

ORIGINAL

DOCKET NO.: 971065-SU - Application for rate increase in Pinellas County by Mid-County Services, Inc.

WITNESS: Direct Testimony of Robert J. Crouch, Appearing On Behalf of Florida Public Service Commission

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FPSC-RECORDS/REPORTING

1 DIRECT TESTIMONY OF

2 ROBERT J. CROUCH

3

4 Q. Please state your name and business address.

5 A. Robert J. Crouch. Florida Public Service Commission, 2540 Shumard Oak
6 Boulevard, Tallahassee, FL 32399.

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

9 A. I received a B.S. in Engineering from the Air Force Institute of
10 Technology in 1970. I completed post graduate work in Industrial Management
11 from the Industrial College of the Armed Forces and graduated in 1976. I was
12 certified as a Professional Engineer in March 1976, and have maintained that
13 certification since that date. I retired from the U.S. Air Force in 1979 as
14 a Lieutenant Colonel after 23 years of military service, primarily as an
15 engineer and a manager. From 1979 to 1984, I was employed by Southwestern
16 Bell Telephone Company as a circuit design engineer. In September, 1984, I
17 started working for the Florida Public Service Commission (PSC) as a
18 supervisor of an engineering section in the Division of Communications. In
19 April, 1987, I transferred to the Division of Water and Wastewater where I
20 supervise engineers in investigations of regulated water and wastewater
21 utilities. I am currently, or have been in the recent past, a member of the
22 Florida Engineering Society, the Texas Society of Professional Engineers,
23 National Society of Professional Engineers, Society of Military Engineers,
24 American Water Works Association, Water Environment Federation, and the
25 Florida Pollution Control Federation.

1 Q. By whom are you presently employed and in what capacity?

2 A. I am employed by the PSC as the Supervisor of Engineering in the Division
3 of Water and Wastewater. As I stated earlier, I have worked for the PSC for
4 over fourteen years and have been in my current position for over twelve
5 years.

6 Q. What are your general responsibilities at the PSC?

7 A. As Supervisor of Engineering in the Division of Water and Wastewater, I
8 supervise assigned engineers who conduct field evaluations and prepare
9 recommendations pertaining to rate cases and technical complaints for
10 Commission review. The Engineering Section inspects and evaluates regulated
11 water and wastewater utilities and makes recommendations to the Commission
12 regarding utility compliance with applicable PSC rules and state and federal
13 regulatory standards. The Engineering Section is also responsible for making
14 recommendations on what portion of a utility is "used and useful" for current
15 customers.

16 Q. Have you ever testified before?

17 A. Yes. I have been accepted and testified as an expert witness in two
18 separate hearings held by the U.S. House of Representatives, Military
19 Appropriations sub-committee. I testified before this Commission in Docket
20 No. 910560-WS, application for a rate increase by Tamiami Village Utility,
21 Inc.; Dockets Nos. 920733-WS and 920734-WS, application for a rate increase
22 by General Development Utilities, Inc.; and Docket No.940847-WS, application
23 for a rate increase by Ortega Utility Company. I recently testified in Docket
24 950387-SU, the Florida Cities Water Company wastewater rate case for its North
25 Ft. Myers wastewater system.

1 | I have also testified before the Division of Administrative Hearings (DOAH)
2 | in the challenge to proposed Rule 25-30.431 (Margin Reserve).

3 | Q. What is the purpose of your testimony today?

4 | A. The purpose of my testimony is fourfold: to explain and discuss first, the
5 | methods and procedures used by staff when calculating used and useful
6 | percentages; second, the need to use comparable periods of time for
7 | determining average wastewater flows in both the numerator and denominator of
8 | the used and useful equation; third, the appropriate period of time to be used
9 | by staff and the Commission in determining a margin reserve if a margin
10 | reserve is requested and justified by the utility; and fourth, I will explain
11 | certain pro-forma projects which were added to rate base, since these projects
12 | were dictated by circumstances beyond the control of Mid-County Services, Inc.
13 | (Mid-County or utility).

14 | Q. What information have you relied upon in reaching your testimony?

15 | A. As stated earlier, I have been a registered professional engineer for more
16 | than 23 years and have worked as an engineer evaluating water and wastewater
17 | rate cases for over 12 years. My testimony is based upon the evidence in the
18 | record, my knowledge and expertise on used and useful calculations, and past
19 | Commission decisions. The used and useful determinations in recent cases have
20 | been controversial, and it is important that the Commission have all possible
21 | facts before reaching a decision.

22 | Q. Is there a requirement that a used and useful percentage be calculated in
23 | rate cases brought before the Commission?

24 | A. Yes. Section 367.081(2)(a), Florida Statutes, which states that:
25 | The commission shall, either upon request or upon its own motion,

1 fix rates which are just, reasonable, compensatory, and not
2 unfairly discriminatory. In every such proceeding, the commission
3 shall consider the value and quality of the service and the cost
4 of providing the service, which shall include, but not be limited
5 to, debt interest; the requirements of the utility for working
6 capital; maintenance, depreciation, tax, and the operating
7 expenses incurred in the operation of all property used and useful
8 in the public service; and a fair return on the investment of the
9 utility in property used and useful in the public service.
10 (emphasis added)

11 Q. Is there a rule or statute which specifies just how used and useful
12 percentages are to be calculated?

13 A. No. While there is no codification of just how used and useful
14 percentages are to be calculated, staff has general guidelines for what
15 factors are to be considered. Each case, however, must be considered on its
16 own merits and used and useful must be calculated based upon the data
17 presented in that particular case.

18 Q. What causes a utility to invest in plant expansion?

19 A. Normally, a utility will invest in plant expansion when one of two events
20 occur: The first is to comply with new environmental requirements or
21 treatment dictated by a governmental agency which is beyond the current
22 capability of the plant, and second, when known and predicted customer demands
23 exceed the capacity of the current system. The Florida Department of
24 Environmental Protection (FDEP) has a tool called a Capacity Analysis Report
25 (CAP) which sets guidelines as to when new facilities must be planned.

1 | designed, and constructed in order to meet projected customer demands (Rule
2 | 17-600.405, Florida Administrative Code). While it is difficult to anticipate
3 | when environmental rules and regulations may require additional capacity or
4 | treatment, compliance with DEP rule 17-600.405, Florida Administrative Code,
5 | Planning for Wastewater Facilities Expansion, means that a utility may need
6 | to invest in new or expanded facilities at a predictable time.

7 | Q. What is the primary purpose of the Rule 17-600.405, Florida Administrative
8 | Code, and the CAP?

9 | A. According to pages 2 and 3 of the Guidelines for Preparation of the
10 | Capacity Analysis Reports, July 1992, this rule requires permittees to
11 | routinely compare flows being treated at wastewater facilities with the
12 | permitted capacities of the treatment facilities. These pages have been
13 | attached to my testimony as Exhibit RJC-1. A system has a specific design
14 | capacity which serves as the basis for the sizing and design of the wastewater
15 | facilities. The time frame associated with the design capacity shall be
16 | specified by the permit applicant. The permit shall specify the time frame
17 | associated with the permitted capacity.

18 | Q. Why is a used and useful percentage important?

19 | A. A utility recoups its investment through rates. The rates a utility is
20 | allowed to charge its customers is based upon the factors specified in Section
21 | 367.081, Florida Statutes, quoted earlier. In other words, the rates charged
22 | are dependent upon the determination of property used and useful in the public
23 | service, that is, the percentage of a utility's investment used by and useful
24 | to existing customers. The utility strives to justify the highest used and
25 | useful percentage possible, thereby maximizing the return on its investment

1 | in the shortest possible time frame. Opponents to a rate increase attempt to
2 | obtain as low a used and useful percentage as possible, thereby minimizing the
3 | rates. Staff, on the other hand, must recommend rates that are fair, just,
4 | and reasonable to both the utility and the customers. Consequently, staff
5 | must recommend, to the best of our ability based upon the evidence, just how
6 | much of the utility's investment is used by and useful to existing customers.
7 | Past Commission practice has been that non-used and useful investment should
8 | be paid for by future customers and not current customers. This means that
9 | the utility may have to wait for future customers to come on line before it
10 | earns a return on its total investment.

11 | Q. What does staff consider when calculating used and useful for a wastewater
12 | system?

13 | A. Historically, in calculating used and useful percentages for a wastewater
14 | plant in a rate case, staff considers the following factors:

15 | First, staff determines the capacity of the plant being evaluated. This
16 | capacity becomes the denominator in the used and useful equations.

17 | Historically, staff has used the capacity taken from the permit issued by DEP.

18 | Second, staff determines the flows actually handled by the system; normally
19 | this is an average day demand. Prior to 1992, staff used the annual average
20 | flow from the maximum month since no other basis was specified on the permit.

21 | Third, staff considers a margin reserve or projected short-term growth demand
22 | if requested and justified by the utility in its filing. Fourth, staff

23 | determines if there is an excessive amount of infiltration and inflow. An

24 | excessive amount may be deducted from the allowable flows. The average flows

25 | plus any margin reserve minus excessive infiltration and inflow are placed in

1 | the numerator of the used and useful equation.

2 | Q. Why are the different types of flows important when calculating a used and
3 | useful percentage for a wastewater treatment plant?

4 | A. Whereas a water system must be capable of meeting customer demands at any
5 | instant, a wastewater plant with a surge (or equalization) tank has the
6 | ability to "save" peak flows or surges and treat those flows after the surge
7 | has passed. Surge (or equalization) tanks ease the peaks allowing the plant
8 | to be designed to meet an average daily flow. The permitted capacity of the
9 | plant is the denominator while the average daily flow, either Annual Average
10 | (AADF), Three Month Average (TMADF), or Maximum Month Average (MMADF), plus
11 | a margin reserve (if requested and justified), minus excess infiltration or
12 | inflow goes in the numerator. The result is the used and useful ratio.

13 | Q. Has the type of flows which should be used when calculating a used and
14 | useful percentage been an issue in any other dockets?

15 | A. Yes. Docket No. 950387-SU, Florida Cities North Fort Myers, was remanded
16 | to the Commission for additional testimony regarding the methodology, i.e.,
17 | the type of flows, to be used by staff when calculating the used and useful
18 | percentage of wastewater treatment plants. The Commission considered this
19 | case at the March 16, 1999 Agenda Conference. By proposed agency action Order
20 | NO. PSC-99-0691-FOF-SU, issued April 8, 1999, the Commission found that the
21 | basis for flows used in the numerator of the used and useful equation should
22 | be expressed in the same flow basis as permitted by DEP and used in the
23 | denominator. The Commission upheld in Docket No. 950387-SU the same flow
24 | methodology which is at issue in this case.

25 | Q Is there a rule in place now which governs how flow data should be used in

1 calculating a used and useful percentage?

2 A. Not at this time. However, Staff has submitted a proposed rule, 25-
3 30.432, Florida Administrative Code, which will codify this elementary,
4 mathematical fact: The basis for flows (AADF, MMADF, or 3MADF) used in the
5 numerator of the used and useful equation shall be the same basis as that
6 specified on the permit issued by DEP. Anyone who has taken physics in school
7 knows that an equation must always be dimensionally consistent; this means
8 that two terms may be equated only if they have the same units. These units
9 are treated just like algebraic symbols with respect to multiplication or
10 division. In support of this, I have attached to my testimony as Exhibit RJC-
11 2 an excerpt from a physics text.

12 Q. Is the actual average flow data different from permitted flow data?

13 A. While the quantities may differ, the basis for determining average flows
14 should be the same basis used to permit the plant capacity. The engineer
15 responsible for designing the plant will design based upon flow data for a
16 certain period (AADF, MMADF, or 3MADF). That same flow basis or period of
17 time should be designated upon the permit application. As a mathematical
18 example, 12 feet divided by 4 feet equals 3 feet, but 12 feet divided by 4
19 yards does not equal 3 feet. Similarly, \$4,000 in revenue in maximum month
20 divided by \$1,000 in annual average monthly expenses does not equal 400%
21 profit.

22 Likewise, you cannot divide the average daily flows treated by a
23 wastewater treatment plant in the maximum month by the permitted annual
24 average daily flows and get a valid percentage of used and useful capacity.
25 It is imperative that terms or time periods under consideration be the same

1 | for both the numerator and the denominator of a legitimate equation. This is
2 | only logical.

3 | Q. What procedure was used by staff in past cases?

4 | A. For many years, the Commission staff has relied upon the permits issued
5 | by DEP to determine the permitted capacity of a wastewater treatment plant.
6 | That permitted capacity went in the denominator of the equation. Prior to
7 | 1992, the DEP issued permit did not normally indicate the basis which the
8 | utility specified. Since the basis was not shown on the permit, the
9 | Commission staff had no way of knowing what that basis was; consequently,
10 | staff selected the maximum month average daily flow, or MMADF, as the flow to
11 | be used in the numerator. While use of the MMADF gave the benefit of any
12 | doubt to the utility, it must be emphasized that there was no basis shown for
13 | the denominator; therefore, staff had no way of knowing if a mismatch existed.

14 | Q. When and why did staff change their method or procedure for setting up the
15 | used and useful equation?

16 | A. Starting approximately 1992, DEP began to show the basis for determining
17 | permitted flow (AADF, MMADF, TMADF) which was selected by the utility in
18 | its permit application. A sample DEP wastewater discharge permit application
19 | form is attached to my testimony as Exhibit RJC-3. When DEP started listing
20 | the flow basis in the permits (the denominator), it became imperative that the
21 | same basis be used in the numerator flow data.

22 | Q. When did the Commission staff become aware of the change in DEP permitting
23 | procedures?

24 | A. Staff became aware of the change by a letter dated July 30, 1992, from
25 | Richard Harvey, Director, Division of Water Facilities, which provided DEP's

1 | comments on the draft used and useful rule. A copy of the letter is attached
2 | to my testimony as Exhibit RJC-4. In that letter, Mr. Harvey suggested that
3 | the number in the numerator be defined as the same time period as that used
4 | in the denominator for the capacity of the plant. Staff investigated and
5 | found that DEP had started showing on the permit the basis or time period
6 | selected by the utility for average flows. A copy of Mid-County's permit,
7 | with an issuance of date of April 1, 1994, is attached to my testimony as
8 | Exhibit RJC-5.

9 | Q. Who is responsible for selecting the permitted flow basis?

10 | A. As stated earlier, the utility selects the basis for its permitted flows.
11 | If the flows treated by the utility are seasonal, then an annual average daily
12 | flow (AADF) may not be appropriate and the utility engineer should specify
13 | that the plant be permitted based upon a maximum month average daily flow
14 | (MMADF). According to DEP, they will not permit a plant based upon an average
15 | too low to accommodate seasonal flows.

16 | Q. What is the difference between an AADF flow basis and a MMADF flow basis?

17 | A. The AADF results in the lowest average daily flow; consequently, the
18 | utility may not have to staff its plant with as many personnel as it might had
19 | it selected the MMADF (which results in the highest average daily flow).
20 | Laboratory testing frequencies may also be less for a smaller plant. In many
21 | instances the actual hydraulic capacity of the plant as constructed is larger
22 | than the permitted capacity. On the other hand, a utility generally wants
23 | to obtain the highest possible used and useful percentage so that the maximum
24 | amount of plant it has constructed will be placed in rate base and rates
25 | collected from existing customers to pay for that plant. For this reason, it

1 | would be most advantageous if a utility used the MMADF (largest average flow)
2 | in the numerator while the AADF (smallest average flow) would be used in the
3 | denominator. It is easy to see that this would result in a much larger used
4 | and useful percentage, a larger rate base, and higher rates. In other words,
5 | that utility would enjoy the best of both worlds: It would not have to hire
6 | personnel to support a larger permitted plant, its lab testing expenses could
7 | be lower, and at the same time, it would enjoy higher rates since a larger
8 | used and useful percentage would result if the MMADF was divided by the AADF.
9 | The customer would be disadvantaged, however, since this would result in less
10 | testing, fewer operators on hand, and higher rates. It is curious to note
11 | that Mid-County, in a letter to DEP dated May 25, 1993, stated that the
12 | previous owner of the utility requested that the plant be permitted less than
13 | the actual design capacity. In this letter, Mr. Donald Rasmussen, the
14 | regional director of Utilities, Inc. (Mid-County's parent company), stated
15 | that "the purpose for rating the capacity of the plant lower than the actual
16 | capacity was to reduce the testing and operator requirements." (See Exhibit
17 | TLB-6, attached to the testimony of Mr. Ted Bidy)

18 | Q. How would you propose to calculate the flows treated by the utility?

19 | A. The solution is simple: staff should use the same basis or units of
20 | measurement in both the numerator and the denominator. The utility must
21 | decide which is the most appropriate basis for designing and permitting their
22 | plant. If it can be either AADF, 3MADF, or MMADF, the utility must decide
23 | whether it wants a smaller permitted capacity (AADF) or a larger permitted
24 | capacity based upon the MMADF. At the same time, the utility should consider
25 | which flow basis will result in the larger used and useful percentage. I must

1 reemphasize that it is the utility's choice. The utility selects the basis
2 it thinks is appropriate when it applies for a permit from DEP. It may
3 consider whether AADF/AADF will be larger or smaller than MMADF/MMADF.
4 Normally, the results will be very close. The mismatch comes when the utility
5 attempts to divide the MMADF by the AADF. Under no circumstances should the
6 utility be allowed to get an abnormally large used and useful percentage by
7 calculating MMADF/AADF. This is a mathematical mismatch that is not proper,
8 and should not be authorized in this case.

9 Q. Is margin reserve at issue in this case?

10 A. Yes. Several utilities have argued that a margin reserve should be
11 calculated for at least five and in some cases seven or more years. There is
12 currently an attempt in Florida Legislature to get a law passed which will
13 greatly increase the time frame permitted for a margin reserve without
14 justification by the utility. Staff and the Commission have consistently
15 considered an 18-month period for a margin reserve for plant and a 12-month
16 period for distribution and collection lines unless additional time is
17 requested and justified by the utility. Exceptions to the 18/12-month period
18 have been considered by the Commission when justified by the utility.

19 Q. Is there a rule or statute governing margin reserve?

20 A. No. The Commission proposed a Rule 25-30.431, Florida Administrative Code
21 (Margin Reserve), which codified the existing commission practice of a minimum
22 of 18 months for plant and 12 months for lines. This proposed rule was
23 overturned in a proceeding before the Division of Administrative Hearings
24 (DOAH) and is presently on appeal before the First District Court of Appeals.

25 Q. What is the rationale behind the 18/12 month practice?

1 A. The Commission's use of 18/12 months unless additional time is justified
2 revolves around the question of what requires investment by a utility, and
3 when is it required. A utility may argue that it is required by DEP to plan,
4 design, permit, and construct additional plant and lines as much as 5 years
5 in advance. Staff does not deny that DEP may require a utility with a growing
6 customer base to plan for expansion of facilities as much as 5 years in
7 advance. That does not mean, however, that actual construction will start
8 that far ahead of time. In fact, negligible funds are actually expended by
9 a utility in "planning" sessions. A well-managed utility will have numerous
10 meetings where its future expansion plans may be discussed. Likewise, limited
11 funds are expended in designing most expansions to plant and lines. The major
12 expense comes when a utility actually begins construction. Staff's primary
13 concern is attempting to insure that current customers are not required to pay
14 for growth that is needed only by future customers. I must emphasize that the
15 utility has the option, and ample opportunity, to request and justify a more
16 lengthy margin reserve if it deems one is needed. Staff realizes that most
17 expansions are limited in scope. However, a utility may find it necessary to
18 plan for a major expansion which could require the expenditure of large
19 amounts of funds earlier than the 18/12 months. It is in those types of cases
20 when the utility can best present its arguments for a longer margin reserve
21 period. In the majority of cases, however, staff has found that costs
22 associated with planning, designing, and permitting for small expansions are
23 negligible, and that actual construction takes less than 18/12 months.
24 Automatically granting a 5-year margin reserve without justification would
25 require existing customers to pay for growth which is essentially required to

1 | need the demands of future customers. That would not be fair, just, or
2 | reasonable for existing customers, contrary to the requirements of Section
3 | 367.081, Florida Statutes.

4 | Q. What is the used and useful history of Mid-County Services?

5 | A. This utility's last rate increase was in Docket No. 921293-SU, in which
6 | it requested 113.5% used and useful with a 20% margin reserve. Their margin
7 | reserve request was based upon an earlier proposed rule 25-30.432(5)(a),
8 | Florida Administrative Code, which would have allowed a 20% margin reserve
9 | without any justification. I emphasize that this was a proposed rule which
10 | was never enacted. The permitted capacity of the wastewater treatment plant
11 | at that time was 0.8 million gallons per day (MGD) and staff's procedure at
12 | that time was to use the average flows from the maximum month in the numerator
13 | when calculating a used and useful percentage since there was no designation
14 | on the permit as to the basis selected by the utility for their permitted
15 | capacity. Staff also recommended a margin reserve of 5% based upon actual
16 | growth projections. The result was a 90% used and useful percentage. The PAA
17 | Order for Docket No. 921293-SU was protested, however the protest was limited
18 | to the issue of service availability. Used and useful and margin reserve
19 | issues were not protested, consequently were not at issue in the protested
20 | case. On April 1, 1994, however, DEP issued a new wastewater treatment plant
21 | permit listing the permitted capacity as 0.9 MGD. Staff recalculated the used
22 | and useful percentage using the new permitted capacity and determined that the
23 | new used and useful was 88%. This new used and useful percentage was
24 | stipulated by all parties and was never discussed at the hearing. Staff did
25 | not realize at that time that the new permit specified 0.9 MGD annual average

1 daily flow (AADF), and staff had used the maximum month average daily flow
2 (MMADF) in the numerator when calculating the 88% used and useful. Since the
3 issue was stipulated, there was no new discovery or discussion and the use of
4 MMADF instead of AADF went unnoticed. Upon later review, staff noticed the
5 AADF designation on the permit. Had staff calculated the used and useful
6 percentage using the AADF in the numerator to match the AADF specific on the
7 new permit and used in the denominator, the used and useful would have been
8 80.6% ($680\text{MGD}/900\text{MGD}=75.6\%$ plus 5% margin reserve). The Mid-County rate case,
9 Docket No. 921293-SU, was completed by then. Mid-County filed this current
10 rate case, Docket No. 971065-SU, in which they requested 112% used and useful
11 and again asked for an unsupported 20% margin reserve. Staff calculated a
12 more realistic 3% margin reserve based upon historical growth and recommended
13 an 18-month margin reserve in accordance with Commission practice.

14 Q. Were there any additional issues regarding pro forma projects?

15 A. Yes. Staff recommended that several items be included in rate base
16 because they were pro forma projects dictated by circumstances beyond the
17 control of Mid-County. Staff engineers, under my supervision, inspected the
18 utility's facilities and reviewed documentation supporting the need for
19 relocation of sewer lines in the Curlew Road and US Highway 19/Belcher Road
20 areas. These projects were dictated by the widening and improvement of roads
21 in the Mid-County service area and were not merely elective; consequently,
22 staff recommended that the costs of these projects be reclassified from
23 construction works in progress (CWIP) to plant in service. Although the
24 utility claimed that the entire CWIP budget of \$296,659 was associated with
25 the highway relocation, in actuality, only \$195,891 (Line No. 2 & 3, Schedule

1 | A-6 of the MFRs) of the CWIP budget was directly associated with the
2 | relocation of Curlew & Belcher Roads and US Highway 19. The other items
3 | listed in Schedule A-6 of Mid-County's MFRs, totaling \$100,768, were not
4 | associated with the highway relocation project and should be capital
5 | expenditures for normal repair and replacement projects.

6 | Q. Does this conclude your testimony?

7 | A. Yes.

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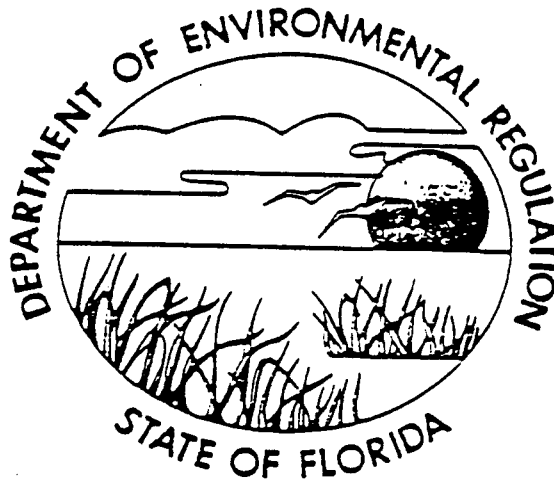
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Guidelines for Preparation of Capacity Analysis Reports



July 1992

**GUIDELINES FOR PREPARATION OF
CAPACITY ANALYSIS REPORTS**

Florida Department of Environmental Regulation

July 1992

TABLE OF CONTENTS

	<u>Page</u>
PURPOSE AND APPLICABILITY	1
Purpose	1
Applicability	1
BACKGROUND	2
Rule Requirements	2
Definitions	3
Annual Average Daily Flow.	3
Design Capacity.	3
Domestic Wastewater.	3
Monthly Average Daily Flow	3
Permitted Capacity	3
Three-month Average Daily Flow	3
Type I Facility.	4
Type II Facility	4
Type III Facility.	4
DATES FOR SUBMITTAL	5
Initial Capacity Analysis Reports	5
Updated Capacity Analysis Reports	5
REPORT OUTLINE.	6
Title Page.	6
Certifications.	6
Table of Contents	7
Chapter 1 - Introduction.	8
Chapter 2 - Existing Conditions	8
Permitted Capacities	8
Monthly Average Daily Flows, Three-month Average Daily Flows, and Annual Average Daily Flows	8
Seasonal Variations in Flow.	9
Updated Flow and Loading Information	9
Chapter 3 - Future Conditions	10
Population Projections	10
Flow Projections	11
Chapter 4 - Summary and Conclusions	11
Time Required for the Three-month Average Daily Flow to Reach the Permitted Capacity.	11
Recommendations for Expansion.	12
Expansion Schedules.	12

ABBREVIATED REPORTS	13
Facilities Serving Areas That Are Built-Out	13
Initial Abbreviated Reports.	13
Updated Abbreviated Reports.	14
Facilities That Will Be Connected To A Regional Facility.	14

LIST OF FIGURES

1. Schedule for Submittal of Initial Capacity Analysis Reports
2. Schedule for Submittal of Updated Capacity Analysis Reports

LIST OF TABLES

1. Capacity Analysis Report Outline

LIST OF ATTACHMENTS

1. Request for Monthly Operating Report Flow Data

PURPOSE AND APPLICABILITY

Purpose

The purpose of this document is to provide guidelines for the preparation of Capacity Analysis Reports. The following aspects of capacity analysis report preparation are included:

1. Required dates for submittal of initial and updated reports,
2. Report outline, and
3. Minimum schedule for planning, design, and construction.

Applicability

These guidelines are to be used in the preparation of capacity analysis reports by permittees of domestic wastewater treatment facilities and by professional engineers assisting in report preparation. The section of this report entitled "Dates for Submittal" outlines when initial capacity analysis reports and updates to capacity analysis reports must be submitted to the Department.

BACKGROUND

Since Congress passed the Clean Water Act in 1972, more than \$73 billion have been invested in the nation's wastewater infrastructure. In an effort to prevent these facilities from deteriorating, the Environmental Protection Agency (EPA) asked states to develop and promote state-based municipal water pollution prevention (MWPP) programs. These programs would be aimed at preventing pollution rather than taking corrective action after pollution has occurred.

The EPA guidance on MWPP programs identified two concepts which, if incorporated into the Department's domestic wastewater facilities rules, would help improve compliance and facilitate program management:

1. Establishment of a mechanism for assessing the operations and physical capabilities of wastewater treatment facilities on a regular basis, and
2. Implementation of necessary preventative measures, including the planning, design, and construction of new or expanded facilities.

In 1990, when Chapter 17-600, Florida Administrative Code (F.A.C.), was being modified, these two key pollution prevention concepts were incorporated in the rule.

Rule Requirements

Rule 17-600.405, F.A.C., Planning for Wastewater Facilities Expansion, was added to ensure that permittees conduct the timely planning, design, and construction of wastewater facilities necessary to provide proper treatment and reuse or disposal of domestic wastewater and management of domestic wastewater residuals.

The rule requires permittees to routinely compare flows being treated at wastewater facilities with the permitted capacities of the treatment, residuals, reuse, and disposal facilities. When the three-month average daily flow exceeds 50 percent of the permitted capacity of the treatment plant or reuse and disposal systems, the permittee shall submit an initial capacity analysis report to the Department's appropriate district office. Based on the results of this initial report, the permittee will be required to submit updated capacity analysis reports to the Department and, possibly, initiate planning, design, and construction of new facilities.

Definitions

"Annual Average Daily Flow," "Design Capacity," "Domestic Wastewater," "Monthly Average Daily Flow," "Permitted Capacity," "Three-month Average Daily Flow," "Type I Facility," "Type II Facility," and "Type III Facility" are defined as follows:

Annual Average Daily Flow - means the total volume of wastewater flowing into a wastewater facility during any consecutive 365 days, divided by 365 and expressed in units of mgd.

Design Capacity - means the average daily flow projected for the design year which serves as the basis for the sizing and design of the wastewater facilities. The design capacity is established by the permit applicant. The time frame associated with the design capacity (e.g., annual average daily flow, maximum monthly average daily flow, three-month average daily flow) shall be specified by the permit applicant.

Domestic Wastewater - means wastewater derived principally from dwellings, business buildings, institutions, and the like; sanitary wastewater; and sewage. Where wastewater from sources other than typical domestic sources (e.g., industrial sources) is combined and treated with wastes from domestic sources, the determination of whether or not the wastewater treatment plant is designated as "domestic" shall be made by the Department considering any or all of the following: wastewater residuals classification; whether wastewaters have been pretreated or contain constituents within 50-150 percent, by concentration, of typical domestic wastewater; and whether the permittee, when not required to provide more stringent or otherwise specific levels of treatment, can provide assurance of facility compliance with domestic wastewater treatment standards contained in Chapter 17-600, F.A.C.

Monthly Average Daily Flow - means the total volume of wastewater flowing into a wastewater facility during a calendar month, divided by the number of days in that month and expressed in units of mgd.

Permitted Capacity - means the treatment capacity for which a plant is approved by Department permit expressed in units of mgd. The permit shall specify the time frame associated with the permitted capacity (e.g., annual average daily flow, maximum monthly average daily flow, three-month average daily flow).

Three-month Average Daily Flow - means the total volume of wastewater flowing into a wastewater facility during a period of three consecutive months, divided by the number of days in this three-month period and expressed in units of mgd. The three-month average daily flow also can be calculated by adding the three monthly average daily flows observed during this

three-month period and dividing by three. The three-month average daily flow is a rolling average that is to be assessed for each month of the year.

Type I Facility - means a wastewater facility having a permitted capacity of 500,000 gallons per day or greater.

Type II Facility - means a wastewater facility having a permitted capacity of 100,000 and up to, but not including, 500,000 gallons per day.

Type III Facility - means a wastewater facility having a permitted capacity of over 2,000 and up to, but not including, 100,000 gallons per day.

DATES FOR SUBMITTAL

Initial Capacity Analysis Reports

Rule 17-600.405(4), F.A.C., describes when initial capacity analysis reports must be submitted to the Department. Figure 1 summarizes this rule requirement and may be used to determine when the initial report is due. The time frame associated with the permitted capacities may or may not be three-month average daily flows. Regardless, the three-month average daily flows should be compared with the permitted capacities to determine when the initial report is due.

If a separate reuse or disposal system permit is issued for a wastewater treatment plant, a single capacity analysis report should be submitted for the entire wastewater facilities. The initial report should be submitted in accordance with Figure 1 when the initial report for either the treatment plant or reuse and disposal system is due, whichever occurs first.

Updated Capacity Analysis Reports

Rule 17-600.405(5), F.A.C., describes when updated capacity analysis reports must be submitted to the Department. Figure 2 summarizes this rule requirement and may be used to determine when an updated report is due.

REPORT OUTLINE

Table 1 presents the outline to be used for preparing the capacity analysis report. The following sections discuss the contents of the report.

Title Page

The title page should include the following:

1. Type of report (initial or updated capacity analysis report),
2. Name of the facility,
3. County,
4. Facility's DER identification number, also known as Groundwater Monitoring System (GMS) identification number,
5. Current DER and NPDES (if applicable) permit number(s),
6. Current permit expiration date, and
7. Date of the report.

Certifications

Initial and updated capacity analysis reports shall be signed by the permittee and signed and sealed by a professional engineer registered in Florida. Certifications shall include:

The name, address, and phone number of the permittee, municipality, or county (include the name of a contact person) and a statement, signed by the permittee, that he "is fully aware and intends to comply with the recommendations and schedules included in the report;" and

The name, address, and phone number of the firm and/or professional engineer preparing the report and a statement, signed and sealed by the professional engineer preparing the report, that "the information contained in the report is true and correct to the best of his knowledge, the report was prepared in accordance with sound engineering principles, and he discussed the recommendations and schedules with the permittee or the permittee's delegated representative."

Unless otherwise approved by the Department in accordance with Rule 17-600.405(9), F.A.C., if the initial capacity analysis report or an update of the capacity analysis report documents that the permitted capacity will be equaled or exceeded within the next five years, the report shall also include:

A statement, signed and sealed by the professional engineer responsible for planning and preliminary design, that "planning and preliminary design of the necessary expansion have been initiated."

Unless otherwise approved by the Department in accordance with Rule 17-600.405(9), F.A.C., if the initial capacity analysis report or an update of the capacity analysis report documents that the permitted capacity will be equaled or exceeded within the next four years, the report shall include:

A statement, signed and sealed by the professional engineer responsible for preparation of plans and specifications, that "plans and specifications for the necessary expansion are being prepared."

Unless otherwise approved by the Department in accordance with Rule 17-600.405(9), F.A.C., if the initial capacity analysis report or an update of the capacity analysis report documents that the permitted capacity will be equaled or exceeded within the next three years, the report shall include:

A statement, signed by the permittee, that "a complete construction permit application will be submitted to the Department within 30 days of submittal of this capacity analysis report."

Unless otherwise approved by the Department in accordance with Rule 17-600.405(9), F.A.C., if the initial capacity analysis report or an update of the capacity analysis report documents that the permitted capacity will be equaled or exceeded within the next six months, the permittee shall submit to the Department an application for a construction/temporary operation/operation permit for the expanded facility, as appropriate. The operation permit application shall be submitted no later than the submittal of the initial capacity analysis report or the update of the capacity analysis report. The operation permit application shall include the certifications required by the application.

Table of Contents

The report should include a table of contents which follows the format of the report outline provided in Table 1. All pages should be numbered and cross referenced in the Table of Contents by page number.

Chapter 1 - Introduction

The introduction should include a brief description of the treatment, residuals, reuse, and disposal facilities. Up-to-date flow diagram(s) for these facilities should be attached to the report. Flow lines, tank volumes, and the name and quantity of each component, system, and process should be shown on the flow diagram(s). The flow diagram(s) should include each:

1. Pump station,
2. Major unit treatment process,
3. Residuals processing and disposal system, and
4. Reclaimed water reuse and effluent disposal system.

If the report is an updated report, the introduction should state when the last updated or initial capacity analysis report was submitted to the Department and the name of the engineer and the firm who prepared the report.

Chapter 2- Existing Conditions

Permitted Capacities

The capacity analysis report shall clearly state the permitted capacities of the treatment plant (including the residuals treatment facilities) and the reuse or disposal system. The time frame associated with each permitted capacity (e.g., annual average daily flow, maximum monthly average daily flow, three-month average daily flow) should be stated.

Monthly Average Daily Flows, Three-month Average Daily Flows, and Annual Average Daily Flows

The rule states that the capacity analysis report must contain data showing the monthly average daily flows, three-month average daily flows, and annual average daily flows for the past 10 years or for the length of time the facility has been in operation, whichever is less.

Permittee's records of monthly operating reports should be used to obtain flow data. If these records are not available, the permittee may set up an appointment with the Department's appropriate district office to review Department files that contain monthly operating report data. The permittee may also request information from the Department's computer database for a small fee. A copy of this computer data may be obtained by mailing or FAXing a completed copy of the form letter, Attachment 1, to the Florida Department of Environmental Regulation.

The capacity analysis report should provide information related to the accuracy of the flow data reported in the monthly operating reports. It should state whether flows were measured by a flow meter or other methods, the location of the flow meter, the last date of calibration of the meter, and who performed the calibration.

Monthly average daily flows, three-month average daily flows, and annual average daily flows should be calculated using monthly operating report data and the definitions provided in these guidelines. Monthly average daily flows and three-month average daily flows should be tabulated for each month of the year. Annual average daily flows should be tabulated for each year.

Type I and Type II plants should graph monthly average daily flows, three-month average daily flows, and annual average daily flows for at least the past 5 years. The monthly average daily flows, three-month average daily flows, and annual average daily flows to the treatment plant should be plotted on the same graph, using different legends to identify the respective flows. Type III facilities do not have to graph flows.

Seasonal Variations in Flow

For each of the past ten years, the month of the year when the three-month average daily flow was maximum and the ratio of the maximum three-month average daily flow to the annual average daily flow should be tabulated. The report should indicate whether the facility experiences seasonal variations in flow. It should identify the month(s) of the year when the three-month average daily flow was typically maximum, and it should state the average ratio of the yearly maximum three-month average daily flow to the annual average daily flow for the past ten years.

Updated Flow and Loading Information

Rule 17-600.405(6), F.A.C., states "The report shall update the flow-related and loading information contained in the preliminary design report submitted as part of the most recent permit application for the wastewater facilities pursuant to Rules 17-600.710 and 17-600.715, F.A.C." To satisfy this rule requirement, the report should compare the loadings currently being treated at the plant to the loadings which were used to establish the design capacity.

For a treatment plant that received a construction permit after December 20, 1988, the design capacity was established in the preliminary design report based on predicted (design) loadings to the plant. For a plant permitted before this date, the design capacity may have been established in facility planning reports

or other similar reports submitted to the Department during the permitting process. The Department used these reports to establish the permitted capacity for the facility, which in most cases should be equal to the design capacity.

The report should list the types of loadings (BOD₅/CBOD₅, TSS, total phosphorus, total nitrogen, etc.) used to establish the design capacity. The design and current loadings for each should be tabulated along with the method of calculation used to determine the current loadings (i.e., annual average, yearly maximum, etc.). The method used should be selected by the engineer. Current loadings should be based on the past year's influent monitoring data.

If all of the current loadings are within the ranges used to establish the design capacity, a simple statement of this fact should be included in the report. If the current loadings are not within the ranges, it should be stated, and recommendations and schedules for appropriate action should be included in Chapter 4 of this report.

Chapter 3 - Future Conditions

The capacity analysis report should project, for each of the next 10 years, the annual average daily flow and the maximum three-month average daily flow that will occur during each year. Population projections, in combination with water usage rates, wastewater flow records, or appropriate gallons per capita per day figures may be used to project the annual average daily flows. The average ratio of the yearly maximum three-month average daily flow to the annual average daily flow, as determined in the previous section on seasonal variations in flow, may then be used to project the maximum three-month average daily flows for each year.

Population Projections

Population projections for the service area should be tabulated on a yearly basis for each of the next 10 years. The report should discuss how these populations were projected and state what documents, such as comprehensive plans, census reports, and other facility planning documents, were used. It should discuss any assumptions made, ratios used, or interpolations made. Equivalent dwelling units (EDUs) may be used to project population.

A map or sketch showing the existing service area and land uses should be included in the report. A map showing the 10-year projected service area and land uses should also be included.

Flow Projections

Annual average daily flows and yearly maximum three-month average daily flows should be tabulated for each of the next 10 years.

One way to project annual average daily flows and yearly maximum three-month average daily flows for residential areas is, first, to project the number of gallons per capita per day for the next 10 years. The report should discuss how this number was established (i.e., Was it based on water usage rates, wastewater flow records, or other appropriate gallons per capita per day figures?). Next, the projected number of gallons per capita per day should be multiplied by the yearly population projections to project annual average daily flows. Finally, the average ratio of the yearly maximum three-month average daily flow to the annual average daily flow, as determined in the previous section on seasonal variations in flow, should be multiplied by the projected annual average daily flow for each of the next 10 years to project the maximum three-month average daily flow for each year. Of course, if seasonal variations in flow have changed drastically over the last 10 year, the average ratio should be adjusted accordingly.

Annual average daily and maximum three-month average daily flow projections for commercial and industrial, or other non-residential users, and for outstanding commitments should be added to the residential flow projections.

Type I and Type II facilities should graph the projected annual average daily flows and yearly maximum three-month average daily flows for the next 10 years. The projected flows should be graphed so that they are a continuation of the actual annual average daily flows and the three-month average daily flows which have already been plotted for the past 5 years.

Chapter 4 - Summary and Conclusions

Time Required for the Three-month Average Daily Flow to Reach the Permitted Capacity

The dates that the maximum three-month average daily flows of the treatment plant or reuse and disposal systems are projected to exceed the permitted capacity should be stated in the capacity analysis report. When possible, these dates should be indicated on the graph of future conditions.

The time frame associated with the permitted capacities may or may not be three-month average daily flows. Regardless, the permitted capacities should be compared with the projected maximum three-month average daily flows for each year.

Recommendations for Expansion

If the yearly maximum three-month average daily flow will not equal or exceed the permitted capacity for the treatment plant or reuse or disposal systems within the next five years, recommendations for expansion do not have to be included in the report. A statement to this effect should be included.

If the maximum three-month average daily flow will exceed the permitted capacity within the next five years, recommendations shall be included.

Recommendations shall address the following:

1. Whether new construction will be required;
2. Whether the facility will be replaced by regional facilities, indicating the name of the regional facility that it will be connected to and the dates for connection; and
3. Whether a re-rating study will be conducted to request a revision of the permitted capacity.

Expansion Schedules

Expansion schedules should be included for the treatment plant and reuse and disposal systems if it has been documented that the yearly maximum three-month average daily flow will exceed the permitted capacity, within the next five years. At a minimum dates for planning, design, submittal of the construction permit application, start of construction, submittal of the operation permit application, and placing the new or expanded facilities into operation should be included in accordance with Rule 17-600.405, F.A.C.

ABBREVIATED REPORTS

The following section outlines when abbreviated capacity analysis reports may be submitted to the Department and what information should be submitted in such cases. The Department may request any information, beyond what is provided in this section, if such information is needed to provide assurance that the facility will have adequate capacity available.

Facilities Serving Areas That Are Built-out

Facilities serving areas that are built-out may submit abbreviated capacity analysis reports to the Department when operating history (including monthly operating report data, ground water monitoring data, the Department's latest inspection reports, and any other documented information) indicates that the facility is in full compliance with its effluent limitations.

Initial Abbreviated Reports - Initial abbreviated reports must be submitted to the Department in accordance with Figure 1. Abbreviated initial reports shall include:

1. The sections entitled Title Page; Introduction; Permitted Capacities; and Monthly Average Daily Flows, Three-Month Average Daily Flows, and Annual Average Daily Flows, as described in these guidelines;
2. Information demonstrating that the service area is built-out, including a map or sketch showing the service area and land uses, and, a statement that there are no plans to expand the service area;
3. A statement that the collection system receives only domestic wastewater;
4. The name, address, and phone number of the permittee, municipality, or county (include the name of a contact person) and, a statement, signed by the permittee, that he "is fully aware of the information contained in the report;" and
5. The name, address, and phone number of the firm and/or professional engineer preparing the report and a statement signed and sealed by the professional engineer preparing the report, that "the information contained in the report is true and correct to the best of his knowledge, and the report was prepared in accordance with sound engineering principles."

Updated Abbreviated Reports - Updated abbreviated reports must be submitted to the Department in accordance with Figure 2. Abbreviated updated reports shall include:

1. The date when the last updated or initial capacity analysis report was submitted to the Department and the name of the engineer and the firm who prepared the report;
2. The sections entitled Title Page; Permitted Capacities; and Monthly Average Daily Flows, Three-Month Average Daily Flows, and Annual Average Daily Flows, as described in these guidelines;
3. A statement that the service area has not been expanded and that there are no plans to expand the service area that was identified in the initial abbreviated report;
4. The name, address, and phone number of the permittee, municipality, or county (include the name of a contact person), and a statement, signed by the permittee, that he "is fully aware of the information contained in the report;" and.
5. The name, address, and phone number of the firm and/or professional engineer preparing the report and a statement signed and sealed by the professional engineer preparing the report, that "the information contained in the report is true and correct to the best of his knowledge, and the report was prepared in accordance with sound engineering principles."

Facilities That Will Be Connected To A Regional Facility

Facilities that will be connected to a regional facility within the next two years may submit abbreviated initial or updated capacity analysis reports. The abbreviated reports must be submitted in accordance with Figures 1 and 2 and shall include:

1. If the report is an updated report, the date when the last updated or initial capacity analysis report was submitted to the Department and the name of the engineer and the firm who prepared the report;
2. The sections entitled Title Page; Permitted Capacities; and Monthly Average Daily Flows, Three-Month Average Daily Flows, and Annual Average Daily Flows, as described in these guidelines;
3. A detailed schedule for the removal of the facility from service, along with documentation from the owner of the regional facility indicating concurrence with the plan to connect;

4. The signature, name, address, and phone number of the permittee, municipality, or county (include the name of a contact person); and
5. The name, address, and phone number of the firm and/or professional engineer preparing the report and a statement signed and sealed by the professional engineer preparing the report, that "the information contained in the report is true and correct to the best of his knowledge, and the report was prepared in accordance with sound engineering principles."

FIGURE 1

SCHEDULE FOR SUBMITTAL OF INITIAL CAPACITY ANALYSIS REPORTS

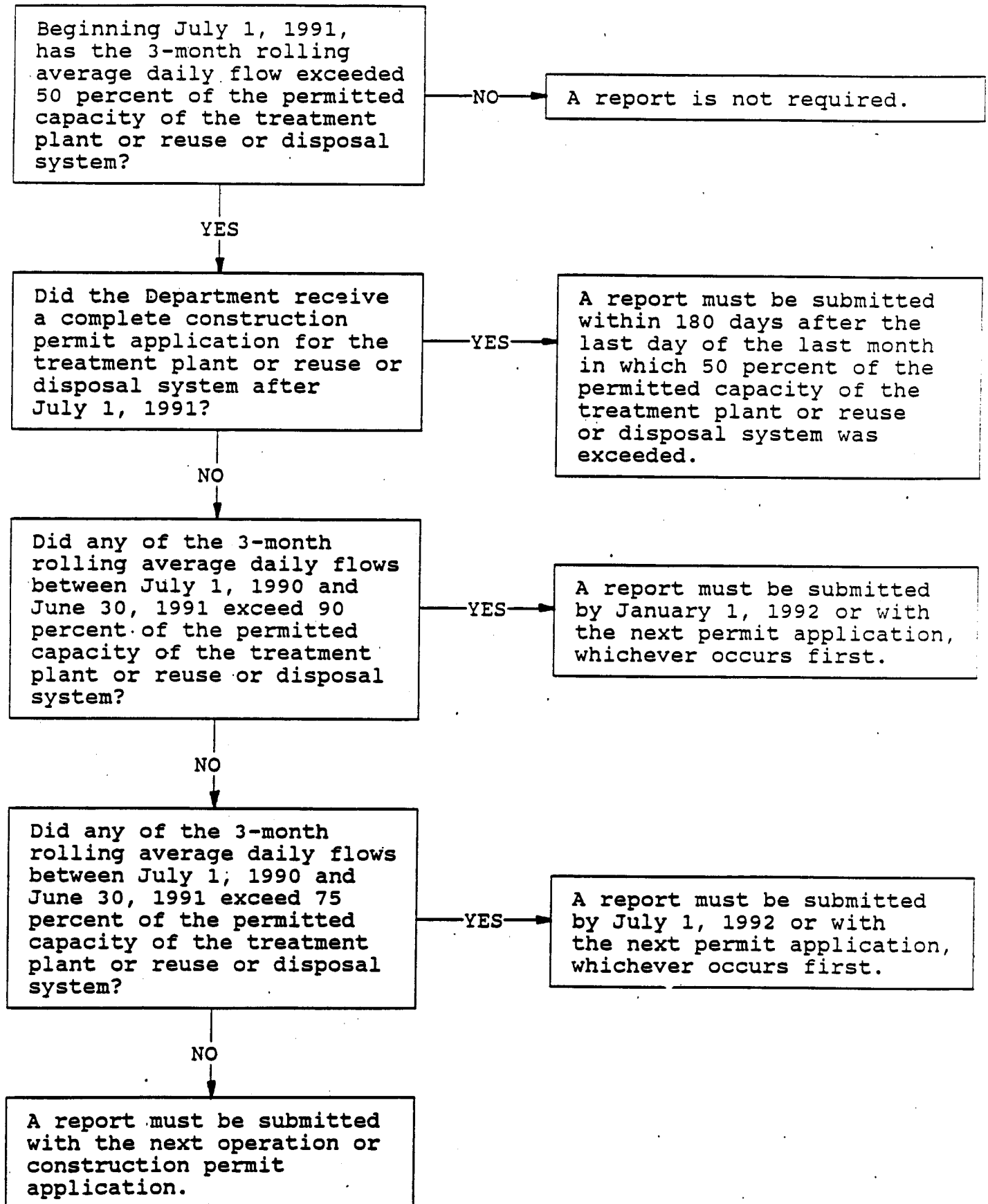


FIGURE 2

SCHEDULE FOR SUBMITTAL OF UPDATED CAPACITY ANALYSIS REPORTS

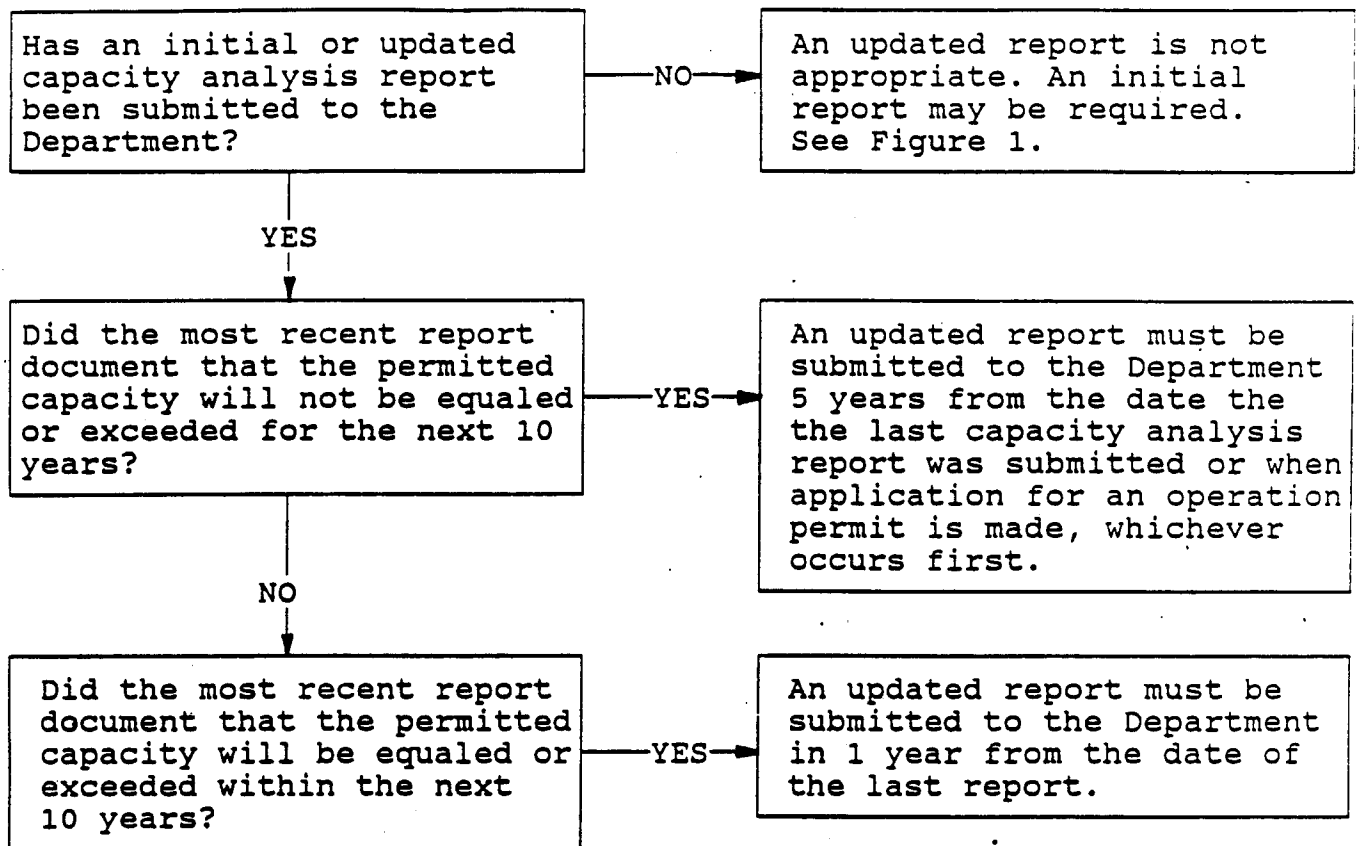


TABLE 1

CAPACITY ANALYSIS REPORT OUTLINE

- A. Title Page
- B. Certifications
- C. Table of Contents
- D. Chapter 1 - Introduction
- E. Chapter 2 - Existing Conditions
 - 1. Permitted Capacities
 - 2. Monthly Average Daily Flows, Three-month Average Daily Flows, and Annual Average Daily Flows
 - 3. Seasonal Variations in Flow
 - 4. Updated Flow and Loading Information
- F. Chapter 3 - Future Conditions
 - 1. Population Projections
 - 2. Flow Projections
- G. Chapter 4 - Summary and Conclusions
 - 1. Time Required for the Three-month Average Daily Flow to Reach the Permitted Capacity
 - 2. Recommendations for Expansion
 - 3. Expansion Schedules

ATTACHMENT 1

REQUEST FOR MONTHLY OPERATING REPORT DATA

Mail or FAX to:

Florida Department of Environmental Regulation
Bureau of Information Systems
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

FAX Number: (904)922-6041

Questions:

Phone Number: (904)922-7121

_____, 199_

Florida Department of Environmental Regulation
Bureau of Information Systems
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
FAX Number: (904)922-6041
Phone Number: (904)922-7121

Dear Sir or Madam:

I am requesting a copy of Batch Report GMS36 for the following facility.

Facility's DER(GMS) Identification Number: _____
DER District: _____
Report Beginning Date: _____ (mm/dd/yy)
Report Ending Date: _____ (mm/dd/yy)
County: _____
Facility Type: 1 = Domestic
Facility Status: A = Active
Site Type: EF = Effluent
Site Status: A = Active
Check Samples: N = No

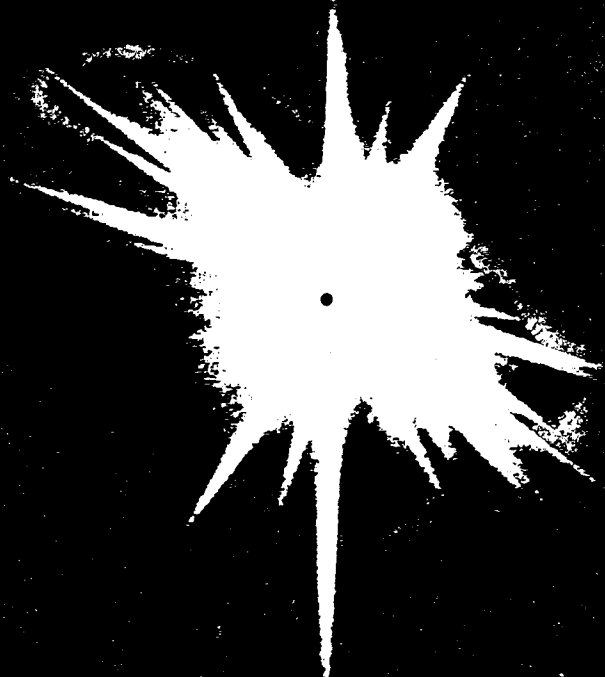
I understand that before you send a copy of this report to me I must submit a fee to the Department. Please let me know as soon as possible how much this fee will be. I can be contacted in the daytime at:

Phone Number: _____

Address: _____

Sincerely,

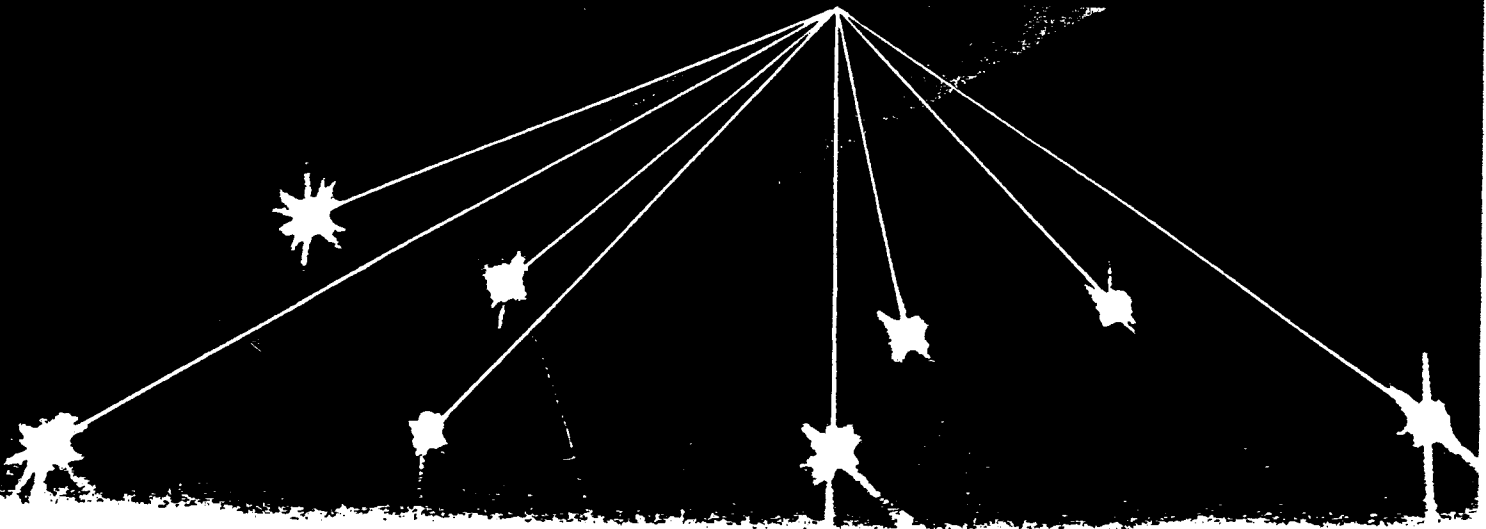
(Name)



University Physics

S E V E N T H E D I T I O N

SEVENTH EDITION



1-3 UNIT CONSISTENCY AND CONVERSIONS

We often use equations to express relations among physical quantities that are represented by algebraic symbols. An algebraic symbol always denotes both a number and a unit. For example, d might represent a distance of 10 m, t a time of 5 s, and v (for velocity) a speed of 2 m/s or $2 \text{ m}\cdot\text{s}^{-1}$. (In this book we usually use negative exponents with units to avoid use of the fraction bar.)

An equation must always be **dimensionally consistent**; this means that two terms may be added or equated only if they have the same units. For example, if a body moving with constant speed v travels a distance d in a time t , these quantities are related by the equation

$$d = vt. \quad (1-1)$$

If d is measured in meters, then the product vt must also be expressed in meters. Using the numbers above as an example, we may write

$$10 \text{ m} = (2 \text{ m}\cdot\text{s}^{-1})(5 \text{ s}).$$

Because the unit s^{-1} or $1/\text{s}$ cancels the unit s on the right side, the product vt is indeed expressed in meters, as it must be. In calculations, units are always treated just like algebraic symbols with respect to multiplication and division.

When a problem requires calculations using numbers with units, the numbers should always be written with the correct units, and the units should be carried through the calculation as in the example above. This provides a very useful check for calculations. If at some stage in a calculation you find that an equation or an expression has inconsistent units, you know you have made an error somewhere. In this book we will always carry units through all calculations, and we strongly urge you to follow this practice when you solve problems.

Unit consistency: You can't add apples and artichokes.

PROBLEM-SOLVING STRATEGY: Unit conversions

Units are multiplied and divided just like algebraic symbols. This fact provides a convenient procedure for converting a quantity from one set of units to another. The key to the procedure is that we can use equality to represent the same quantity when we express it in different units. For example, to say that $1 \text{ min} = 60 \text{ s}$ means that the number 1 is equal to the number 60. If we mean that 1 min represents the same physical time interval as 60 s. Thus we may multiply a quantity by 1 min and

... multiply by the quantity $1 \text{ min}/60 \text{ s}$ to obtain a quantity with the same physical meaning. To find the number of seconds in 5 min, we multiply 5 min by $1 \text{ min}/60 \text{ s}$.

EXAMPLE 1-1 American women in the age group 19 to 22 years have an average height of 5 ft, 4 in. What is this height in centimeters? In meters?

SOLUTION We first express the height in inches:

$$5 \text{ ft} = \left(\frac{12 \text{ in.}}{1 \text{ ft}} \right) 5 \text{ ft} = 60 \text{ in.}$$

$$5 \text{ ft}, 4 \text{ in.} = 5 \text{ ft} + 4 \text{ in.} = 60 \text{ in.} + 4 \text{ in.} = 64 \text{ in.}$$



WASTEWATER APPLICATION FORM 2A

PERMIT TO DISCHARGE WASTEWATER
FROM NEW OR EXISTING
DOMESTIC WASTEWATER FACILITIES

Serial Number(s) _____

SECTION 2. TREATMENT FACILITY DESCRIPTION

1. Description

2. Treatment Codes

3. Design Capacity of the Treatment Facility

Current Design Capacity _____ mgd
 Proposed Incremental Design Capacity + _____ mgd
 Proposed Total Design Capacity = _____ mgd

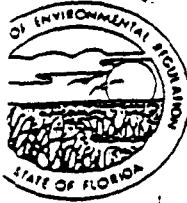
4. Basis of Design Flow

_____ Annual Average Daily Flow
 _____ Maximum Monthly Average Daily Flow
 _____ Three-Month Average Daily Flow
 _____ Other

If other, specify.

5. Design Treatment Levels

Parameter	Effluent Concentration	Units	Basis	Percent Removal
pH		Standard Units		
CBOD ₅		mg/L		
TSS		mg/L		



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

July 30, 1992

Carol M. Browner, Secretary

Mr. Charles H. Hill, Director
Division of Water and Wastewater
Florida Public Service Commission
101 East Gaines Street
Tallahassee, Florida 32399-0873

Dear Mr. Hill:


Thank you for the opportunity to review the draft version of Rule 25-30.432, Florida Administrative Code (F.A.C.), Used and Useful in rate case proceedings. Our specific comments are enclosed, but I would like to highlight two of our major concerns.

Section 403.064(5), Florida Statutes, states "Pursuant to Chapter 367, the Florida Public Service Commission shall allow entities which implement reuse projects to recover the full cost of such facilities through their rate structure." The intent of this statutory provision was that the full cost of capital investments be included in the costs recoverable through a rate structure. In essence, the entire cost of a reuse project should be considered used and useful. We recommend that Chapter 25-30, F.A.C., include this provision:

A significant wastewater management problem in Florida involves overloaded wastewater treatment facilities. Rule 17-600.405, F.A.C., (copy enclosed) is a pollution prevention measure designed to ensure that the permittees conduct the planning necessary to allow for timely expansion of the wastewater facilities. This rule contains requirements for capacity analysis reports. The capacity analysis report is a detailed assessment of flow projections as they relate to future needs for expansion of domestic wastewater facilities. Timeframes are established in the rule for submittal of the initial capacity analysis report as well as for updates of the report and for the planning design, and construction of expanded facilities. This rule became effective in 1991 and has been well received by the regulated public, as well as the utilities. We believe that Chapter 25-30, F.A.C., should allow utilities to recover investment for timely expansion of needed wastewater treatment facilities consistent with our rule requirements.

If you have any questions about our comments, please contact Robert Heilman, P.E., Chief, Bureau of Water Facilities Planning and Regulation, at the letterhead address or at 904/487-0563.

Sincerely,


Richard M. Harvey
Director
Division of Water Facilities

RMH/ra/btm

Enclosures

1000000000

Rule 25-30.432, F.A.C.

Used and Useful in Rate Case Proceedings

Specific Comments

1. Rule 25-30.432(3)(a), F.A.C. - Design and construction requirements for collection systems and transmission facilities are contained in Chapter 17-604, F.A.C. We suggest including this chapter as a reference.
2. Rule 25-30.432(4), F.A.C. - The statement that to "encourage long-term planning and least cost system design, the Commission, at a minimum, shall consider as used and useful the level of investment that would have been required had the utility designed and constructed the system to serve only its existing customer base" is unclear. This statement doesn't seem to promote long-term planning.
3. Rule 25-30.432(5), F.A.C. - The definition of ERC demand, as that used for design/permitting and actual historical demand, is unclear. When would each apply?
4. Rule 25-30.432(5)(a)4, F.A.C. - Here margin reserve for treatment facilities is 20 percent of the permitted or actual ERC capacity, whichever is greater. We agree that there is a need to balance a 'utilities' incentive for making plant investments and planning for future needs with some type of mechanism to control imprudent investments in order to protect existing ratepayers. How was the 20 percent derived? Have other mechanisms to achieve this balance been explored?
5. Rule 25-30.432(5)(a)4 ii and iii, F.A.C. - It is suggested that definitions for "off-site" and "on-site" be included in the rule.
6. Rule 25-30.432(5)(d)1, F.A.C. - The rule states that a utility "has little control over inflow." There are numerous methods for correction of inflow sources including, manhole raising, manhole cover replacement, cross connection plugging, and drain disconnection. A utility should discover the locations of inflow, determine legitimacy and assign responsibility for cost-effective correction.
7. Rule 25-30.432(5)(d)2, F.A.C. - The EPA used the following standard in the Construction Grants program to determine if a system would be subject to further I/I analysis: No further I/I analysis will be necessary if domestic wastewater plus non-excessive infiltration does not exceed 120 gallons per capita per day (gpcd) during periods of high groundwater. The total daily flow during a storm should not exceed 275 gpcd, and there should be no operational problems, such as

surcharges, bypasses, or poor treatment performance resulting from hydraulic overloading of the treatment works during storm events. You may want to consider this as an alternative to the Water Pollution Control Federation Manual of Practice No. 9.

8. Rule 25-30.432(5)(e), F.A.C. - It is suggested to add "inflow" in the first sentence of this section. Cost effective correction of inflow should be encouraged.
9. Rule 25-30.432(5)(f)2 ii, F.A.C. - We suggest that Number "2" be defined as the same time period as that used for Number "1" (capacity of the plant) in order for the formula to be consistent. The basis of design of a WWTP can be stated in various ways including, annual average daily flow, maximum monthly average daily flow, or three-month average daily flow. Also, we suggest that excessive "inflow" in Number "4" be added.



Lawton Chiles
Governor

Florida Department of
Environmental Protection

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
813-744-6100

Docket No. 971065-SU
Exhibit RJC-5 (Pg1 of
6)

DEP Permit
Virginia B. Wetherell
Secretary

PERMITTEE:
Mid-County Services, Inc.
200 Weathersfield Ave.
Altamonte Springs, FL 32714

Attention:
Mr. Donald Rasmussen
Regional Director

PERMIT/CERTIFICATION
GMS ID No: 4052P01064
Permit No: D052-242275
Date of Issue: 04/01/94
Expiration Date: 03/01/99
County: Pinellas
Lat/Long: 28° 02' 20"
82° 45' 20"
Sec/Town/Range: 19/28/16
Project: Mid-County Services, Inc.
Processor: E.G. Snipes, P.E.

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-3, 17-4, 17-300, 17-500 and 17-600 Series. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached thereto or on file with the Department and made a part thereof and specifically described as follows:

Operation of a .9 MGD Type I advanced wastewater treatment plant discharging filtered, chlorinated and de-chlorinated reclaimed water into Curlew Creek.

Location: 2299 Spanish Vista Drive, Clearwater, Pinellas County, Florida

Replaces Permit No. DT52-206904 Expired: 06/01/94

ITEM /

permittee: Mid-County Services, Inc.
 permit No: DO52-242275

SPECIFIC CONDITIONS:

1. Drawings, plans, documents or specifications submitted by the permittee, not attached hereto, but retained on file at the Southwest District Office, are made a part hereof.
2. In accordance with Chapter 17-699, F.A.C., the required certified operator on site time is: A Class C or higher operator for 16 hours/day for 7 days/week. The lead operator must be a Class B operator.
3. The discharge of reclaimed water from the outfall pipe into Curlew Creek shall be sampled in accordance with Chapter 17-601, F.A.C. and shall meet the following limitations:

Parameter	Unit	Min-imum	Maximum	Type Sample	Frequency
Permitted Capacity (flow)	mgd	-	.90 mgd ann. avg.	****	Continuous
pH	STD UN	6.00	8.50	*****	Continuous
CBOD ₅ *	mg/L	-	5 annual avg.	**	Weekly
Total Suspended Solids*	mg/L	-	5 annual avg.	**	Weekly
Total Nitrogen	mg/L	-	3 annual avg.	**	Weekly
Total Phosphorous	mg/L	-	1 annual avg.	**	Weekly
CL ₂	mg/L	0.01	-	grab	Hourly
Fecal coliform	#/100	0	***non-detectable	grab	Daily

*Influent shall be monitored and reported monthly.
 [Rule 17-601.300(1), F.A.C.]
 ** Fpc=flow proportional composite - 16 hours
 ***Non-detectable in at least seventy-five percent (75%) of 30 samples collected during the monthly operating period (e.g. 30 samples).
 ****Rfm&t=recording flowmeter and totalizer
 *****=Hourly measurements for 24 hours may be substituted for continuous measurement.

The results shall be reported monthly on DEP Form 17-601.

Permittee: Mid-County Services, Inc.
Permit No: D052-242275

4. The residuals shall be sampled after final treatment in accordance with Rule 17-640.700(1)(b) F.A.C. but prior to land application for the parameters listed below every 3 months. A copy of the analyses shall be submitted with the monthly operation report for the following parameters:

Total Nitrogen - % dry weight
Total Phosphorus - % dry weight
Total Potassium - % dry weight
Cadmium - mg/kg dry weight
Copper - mg/kg dry weight
Lead - mg/kg dry weight
Nickel - mg/kg dry weight
Zinc - mg/kg dry weight
pH - standard units
Total Solids - %

5. If historical or archaeological artifacts, such as Indian canoes, are discovered at any time within the project site, the permittee shall notify the DEP Southwest District office and the Bureau of Historic Preservation, Division of Archives, History and Records Management, R.A. Gray Building, Tallahassee, Florida 32301, telephone number (904) 487-2073.

6. The domestic wastewater residuals for this facility are classified as stabilization Class B.

a. The domestic wastewater residuals shall be land applied only at Anclote River Ranch and Turner Ranch (as identified in the Agricultural Use Plan or Dedicated Site Plan submitted with the application).

b. Annual update reports, summaries, and revised Agricultural Use Plans are due not later than one year from the issuance of the permit. The reports shall be submitted annually thereafter, and not later than this anniversary date to the Department.

c. The permittee shall comply with all provisions of Chapter 17-640, F.A.C. and shall report any non-compliance or changes from the approved site plan to the Department.

ITEM 10

ITEM 7

permittee: Mid-County Services, Inc.
Permit No: D052-242275

7. The permittee shall ensure that the operation of this facility shall be as described in the application and supporting documents. Any request for change to this permit, shall be submitted in writing to the Domestic Wastewater Program Manager for review and clearance prior to implementation. Requests for changes of negligible impact to the environment and staff time will be reviewed by the Program Manager, cleared when appropriate and incorporated into this permit. Changes or modifications other than those described above will require submission of a completed application and appropriate processing fee as per Section 17-4.050, F.A.C.

8. In order to provide the Department with reasonable assurance that the discharge from the outfall does not violate the toxicity requirements of Section 17-302.500(1)(d), F.A.C., the permittee shall perform the toxicity test as specified below and submit the results to the Department for review:

a. The permittee shall initiate the series of tests described below within sixty (60) days of the effective date of this permit to evaluate wastewater toxicity. The permittee shall conduct 96 hour static renewal acute toxicity screening tests on the test species, Ceriodaphnia dubia and Notropis Leedsii, once every two months (bimonthly) on samples of 100% whole effluent. Such Static renewal screening tests will be conducted on four separate grab samples of 100% final effluent collected at evenly spaced (6-hour) intervals over a 24-hour period and used in four separate acute toxicity screening tests in order to account for daily variations in effluent quality.

Once the permittee has demonstrated to the satisfaction of the Department that there are no effluent toxicity peaks and no diurnal toxicity variations resulting in violations, the frequency of the above described requirement for bimonthly testing may be changed to become once every 6 months thereafter for the duration of the permit, unless notified otherwise by the Department. This schedule is reduced to biannual sampling.

Permittee: Mid-County Services, Inc.
Permit No: D052-242275

Specific Conditions Number 8 (continued):

b. If control mortality exceeds 10% of either species in any test, the test(s) for the species (including the control) shall be repeated. A test will be considered valid only if control mortality does not exceed 10% for either species. If, in any separate grab sample test, 100% mortality occurs prior to the end of the test, and control mortality is less than 10% at that time, that test (including the control) shall be terminated with the conclusion that the sample demonstrates unacceptable acute toxicity.

c. If any such bimonthly acute toxicity screening test indicates that unacceptable toxicity (less than 80% survival of test organisms in 100% effluent) is found in any sample of effluent, additional (definitive) acute static renewal toxicity testing involving the determination of 96-hour LC50 values with 95% confidence limits will be required. A minimum of three (3) such 96-hour additional tests are required to be conducted within 30 days from the date that any screening test indicates the presence of toxicity. Preferable, the first of these additional tests shall be initiated within seven days of a failed screening test. The second test shall be initiated at least seven (7) days after completion of the first additional test. Such tests shall be conducted using that test species which exhibited the most toxic response in the screening tests above, and shall be taken at the same time of day and day of the week during which the greatest toxicity was exhibited.

The results of each toxicity test shall be submitted to the Department concurrently with monthly discharge monitoring reports.

d. All test procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, 4th Edition EPA-600/ 4-90-027. If the test organisms specified in Sub-Part (a), are not available, appropriate substitutes from the list of recommended test organisms in the above referenced bioassay manual may be used. This, and any other deviation from the standard bioassay procedures, shall be submitted to the Department for review and approval prior to use.

ITEM 10

Permittee: Mid-County Services, Inc.
Permit No: D052-242275

9. The permittee shall be aware of and operate under the attached "General Permit Conditions #1 through #15". General Permit Conditions are binding upon the permittee and enforceable pursuant to Chapter 403 of the Florida Statutes.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION



Richard D. Garrity, Ph.D.
Director of District Management

ITEM 7

ITEM 8

ITEM 9