community
 Service area characteristics: Residential No. of service connections: 295
 Food service? Yes No Served population: 1032

OPERATION & MAINTENANCE

Certified operator: Yes No N/A
 Operator & certification class number: Frank McCord C-7264
 O&M log: yes no

WELL

Number of wells: 1 Standby well?
 Auxiliary power.. yes no N/A
 6' x 6' x 4" pad yes no
 Sanitary seal..... OK
 Raw water tap: yes no
 not smooth nosed
 Check valve..... yes no
 Fence/housing.... yes no
 Sanitary hazards: NONE OBSERVED

CHLORINATION

Chlorinator type: Gas Hypo 105 Lake Harriet Dr.
 Cl₂ residual: Plant 1.3 Remote 0.2
 DPD-type test kit..... yes no
 Gas cylinder scale... one yes no
 Gas cylinder chained..... yes no
 Adequate air-pak..... yes no
 Fresh ammonia solution.. yes no
 Adequate ventilation..... yes no
 Dual chlorination..... yes no
 Auto-switchover..... yes no
 Alarm yes no

AERATION: Type CASCADE
 Condition _____

OTHER TREATMENT PROCESSES:

NONE

OTHER

Flow measuring device:
 meter elapsed time clock none
 Backflow prevention devices: yes no
 Cross-connections: NONE

WTP on NE CNR of Lake Harriet.

PLEASE CORRECT THE INDICATED DEFICIENCIES AND PROVIDE A WRITTEN STATEMENT TO THE DEPARTMENT NO LATER THAN _____ STATING THAT ALL LISTED DEFICIENCIES HAVE BEEN CORRECTED; FAILURE TO DO SO WILL RESULT IN THE TAKING OF APPROPRIATE ENFORCEMENT ACTION BY THE DEPARTMENT. Send your response to: Department of Environmental Protection, 3319 Maguire Blvd, Suite 232, Orlando, Florida 32803. Phone: (407)894-7555

Inspector: Kevin Forner Title: ENVIRONMENTAL SPECIALIST Date: 5/18/95
 Received by: Frank McCord Title: OPERATOR Date: 5/18/95

Form left: on site with water plant operator with water purveyor

STORAGE TANKS

(G) Ground (C) Clearwell (E) Elevated
 (B) Bladder (H) Hydropneumatic/flow-through

Tank type	G	H		
Capacity	<u>2675</u>	<u>500</u>		
Gravity drain	<u>Yes</u>	<u>Yes</u>		
By-pass piping	<u>Yes</u>	<u>Yes</u>		
Pressure gauge		<u>Yes</u>		
On/Off pressure		<u>50/65</u>		
Sight glass		<u>Yes</u>		
Fittings for sight glass		<u>Yes</u>		
Air release valve		<u>Yes</u>		
Pressure relief valve				
Access padlocked	<u>Yes</u>	<u>Yes</u>		

interconnect w/ automatic springs
DEFICIENCIES / COMMENTS
WTP shut down completely
Operating off of interconnect - see
SSD letter dated 5/9/95.
Repairs being made @ this time
OST roof & aeration.

DOCKET 950495-WS
EXHIBIT NO. 170
CASE NO. 96-04227

EXHIBIT TLB-1

DISTRIBUTION SYSTEM ANALYSIS EXAMPLE

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 950495-WS **EXHIBIT NO** 170
COMPANY/
WITNESS: OPC / B1004
DATE: 4/29/96

DOCUMENT NUMBER-DATE

05081 MAY-6 96

FPSC-RECORDS/REPORTING

PUMPING FOR DISTRIBUTION STORAGE

The two types of distribution storage—ground and elevated—have, in turn, two types of pumping systems. One is a direct pumping system, in which the instantaneous system demand is met by pumping with no elevated storage provided. The second type is an indirect system in which the pumping station lifts water to a reservoir or elevated storage tank, which floats on the system and provides system pressure by gravity.

Direct Pumping

The direct pumping system is quite rare today, but some systems still exist. Variable-speed pumping units operated off of direct system pressure are also in use in some communities. Hydropneumatic tanks at the pumping station provide some storage. These tanks permit the pumping-station pumps to start and stop, based on a variable system pressure preset by controls operating off of the tank.

Indirect Pumping

In an indirect system, the pumping station is not associated with the demands of the major load center. It is operated from the water level difference in the reservoir or elevated storage tank, enabling the prescribed water level in the tank to be maintained. The majority of systems have an elevated storage tank or a reservoir on high ground floating on the system. This arrangement permits the pumping station to operate at a uniform rate, with the storage either making up or absorbing the difference between station discharge and system demand.

ANALYSIS OF STORAGE

Two variations of distribution storage design affect the operation and reliability of a system's fire suppression capabilities. These two variations involve placement of the storage between the supply point and the major load center or beyond the major load center. An analysis of the following storage designs will be made in the remainder of this chapter:

- system A—pumping station to major center of demand (load) with no elevated storage tank;
- system B—pumping station to major center of demand with an elevated storage tank between the supply and demand; and
- system C—pumping station to major center of demand with an elevated storage tank beyond the demand.

Model System

The model system used in the analysis has the following characteristics:

Population = 27,000	
Water demand rates	
Average day— $27,000 \times 150$ gpcd	= 4.0 mgd
Maximum day— 4.0×1.5	= 6.0 mgd
Maximum hour— 6.0×1.5	= 9.0 mgd
Fire flow = 5000 gpm	= 7.2 mgd
Maximum 10-h rate	
Maximum day and fire flow— $6.0 + 7.2$	= 13.2 mgd
Minimum pressure at major load center	= 50 psi

System pipelines are all expressed as equivalent lengths of 24-in. pipe with a *C* factor of 120. Hydraulic gradient is the slope of the line joining the elevations to which water would rise in pipes freely vented and under atmospheric pressure.

System A—No Storage

If no storage is provided in system A (Figure 3-1) at a given demand rate, the pumping station hydraulic gradient must be sufficient to overcome system losses at a demand rate and maintain a minimum of 115 ft at the major load center. Thus, the pumping heads required to maintain 115 ft plus the head loss in 40,000 ft of equivalent pipe for the various conditions are as follows:

Demand Rates	Pumping Head Required
Average day, 4.0 mgd— $115 + (0.67 \times 40)$	= 142 ft
Maximum day, 6.0 mgd— $115 + (1.42 \times 40)$	= 172 ft
Maximum hour, 9.0 mgd— $115 + (3.0 \times 40)$	= 235 ft
Maximum day and fire, 13.2 mgd— $115 + (6.1 \times 40)$	= 359 ft

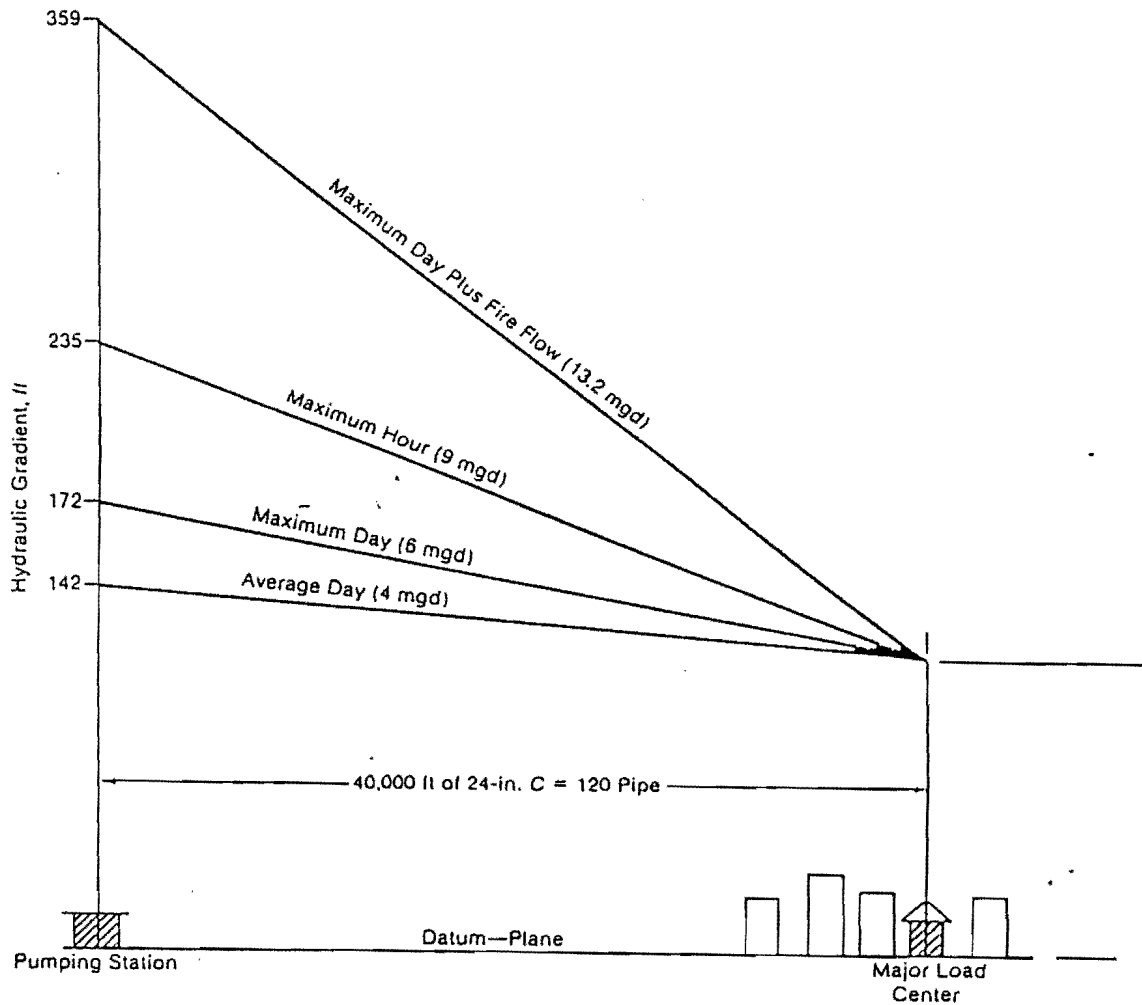


Figure 3-1 System A—hydraulic gradient with no storage.

System B—Storage Ahead of Load Center

If, as shown in Figure 3-2, a 1.75-mil gal storage tank is located 145 ft above the datum plane and at a distance of 35,000 ft from the pump station (5000 ft ahead of the major load center), the pumping head of a given pumping rate must be sufficient to pump against a head at the storage tank and overcome system losses at the pumping rate.

Average day. At the average-day demand, the required pumping rate (no water taken from storage) is 4 mgd. The pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 35,000 ft of equivalent pipe at 4 mgd, or $145 + (0.67 \times 35) = 169$ ft. The hydraulic gradient at the load center is the hydraulic gradient at the tank minus the head loss in 5000 ft of equivalent pipe, or $145 - (0.67 \times 5) = 142$ ft.

Maximum day. At the maximum-day demand, the required pumping rate is 6 mgd (no water taken from storage). The pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 35,000 ft of equivalent pipe at 6 mgd, or $145 + (1.42 \times 35) = 195$ ft. The hydraulic gradient at the load center is the hydraulic gradient at the tank minus the head loss in 5000 ft of equivalent pipe at 6 mgd, or $145 - (1.42 \times 5) = 138$ ft.

Maximum hour. At the maximum-hour demand, the flow in the 5000 ft of pipe between the tank and the load center must be 9 mgd. The hydraulic gradient at the load center is the hydraulic gradient at the tank minus the losses in 5000 ft of equivalent pipe at 9 mgd, or $145 - (3 \times 5) = 130$ ft. The pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 35,000 ft of equivalent pipe at the chosen pumping rate. If 3 mgd is to be supplied from the tank

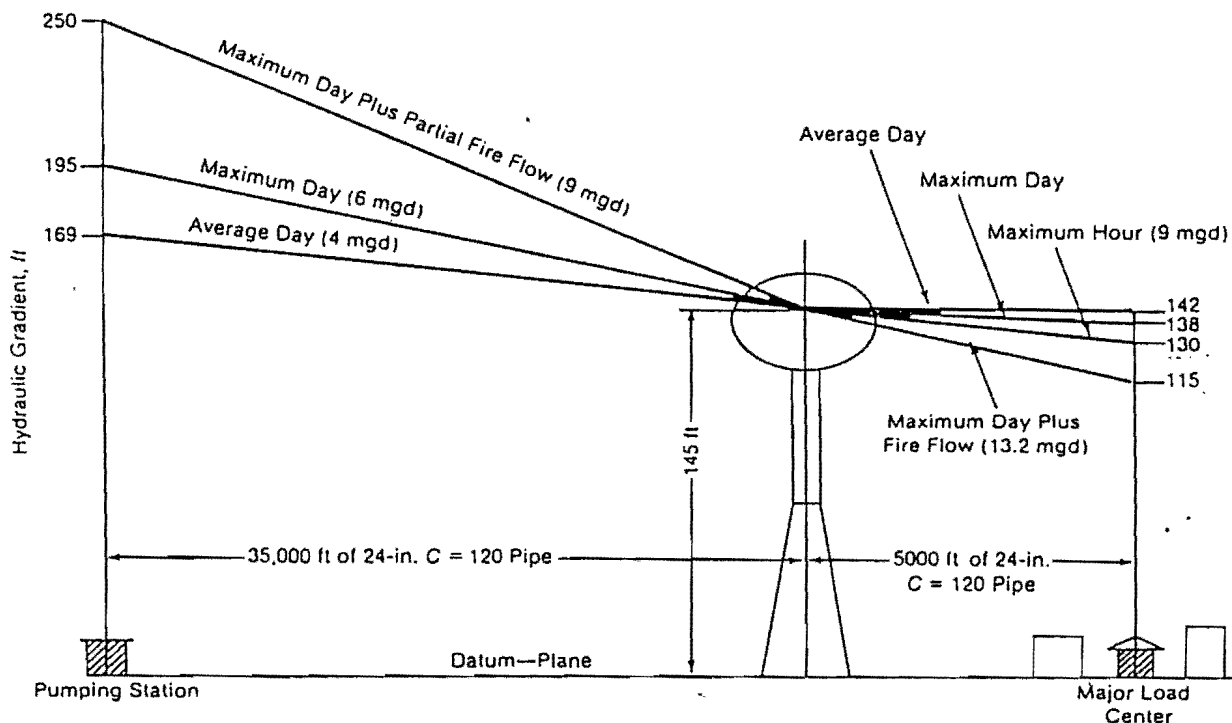


Figure 3-2. System B—hydraulic gradients with storage between pump station and load center.

storage and the remaining 6 mgd is to be supplied from pumping, the pumping head required is $145 + (1.42 \times 35) = 195$ ft (Figure 3-2).

Maximum day plus fire flow. At the maximum-day demand plus the fire demand, the flow in the 5000 ft of pipe between the tank and the load center must be 13.2 mgd. The hydraulic gradient at the load center is the hydraulic gradient at the tank minus the head loss of 5000 ft of equivalent pipe at 13.2 mgd, or $145 - (6.1 \times 5) = 115$ ft. If it is decided to supply 4.2 mgd from storage and pump the remaining 9 mgd, the pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 35,000 ft of equivalent pipe at 9 mgd, or $145 + (3 \times 35) = 250$ ft.

Demand Rates	Pumping Head Required
Average day, 4.0 mgd—no water from storage	= 169 ft
Maximum day, 6.0 mgd—no water from storage	= 195 ft
Maximum hour, 9.0 mgd—6.0 mgd from pumps + 3.0 mgd from storage	= 195 ft
Maximum day plus fire flow, 13.2 mgd—9.0 mgd from pumps + 4.2 mgd tank	= 250 ft

System C—Storage Beyond Load Center

In the arrangement shown in Figure 3-3, 1.75 mil gal of storage is provided 5000 ft beyond the load center (45,000 ft from the pump station) at an elevation of 119 ft above the datum plane. When no water is being taken from storage at a given demand rate, the pumping head must be sufficient to pump against the head at the tank and overcome losses between the pump station and the load center at that demand rate. When part of the demand is being supplied from storage, however, the pumping head need only be sufficient to pump against the head at the load center and overcome losses in the pipeline between the pump station and the load center.

Average day. At the average-day demand, the required pumping rate is 4 mgd (no water taken from storage). The pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 40,000 ft of equivalent pipe, or $119 + (0.67 \times 40) = 146$ ft. The hydraulic gradient at the load center is thus identical to that at the tank (119 ft).

Maximum day. At the maximum-day demand, the required pumping rate is 6 mgd (no water taken from storage). The pumping head required is equal to the hydraulic gradient at the tank plus the head loss in 40,000 ft of equivalent pipe at 6 mgd, or $119 + (1.42 \times 40) = 176$ ft. The hydraulic gradient at the load center is identical to that at the tank (119 ft).

Maximum hour. If, at the maximum-hour demand (9 mgd), it is decided to supply 3 mgd from storage and the remaining 6 mgd from pumping, the hydraulic gradient at the load center is the hydraulic gradient at the tank minus the head loss in the 5000 ft of pipe between the tank and load center at the storage discharge rate of 3 mgd, or $119 - (0.4 \times 5) = 117$ ft. The pumping head required is equal to the hydraulic gradient at the load center plus the head loss in 40,000 ft of equivalent pipe at 6 mgd, $117 + (1.42 \times 40) = 174$ ft.

Maximum day plus fire flow. In order to maintain a head of 115 ft at the load center, the flow in the 5000 ft of pipe between the load center and the tank cannot exceed that at which the head loss is 4 ft, which is 4.2 mgd. Thus the remainder of the demand (9 mgd) must be supplied from pumping. The pumping head required is equal to the hydraulic gradient at the load center (115 ft) plus the head loss in 40,000 ft of equivalent pipe, or $115 + (3 \times 40) = 235$ ft.

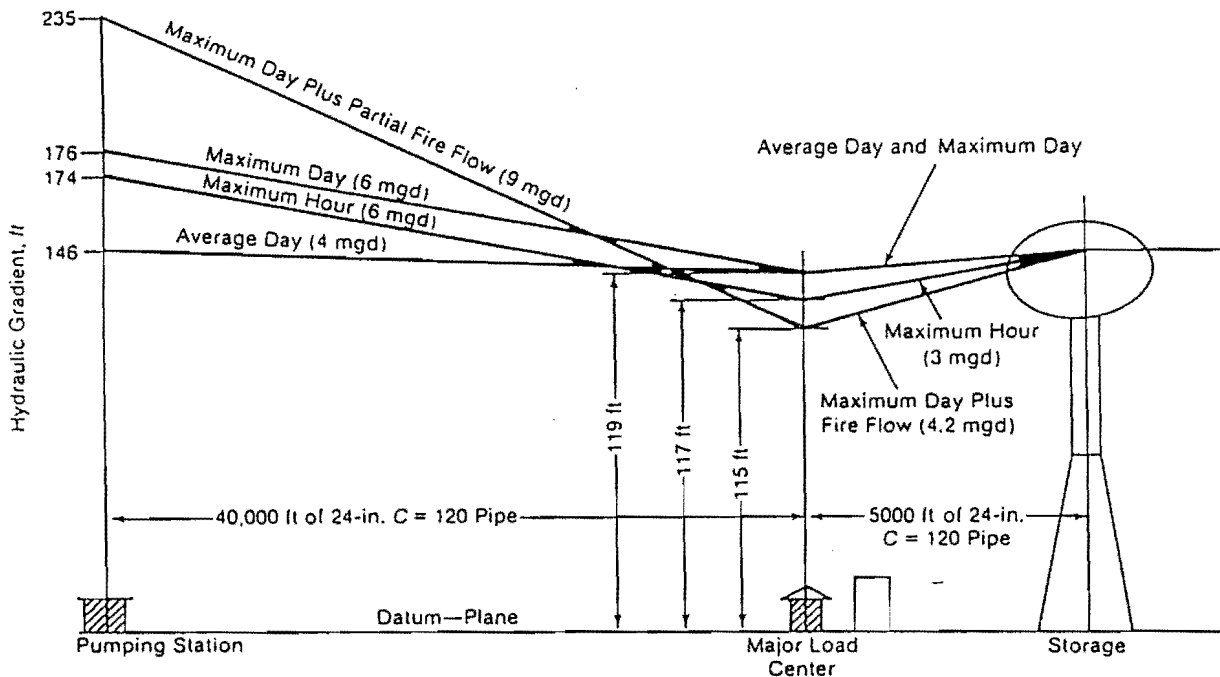


Figure 3-3 System C—hydraulic gradients with storage beyond load center.

Demand Rates	Pumping Head Required
Average day, 4.0 mgd—no water from storage	= 146 ft
Maximum day, 6.0 mgd—no water from storage	= 176 ft
Maximum hour, 9.0 mgd—6.0 mgd from pumps + 3.0 mgd from tank	= 174 ft
Maximum day plus fire flow, 13.2 mgd—9.0 mgd from pumps + 4.2 mgd from tank	= 235 ft

In the analyses above, the designer has provided 1.75 mil gal of storage for fire demands. The highest rate of flow that can be sustained for the required 10 h is 4.2 mgd. The remainder of the fire flow (3 mgd) and the maximum-day demand (6 mgd) must be supplied from pumping. The fact that the pumping rate (9 mgd) is the same as the maximum-hour demand is only a coincidence.

Comparison of System A With System C

If no storage is provided, 124 ft (359 ft – 235 ft) more pumping head is required to furnish the maximum-day demand plus fire flow than if adequate storage is provided beyond the load center. With the increased pumping rates required with no storage, the power needed is approximately 1100 hp, as opposed to 495 hp with storage, or more than twice as much. Similarly, furnishing the maximum-hour demand without storage would require 500 hp, as opposed to 245 hp, still more than twice as much.

The capacities of the pumps required under these two conditions would be 13.2 mgd at 359-ft head, as opposed to 9 mgd at 235-ft head, and 9 mgd at 235-ft head, as opposed to 6 mgd at 174-ft head. During average- and maximum-day demands, the pumping head at the source is approximately the same.

Comparison of System B With System C

In comparing storage located between the source and the load center with storage located beyond the load center, the examples illustrate that an increase in height is necessary if the storage is between the source and the load center. To secure approximately equivalent pressure results, the flow line of storage in the first instance must be 26 ft (145 ft - 119 ft) higher than if the storage feeds back to the load center from a point beyond.

Pumping heads are substantially lower under all rates of flow and pressure is more uniformly regulated, if the storage is located beyond the load center. The area served is substantially greater and the pressures are better regulated by storage located beyond the load center than by storage located between the pumping station and the load center. The additional height of 26 ft for the storage tank and the additional pumping head under all rates of flow make system B more costly when considering initial capital cost and substantially higher operating costs for electrical power.

Recommended Design

System C, using a 1.75-mil gal elevated storage tank beyond the major load center, is the recommended design, because it provides the necessary water demand flows at reasonable pressures. This system is also the most cost-effective design for capital costs and operating costs.

The design chosen is based on replenishing, within the 24 h during which a major fire occurs, all water taken from storage for fire fighting. The maximum required pumping head would be reduced from 235 ft to 182 ft if all water used for fire fighting (7.2 mgd) was provided by storage, and the pumps would only have to operate at 6 mgd. If the system was so designed, however, the tank would have to be raised 6 ft in order to maintain 115 ft of head at the load center, and the fire storage would have to be increased to 3 mil gal. Fire storage would then amount to 50 percent of the maximum day and 75 percent of the average day, and that much storage might not be economically justified. On the other hand, if the storage is not provided, an additional 3 mgd of pumping capacity is required and the production and supply works must also be capable of increased output, unless finished-water storage is provided ahead of the pump station. Therefore, an economic and engineering study should generally be made to determine the most efficient way to provide the required capacity.

References

1. *Water Distribution Operator Training Handbook*. AWWA, Denver, Colo. (1976).
2. COTE, A.E. & LINVILLE, J.L., eds. *Fire Protection Handbook*. National Fire Protection Association, Quincy, Mass. (16th ed., 1986).
3. FAIR, G.M. ET AL. *Water and Wastewater Engineering*. John Wiley and Sons, Inc., New York (1966).
4. STEEL, E.W. & MCGHEE, T.G. *Water Supply and Sewerage*. McGraw-Hill Book Co., New York (1979).

EXHIBIT TLB-2

**KEY AND RATIONALE
FOR
OPC USED AND USEFUL CALCULATIONS**

KEY AND RATIONALE FOR OPC USED AND USEFUL CALCULATIONS

I. SUPPLY WELL

A. Small System (without high service pumps):

Used & Useful % = **PHF/Reliable Capacity** (w/o fire flow provision)

= **(MDF + FF)/Reliable Capacity** (w/ fire flow provision)

Rationale ---- Well pumps function as high service pumps. Therefore, according to "10 States Standards", at least two pumping units shall be provided. With any pump out of service, the remaining pump or pumps shall be capable of providing the maximum daily pumping demand of the system. It is not economically justified to use PHF+FF as design flow. A peaking factor of 1.3 is applied to MDF where PHF is used in the calculations.

B. Large System (with high service pumps and storage):

Used & Useful % = **MDF/Total Capacity** or **ADF/Reliable Capacity**,

Whichever is greater.

Rationale ---- ADF/Reliable Capacity is used because the percentage is generally greater than MDF/Total Capacity. Reliable capacity should be applied once to high service pumps, not to other facilities also. The chance of having a well and a high service pump breakdown or to be out of service simultaneously is very slim. "10 States Standards" states that "the total developed groundwater source capacity shall equal or exceed the design maximum day demand and equal or exceed the design average day demand with the largest producing well out of service."

Notes: 1. PHF = Peak Hourly Flow; MDF = Avg. 5 Max Day Flows in Max Month; ADF = Annual Avg. Day Flow; FF = Fire Flow. However, fire

flow provisions were allowed only for those systems that had verified fire flows.

2. Water flow was adjusted for excess unaccounted for water.
3. No margin reserve was included in OPC's calculations.

II. HIGH SERVICE PUMP

Used & Useful % = $(MDF + FF)/\text{Reliable Capacity}$
or $PHF/\text{Reliable Capacity}$ (no fire protection)

Rationale ---- It is not economically justified to use PHF + FF as design flow, per AWWA M31 (P.16). Reliable capacity should be used per "10 States Standards." No fire flow was applied at this time. It may be included pending future discovery response. For systems with elevated storage tanks like Keystone Heights and Lehigh, the peak hour demands are provided by elevated tanks.

III. WATER TREATMENT PLANT

Used & Useful % = $MDF/\text{Total Capacity}$

Rationale ---- The chance is very small to have a high service pump and a part of treatment facilities to be out of service at the same time.

VI. FINISHED WATER STORAGE

Used & Useful % = $(1/2 ADF + FF)/\text{Total Capacity}$ (with fire flow provision)
or $ADF/\text{Total Capacity}$ (without fire flow protection)

Rationale ---- AWWA M32 suggests that equalization storage is about 20 to 25 percent of the average day demand. Fire storage shall be included if fire flow is provided. Emergency storage is an owner option.

---- "10 States Standard" requires fire flow storage where fire protection

is provided. The minimum storage capacity for systems not providing fire protection shall be equal to the average daily consumption (ADF). This requirement may be reduced when the source and treatment facilities have sufficient capacity with stand by power to supplement peak demands of the system. Emergency storage is not mentioned in this reference.

- SSU uses a peaking factor of 2 and 4 hours of peak duration to calculate peak hour storage or equalization storage. This is a pure empirical method. SSU also requests 8 hours of ADF as emergency storage for some water systems, but no detail explanation was provided.
- OPC believes fire storage should be included where fire protection is provided. Fire flow storage was not included because SSU has not confirmed the provision of fire protection. Fire flow is assumed stored in ground storage tanks and delivered through high service pumps.

When the system is furnishing fire flow, a half day ADF storage is used. That is more than adequate for peak hour demand storage compared with 20 to 25% ADF mentioned in the AWWA M32. The volume of a half day ADF is also close to SSU's empirical method calculated. The excess storage can be considered as a provision for emergency storage. The one day ADF storage criteria used in "10 States Standards" was reduced to one half day because MDF design flow is used for supply wells, treatment plant and high service pumps. Fire storage will be included if it is confirmed.

No emergency storage was included because it is not yet confirmed by the original design or other supporting documents. Total capacity is used because SSU used more than 10% for dead storage without confirmation. Dead storage is not applicable to

elevated storage tanks.

V. HYDROPNEUMATIC TANK

Used & Useful % = **10 x (Total Capacity - Reliable Capacity of Supply Well)**

Hydro Tank Capacity

Rationale ---- Hydropneumatic tanks are usually used in very small water systems with groundwater supply wells as "10 States Standards" stated. When serving more than 150 units, ground or elevated storage should be provided.

The sizing criteria is ten times the capacity of the largest well pump. The information filed is not clear on some supply wells especially for large systems because two wells were assumed out of service. However, the largest well capacity is still assumed to be the difference between total capacity and reliable capacity of supply wells.

VI. AUXILIARY POWER

A. Water System:

Used & Useful % = **$(1/2 \text{ MDF}) / (1/2 \text{ Total Capacity}) = \text{MDF} / \text{Total Capacity}$**

Rationale ---- This a FDEP requirement per Chapter 62-555.320, F.A.C. SSU cannot provide proper capacity information of auxiliary power, therefore, the used and useful percentage of supply wells was used because the cost of auxiliary power is booked under the Source of Supply as Power Generation Equipment.

B. Wastewater System:

Used & Useful % = **ADF of Max. Month/Total Capacity**

Rationale ---- FDEP has no specific requirement. Since SSU cannot provide proper

capacity information to specific equipments, the same used and useful percentage of WWTP was used for auxiliary power.

VII. WASTEWATER TREATMENT PLANT

Used & Useful % = **ADF of Max. Month/Total Capacity**

Rationale ---- Though the capacity permitted is annual ADF, OPC agrees to use ADF of the maximum month because that is the PSC policy.

Note: Wastewater flow was adjusted for excess infiltration.

VIII. EFFLUENT DISPOSAL AND EFFLUENT REUSE FACILITY

Used & Useful % = **ADF of Max. Month/Total Capacity**

Rationale ---- Same as WWTP.

Note: Since no effluent reuse data was yet provided, the same used and useful percentage also was used for effluent reuse facilities for the following systems: Amelia Island, Deltona Lakes, Florida Central Commerce Park, Lehigh, Marco Island, Point O'Woods, and University Shores.

IX. WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM

Used & Useful % = **Lots Connected/Total Lots Available**

Rationale ---- See direct testimony.

X. FLOWS AND LOTS PROJECTIONS OF 1996

A. Water System:

MDF of 1996 = (ERCs of 1996/ERCs of 1994) x Avg. 5 Max. Day of 1994

B. Wastewater System:

$$\text{ADF of Max. Month in 1996} = (\text{ERCs of 1996/ERCs of 1994}) \times \text{ADF of Max. Month in 1994}$$

C. Water Distribution and Wastewater Collection Systems

$$\text{Connected Lots of 1996} = (\text{ERCs of 1996/ERCs of 1994}) \times \text{Connected Lots of 1994}$$

EXHIBIT TLB-3

**OPC USED AND USEFUL CALCULATIONS
OF
WATER SYSTEMS**

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	OPC USED AND USEFUL CALCULATIONS									
	Amelia Island	Apache Shore	Apple Valley	Bay Lake Estates	Beacon Hill	Beecher's Point	Burnt Store	Carlton Village	Chuluota	
Docket No. 950495-WS										
Company: Southern States Utilities, Inc.										
Schedule Year Ended: 12/31/96	1996	1996	1996	1996	1996	1996	1996	1996	1996	
Projected [x]							Reverse			
FPSC Uniform [x]; FPSC Non-Uniform [x]							Osmosis			
1 1994 MAX DAY FOR YEAR (GPD)	2,110,842	24,000	960,000	60,000	2,849,200	Water	239,040	94,000	488,000	
2 1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	1,933,972	20,200	767,715	56,348	2,731,049	Purchased	220,503	108,593	367,168	
3 1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	1,727,071	20,200	736,800	54,000	2,477,540	From	194,688	93,080	352,400	
4 1996 ANNUAL AVG DAILY FLOW (GPD)	1,286,547	15,268	389,878	20,038	1,492,990	Town of	164,340	45,073	207,825	
5 1994 ANNUAL AVG DAILY FLOW (GPD)	1,148,909	15,268	374,178	19,203	1,354,404	Welaka	145,100	38,634	199,466	
6 FIRE STORAGE ACCEPTED (GAL.)	180,000	0	0	0	0		0	0	0	
7 FIRE FLOW PROVISION (GPM)	1,000	0	0	0	0		0	0	0	
8 Unaccounted for Water Level (%)	21.9%	11.9%	9.7%	8.5%	0.3%	17.6%	0.1%	19.9%	4.9%	
9 Unaccounted for Water Allowed (%)	10.0%	10.0%	9.7%	8.5%	0.3%	10.0%	0.1%	10.0%	4.9%	
10										
11 SOURCE OF SUPPLY AND PUMPING:										
12 Supply Wells:	L	S	L	S	L	S	L	S	L	
13 Total Capacity (gpm)	2,800	150	1,100	275	3,850	N/A	440	300	1,300	
14 Reliable Capacity (gpm)	1,400	50	500	0	2,350	N/A	220	100	800	
15 OPC Calculated Used & Useful (%)	56.22%	35.78%	54.15%	100.00%	49.26%	N/A	51.87%	88.33%	19.61%	
16 U & U Per Order (%)	67.70%	25.30%	100.00%	100.00%	58.90%	N/A	80.10%	100.00%	98.50%	
17 SSU Requested U & U (%)	100.00%	66.67%	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	50.43%	
18										
19 Auxiliary Power:										
20 Capacity (GPD), not provided	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	
21 OPC Calculated Used & Useful (%)	56.22%	54.15%	100.00%	49.26%	51.87%	88.33%	19.61%			
22 SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
23										
24 High Service Pumping:										
25 Total Capacity (gpm)	5,200	N/A	2,400	N/A	5,675	N/A	2,400	N/A	1,950	
26 Reliable Capacity (gpm)	2,645	N/A	1,200	N/A	4,000	N/A	900	N/A	1,450	
27 OPC Calculated Used & Useful (%)	82.54%	N/A	44.43%	N/A	47.41%	N/A	17.01%	N/A	17.58%	
28 U & U Per Order (%)	64.20%	N/A	100.00%	N/A	100.00%	N/A	100.00%	N/A	100.00%	
29 SSU Requested U & U (%)	100.00%	N/A	100.00%	N/A	100.00%	N/A	100.00%	N/A	97.03%	
30										
31 WATER TREATMENT PLANT:										
32 Water Treatment Equipment:										
33 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	380	N/A	N/A	
34 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	380	N/A	N/A	
35 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	40.30%	N/A	N/A	
36 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	N/A	
37 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	96.77%	N/A	N/A	
38										
39 TRANSMISSION AND DISTRIBUTION:										
40 Finished Water Storage:										
41 Total Capacity (gal.)	1,000,000		100,000		433,600		500,000		150,000	
42 Reliable Capacity (gal.)	289,953	N/A	90,000	N/A	390,240	N/A	401,633	N/A	135,000	
43 OPC Calculated Used & Useful (%)	74.67%	N/A	100.00%	N/A	100.00%	N/A	16.43%	N/A	69.28%	
44 U & U Per Order (%)	100.00%	N/A	100.00%	N/A	100.00%	N/A	46.90%	N/A	75.00%	
45 SSU Requested U & U (%)	100.00%	N/A	100.00%	N/A	100.00%	N/A	84.75%	N/A	100.00%	
46										
47 Hydropneumatic Tanks:										
48 Total Capacity (gal.)	20,000	12,500	15,000	3,000	20,000	N/A	25,000	10,000	15,000	
49 OPC Calculated Used & Useful (%)	70.00%	8.00%	40.00%	91.67%	75.00%	N/A	8.80%	20.00%	33.33%	
50 U & U Per Order (%)	100.00%	81.00%	100.00%	100.00%	100.00%	N/A	100.00%	54.00%	100.00%	
51 SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	
52										
53 USED AND USEFUL CALCULATIONS										
Water Transmission & Distribution System										
54 Schedule F-7(W)										
55 TRANSMISSION AND DISTRIBUTION:										
56 Connected Lots in 1996 w/o M.R.	1,601	153	982	72	3,266	52	490	147	682	
57 Connected Lots in 1994 w/o M.R.	1,429	153	942	69	2,962	45	432	126	655	
58 Connected Lots in 1994 w/ M.R.	1,513	153	962	70	3,080	49	458	137	669	
59 Number of Lots	2,467	293	1,591	100	3,178	85	4,347	343	1,055	
60 OPC Calculated Used & Useful (%)	64.88%	52.22%	61.71%	72.00%	100.00%	61.56%	11.26%	42.86%	64.67%	
61 U & U Per Order (%)	100.00%	55.00%	100.00%	64.00%	97.00%	100.00%	13.70%	31.00%	100.00%	
62 SSU Requested U & U (%)	100.00%	55.00%	100.00%	73.70%	100.00%	100.00%	13.70%	45.89%	100.00%	
63										
64 ERC CALCULATIONS (by SSU)										
65 Combined Schedule of F- 8 & 9 (W)	Water	Water	Water	Water	Water	Water	Water	Water	Water	
66 Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	
67 1990	1,630	161	918	63	2,545	69	503	87	635	
68 1991	1,804	160	941	64	2,660	80	561	96	653	
69 1992	1,924	161	961	66	2,799	90	597	109	669	
70 1993	2,027	157	982	68	3,078	92	651	118	679	
71 1994	2,187	153	1,001	69	3,401	94	724	126	692	
72 1995	2,315	153	1,022	70	3,536	103	767	137	707	
73 1995.5	2,382	153	1,033	71	3,642	107	793	142	714	
74 1996	2,449	153	1,043	72	3,749	110	820	147	721	

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Citrus Park	Citrus Springs	Crystal River	Daetwyler Shores	Deltona Lakes	Doi Ray Manor	Druid Hills	East Lake Harris Est.	Fern Park	Fern Terrace
	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
Docket No. 950495-W5										
Company: Southern States Utilities, Inc.										
Schedule Year Ended: 12/31/96										
Projected [x]										
FPSC Uniform [x]; FPSC Non-Uniform [x]										
1 1994 MAX DAY FOR YEAR (GPD)	155,700	1,384,800	46,000	Water	15,981,000	66,600	299,000	40,200	92,000	93,680
2 1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	144,583	1,018,008	40,744	Purchased	16,045,232	57,120	240,800	37,268	80,641	81,858
3 1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	142,940	960,200	38,800	From	15,200,200	57,120	240,800	36,640	80,200	79,300
4 1996 ANNUAL AVG DAILY FLOW (GPD)	90,399	594,100	23,653	Orlando	6,764,274	26,158	124,771	18,026	52,101	37,835
5 1994 ANNUAL AVG DAILY FLOW (GPD)	89,372	560,364	22,408	Util. Comm.	6,408,029	26,158	124,771	17,722	51,816	36,653
6 FIRE STORAGE ACCEPTED (GAL.)	0	0	0		260,100	0	0	0	0	0
7 FIRE FLOW PROVISION (GPM)	0	0	0		2,168	0	0	0	0	0
8 Unaccounted for Water Level (%)	9.9%	17.9%	2.8%	2.0%	11.6%	0.0%	14.2%	9.9%	7.9%	4.4%
9 Unaccounted for Water Allowed (%)	9.9%	10.0%	2.8%	2.0%	10.0%	0.0%	10.0%	9.9%	7.9%	4.4%
10										
11 SOURCE OF SUPPLY AND PUMPING:										
12 Supply Wells:	S	L	S	S	L	L	L	S	L	S
13 Total Capacity (gpm)	285	1,500	390	N/A	17,230	525	550	200	259	180
14 Reliable Capacity (gpm)	137	1,000	150	N/A	14,230	250	200	0	0	0
15 OPC Calculated Used & Useful (%)	95.27%	43.41%	24.52%	N/A	63.63%	7.56%	41.50%	100.00%	100.00%	100.00%
16 U & U Per Order (%)	100.00%	100.00%	100.00%	N/A	96.00%	100.00%	100.00%	100.00%	100.00%	100.00%
17 SSU Requested U & U (%)	100.00%	100.00%	53.64%	N/A	92.85%	100.00%	100.00%	100.00%	100.00%	100.00%
18										
19 Auxiliary Power:										
20 Capacity (GPD), not provided	Unavailable			Unavailable		Unavailable		Unavailable		Unavailable
21 OPC Calculated Used & Useful (%)	95.27%			63.63%		41.50%		100.00%		100.00%
22 SSU Requested U & U (%)	100.00%			100.00%		100.00%		100.00%		100.00%
23										
24 High Service Pumping:										
25 Total Capacity (gpm)	N/A	4,500	N/A	N/A	23,300	500	500	N/A	250	N/A
26 Reliable Capacity (gpm)	N/A	3,000	N/A	N/A	21,200	250	250	N/A	0	N/A
27 OPC Calculated Used & Useful (%)	N/A	21.70%	N/A	N/A	61.94%	15.87%	64.08%	N/A	100.00%	N/A
28 U & U Per Order (%)	N/A	N/A	N/A	N/A	100.00%	100.00%	100.00%	N/A	100.00%	N/A
29 SSU Requested U & U (%)	N/A	100.00%	N/A	N/A	100.00%	37.00%	100.00%	N/A	100.00%	N/A
30										
31 WATER TREATMENT PLANT:										
32 Water Treatment Equipment:										
33 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38										
39 TRANSMISSION AND DISTRIBUTION:										
40 Finished Water Storage:										
41 Total Capacity (gal.)		500,000			7,000,000	8,000	30,000		17,000	
42 Reliable Capacity (gal.)	N/A	140,825	N/A	N/A	3,749,577	7,200	27,000	N/A	15,300	N/A
43 OPC Calculated Used & Useful (%)	N/A	54.72%	N/A	N/A	51.28%	100.00%	100.00%	N/A	100.00%	N/A
44 U & U Per Order (%)	N/A	N/A	N/A	N/A	100.00%	100.00%	100.00%	N/A	100.00%	N/A
45 SSU Requested U & U (%)	N/A	100.00%	N/A	N/A	100.00%	100.00%	100.00%	N/A	100.00%	N/A
46										
47 Hydropneumatic Tanks:										
48 Total Capacity (gal.)	4,000	16,000	2,000	N/A	25,500	5,000	7,500	3,000	4,500	3,000
49 OPC Calculated Used & Useful (%)	37.00%	31.25%	100.00%	N/A	100.00%	55.00%	46.87%	66.67%	57.56%	60.00%
50 U & U Per Order (%)	56.00%	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	70.00%	100.00%	50.00%
51 SSU Requested U & U (%)	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
52										
53 USED AND USEFUL CALCULATIONS										
Water Transmission & Distribution System										
54 Schedule F-7(W)										
55 TRANSMISSION AND DISTRIBUTION:										
56 Connected Lots in 1996 w/o M.R.	350	1,892	76	124	23,933	59	247	177	178	126
57 Connected Lots in 1994 w/o M.R.	346	1,784	72	124	22,672	59	247	174	177	122
58 Connected Lots in 1994 w/ M.R.	346	1,840	74	124	23,327	59	247	175	177	125
59 Number of Lots	335	11,667	91	138	34,940	77	335	214	208	126
60 OPC Calculated Used & Useful (%)	100.00%	16.22%	83.52%	89.86%	68.50%	76.62%	73.73%	82.70%	85.56%	99.99%
61 U & U Per Order (%)	100.00%	21.00%	100.00%	100.00%	89.30%	100.00%	100.00%	100.00%	100.00%	100.00%
62 SSU Requested U & U (%)	100.00%	42.71%	100.00%	100.00%	89.30%	100.00%	100.00%	100.00%	100.00%	100.00%
63										
64 ERC CALCULATIONS (by SSU)										
65 Combined Schedule of F- 8 & 9 (W)										
66 Year	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
67 1990	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
68 1991	333	1,719	65	136	22,190	77	333	168	180	119
69 1992	326	1,810	65	133	23,064	77	331	170	180	121
70 1993	328	1,864	68	130	23,651	77	330	170	181	123
71 1994	340	1,898	70	130	24,301	75	330	173	180	125
72 1995	348	1,960	72	131	24,895	75	331	175	182	124
73 1995.5	348	2,021	74	131	25,614	75	331	176	182	127
74 1996	350	2,050	75	131	25,946	75	331	177	182	128
74 1996	352	2,078	76	131	26,279	75	331	178	183	128

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Fisherman's Haven	Fountains	Fox Run	Friendly Center	Golden Terrace	Gospel Island	Grand Terrace	Harmony Homes	Hermits Cove
Docket No. 950495-W5									
Company: Southern States Utilities, Inc.									
Schedule Year Ended: 12/31/96	1996	1996	1996	1996	1996	1996	1996	1996	1996
Projected [x]									
FPSC Uniform [x]; FPSC Non-Uniform [x]									
1 1994 MAX DAY FOR YEAR (GPD)	56,700	65,100	69,000	12,900	Water	7,000	99,500	5,900	80,800
2 1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	41,680	50,427	62,297	9,100	Purchased	6,525	134,731	36,360	49,400
3 1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	41,680	37,820	57,057	9,100	From	5,800	93,800	36,360	49,400
4 1996 ANNUAL AVG DAILY FLOW (GPD)	26,751	14,603	30,855	4,363	City of	2,271	50,119	23,078	20,043
5 1994 ANNUAL AVG DAILY FLOW (GPD)	26,751	10,952	28,260	4,363	Inverness	2,019	34,893	23,078	20,043
6 FIRE STORAGE ACCEPTED (GAL.)	0	0	0	0		0	0	0	0
7 FIRE FLOW PROVISION (GPM)	0	0	0	0		0	0	0	0
8 Unaccounted for Water Level (%)	3.1%	13.6%	1.5%	9.3%	17.6%	9.8%	4.3%	7.6%	9.8%
9 Unaccounted for Water Allowed (%)	3.1%	10.0%	1.5%	9.3%	10.0%	9.8%	4.3%	7.6%	9.8%
10									
11 SOURCE OF SUPPLY AND PUMPING:									
12 Supply Wells:	S	L	L	S	S	S	S	S	L
13 Total Capacity (gpm)	100	300	850	140	N/A	50	600	300	110
14 Reliable Capacity (gpm)	0	80	350	0	N/A	0	0	0	0
15 OPC Calculated Used & Useful (%)	100.00%	12.22%	6.12%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%
16 U & U Per Order (%)	100.00%	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%
17 SSU Requested U & U (%)	100.00%	100.00%	19.07%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%
18									
19 Auxiliary Power:									
20 Capacity (GPD), not provided			Unavailable						Unavailable
21 OPC Calculated Used & Useful (%)			6.12%						100.00%
22 SSU Requested U & U (%)			100.00%						100.00%
23									
24 High Service Pumping:									
25 Total Capacity (gpm)	N/A	1,500	850	N/A	N/A	N/A	N/A	N/A	240
26 Reliable Capacity (gpm)	N/A	1,000	500	N/A	N/A	N/A	N/A	N/A	120
27 OPC Calculated Used & Useful (%)	N/A	3.38%	6.65%	N/A	N/A	N/A	N/A	N/A	37.16%
28 U & U Per Order (%)	N/A	37.00%	100.00%	N/A	N/A	N/A	N/A	N/A	60.60%
29 SSU Requested U & U (%)	N/A	83.98%	100.00%	N/A	N/A	N/A	N/A	N/A	95.85%
30									
31 WATER TREATMENT PLANT:									
32 Water Treatment Equipment:									
33 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38									
39 TRANSMISSION AND DISTRIBUTION:									
40 Finished Water Storage:									
41 Total Capacity (gal.)		20,000	50,000						23,000
42 Reliable Capacity (gal.)	N/A	18,000	45,000	N/A	N/A	N/A	N/A	N/A	20,700
43 OPC Calculated Used & Useful (%)	N/A	35.19%	30.86%	N/A	N/A	N/A	N/A	N/A	43.57%
44 U & U Per Order (%)	N/A	100.00%	100.00%	N/A	N/A	N/A	N/A	N/A	100.00%
45 SSU Requested U & U (%)	N/A	100.00%	100.00%	N/A	N/A	N/A	N/A	N/A	100.00%
46									
47 Hydropneumatic Tanks:									
48 Total Capacity (gal.)	10,000	13,000	4,400	3,500	N/A	600	6,000	5,000	3,000
49 OPC Calculated Used & Useful (%)	10.00%	16.92%	100.00%	40.00%	N/A	83.33%	100.00%	60.00%	36.67%
50 U & U Per Order (%)	15.00%	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	90.00%	75.90%
51 SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%
52									
53 USED AND USEFUL CALCULATIONS									
54 Water Transmission & Distribution System									
54 Schedule F-7(W)									
55 TRANSMISSION AND DISTRIBUTION:									
56 Connected Lots in 1996 w/o M.R.	136	39	107	20	106	9	158	61	175
57 Connected Lots in 1994 w/o M.R.	136	29	98	20	105	8	110	61	175
58 Connected Lots in 1994 w/ M.R.	136	32	103	20	105	9	139	61	175
59 Number of Lots	144	84	109	46	120	25	111	62	350
60 OPC Calculated Used & Useful (%)	94.44%	48.18%	98.17%	43.48%	88.24%	12.34%	100.00%	98.39%	50.00%
61 U & U Per Order (%)	100.00%	14.00%	100.00%	100.00%	100.00%	36.00%	100.00%	100.00%	49.40%
62 SSU Requested U & U (%)	100.00%	53.59%	100.00%	100.00%	100.00%	12.34%	100.00%	100.00%	50.41%
63									
64 ERC CALCULATIONS (by SSU)									
65 Combined Schedule of F- 8 & 9 (W)									
66 Year	Water	Water	Water	Water	Water	Water	Water	Water	Water
67 1990	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
68 1991	133	2	82	21	118	6	38	62	173
69 1992	133	4	90	20	116	8	66	62	173
70 1993	133	6	94	21	117	8	95	62	172
71 1994	133	18	96	21	119	8	108	62	173
72 1995	136	30	98	20	119	8	110	61	176
73 1995.5	136	33	103	20	119	9	139	61	176
74 1996	136	37	105	20	120	9	148	61	176

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Hobby Hills	Holiday Haven	Holiday Heights	Imperial Terrace	Inter-cession City	Interlachen/Park Manor	Jungle Den	Keystone Heights	Kingswood
Docket No. 950495-WS									
Company: Southern States Utilities, Inc.									
Schedule Year Ended: 12/31/96	1996	1996	1996	1996	1996	1996	1996	1996	1996
Projected [x]									
FPSC Uniform [x]; FPSC Non-Uniform [x]									
1 1994 MAX DAY FOR YEAR (GPD)	49,350	Water	33,000	103,000	136,190	101,400	Water	656,000	Water
2 1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	42,540	Purchased	39,600	87,062	116,250	68,818	Purchased	549,886	Purchased
3 1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	42,540	From	39,600	86,000	110,590	76,360	From	543,400	From
4 1996 ANNUAL AVG DAILY FLOW (GPD)	20,386	Astor Water	16,488	39,720	61,837	36,140	Astor Water	338,350	Brevard County
5 1994 ANNUAL AVG DAILY FLOW (GPD)	20,386	Assoc.	16,488	39,236	58,826	40,101	Assoc.	334,359	
6 FIRE STORAGE ACCEPTED (GAL.)	0		0	0	0	0		120,000	
7 FIRE FLOW PROVISION (GPM)	0		0	0	0	0		1,000	
8 Unaccounted for Water Level (%)	11.8%	21.7%	7.2%	5.8%	22.3%	24.9%	1.3%	11.8%	5.2%
9 Unaccounted for Water Allowed (%)	10.0%	10.0%	7.2%	5.8%	10.0%	10.0%	1.3%	10.0%	5.2%
10									
11 SOURCE OF SUPPLY AND PUMPING:									
12 Supply Wells:	S	S	S	S	S	L	S	L	S
13 Total Capacity (gpm)	325	N/A	220	550	325	340	N/A	1,230	N/A
14 Reliable Capacity (gpm)	150	N/A	0	150	75	160	N/A	680	N/A
15 OPC Calculated Used & Useful (%)	25.14%	N/A	100.00%	52.40%	100.00%	13.35%	N/A	33.93%	N/A
16 U & U Per Order (%)	43.20%	N/A	100.00%	100.00%	100.00%	56.30%	N/A	47.10%	N/A
17 SSU Requested U & U (%)	47.94%	N/A	100.00%	100.00%	100.00%	56.30%	N/A	70.97%	N/A
18									
19 Auxiliary Power:									
20 Capacity (GPD), not provided				Unavailable	Unavailable	Unavailable		Unavailable	
21 OPC Calculated Used & Useful (%)				52.40%	100.00%	13.35%		33.93%	
22 SSU Requested U & U (%)				100.00%	100.00%	100.00%		100.00%	
23									
24 High Service Pumping:									
25 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	430	N/A	N/A	N/A
26 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	190	N/A	N/A	N/A
27 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	21.41%	N/A	N/A	N/A
28 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	N/A	N/A
29 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	N/A	N/A
30									
31 WATER TREATMENT PLANT:									
32 Water Treatment Equipment:									
33 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38									
39 TRANSMISSION AND DISTRIBUTION:									
40 Finished Water Storage:									
41 Total Capacity (gal.)						30,500		55,000	
42 Reliable Capacity (gal.)	N/A	N/A	N/A	N/A	N/A	27,450	N/A	49,500	N/A
43 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	50.42%	N/A	100.00%	N/A
44 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	100.00%	N/A
45 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	100.00%	N/A
46									
47 Hydropneumatic Tanks:									
48 Total Capacity (gal.)	3,000	N/A	3,000	3,000	5,000	10,000	N/A	10,000	N/A
49 OPC Calculated Used & Useful (%)	58.33%	N/A	73.33%	100.00%	50.00%	18.00%	N/A	55.00%	N/A
50 U & U Per Order (%)	87.50%	N/A	100.00%	100.00%	75.00%	54.00%	N/A	71.30%	N/A
51 SSU Requested U & U (%)	100.00%	N/A	100.00%	100.00%	100.00%	100.00%	N/A	100.00%	N/A
52									
53 USED AND USEFUL CALCULATIONS									
Water Transmission & Distribution System									
54 Schedule F-7(W)									
55 TRANSMISSION AND DISTRIBUTION:									
56 Connected Lots in 1996 w/o M.R.	95	113	52	244	262	252	113	991	61
57 Connected Lots in 1994 w/o M.R.	95	112	52	241	249	280	113	979	61
58 Connected Lots in 1994 w/ M.R.	95	113	52	243	257	250	113	984	61
59 Number of Lots	125	166	53	241	546	387	135	1,673	68
60 OPC Calculated Used & Useful (%)	78.00%	88.07%	98.11%	100.00%	47.97%	65.19%	83.70%	59.22%	89.71%
61 U & U Per Order (%)	100.00%	70.00%	100.00%	100.00%	44.00%	61.50%	100.00%	68.40%	100.00%
62 SSU Requested U & U (%)	100.00%	70.00%	100.00%	100.00%	49.02%	66.33%	100.00%	68.40%	100.00%
63									
64 ERC CALCULATIONS (by SSU)									
65 Combined Schedule of F- 8 & 9 (W)									
66 Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
67 1990	94	111	51	238	236	235	112	1,148	61
68 1991	92	116	52	241	239	240	113	1,140	60
69 1992	91	116	51	242	247	243	113	1,152	59
70 1993	95	112	51	243	255	242	112	1,167	60
71 1994	96	114	52	243	254	243	113	1,173	61
72 1995	96	115	52	245	262	217	113	1,179	61
73 1995.5	96	115	52	245	265	218	113	1,183	61
74 1996	96	115	52	246	267	219	113	1,187	61

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Docket No. 950495-WS	Morningview	Oak Forest	Oakwood	Palisades	Palm Port	Palm Terrace	Palm Mobile Home Park	Piccioia Island	Pine Ridge
Company: Southern States Utilities, Inc.										
Schedule Year Ended: 12/31/96		1996	1996	1996	1996	1996	1996	1996	1996	1996
Projected [x]										
FPSC Uniform [x]; FPSC Non-Uniform [x]										
1	1994 MAX DAY FOR YEAR (GPD)	28,900	140,000		146,000	41,700	183,800	12,990	83,100	793,000
2	1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	17,540	114,637	Purchased	174,771	35,218	151,912	10,574	81,324	820,099
3	1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	17,540	111,600	From	122,100	32,560	151,660	10,574	78,420	670,000
4	1996 ANNUAL AVG DAILY FLOW (GPD)	11,245	46,900	Brevard	69,894	18,415	71,773	4,453	39,071	426,945
5	1994 ANNUAL AVG DAILY FLOW (GPD)	11,245	45,658	County	48,830	17,025	71,654	4,453	37,676	348,803
6	FIRE STORAGE ACCEPTED (GAL.)	0	0		0	0	0	0	0	0
7	FIRE FLOW PROVISION (GPM)	0	0		0	0	0	0	0	0
8	Unaccounted for Water Level (%)	8.0%	26.1%	4.2%	9.8%	12.4%	12.0%	2.4%	17.4%	5.7%
9	Unaccounted for Water Allowed (%)	8.0%	10.0%	4.2%	9.8%	10.0%	10.0%	2.4%	10.0%	5.7%
10										
11	SOURCE OF SUPPLY AND PUMPING:									
12	Supply Wells:	S	S	S	S	L	S	S	S	S
13	Total Capacity (gpm)	425	630	N/A	800	100	160	130	275	1,150
14	Reliable Capacity (gpm)	0	150	N/A	0	0	0	0	100	550
15	OPC Calculated Used & Useful (%)	100.00%	44.53%	N/A	100.00%	100.00%	100.00%	100.00%	67.98%	100.00%
16	U & U Per Order (%)	100.00%	100.00%	N/A	86.80%	100.00%	100.00%	26.60%	100.00%	100.00%
17	SSU Requested U & U (%)	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
18										
19	Auxiliary Power:									
20	Capacity (GPD), not provided		Unavailable					Unavailable	Unavailable	
21	OPC Calculated Used & Useful (%)		44.53%					67.98%	100.00%	
22	SSU Requested U & U (%)		100.00%					100.00%	100.00%	
23										
24	High Service Pumping:									
25	Total Capacity (gpm)	N/A	N/A	N/A	N/A	120	N/A	N/A	N/A	N/A
26	Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A
27	OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	39.78%	N/A	N/A	N/A	N/A
28	U & U Per Order (%)	N/A	N/A	N/A	N/A	29.50%	N/A	N/A	N/A	N/A
29	SSU Requested U & U (%)	N/A	N/A	N/A	N/A	100.00%	N/A	N/A	N/A	N/A
30										
31	WATER TREATMENT PLANT:									
32	Water Treatment Equipment:									
33	Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34	Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35	OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36	U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37	SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38										
39	TRANSMISSION AND DISTRIBUTION:									
40	Finished Water Storage:									
41	Total Capacity (gal.)					18,000				
42	Reliable Capacity (gal.)	N/A	N/A	N/A	N/A	16,200	N/A	N/A	N/A	N/A
43	OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	49.92%	N/A	N/A	N/A	N/A
44	U & U Per Order (%)	N/A	N/A	N/A	N/A	23.60%	N/A	N/A	N/A	N/A
45	SSU Requested U & U (%)	N/A	N/A	N/A	N/A	100.00%	N/A	N/A	N/A	N/A
46										
47	Hydropneumatic Tanks:									
48	Total Capacity (gal.)	4,500	10,000	N/A	15,000	5,000	3,000	1,500	5,000	16,000
49	OPC Calculated Used & Useful (%)	94.44%	48.00%	N/A	53.33%	20.00%	53.33%	86.67%	35.00%	37.50%
50	U & U Per Order (%)	100.00%	43.20%	N/A	80.00%	30.00%	80.00%	100.00%	53.00%	100.00%
51	SSU Requested U & U (%)	100.00%	100.00%	N/A	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
52										
53	USED AND USEFUL CALCULATIONS									
Water Transmission & Distribution System										
54	Schedule F-7(W)									
55	TRANSMISSION AND DISTRIBUTION:									
56	Connected Lots in 1996 w/o M.R.	36	145	206	49	106	1,183	59	137	818
57	Connected Lots in 1994 w/o M.R.	36	141	201	34	98	1,181	59	132	668
58	Connected Lots in 1994 w/ M.R.	36	143	203	40	103	1,181	59	135	743
59	Number of Lots	42	287	191	141	137	1,213	87	213	3,828
60	OPC Calculated Used & Useful (%)	85.71%	50.49%	100.00%	34.52%	77.37%	97.52%	67.82%	64.30%	21.38%
61	U & U Per Order (%)	100.00%	50.70%	100.00%	6.30%	67.50%	100.00%	69.00%	100.00%	20.00%
62	SSU Requested U & U (%)	100.00%	51.28%	100.00%	40.08%	80.22%	100.00%	69.00%	100.00%	100.00%
63										
64	ERC CALCULATIONS (by SSU)									
65	Combined Schedule of F- 8 & 9 (W)	Water	Water	Water	Water	Water	Water	Water	Water	Water
66	Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
67	1990	44	140	189	2	86	1,199	59	125	776
68	1991	45	140	191	4	88	1,193	60	128	948
69	1992	45	143	195	19	94	1,195	59	130	1,103
70	1993	45	145	196	34	98	1,202	58	133	1,253
71	1994	46	147	201	51	98	1,204	59	135	1,415
72	1995	46	149	203	60	103	1,204	59	138	1,574
73	1995.5	46	150	204	67	105	1,205	59	139	1,653
74	1996	46	151	206	73	106	1,206	59	140	1,732

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Description	Pine Ridge	Piney Woods	Point O'Woods	Ponoma Park	Postmaster Village	Quail Ridge	River Grove	River Park	Rosemont Rolling Green
		1996	1996	1996	1996	1996	1996	1996	1996	1996
Docket No. 950495-WS Company: Southern States Utilities, Inc. Schedule Year Ended: 12/31/96 Projected [x] FPSC Uniform [x]; FPSC Non-Uniform [x]										
1	1994 MAX DAY FOR YEAR (GPD)	124,000	112,967	132,000	84,600	114,500	27,000	49,100	74,400	153,000
2	1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	103,914	101,593	129,365	64,808	116,896	38,480	43,133	59,799	147,903
3	1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	98,788	99,800	120,200	62,740	112,540	22,200	43,133	58,300	140,000
4	1996 ANNUAL AVG DAILY FLOW (GPD)	51,873	53,646	77,342	38,030	45,728	9,076	23,715	34,230	57,388
5	1994 ANNUAL AVG DAILY FLOW (GPD)	49,314	52,699	71,863	36,816	44,024	5,236	23,715	33,372	54,321
6	FIRE STORAGE ACCEPTED (GAL.)	0	0	0	0	0	0	0	0	0
7	FIRE FLOW PROVISION (GPM)	0	0	0	0	0	0	0	0	0
8	Unaccounted for Water Level (%)	11.8%	9.6%	16.2%	18.4%	10.0%	2.4%	8.2%	9.1%	8.8%
9	Unaccounted for Water Allowed (%)	10.0%	9.6%	10.0%	10.0%	10.0%	2.4%	8.2%	9.1%	8.8%
11	SOURCE OF SUPPLY AND PUMPING:									
12	Supply Wells:	L	L	S	S	S	S	L	L	S
13	Total Capacity (gpm)	685	440	1,250	95	400	650	135	215	865
14	Reliable Capacity (gpm)	360	140	500	35	200	0	0	93	65
15	OPC Calculated Used & Useful (%)	10.35%	26.61%	16.85%	100.00%	52.77%	100.00%	100.00%	25.56%	100.00%
16	U & U Per Order (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	36.70%	100.00%
17	SSU Requested U & U (%)	34.14%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	61.55%	100.00%
19	Auxiliary Power:									
20	Capacity (GPD), not provided	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable				Unavailable
21	OPC Calculated Used & Useful (%)	10.35%	26.61%	16.85%	100.00%	52.77%				100.00%
22	SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%				100.00%
24	High Service Pumping:									
25	Total Capacity (gpm)	500	200	N/A	N/A	N/A	N/A	320	180	N/A
26	Reliable Capacity (gpm)	250	0	N/A	N/A	N/A	N/A	160	90	N/A
27	OPC Calculated Used & Useful (%)	28.35%	100.00%	N/A	N/A	N/A	N/A	18.72%	46.14%	N/A
28	U & U Per Order (%)	100.00%	100.00%	N/A	N/A	N/A	N/A	32.30%	75.90%	N/A
29	SSU Requested U & U (%)	100.00%	100.00%	N/A	N/A	N/A	N/A	42.91%	100.00%	N/A
31	WATER TREATMENT PLANT:									
32	Water Treatment Equipment:									
33	Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34	Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35	OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36	U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37	SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
39	TRANSMISSION AND DISTRIBUTION:									
40	Finished Water Storage:									
41	Total Capacity (gal.)	15,000	25,000					15,000	5,000	
42	Reliable Capacity (gal.)	13,500	22,500	N/A	N/A	N/A	N/A	13,500	4,500	N/A
43	OPC Calculated Used & Useful (%)	100.00%	100.00%	N/A	N/A	N/A	N/A	79.05%	100.00%	N/A
44	U & U Per Order (%)	100.00%	100.00%	N/A	N/A	N/A	N/A	92.00%	100.00%	N/A
45	SSU Requested U & U (%)	100.00%	100.00%	N/A	N/A	N/A	N/A	100.00%	100.00%	N/A
47	Hydropneumatic Tanks:									
48	Total Capacity (gal.)	3,500	7,000	10,000	5,000	8,000	6,500	3,000	4,500	10,000
49	OPC Calculated Used & Useful (%)	92.86%	42.86%	75.00%	12.00%	25.00%	100.00%	45.00%	27.11%	80.00%
50	U & U Per Order (%)	92.00%	90.00%	100.00%	18.00%	41.00%	100.00%	67.50%	83.00%	35.00%
51	SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
53	USED AND USEFUL CALCULATIONS									
Water Transmission & Distribution System										
54	Schedule F-7(W)									
55	TRANSMISSION AND DISTRIBUTION:									
56	Connected Lots in 1996 w/o M.R.	217	170	367	172	161	26	104	359	131
57	Connected Lots in 1994 w/o M.R.	206	167	341	166	155	15	104	350	124
58	Connected Lots in 1994 w/ M.R.	207	169	358	169	158	22	104	355	129
59	Number of Lots	292	215	415	535	345	114	119	754	150
60	OPC Calculated Used & Useful (%)	74.22%	79.07%	88.43%	32.10%	46.67%	22.81%	87.39%	47.61%	87.33%
61	U & U Per Order (%)	100.00%	76.50%	83.50%	32.00%	44.70%	15.80%	100.00%	44.80%	87.00%
62	SSU Requested U & U (%)	100.00%	79.44%	90.43%	32.72%	47.75%	26.20%	100.00%	48.11%	89.23%
64	ERC CALCULATIONS (by SSU)									
65	Combined Schedule of F- 8 & 9 (W)	Water	Water	Water	Water	Water	Water	Water	Water	Water
66	Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
67	1990	169	163	304	171	141	0	104	334	113
68	1991	171	165	329	171	146	6	104	339	120
69	1992	173	166	342	174	148	15	104	343	123
70	1993	186	167	342	180	151	16	104	347	124
71	1994	212	167	341	182	155	15	104	350	124
72	1995	213	169	358	185	158	22	104	355	129
73	1995.5	218	169	362	187	160	24	104	357	130
74	1996	223	170	367	188	161	26	104	359	131

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Salt Springs	Samira Villas	Silver Lakes West Shores	Silver Lake Oaks	Skycrest	St. Johns Highlands	Stone Mountain	Sugar Mill	Sugamill Woods
Docket No. 950495-WS									
Company: Southern States Utilities, Inc.									
Schedule Year Ended: 12/31/96									
Projected [x]									
FPSC Uniform [x]; FPSC Non-Uniform [x]									
1	1996	1996	1996	1996	1996	1996	1996	1996	1996
1	202,000	8,900	1,857,200	15,700	61,700	42,800	24,600	200,000	2,806,000
2	195,383	4,847	1,889,654	8,727	60,758	34,111	22,880	165,383	2,796,369
3	193,000	4,847	1,796,720	8,727	59,200	32,907	20,020	158,000	2,479,400
4	93,150	2,472	878,354	5,208	24,086	13,974	8,241	111,469	1,187,768
5	92,014	2,472	835,156	5,208	23,468	13,481	7,211	106,493	1,053,134
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	3.6%	2.1%	7.3%	4.1%	17.1%	39.2%	58.8%	7.7%	6.0%
9	3.6%	2.1%	7.3%	4.1%	10.0%	10.0%	10.0%	7.7%	6.0%
10									
11	SOURCE OF SUPPLY AND PUMPING:								
12	Supply Wells:								
	S	S	L	L	S	L	S	L	L
13	633	85	2,850	40	675	75	100	330	4,800
14	133	0	1,450	0	175	0	0	210	4,200
15	100.00%	100.00%	90.50%	100.00%	22.40%	100.00%	100.00%	36.86%	40.46%
16	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	21.00%	57.00%	100.00%
17	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	77.84%	71.46%
18									
19	Auxiliary Power:								
20	Unavailable				Unavailable		Unavailable	Unavailable	Unavailable
21	100.00%				22.40%		36.86%	40.46%	
22	100.00%				100.00%		100.00%	100.00%	
23									
24	High Service Pumping:								
25	N/A	N/A	3,460	140	N/A	120	N/A	2,250	3,600
26	N/A	N/A	2,745	70	N/A	60	N/A	1,200	2,400
27	N/A	N/A	47.81%	8.66%	N/A	27.95%	N/A	9.57%	80.91%
28	N/A	N/A	N/A	N/A	N/A	100.00%	N/A	100.00%	N/A
29	N/A	N/A	100.00%	31.15%	N/A	100.00%	N/A	100.00%	100.00%
30									
31	WATER TREATMENT PLANT:								
32	Water Treatment Equipment:								
33	N/A	N/A	N/A	N/A	N/A	N/A	N/A	350	N/A
34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	350	N/A
35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32.81%	N/A
36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48.10%	N/A
37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48.10%	N/A
38									
39	TRANSMISSION AND DISTRIBUTION:								
40	Finished Water Storage:								
41				12,000		16,000		500,000	500,000
42	N/A	N/A	N/A	5,400	N/A	14,400	N/A	400,564	450,000
43	N/A	N/A	N/A	21.70%	N/A	30.92%	N/A	11.15%	100.00%
44	N/A	N/A	N/A	50.00%	N/A	100.00%	N/A	73.30%	N/A
45	N/A	N/A	N/A	100.00%	N/A	100.00%	N/A	100.00%	100.00%
46									
47	Hydropneumatic Tanks:								
48	15,000	1,500	15,000	1,000	5,000	3,000	1,000	15,000	60,000
49	33.33%	56.67%	93.33%	40.00%	100.00%	25.00%	100.00%	8.00%	10.00%
50	53.30%	85.00%	100.00%	60.00%	100.00%	49.00%	100.00%	100.00%	67.00%
51	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
52									
53	USED AND USEFUL CALCULATIONS								
Water Transmission & Distribution System									
54	Schedule F-7(W)								
55	TRANSMISSION AND DISTRIBUTION:								
56	115	2	1,285	26	117	85	8	648	2,632
57	114	2	1,222	26	114	82	7	619	2,333
58	114	2	1,265	26	116	84	7	636	2,508
59	160	3	1,648	53	122	118	22	661	8,252
60	72.13%	66.67%	77.99%	49.06%	95.90%	72.03%	36.36%	97.97%	31.89%
61	78.00%	100.00%	100.00%	50.90%	100.00%	69.80%	25.00%	86.90%	22.40%
62	100.00%	100.00%	100.00%	50.90%	100.00%	72.46%	36.36%	99.51%	33.39%
63									
64	ERC CALCULATIONS (by SSU)								
65	Combined Schedule of F- 8 & 9 (W)								
	Water	Water	Water	Water	Water	Water	Water	Water	Water
66	Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
67	1990	154	13	1,368	27	108	79	6	591
68	1991	158	13	1,503	26	111	79	6	624
69	1992	161	13	1,582	25	113	81	7	636
70	1993	156	13	1,472	24	113	83	7	636
71	1994	162	13	1,508	26	114	82	7	642
72	1995	162	13	1,561	26	116	84	7	660
73	1995.5	163	13	1,574	26	117	84	8	666
74	1996	164	13	1,586	26	117	85	8	672

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.											Weiaka/ Saratoga	Westmont	Windsong
	Sunny Hills (Well 1 & 4)	Sunny Hills (Well 3)	Sunshine Parkway	Tropical Park	University Shores	Venetian Village	Harbor	1996	1996	1996			
Docket No.	950495-WS												
Company:	Southern States Utilities, Inc.												
Schedule Year Ended:	12/31/96												
Projected [x]													
FPSC Uniform [x]; FPSC Non-Uniform [x]													
1 1994 MAX DAY FOR YEAR (GPD)	311,500	19,000	186,900	187,700	1,658,600	65,600	55,000	Water	44,800				
2 1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	269,400	8,400	157,043	152,257	1,775,860	45,756	40,102	Purchased	36,088				
3 1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	269,400	8,400	118,740	151,980	1,559,860	43,500	38,940	From	35,420				
4 1996 ANNUAL AVG DAILY FLOW (GPD)	159,592	3,000	98,981	58,412	1,071,474	26,111	17,395	Orange	16,249				
5 1994 ANNUAL AVG DAILY FLOW (GPD)	159,592	3,000	74,839	58,306	941,149	24,824	16,891	County	15,948				
6 FIRE STORAGE ACCEPTED (GAL.)	0	0	270,000	0	0	0	0		0				
7 FIRE FLOW PROVISION (GPM)	0	0	2,000	0	0	0	0		0				
8 Unaccounted for Water Level (%)	4.0%	4.0%	5.4%	13.3%	3.6%	2.9%	6.9%	12.0%	2.0%				
9 Unaccounted for Water Allowed (%)	4.0%	4.0%	5.4%	10.0%	3.6%	2.9%	6.9%	10.0%	2.0%				
10													
11 SOURCE OF SUPPLY AND PUMPING:													
12 Supply Wells:	L	S	L	S	L	S	L	S	S				
13 Total Capacity (gpm)	650	200	2,000	200	5,100	310	296	N/A	180				
14 Reliable Capacity (gpm)	300	0	1,000	0	3,600	100	110	N/A	0				
15 OPC Calculated Used & Useful (%)	36.94%	100.00%	6.87%	100.00%	24.18%	41.31%	10.98%	N/A	100.00%				
16 U & U Per Order (%)	63.90%	63.90%	100.00%	100.00%	100.00%	44.30%	29.80%	N/A	100.00%				
17 SSU Requested U & U (%)	72.11%	100.00%	100.00%	100.00%	100.00%	100.00%	38.09%	N/A	100.00%				
18													
19 Auxiliary Power:													
20 Capacity (GPD), not provided	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable							
21 OPC Calculated Used & Useful (%)	36.94%	100.00%	6.87%	100.00%	24.18%	41.31%							
22 SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%							
23													
24 High Service Pumping:													
25 Total Capacity (gpm)	500	N/A	3,400	N/A	7,980	N/A	300	N/A	N/A				
26 Reliable Capacity (gpm)	300	N/A	2,600	N/A	3,980	N/A	150	N/A	N/A				
27 OPC Calculated Used & Useful (%)	62.36%	N/A	81.12%	N/A	30.99%	N/A	18.57%	N/A	N/A				
28 U & U Per Order (%)	100.00%	N/A	100.00%	N/A	72.30%	N/A	N/A	N/A	N/A				
29 SSU Requested U & U (%)	100.00%	N/A	99.89%	N/A	100.00%	N/A	55.87%	N/A	N/A				
30													
31 WATER TREATMENT PLANT:													
32 Water Treatment Equipment:													
33 Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
34 Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
35 OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
36 U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
37 SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
38													
39 TRANSMISSION AND DISTRIBUTION:													
40 Finished Water Storage:													
41 Total Capacity (gal.)	60,000		108,000		612,000		40,000						
42 Reliable Capacity (gal.)	54,000	N/A	97,200	N/A	550,800	N/A	36,000	N/A	N/A				
43 OPC Calculated Used & Useful (%)	100.00%	N/A	100.00%	N/A	87.54%	N/A	21.74%	N/A	N/A				
44 U & U Per Order (%)	100.00%	N/A	100.00%	N/A	100.00%	N/A	N/A	N/A	N/A				
45 SSU Requested U & U (%)	100.00%	N/A	100.00%	N/A	100.00%	N/A	55.87%	N/A	N/A				
46													
47 Hydropneumatic Tanks:													
48 Total Capacity (gal.)	20,000	7,500	10,000	10,000	20,000	4,000	4,500	N/A	4,000				
49 OPC Calculated Used & Useful (%)	17.50%	26.87%	100.00%	20.00%	75.00%	52.50%	41.33%	N/A	45.00%				
50 U & U Per Order (%)	93.00%	100.00%	100.00%	100.00%	100.00%	66.00%	45%/100%	N/A	56.00%				
51 SSU Requested U & U (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	N/A	100.00%				
52													
53 USED AND USEFUL CALCULATIONS													
54 Water Transmission & Distribution System													
54 Schedule F-7(W)													
55 TRANSMISSION AND DISTRIBUTION:													
56 Connected Lots in 1996 w/o M.R.	435	4	14	533	3,800	142	134	137	107				
57 Connected Lots in 1994 w/o M.R.	435	4	11	532	3,338	135	130	129	105				
58 Connected Lots in 1994 w/ M.R.	435	4	13	532	3,574	139	132	134	106				
59 Number of Lots	5,377	491	40	671	5,100	223	249	167	106				
60 OPC Calculated Used & Useful (%)	8.09%	0.81%	36.01%	79.43%	74.51%	63.68%	53.79%	82.04%	100.00%				
61 U & U Per Order (%)	11.00%	N/A	100.00%	81.40%	100.00%	61.70%	54.00%	100.00%	100.00%				
62 SSU Requested U & U (%)	28.09%	26.09%	100.00%	81.40%	100.00%	65.13%	54.00%	100.00%	100.00%				
63													
64 ERC CALCULATIONS (by SSU)													
65 Combined Schedule of F- 8 & 9 (W)	Water	Water	Water	Water	Water	Water	Water	Water	Water				
66 Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC				
67 1990	619	4	39	544	2,777	123	129	117	102				
68 1991	604	4	42	545	2,951	129	129	121	105				
69 1992	607	4	56	544	3,233	133	130	127	105				
70 1993	614	4	67	545	3,548	134	132	129	106				
71 1994	602	4	62	549	3,748	135	134	129	106				
72 1995	602	4	74	549	4,013	139	136	134	107				
73 1995.5	602	4	78	549	4,140	141	137	136	108				
74 1996	602	4	82	550	4,267	142	138	137	108				

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Docket No. 950495-WS Company: Southern States Utilities, Inc. Schedule Year Ended: 12/31/96 Projected [x] FPSC Uniform [x]; FPSC Non-Uniform [x]	Woodmere	Wootens	Zephyr Shores	Buenaventura Lakes	Deep Creek	Enterprise	Geneva Lake Estates	Keystone Club Estates	
		1996	1996	1996	1996	1996	1996	1996	1996	1996
1	1994 MAX DAY FOR YEAR (GPD)	1,479,000	8,120	121,000	2,753,000	All Water	All Water	104,500	229,000	
2	1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	1,463,718	8,855	91,187	2,769,385	Purchased	Purchased	96,603	132,851	
3	1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	1,398,000	7,792	89,600	2,610,400	From	From	90,540	126,000	
4	1996 ANNUAL AVG DAILY FLOW (GPD)	888,133	3,114	54,982	1,815,263	Charlottee	Deltona	39,711	39,183	
5	1994 ANNUAL AVG DAILY FLOW (GPD)	848,258	2,740	54,025	1,711,052	County	Lakes	37,219	37,162	
6	FIRE STORAGE ACCEPTED (GAL)	0	0	0	141,864			0	0	
7	FIRE FLOW PROVISION (GPM)	0	0	0	1,182			0	0	
8	Unaccounted for Water Level (%)	38.6%	6.9%	5.0%	13.5%	2.9%	11.6%	17.2%	12.6%	
9	Unaccounted for Water Allowed (%)	10.0%	6.9%	5.0%	10.0%	2.9%	10.0%	10.0%	10.0%	
10										
11	SOURCE OF SUPPLY AND PUMPING:									
12	Supply Wells:	L	S	S	L	S	S	S	S	
13	Total Capacity (gpm)	3,000	25	120	4,700	N/A	N/A	280	750	
14	Reliable Capacity (gpm)	1,000	0	0	2,200	N/A	N/A	100	375	
15	OPC Calculated Used & Useful (%)	44.04%	100.00%	100.00%	55.29%	N/A	N/A	80.93%	31.15%	
16	U & U Per Order (%)	48.30%	90.00%	100.00%	63.20%	N/A	N/A	N/A	N/A	
17	SSU Requested U & U (%)	100.00%	100.00%	100.00%	92.14%	N/A	N/A	100.00%	53.93%	
18										
19	Auxiliary Power:									
20	Capacity (GPD), not provided	Unavailable			Unavailable			Unavailable	Unavailable	
21	OPC Calculated Used & Useful (%)	44.04%			55.29%			80.93%	31.15%	
22	SSU Requested U & U (%)	100.00%			100.00%			100.00%	100.00%	
23										
24	High Service Pumping:									
25	Total Capacity (gpm)	3,100	N/A	N/A	7,400	N/A	N/A	N/A	N/A	
26	Reliable Capacity (gpm)	2,000	N/A	N/A	4,400	N/A	N/A	N/A	N/A	
27	OPC Calculated Used & Useful (%)	36.29%	N/A	N/A	69.05%	N/A	N/A	N/A	N/A	
28	U & U Per Order (%)	100.00%	N/A	N/A	63.2%	N/A	N/A	N/A	N/A	
29	SSU Requested U & U (%)	100.00%	N/A	N/A	100.0%	N/A	N/A	N/A	N/A	
30										
31	WATER TREATMENT PLANT:									
32	Water Treatment Equipment:									
33	Total Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
34	Reliable Capacity (gpm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
35	OPC Calculated Used & Useful (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
36	U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
37	SSU Requested U & U (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
38										
39	TRANSMISSION AND DISTRIBUTION:									
40	Finished Water Storage:									
41	Total Capacity (gal.)	455,000			1,206,000					
42	Reliable Capacity (gal.)	409,500	N/A	N/A	1,085,400	N/A	N/A	N/A	N/A	
43	OPC Calculated Used & Useful (%)	69.68%	N/A	N/A	84.39%	N/A	N/A	N/A	N/A	
44	U & U Per Order (%)	100.00%	N/A	N/A	60.1%	N/A	N/A	N/A	N/A	
45	SSU Requested U & U (%)	100.00%	N/A	N/A	100.0%	N/A	N/A	N/A	N/A	
46										
47	Hydropneumatic Tanks:									
48	Total Capacity (gal.)	10,000	500	7,500	N/A	N/A	N/A	3,000	8,000	
49	OPC Calculated Used & Useful (%)	100.00%	50.00%	16.00%	N/A	N/A	N/A	60.00%	46.88%	
50	U & U Per Order (%)	100.00%	75.00%	17.10%	N/A	N/A	N/A	N/A	N/A	
51	SSU Requested U & U (%)	100.00%	100.00%	100.00%	N/A	N/A	N/A	100.00%	100.00%	
52										
53	USED AND USEFUL CALCULATIONS									
	Water Transmission & Distribution System									
54	Schedule F-7(W)									
55	TRANSMISSION AND DISTRIBUTION:									
56	Connected Lots in 1996 w/o M.R.	1,207	25	499	7,515	3,311	236	93	159	
57	Connected Lots in 1994 w/o M.R.	1,153	22	490	7,083	2,940	216	87	151	
58	Connected Lots in 1994 w/ M.R.	1,172	24	495	7,287	3,166	225	90	154	
59	Number of Lots	1,189	52	647	6,725	7,171	279	139	250	
60	OPC Calculated Used & Useful (%)	100.00%	48.08%	77.10%	100.00%	46.17%	84.71%	67.11%	63.64%	
61	U & U Per Order (%)	98.50%	28.90%	85.40%	N/A	N/A	N/A	N/A	N/A	
62	SSU Requested U & U (%)	100.00%	51.25%	85.40%	100.00%	48.19%	88.78%	69.13%	65.77%	
63										
64	ERC CALCULATIONS (by SSU)									
65	Combined Schedule of F- 8 & 9 (W)									
66	Year	Water ERC	Water ERC	Water ERC	Water ERC	Water ERC	Water ERC	Water ERC	Water ERC	
67	1990	1,235	17	479		2,801.5	202.5	96.0	139.0	
68	1991	1,244	18	518		3,087.0	216.5	97.5	141.0	
69	1992	1,277	20	511		3,334.5	226.3	100.5	143.5	
70	1993	1,333	21	496		3,450.8	241.3	107.5	152.5	
71	1994	1,404	22	508	7,075.0	3,479.0	258.3	112.0	160.0	
72	1995	1,427	24	513	7,278.3	3,746.2	269.6	115.3	163.3	
73	1995.5	1,448	24	515	7,395.8	3,832.1	276.4	117.4	166.0	
74	1996	1,470	25	517	7,505.9	3,918.0	283.2	119.5	168.7	

OPC USED AND USEFUL CALCULATIONS
Water Treatment Plant - Schedule F-5 (W)

Line No.	Docket No. 950495-WS Company: Southern States Utilities, Inc. Schedule Year Ended: 12/31/96 Projected [x] FPSC Uniform [x]; FPSC Non-Uniform [x]	Lakeside	Lehigh	Marco Island	Palm Valley	Remington Forest	Spring Gardens	Valencia Terrace
		1996	1996	1996	1996	1996	1996	1996
1	1994 MAX DAY FOR YEAR (GPD)	544,000	1,711,000	11,871,000	All Water	87,780	55,050	224,700
2	1996 AVG MAX 5 DAYS IN MAX MONTH (GPD)	317,003	1,727,685	10,439,248	Purchased	96,041	52,534	218,000
3	1994 AVG MAX 5 DAYS IN MAX MONTH (GPD)	298,800	1,661,200	9,924,600	From	77,540	49,530	218,000
4	1996 ANNUAL AVG DAILY FLOW (GPD)	96,945	1,371,878	6,488,319	Intercoastal Utilities	37,453	24,453	133,344
5	1994 ANNUAL AVG DAILY FLOW (GPD)	91,378	1,319,085	6,168,449		30,238	23,055	133,344
6	FIRE STORAGE ACCEPTED (GAL.)	0	240,000	771,472		0	0	0
7	FIRE FLOW PROVISION (GPM)	0	2,000	3,214		0	0	0
8	Unaccounted for Water Level (%)	100.0%	13.6%	4.0%	8.8%	15.5%	19.8%	49.7%
9	Unaccounted for Water Allowed (%)	10.0%	10.0%	4.0%	8.8%	10.0%	10.0%	10.0%
10								
11	SOURCE OF SUPPLY AND PUMPING:							
12	Supply Wells:	S	L	L	S	L	S	S
13	Total Capacity (gpm)	1,400	1,900	9,831	N/A	48	180	1,100
14	Reliable Capacity (gpm)	400	1,444	7,747	N/A	0	90	350
15	OPC Calculated Used & Useful (%)	5.50%	63.60%	73.74%	N/A	100.00%	36.56%	26.08%
16	U & U Per Order (%)	N/A	100.00%	100.00%	N/A	N/A	N/A	N/A
17	SSU Requested U & U (%)	100.00%	100.00%	95.99%	N/A	100.00%	100.00%	100.00%
18								
19	Auxiliary Power:							
20	Capacity (GPD), not provided	Unavailable	Unavailable	Unavailable			Unavailable	
21	OPC Calculated Used & Useful (%)	5.50%	63.60%	73.74%			26.08%	
22	SSU Requested U & U (%)	100.00%	100.00%	100.00%			100.00%	
23								
24	High Service Pumping:							
25	Total Capacity (gpm)	N/A	4,250	22,700	N/A	600	N/A	N/A
26	Reliable Capacity (gpm)	N/A	3,000	17,700	N/A	220	N/A	N/A
27	OPC Calculated Used & Useful (%)	N/A	100.00%	99.12%	N/A	28.65%	N/A	N/A
28	U & U Per Order (%)	N/A	100.0%		N/A	N/A	N/A	N/A
29	SSU Requested U & U (%)	N/A	100.0%	100.0%	N/A	100.0%	N/A	N/A
30								
31	WATER TREATMENT PLANT:							
32	Water Treatment Equipment:							
33	Total Capacity (gpm)	N/A	1,736	6,944	N/A	N/A	N/A	N/A
34	Reliable Capacity (gpm)	N/A	1,736	6,944	N/A	N/A	N/A	N/A
35	OPC Calculated Used & Useful (%)	N/A	66.62%	100.00%	N/A	N/A	N/A	N/A
36	U & U Per Order (%)	N/A	78.30%	100.00%	N/A	N/A	N/A	N/A
37	SSU Requested U & U (%)	N/A	78.30%	100.00%	N/A	N/A	N/A	N/A
38								
39	TRANSMISSION AND DISTRIBUTION:							
40	Finished Water Storage:							
41	Total Capacity (gal.)		1,720,000	6,500,000		15,000		
42	Reliable Capacity (gal.)	N/A	1,048,052	3,635,143	N/A	13,500	N/A	N/A
43	OPC Calculated Used & Useful (%)	N/A	52.40%	61.78%	N/A	100.00%	N/A	N/A
44	U & U Per Order (%)	N/A	81.80%	100.00%	N/A	N/A	N/A	N/A
45	SSU Requested U & U (%)	N/A	88.00%	100.00%	N/A	100.00%	N/A	N/A
46								
47	Hydropneumatic Tanks:							
48	Total Capacity (gal.)	15,000	10,000	N/A	N/A	5,000	1,500	5,000
49	OPC Calculated Used & Useful (%)	66.67%	45.60%	N/A	N/A	9.60%	60.00%	100.00%
50	U & U Per Order (%)	N/A	100.00%	N/A	N/A	N/A	N/A	N/A
51	SSU Requested U & U (%)	100.00%	100.00%	N/A	N/A	100.00%	100.00%	100.00%
52								
53	USED AND USEFUL CALCULATIONS							
	Water Transmission & Distribution System							
54	Schedule F-7(W)							
55	TRANSMISSION AND DISTRIBUTION:							
56	Connected Lots in 1996 w/o M.R.	93	5,800	6,083	216	80	130	323
57	Connected Lots in 1994 w/o M.R.	87	5,577	5,783	201	65	122	323
58	Connected Lots in 1994 w/ M.R.	90	5,681	5,986	209	70	126	323
59	Number of Lots	252	7,789	14,014	210	87	180	340
60	OPC Calculated Used & Useful (%)	36.79%	74.46%	43.41%	100.00%	92.23%	72.06%	95.00%
61	U & U Per Order (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
62	SSU Requested U & U (%)	37.73%	77.17%	100.00%	100.00%	100.00%	74.06%	95.00%
63								
64	ERC CALCULATIONS (by SSU)							
65	Combined Schedule of F- 8 & 9 (W)	Water	Water	Water	Water	Water	Water	Water
66	Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC
67	1990		8,128.0	12,915.5	196.3	24.5		
68	1991		8,300.5	13,795.0	204.3	28.0		
69	1992		8,473.5	14,150.5	211.5	33.5		
70	1993		8,668.0	14,136.0	219.8	48.5		
71	1994		8,897.5	13,983.0	225.8	65.8	122.0	323.0
72	1995	89.6	9,063.8	14,473.6	234.8	71.1	125.7	323.0
73	1995.5	90.9	9,158.7	14,509.8	238.6	76.3	127.5	323.0
74	1996	92.3	9,253.6	14,708.1	242.4	81.5	129.4	323.0

EXHIBIT TLB-3.1

**SUMMARY OF AVAILABLE FIRE FLOW TESTS RECORDS
OF
SSU WATER SYSTEMS
AND
OPC FIRE FLOW ALLOWANCE**

FIRE FLOW TEST RECORDS SUMMARY

OPC DOCUMENT REQUEST NO. 298

Line

No. Docket No. 950495-WS
Company: Southern States Utilities, Inc.
Schedule Year Ended: 12/31/96
Projected [x]
FPSC Uniform [x]; FPSC Non-Uniform [x]

	Amelia Island	Deltona Lakes	Keystone Heights	Sunshine Parkway	Buenaventura Lakes	Lehigh	Marco Island
1 FIRE STORAGE ACCEPTED (GAL.)	180,000	260,100	120,000	270,000	141,864	240,000	771,472
2 FIRE FLOW PROVISION ACCEPTED (GPM)	1,000	2,168	1,000	2,000	1,182	2,000	3,214
3 AVERAGE FIRE FLOW PROVISION (GPM)	1,123	2,168	1,189	2,150	1,182	1,972	3,214
4 Fire Storage Requested by SSU (gal.)	180,000	300,000	120,000	270,000	300,000	240,000	1,080,000
5 Fire Flow Requested by SSU (gpm)	1,000	2,500	1,000	2,000	2,500	2,000	4,500
6 Duration Requested by SSU (hr)	3	2	2	2.25	2	2	4
7							
8 FIRE FLOW TEST RECORDS							
9 Maximum:							
10 Hydrant Number	Hammock Dr.	30077	Nightingale	Carroll Ful.	31	120	Caxombs
11 Date Last Flowed	7/11/95	4/19/93	n/a	6/29/95	2/23/95	9/14/95	7/18/94
12 Time of Day	n/a	10:45	n/a	n/a	n/a	9:00	10:55
13 Static Pressure	62	84	65	50	68	65	68
14 Residual Pressure	46	78	46	40	46	59	50
15 Pitot Pressure	n/a	40	n/a	38	n/a	52	44-46
16 GPM at flow	1,062	1,060	1,135	1,036	1,135	1,210	2,374
17	1,788	3,805	1,808	2,200	1,730	3,524	4,032
18							
19 Minimum:							
20 Hydrant Number	Ocean Blvd.	30030	Cypre & Her	Carroll Ful.	263	380	Tigertail Ct.
21 Date Last Flowed	7/22/95	11/5/92	n/a	6/25/95	12/1/95	1/28/87	7/21/94
22 Time of Day	n/a	21:05	n/a	n/a	n/a	12:00	13:25
23 Static Pressure	52	52	50	50	58	55	74
24 Residual Pressure	10	20	14	40	16	9	54
25 Pitot Pressure	n/a	10	n/a	32	n/a	8	44-46
26 GPM at flow	531	530	630	950	670	475	1402
27	458	530	571	2,100	635	420	2,397
28							
29 Average:							
30	1,123	2,168	1,189	2,150	1,182	1,972	3,214
31							

EXHIBIT TLB-4

**OPC USED AND USEFUL CALCULATIONS
OF
WASTEWATER SYSTEMS**

OPC USED AND USEFUL CALCULATIONS

	Amelia Island	Apache Shores	Apple Valley	Beacon Hill	Beecher's Point	Burnt Store	Chuluota	Citrus Park	Citrus Springs	
Wastewater Treatment Plant Schedule F-6 (S)										
Docket No. 950495-WS										
Company: Southern States Utilities, Inc.										
Schedule Year Ended: 12/31/96										
Projected [x]										
Line No.	1996	1996	1996	1996	1996	1996	1996	1996	1996	
			Treated by							
			Altomonte							
1	PERMITTED PLANT CAPACITY (GPD)	950,000	17,000	Springs	1,780,000	15,000	250,000	100,000	64,000	200,000
2	EFFLUENT DISPOSAL CAPACITY (GPD)	950,000	17,000	N/A	1,780,000	15,000	250,000	100,000	64,000	200,000
3	1994 AVG DAILY FLOW OF MAX MONTH (GPD)	844,484	12,000	N/A	783,323	8,194	135,968	42,226	48,323	134,033
4	1996 AVG DAILY FLOW OF MAX MONTH (GPD)	611,480	12,000	N/A	848,580	6,072	153,394	43,186	49,055	135,366
5	Response to OPC Doc. Request No. 279									
6	EXCESS Inflow/Infiltration (%), by EPA guidelines	36.4%				25.9%				
7	EXCESS INFLOW/INFILTRATION (GPD)	307,392	0		0	2,122	0	0	0	0
8										
9	TREATMENT PLANT AND EFFLUENT DISPOSAL:									
10	Treatment Plant:									
11	OPC Calculated Used & Useful (%)	64.37%	70.59%	N/A	47.67%	40.48%	61.36%	43.19%	76.65%	67.68%
12	U & U Per Order (%)	94.30%	69.60%	N/A	62.90%	39.60%	48.00%	71.00%	100.00%	51.60%
13	SSU Requested U & U (%)	100.00%	70.59%	N/A	100.00%	54.62%	85.97%	71.00%	100.00%	69.51%
14	Effluent Disposal:									
15	OPC Calculated Used & Useful (%)	64.37%	70.59%	N/A	47.67%	40.48%	61.36%	43.19%	76.65%	67.68%
16	U & U Per Order (%)	94.30%	69.60%	N/A	69.60%	39.60%	48.00%	71.00%	100.00%	51.60%
17	SSU Requested U & U (%)	100.00%	70.59%	N/A	100.00%	54.62%	85.97%	71.00%	100.00%	69.51%
18	Reuse Facilities:									
19	OPC Calculated Used & Useful (%)	64.37%								
20	SSU Requested U & U (%)	100.00%								
21										
22	Auxiliary Power:									
23	Capacity (GPD), not provided	navailable			Unavailable					
24	OPC Calculated Used & Useful (%)	64.37%			47.67%					
25	SSU Requested U & U (%)	100.00%			100.00%					
26										

27 USED AND USEFUL CALCULATIONS

Wastewater Collection System

28 Schedule F-7(S)

29

30 COLLECTION AND SYSTEM PUMPING PLANT:

31	Connected Lots in 1996 w/o M.R.	1,450	111	163	3,085	45	418	135	136	684
32	Connected Lots in 1994 w/ M.R.	1,363	111	163	2,917	45	385	134	134	680
33	Connected Lots in 1994 w/o M.R.	1,273	111	163	2,848	45	371	132	133	677
34	Number of Lots	2,467	195	188	3,178	62	4,347	155	155	1,084
35	Calculated Used & Useful (%)	58.77%	56.92%	86.70%	97.09%	72.58%	9.63%	87.10%	87.43%	63.09%
36	U & U Per Order (%)	93.70%	59.55%	100.00%	91.00%	73.40%	9.20%	82.90%	82.90%	28.00%
37	SSU Requested U & U (%)	93.70%	59.50%	100.00%	100.00%	73.40%	10.40%	87.90%	100.00%	63.38%
38										
39										

ERC CALCULATIONS (by SSU)

Combined Schedule of F- 8 & 10 (S)

	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer
Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
1990	1,382.0	116.0	175.0	2,450.0	45.0	342.0	127.0	251.0	687.0
1991	1,571.0	113.0	175.0	2,524.0	45.0	379.0	130.0	247.0	693.0
1992	1,707.0	113.0	173.0	2,609.0	45.0	398.0	131.0	248.0	696.0
1993	1,783.0	112.0	175.0	2,870.0	45.0	455.0	131.0	258.0	697.0
1994	1,935.0	111.0	180.0	3,229.0	45.0	554.0	132.0	264.0	704.0
1995	2,071.0	111.0	180.0	3,307.0	45.0	575.0	134.0	265.0	707.0
1995.5	2,137.0	111.0	180.0	3,403.0	45.0	600.0	134.0	266.0	709.0
1996	2,203.0	111.0	180.0	3,498.0	45.0	625.0	135.0	268.0	711.0

OPC USED AND USEFUL CALCULATIONS

	Deltona Lakes	Fisherman's Haven	Florida Central Commerce Park	Fox Run	Holiday Haven	Jungle Den	Leilani Heights	Leisure Lakes	
Wastewater Treatment Plant									
Schedule F-6 (S)									
Docket No. 950495-WS									
Company: Southern States Utilities, Inc.									
Schedule Year Ended: 12/31/96									
Projected [x]									
Line No.	1996	1996	1996	1996	1996	1996	1996	1996	
				Interconn.					
				With					
				Martin					
1	PERMITTED PLANT CAPACITY (GPD)	1,200,000	25,000	95,000	County	25,000	25,000	150,000	50,000
2	EFFLUENT DISPOSAL CAPACITY (GPD)	1,400,000	25,000	95,000	Utilities	25,000	25,000	150,000	50,000
3	1994 AVG DAILY FLOW OF MAX MONTH (GPD)	1,132,710	17,467	56,267	to Treat	18,700	16,613	172,964	18,129
4	1996 AVG DAILY FLOW OF MAX MONTH (GPD)	1,207,742	17,467	71,514		18,700	16,755	145,848	18,523
5	Response to OPC Doc. Request No. 279								
6	EXCESS Inflow/Infiltration (%), by EPA guidelines						16.1%		
7	EXCESS INFLOW/INFILTRATION (GPD)	0	0	0		0	27,847	0	
8									
9	TREATMENT PLANT AND EFFLUENT DISPOSAL:								
10	Treatment Plant:								
11	OPC Calculated Used & Useful (%)	100.00%	69.87%	75.28%	N/A	74.80%	67.02%	97.23%	37.05%
12	U & U Per Order (%)	95.00%	80.00%	44.00%	N/A	47.00%	65.00%	100.00%	65.70%
13	SSU Requested U & U (%)	100.00%	80.00%	100.00%	N/A	74.80%	68.61%	100.00%	65.70%
14	Effluent Disposal:								
15	OPC Calculated Used & Useful (%)	86.27%	69.87%	75.28%	N/A	74.80%	67.02%	97.23%	37.05%
16	U & U Per Order (%)	95.00%	80.00%	44.00%	N/A	47.00%	65.00%	100.00%	65.70%
17	SSU Requested U & U (%)	100.00%	80.00%	100.00%	N/A	74.80%	68.61%	100.00%	65.70%
18	Reuse Facilities:								
19	OPC Calculated Used & Useful (%)	86.27%		75.28%					
20	SSU Requested U & U (%)	100.00%		100.00%					
21									
22	Auxiliary Power:								
23	Capacity (GPD), not provided	Unavailable		Unavailable			Unavailable		
24	OPC Calculated Used & Useful (%)	100.00%		75.28%			97.23%		
25	SSU Requested U & U (%)	100.00%		100.00%			100.00%		

27 USED AND USEFUL CALCULATIONS

Wastewater Collection System

28 Schedule F-7(S)

29

30 **COLLECTION AND SYSTEM PUMPING PLANT:**

31	Connected Lots in 1996 w/o M.R.	4,659	141	56	106	94	118	399	235
32	Connected Lots in 1994 w/ M.R.	4,619	141	51	102	94	117	398	233
33	Connected Lots in 1994 w/o M.R.	4,595	141	44	97	94	117	397	230
34	Number of Lots	5,000	144	71	109	166	135	413	385
35	Calculated Used & Useful (%)	93.18%	97.92%	78.18%	97.25%	58.63%	87.41%	98.61%	61.04%
36	U & U Per Order (%)	100.00%	100.00%	43.00%	100.00%	61.40%	100.00%	100.00%	61.60%
37	SSU Requested U & U (%)	100.00%	100.00%	84.26%	100.00%	61.40%	100.00%	100.00%	61.62%

38

39

ERC CALCULATIONS (by SSU)

Combined Schedule of F- 8 & 10 (S)

	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer
Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
1990	4,860.0	142.0	86.0	82.0	95.0	114.0	393.0	221.0
1991	4,852.0	142.0	130.0	88.0	97.0	115.0	393.0	227.0
1992	4,895.0	140.0	146.0	92.0	97.0	116.0	394.0	229.0
1993	4,963.0	138.0	150.0	95.0	94.0	115.0	395.0	229.0
1994	5,025.0	141.0	155.0	97.0	96.0	117.0	397.0	230.0
1995	5,051.0	141.0	181.0	102.0	96.0	117.0	398.0	233.0
1995.5	5,073.0	141.0	189.0	104.0	96.0	118.0	398.0	234.0
1996	5,095.0	141.0	197.0	106.0	96.0	118.0	399.0	235.0

OPC USED AND USEFUL CALCULATIONS

Wastewater Treatment Plant Schedule F-6 (S) Docket No. 950495-WS Company: Southern States Utilities, Inc. Schedule Year Ended: 12/31/96		Marco Shores	Marion Oaks	Meredith Manor	Morning- view	Palm Port	Palm Terrace	Park Manor	Point O'Woods	Salt Springs
Projected [x]		1996	1996	1996	1996	1996	1996	1996	1996	1996
Line No.	FPSC Uniform [x] & Non-Uniform [x]	Interconn. With The City of								
1	PERMITTED PLANT CAPACITY (GPD)	110,000	200,000	Altamonte	20,000	50,000	130,000	15,000	58,000	85,000
2	EFFLUENT DISPOSAL CAPACITY (GPD)	110,000	200,000	Springs and	20,000	50,000	130,000	15,000	58,000	34,000
3	1994 AVG DAILY FLOW OF MAX MONTH (GPD)	62,000	170,129	Sanlando	8,710	25,233	147,742	13,194	20,226	29,129
4	1996 AVG DAILY FLOW OF MAX MONTH (GPD)	64,369	172,210	Utilities	8,710	27,550	148,175	15,134	23,622	29,129
5	Response to OPC Doc. Request No. 279									
6	EXCESS Inflow/Infiltration (%), by EPA guidelines									
7	EXCESS INFLOW/INFILTRATION (GPD)	0	0		0	0	0	0	0	0
8										
9	TREATMENT PLANT AND EFFLUENT DISPOSAL:									
10	Treatment Plant:									
11	OPC Calculated Used & Useful (%)	58.52%	86.10%	N/A	43.55%	55.10%	100.00%	100.00%	40.73%	34.27%
12	U & U Per Order (%)	66.80%	81.00%	N/A	77.00%	45.00%	62.50%	28.00%	28.60%	49.00%
13	SSU Requested U & U (%)	94.24%	90.36%	N/A	77.00%	63.83%	100.00%	100.00%	51.53%	49.00%
14	Effluent Disposal:									
15	OPC Calculated Used & Useful (%)	58.52%	86.10%	N/A	43.55%	55.10%	100.00%	100.00%	40.73%	85.67%
16	U & U Per Order (%)	66.80%	81.00%	N/A	77.00%	45.00%	96.00%	28.00%	28.60%	100.00%
17	SSU Requested U & U (%)	100.00%	90.36%	N/A	77.00%	63.83%	100.00%	100.00%	51.53%	100.00%
18	Reuse Facilities:									
19	OPC Calculated Used & Useful (%)								40.73%	
20	SSU Requested U & U (%)								100.00%	
21										
22	Auxiliary Power:									
23	Capacity (GPD), not provided									
24	OPC Calculated Used & Useful (%)									
25	SSU Requested U & U (%)									
26										

27 USED AND USEFUL CALCULATIONS

Wastewater Collection System

28 Schedule F-7(S)

29

30 **COLLECTION AND SYSTEM PUMPING PLANT:**

31	Connected Lots in 1996 w/o M.R.	411	1,336	29	36	107	1,026	35	160	110
32	Connected Lots in 1994 w/ M.R.	400	1,323	28	36	103	1,024	33	152	110
33	Connected Lots in 1994 w/o M.R.	396	1,320	28	36	98	1,023	30	137	110
34	Number of Lots	584	1,610	34	48	137	1,189	35	191	185
35	Calculated Used & Useful (%)	70.44%	83.00%	84.78%	75.00%	78.10%	86.29%	99.38%	83.77%	59.46%
36	U & U Per Order (%)	50.20%	85.00%	100.00%	100.00%	67.00%	85.00%	96.90%	100.00%	100.00%
37	SSU Requested U & U (%)	85.62%	85.00%	100.00%	100.00%	80.40%	86.40%	100.00%	100.00%	100.00%
38										
39										

ERC CALCULATIONS (by SSU)

Combined Schedule of F- 8 & 10 (S)

Year	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC	Sewer ERC
1990	274.0	1,335.0	33.0	46.0	86.0	1,019.0	26.0	109.0	153.0
1991	288.0	1,333.0	33.0	46.0	89.0	1,013.0	30.0	121.0	151.0
1992	288.0	1,340.0	34.0	45.0	95.0	1,015.0	33.0	134.0	149.0
1993	294.0	1,361.0	34.0	45.0	98.0	1,023.0	33.0	137.0	146.0
1994	314.0	1,390.0	34.0	46.0	98.0	1,023.0	34.0	137.0	151.0
1995	317.0	1,393.0	34.0	46.0	103.0	1,024.0	37.0	152.0	151.0
1995.5	322.0	1,400.0	35.0	46.0	105.0	1,025.0	38.0	156.0	151.0
1996	326.0	1,407.0	35.0	46.0	107.0	1,026.0	39.0	160.0	151.0

OPC USED AND USEFUL CALCULATIONS

	Silver Lake Oaks	South Forty	Suager Mill	Sugarmill Woods	Sunny Hills	Sunshine Parkway	University Shores	Venetian Village
Wastewater Treatment Plant								
Schedule F-6 (S)								
Docket No. 950495-W5								
Company: Southern States Utilities, Inc.								
Schedule Year Ended: 12/31/96								
Projected [x]								
Line FPSC Uniform [x] & Non-Uniform [x]								
No.								
1	12,000	50,000	270,000	400,000	50,000	250,000	1,145,000	36,000
2	12,000	50,000	270,000	500,000	50,000	150,000	1,145,000	36,000
3	7,290	35,806	160,000	261,194	29,419	86,933	1,000,226	35,581
4	7,290	13,508	167,886	293,645	29,583	3,710	1,130,484	36,808
5	Response to OPC Doc. Request No. 279							
6	EXCESS Inflow/Infiltration (%), by EPA guidelines		63.4%		96.5%			
7	0	22,701	0	0	0	83,890	0	0
8								
9	TREATMENT PLANT AND EFFLUENT DISPOSAL:							
10	Treatment Plant:							
11	60.75%	27.02%	62.18%	73.41%	59.17%	1.48%	98.73%	100.00%
12	13.00%	74.00%	78.00%	58.20%	51.00%	51.00%	93.10%	86.00%
13	60.75%	79.88%	78.00%	90.46%	60.02%	56.78%	100.00%	100.00%
14	Effluent Disposal:							
15	60.75%	27.02%	62.18%	58.73%	59.17%	2.47%	98.73%	100.00%
16	13.00%	74.00%	78.00%	58.20%	51.00%	51.00%	93.10%	86.00%
17	60.75%	79.88%	78.00%	72.36%	60.02%	94.63%	100.00%	100.00%
18	Reuse Facilities:							
19	OPC Calculated Used & Useful (%)						98.73%	
20	SSU Requested U & U (%)						100.00%	
21								
22	Auxiliary Power:							
23	Capacity (GPD), not provided		Unavailable		Unavailable		Unavailable	
24	OPC Calculated Used & Useful (%)		73.41%		59.17%		98.73%	
25	SSU Requested U & U (%)		100.00%		100.00%		100.00%	
26								
27	USED AND USEFUL CALCULATIONS							
Wastewater Collection System								
Schedule F-7(S)								
COLLECTION AND SYSTEM PUMPING PLANT:								
31	26	35	642	2,551	177	11	3,532	90
32	26	34	630	2,432	176	10	3,338	89
33	26	33	612	2,269	176	9	3,125	87
34	53	52	661	8,252	504	56	4,275	107
35	49.06%	66.38%	97.08%	30.91%	35.12%	18.92%	82.61%	84.11%
36	50.90%	94.00%	84.00%	21.10%	36.00%	100.00%	72.40%	81.90%
37	50.90%	94.00%	99.00%	32.34%	36.00%	100.00%	87.12%	85.84%
38								
39								
ERC CALCULATIONS (by SSU)								
Combined Schedule of F- 8 & 10 (S)								
	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer
Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC	ERC
1990	27.0	55.0	576.0	3,844.0	176.0	55.0	2,545.0	80.0
1991	27.0	68.0	605.0	4,085.0	178.0	56.0	2,763.0	83.0
1992	25.0	68.0	619.0	4,422.0	178.0	67.0	2,996.0	84.0
1993	24.0	59.0	623.0	4,719.0	177.0	78.0	3,199.0	85.0
1994	26.0	65.0	629.0	4,773.0	179.0	73.0	3,371.0	87.0
1995	26.0	66.0	648.0	5,116.0	179.0	84.0	3,601.0	89.0
1995.5	26.0	67.0	654.0	5,241.0	179.0	86.0	3,706.0	89.0
1996	26.0	67.0	660.0	5,366.0	180.0	89.0	3,810.0	90.0

OPC USED AND USEFUL CALCULATIONS

Wastewater Treatment Plant Schedule F-6 (S) Docket No. 950495-WS Company: Southern States Utilities, Inc. Schedule Year Ended: 12/31/96 Projected [x]		Woodmere	Zephyr Shores	Buenaventura Lakes	Deep Creek	Enterprise	Lehigh	Marco Island
Line No.	FPSC Uniform [x] & Non-Uniform [x]	1996	1996	1996	1996	1996	1996	1996
					All Wastewater Treated	Plant taken off line. Flow goes to		
1	PERMITTED PLANT CAPACITY (GPD)	500,000	40,000	1,800,000	By	Deltona	2,100,000	3,500,000
2	EFFLUENT DISPOSAL CAPACITY (GPD)	500,000	40,000	1,800,000	Charlotte	Lakes.	2,100,000	3,500,000
3	1994 AVG DAILY FLOW OF MAX MONTH (GPD)	466,226	27,258	1,614,839	County		45,097	1,773,710
4	1996 AVG DAILY FLOW OF MAX MONTH (GPD)	482,889	27,744	1,713,181			59,253	1,848,001
5	Response to OPC Doc. Request No. 279							
6	EXCESS Inflow/Infiltration (%), by EPA guidelines							65.1%
7	EXCESS INFLOW/INFILTRATION (GPD)	0	0	0			0	0
8								1,587,138
9	TREATMENT PLANT AND EFFLUENT DISPOSAL:							
10	Treatment Plant:							
11	OPC Calculated Used & Useful (%)	96.58%	69.38%	89.71%	N/A	N/A	88.00%	24.47%
12	U & U Per Order (%)	100.00%	86.30%	69.90%	N/A	N/A	100.00%	78.00%
13	SSU Requested U & U (%)	100.00%	86.30%	89.71%	N/A	100.00%	100.00%	78.00%
14	Effluent Disposal:							
15	OPC Calculated Used & Useful (%)	96.58%	69.36%	89.71%	N/A	N/A	88.00%	22.91%
16	U & U Per Order (%)	100.00%	100.00%	69.90%	N/A	N/A	81.08%	N/A
17	SSU Requested U & U (%)	100.00%	100.00%	89.71%	N/A	N/A	100.00%	100.00%
18	Reuse Facilities:							
19	OPC Calculated Used & Useful (%)						88.00%	63.63%
20	SSU Requested U & U (%)						100.00%	100.00%
21								Exh TLB-4.1
22	Auxiliary Power:							
23	Capacity (GPD), not provided			Unavailable			Unavailable	Unavailable
24	OPC Calculated Used & Useful (%)			89.71%			88.00%	22.91%
25	SSU Requested U & U (%)			100.00%			100.00%	100.00%
26								
27	USED AND USEFUL CALCULATIONS							
Wastewater Collection System								
28	Schedule F-7(S)							
29								
30	COLLECTION AND SYSTEM PUMPING PLANT:							
31	Connected Lots in 1996 w/o M.R.	1,155	496	7,437	3,414	166	4,436	1,976
32	Connected Lots in 1994 w/ M.R.	1,126	492	7,220	3,251	152	4,342	1,970
33	Connected Lots in 1994 w/o M.R.	1,115	487	7,010	2,999	126	4,257	1,964
34	Number of Lots	1,189	647	6,725	7,285	228	5,270	1,334
35	Calculated Used & Useful (%)	97.15%	78.64%	100.00%	46.87%	72.80%	84.17%	100.00%
36	U & U Per Order (%)	100.00%	85.30%	N/A	N/A	N/A	N/A	N/A
37	SSU Requested U & U (%)	100.00%	85.30%	100.00%	49.10%	79.19%	88.31%	100.00%
38								
39								
ERC CALCULATIONS (by SSU)								
Combined Schedule of F- 8 & 10 (S)								
		Sewer	Sewer	Sewer	Sewer	Sewer	Sewer	Sewer
	Year	ERC	ERC	ERC	ERC	ERC	ERC	ERC
	1990	1,206.0	476.0		2,825.8	64.0	6,440.5	5,044.5
	1991	1,210.0	513.0		3,178.5	129.5	6,635.0	5,228.3
	1992	1,230.0	505.0		3,444.5	132.0	6,777.0	5,356.3
	1993	1,279.0	493.0		3,571.0	135.5	6,888.8	5,287.3
	1994	1,343.0	505.0	7,010.0	3,611.8	137.3	7,093.3	5,109.0
	1995	1,356.0	510.0	7,220.3	3,915.8	165.2	7,234.5	5,125.3
	1995.5	1,373.0	512.0	7,327.8	4,014.1	172.8	7,312.4	5,133.4
	1996	1,391.0	514.0	7,436.9	4,112.3	180.4	7,390.4	5,141.6

OPC USED AND USEFUL CALCULATIONS

Wastewater Treatment Plant Schedule F-6 (S)		Spring Gardens	Tropical Isle	Valencia Terrace
Docket No. 950495-WS				
Company: Southern States Utilities, Inc.				
Schedule Year Ended: 12/31/96		1996	1996	1996
Projected [x]				
Line FPSC Uniform [x] & Non-Uniform [x]				
No.				
1	PERMITTED PLANT CAPACITY (GPD)	20,000	50,000	99,000
2	EFFLUENT DISPOSAL CAPACITY (GPD)	20,000	50,000	99,000
3	1994 AVG DAILY FLOW OF MAX MONTH (GPD)	87,200	35,033	78,452
4	1996 AVG DAILY FLOW OF MAX MONTH (GPD)	92,489	43,616	78,452
5	Response to OPC Doc. Request No. 279			
6	EXCESS Inflow/Infiltration (%), by EPA guidelines			
7	EXCESS INFLOW/INFILTRATION (GPD)	0	0	0
8				
9	<u>TREATMENT PLANT AND EFFLUENT DISPOSAL:</u>			
10	Treatment Plant:			
11	OPC Calculated Used & Useful (%)	100.00%	87.23%	79.24%
12	U & U Per Order (%)	N/A	N/A	N/A
13	SSU Requested U & U (%)	100.00%	100.00%	79.24%
14	Effluent Disposal:			
15	OPC Calculated Used & Useful (%)	100.00%	87.23%	79.24%
16	U & U Per Order (%)	N/A	N/A	N/A
17	SSU Requested U & U (%)	100.00%	100.00%	79.24%
18	<u>Reuse Facilities:</u>			
19	OPC Calculated Used & Useful (%)			
20	SSU Requested U & U (%)			
21				
22	<u>Auxiliary Power:</u>			
23	Capacity (GPD), not provided			
24	OPC Calculated Used & Useful (%)			
25	SSU Requested U & U (%)			
26				
27	USED AND USEFUL CALCULATIONS			

Wastewater Collection System
Schedule F-7(S)

30 COLLECTION AND SYSTEM PUMPING PLANT:				
31	Connected Lots in 1996 w/o M.R.	130	274	323
32	Connected Lots in 1994 w/ M.R.	126	250	323
33	Connected Lots in 1994 w/o M.R.	122	220	323
34	Number of Lots	180	334	340
35	Calculated Used & Useful (%)	72.06%	82.07%	95.00%
36	U & U Per Order (%)	N/A	N/A	N/A
37	SSU Requested U & U (%)	74.06%	89.21%	95.00%
38				
39				

ERC CALCULATIONS (by SSU)

Combined Schedule of F- 8 & 10 (S)

Year	Sewer ERC	Sewer ERC	Sewer ERC
1990		126.5	
1991		154.0	
1992		180.5	
1993		207.5	
1994	122.0	220.0	323.0
1995	125.7	249.8	323.0
1995.5	127.5	261.9	323.0
1996	129.4	273.9	323.0

EXHIBIT TLB-4.1

**OPC USED AND USEFUL CALCULATIONS
OF
DEEP INJECTION WELL AND EFFLUENT DISPOSAL
ON
MARCO ISLAND**

OPC USED AND USEFUL CALCULATIONS

**Marco Island
Wastewater Treatment Plant
Effluent Disposal Measures**

Docket No. 950495-WS
Company: Southern States Utilities, Inc.
Schedule Year Ended: 12/31/96
Projected [x]

Deep Well	Perc Pond	Golf Courses
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Line No. FPSC Uniform [] & Non-Uniform [x]

	Mar-94	May-93	May-94
1 PERMITTED PLANT CAPACITY (GPD)	3,500,000	3,500,000	3,500,000
2 EFFLUENT DISPOSAL CAPACITY (GPD)	9,900,000	3,500,000	1,000,000
3 1994/HISTORIC AVG DAILY FLOW OF MAX MONTH (GPD)	3,663,065	801,968	632,258
4 1996 AVG DAILY FLOW OF MAX MONTH (GPD)	3,686,438	801,968	636,292

7 EFFLUENT DISPOSAL:

8 **Information Source:**
9 Late-Filed Deposition Exhibit Nos. 4,5 & 6 of Mr. Terrero;
10 FDEP Permit: UC11-179323. (DR 289-D)
11 Deposition of Mr. Terrero

14 Effluent Disposal:

15 OPC Calculated Used & Useful (%)	37.24%	22.91%	
16 U & U Per Order (%)	N/A	N/A	
17 SSU Requested U & U (%)	100.00%	100.00%	

18 Reuse Facilities:

19 OPC Calculated Used & Useful (%)			63.63%
20 SSU Requested U & U (%)			100.00%

22 ERC CALCULATIONS (by SSU)

23 Combined Schedule of F- 8 & 10 (S)

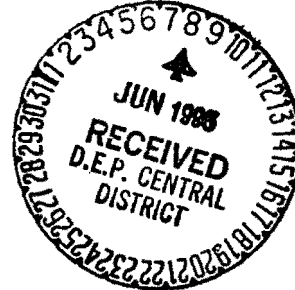
		Sewer ERC	Sewer ERC	Sewer ERC
24				
25	<u>Year</u>			
26	1990	5,044.5	5,044.5	5,044.5
27	1991	5,228.3	5,228.3	5,228.3
28	1992	5,356.3	5,356.3	5,356.3
29	1993	5,287.3	5,287.3	5,287.3
30	1994	5,109.0	5,109.0	5,109.0
31	1995	5,125.3	5,125.3	5,125.3
32	1995.5	5,133.4	5,133.4	5,133.4
33	1996	5,141.6	5,141.6	5,141.6
34	1996.5	5,149.7	5,149.7	5,149.7
35	1997	5,157.9	5,157.9	5,157.9
36	1997.5	5,166.1	5,166.1	5,166.1
37	1998	5,174.3	5,174.3	5,174.3
38	1999	5,190.8	5,190.8	5,190.8
39	2000	5,207.3	5,207.3	5,207.3



1000 Color Place • Apopka, FL 32703 • 407/880-0058

June 7, 1995

Mr. Frank P. Huttner
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767



Re: Southern States Utilities, Inc.
Lake Harriett WTF - PWS ID # 3590699
Aerator Trays

Dear Mr. Huttner:

Please be advised that Southern States Utilities is in the process of replacing the existing aerator trays at the Lake Harriett Water Treatment Facility with new aerator trays, as part of routine maintenance. Construction will consist of installing six (6) fiberglass aerator trays (1 level). The new aerator trays will have a flow capacity of 650 gpm and will be manufactured by CROM. A polyamide epoxy coating (Series 20 Pota-Pox, manufactured by TNEMEC), will be applied to the aerator trays prior to shipment. This product is Certified by NSF, International in accordance with ANSI/NSF Std. 61. We have enclosed a copy of the specification for the aerator trays and a copy of the coating specification, for your information.

Please advise us if a construction permit is required to install the new aerator trays. If we do not hear from you by June 21, 1995, we will assume that a permit is not required and will proceed with the installation.

Thank you for your consideration.

Sincerely,

Sandra J. Joiner, P.E.
Permitting Engineer X 126

*Left message -
No permit req'd.
SJM 6/9/95
10:16 am*

SJJ/sj

Encl.

