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NTC ORLANDO
5090.3a

PRELIMINARY ASSESSMENT REPORT NTC ORLANDO FL
8/1/1988
NAVAL ENERGY AND ENVIRONMENTAL SUPPORT AVTIVITY

Naval Energy and Environmental Support Activity, 1988
Page 1 of 1

PRELIMINARY ASSESSMENT REPORT

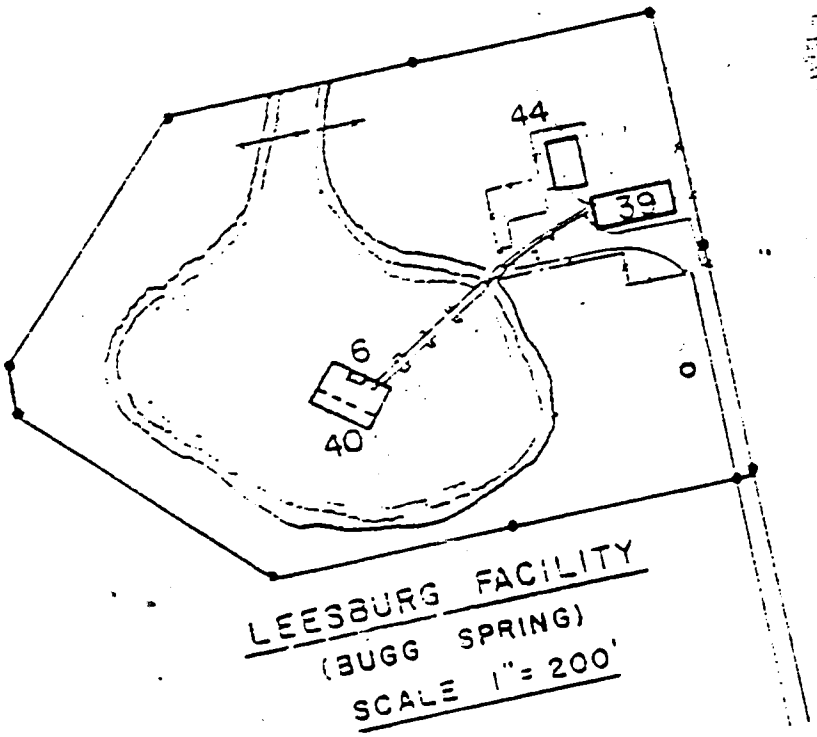
Underwater Sound Reference Detachment
(NRL-UWSREFDET), P.O. Box 56837
Orlando, FL 32856

EPA Identification:
FL 1170022650

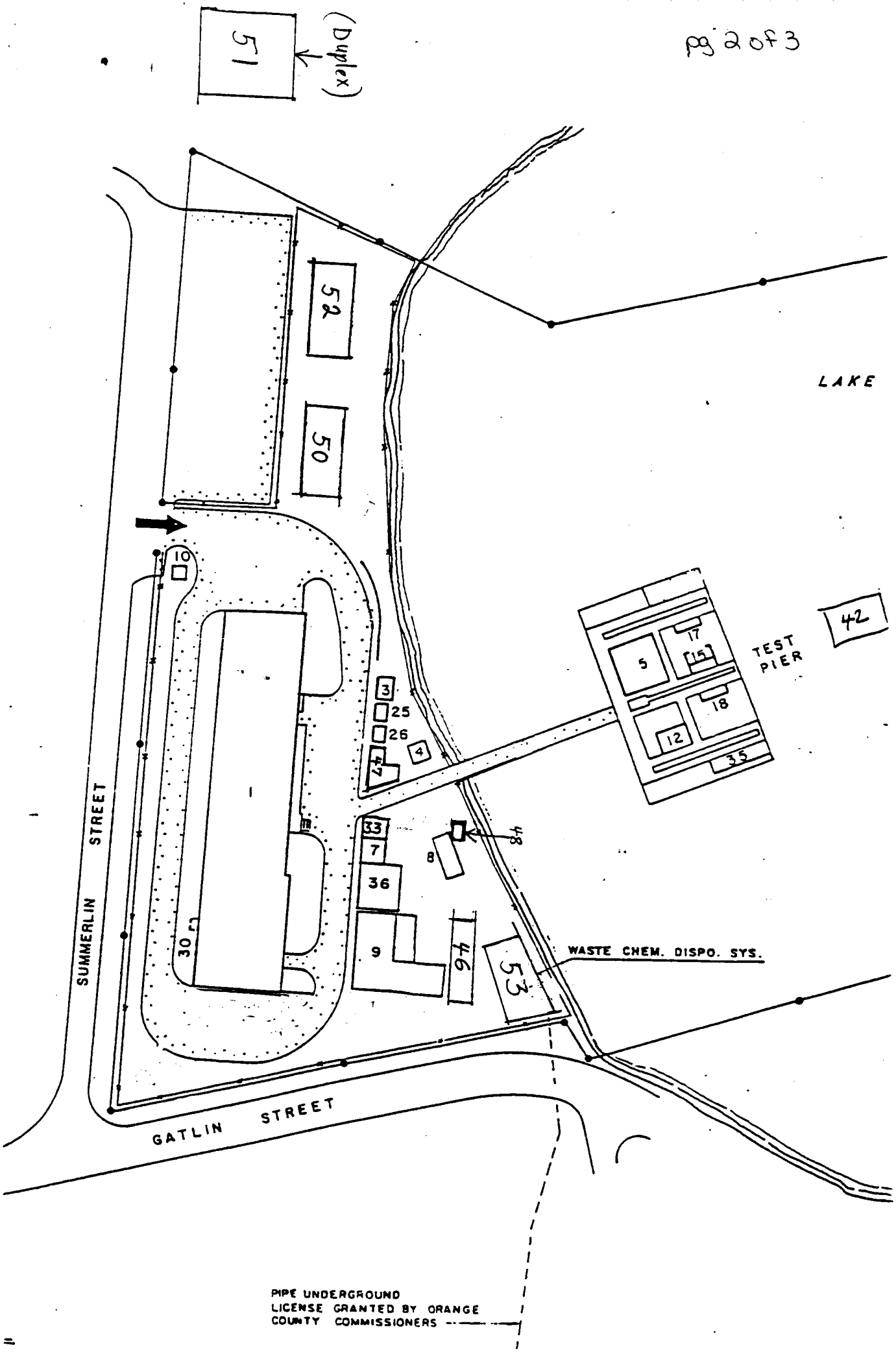
NEESA 13-179PA
August 1988

NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY

Port Hueneme, California 93043-5014



FACILITY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WASTE CHEM. DISPO. SYS.
SUMMERLIN STREET
GATLIN STREET
PIPE UNDERGROUND
LICENSE GRANTED BY ORANGE
COUNTY COMMISSIONERS

Received from
Naval Research Lab,
Underwater Sound Reference
Detachment, 1992
pg 1 of 3

BUILDING NUMBER INDEX FOR NRL-USRD
(June 1, 1992)

BLDG. NO.	DESCRIPTIVE TITLE (CURRENT USAGE)	
1	Main Laboratory Building	Bulk
3	Underwater Equipment Laboratory	2
4	Underwater Systems Facility	
5	Instrument Test House (Pier)	
6	Instrument Test House **(LEEFAC)**	1
7	Materials Laboratory	1
8	Painting and Related Operations Building	
9	Materials Laboratory	7
10	Gatehouse (Guardhouse)	2
12	South Pier Test Building (Pier)	2
15	Electronics Shed (Pier)	3
17	Rigging Shed (Pier)	2
18	Rigging Shed (Pier)	1
25	Water Storage Tank	
26	Water Storage Tank	
33	Hazardous Materials Storehouse	
35	Transducer Assembly Building	
36	Low Frequency Building	3
39	Operations Building **(LEEFAC)**	3
40	Electronic System Building **(LEEFAC - on barge)**	3
44	Bulk and Assembly Building **(LEEFAC)**	
46	Shock Tube Facility	1
47	Electric Distribution Building	
48	Pressure Cycling Facility, ATFII	2
50	Conference Building	4
51	Duplex	7
52	Computer & Electronics Branch Building	
53	Chiller Equipment Storage Building	3

/171

PREPARED FOR ABB ENVIRONMENTAL SERVICES, INC.
TOTAL POPULATION
3 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
53241.

TOTAL POPULATION
4 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
65333.

PREPARED FOR ABB ENVIRONMENTAL SERVICES, INC.
TOTAL POPULATION
1/4 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
340.

TOTAL POPULATION
1/2 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
2104.

TOTAL POPULATION
1 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
6642.

TOTAL POPULATION
2 MILE BAND/NRL USRD ORLANDO, FL

1990 TOTAL POP
25655.

Using sub-BG/ED centroids permits the population of each BG/ED to be distributed among many more centroids. Within a county, this methodology considers the proximity of each BG/ED centroid's "nearest neighbor" BG/ED among all the BG/ED's in each of the census tracts. In this way, the population is redistributed to the sub-BG/ED centroids in a realistic (non-linear) manner that takes into account the relative population densities of adjoining BG/ED's.

As a result, the GRU methodology makes the "all or nothing" inclusion decision at a level smaller than the BG/ED level. In essence, this methodology comes closer to being one of apportionment of geography based on the small areas in which the population resides, rather than the centroids to which the population is assigned.

The GRU methodology is a significant improvement over the other available approaches for apportioning data from the underlying geographic units to geometrically defined study areas.

9/90::GCG

GEOGRAPHIC RETRIEVAL UNIT (GRU) METHODOLOGY

The purpose of this memo is to summarize the approaches available for apportioning data from census tracts to geometrically defined study areas such as rings. Further, we will provide more detailed information about the methodology that Claritas/NPDC employs for retrieving data for geometric areas.

Since geometric areas do not conform to census geographi as tracts, it is necessary to build the data from geogra units for which data has been compiled.

One approach to defining geometric areas is to use the l surface, area as a means of determining a tract's percen inclusion in the study area. However, using land area a that the population of the underlying geography is evenl distributed. This is rarely the case.

6

The Census Bureau released centroid files for block grou enumeration districts (BG/ED's) with associated populat: counts. The BG/ED method of defining geometric areas in using these BG/ED centroids and populations to determine the percentage of a tract's population to include in the area.

To calculate the percent inclusion of a tract, this method first determines what BG/ED centroids are within the study area, then adds the population of each BG/ED, and then takes this sum as a percentage of the tract's total population.

A feature of this BG/ED methodology is that the entire population of the BG/ED is associated with a single point, the BG/ED centroid. In reality, the population is not concentrated at this single point, but is actually distributed in some fashion within the geographic boundaries. Note that the inclusion of the population of a BG/ED into a geometric area is determined by whether the BG/ED centroid is inside or outside the boundary of the study area.

While BG/ED's are small pieces of geography, the "all or nothing" factor of this methodology does inject a certain level of imprecision. In addition, in sparsely populated areas, the BG/ED methodology can result in less than accurate percent inclusions. For example, a study area defined as a ring may include only one BG/ED centroid, but a fairly substantial portion of the tract's area. If the study area is small enough, it is possible that no BG/ED centroids are within the radius and therefore, no population is apportioned to the study area.

The geometric retrieval methodology that Claritas/NPDC currently uses provides a significant improvement over the BG/ED approach.

This Geometric Retrieval Unit (GRU) methodology uses sub-BG/ED centroids, -- 2.7 million sub-BG/ED centroids versus 300,000 BG/ED centroids.

TECHNICAL PUBLICATION SJ 87-2

DEEP MONITORING WELL NETWORK FOR THE METROPOLITAN AREA OF ORLANDO, ORANGE COUNTY, FLORIDA, AND VICINITY

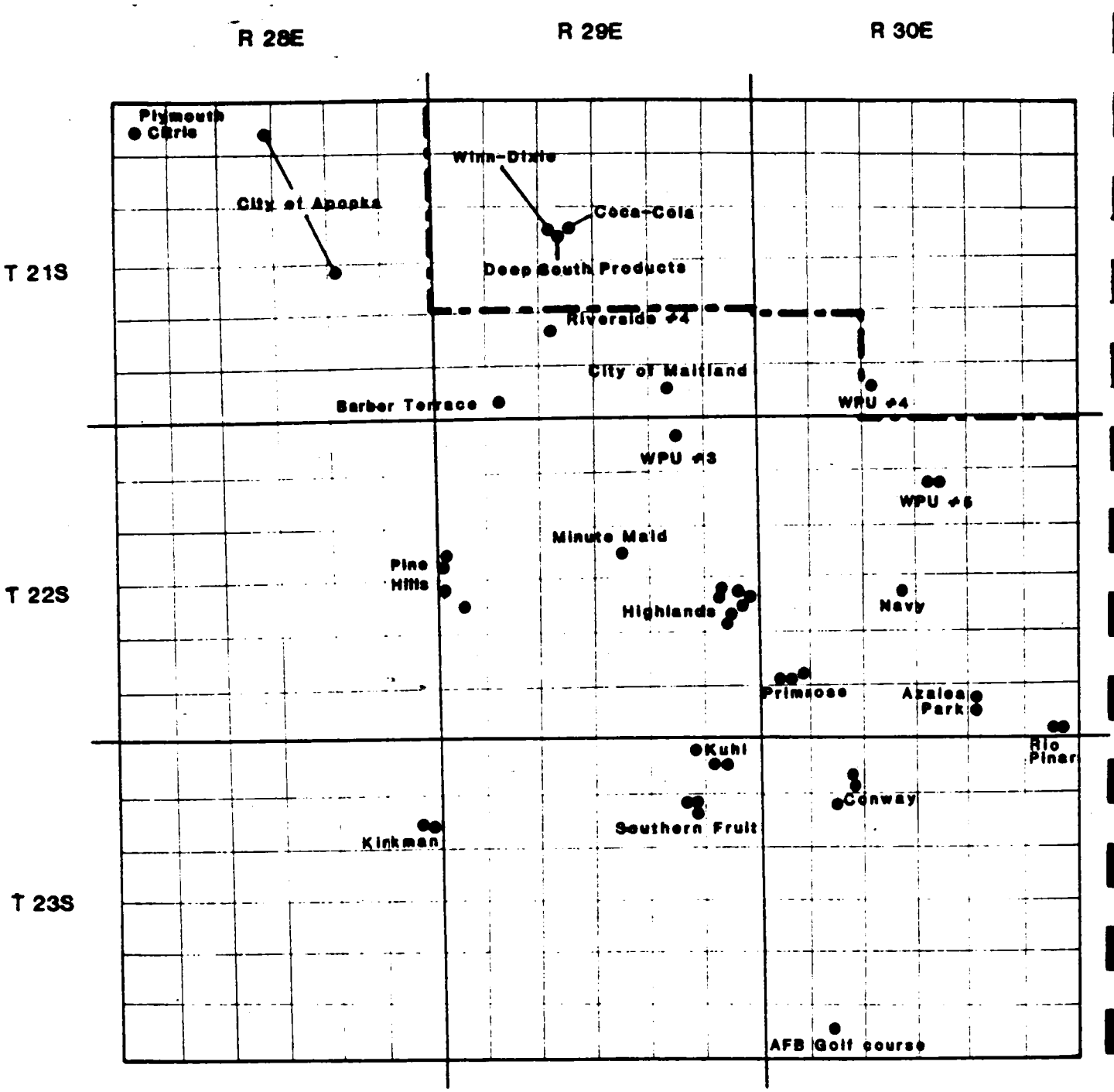
By

GEORGE P. SZELL

Department of Water Resources

St. Johns River Water Management District
Post Office Box 1429
Palatka, Florida 32078-1429

March, 1987



6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Figure 13 -- Location of significant ground water withdrawals from the lower permeable zone of the Floridan aquifer

Table 3.--Summary of Industrial and Institutional Water Users for 1983

Orange

ID#	Water Type	Facility	User Type	MGD
OR0017	GW FR	Southern Fruit Distributors	Industrial	3.0000
OR0016	GW FR	Coca Cola Co. (Plymouth Plant)	Industrial	0.1433
OR0021	GW FR	University of Central Fla.	Institution	0.5127
OR0018	GW FR	Winter Garden Citrus Products	Industrial	1.9986
OR0019	GW FR	Zellwood Farms (Ralston Plant)	Industrial	0.1005
Total				5.7551

Seminole

ID#	Water Type	Facility	User Type	MGD
SE0014	GW FR	Deep South Products	Industrial	0.5321
SE0013	GW FR	Cocoa Cola (Forest City Plant)	Industrial	3.8234
Total				4.3555

GW = ground water
FR = fresh water

users, 7.8 percent by industry, 2.6 percent by institutions, and 0.1% for thermoelectric power generation. Of the total estimated water use, about 64.0 MGD was withdrawn from the lower permeable zone in 1983. The most prominent users withdrawing ground water from the lower permeable zone in the nine township area in 1983 are as follows:

Orlando Utilities Commission	40.0459 MGD
Winter Park Utilities Dept.	10.5687 MGD
The Coca Cola Co.	3.8234 MGD
Orange Co. Dept. of Public Utilities	3.3786 MGD
City of Altamonte Springs	3.0000 MGD
Southern Fruit Distributors	3.0000 MGD
Total	63.8166 MGD

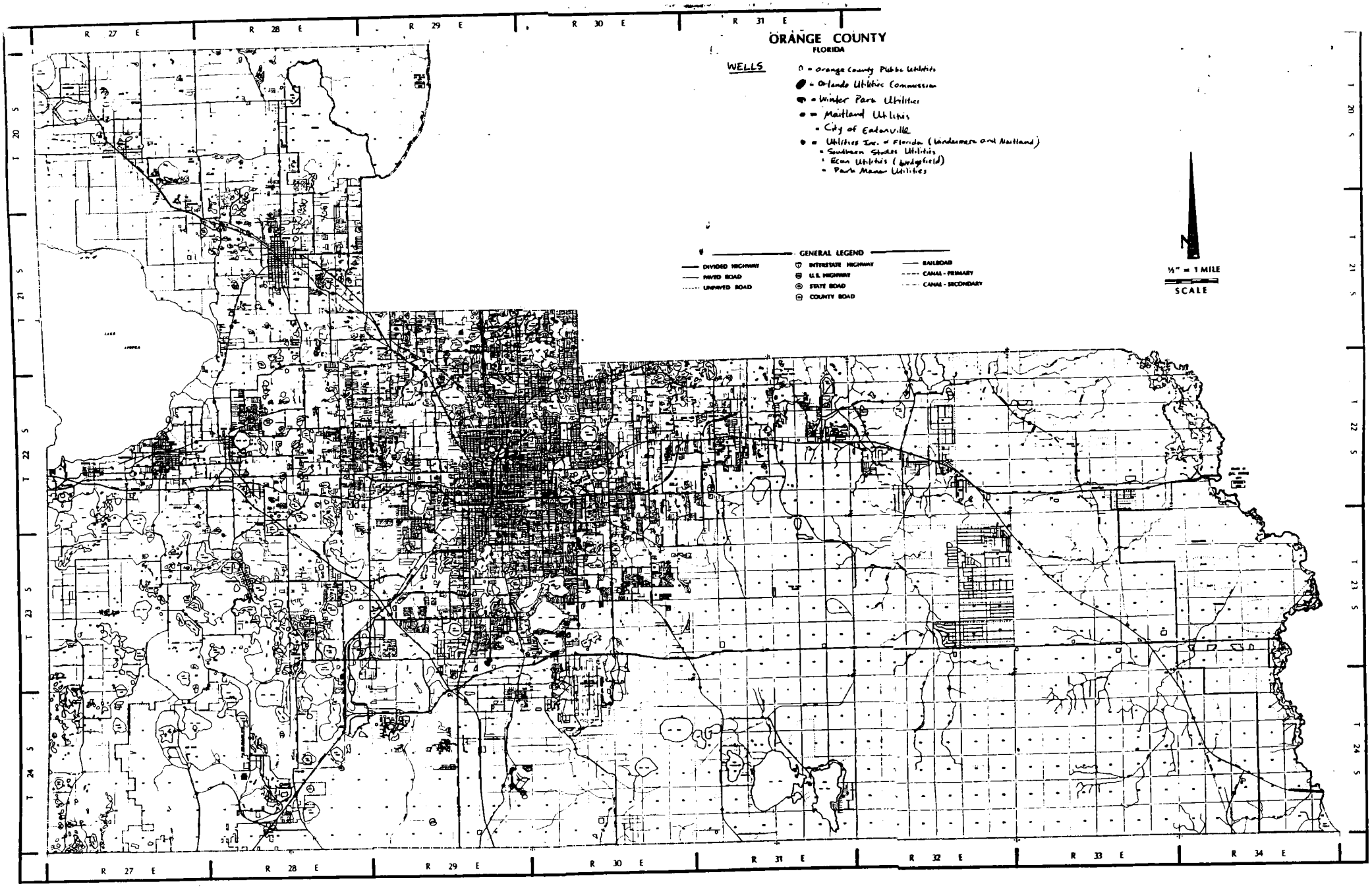
Figure 13 shows the locations of known lower permeable zone withdrawals of greater than 0.1 MGD. Figure 14 shows annual average daily withdrawals for 1984 from sites in the greater Orlando and Winter Park area on pages 29 and 30.

WATER QUALITY

USGS WRI 82-4094 (Schiner and German) describes the water quality of the upper and lower production zones as follows:

Upper Production Zone

> "The water in the upper producing zone of the Floridan aquifer is primarily a calcium and magnesium bicarbonate type. Bicarbonate generally accounts for more than 75 percent of the ions, and calcium and magnesium account for more than 85 percent of the cations. But in several supply wells, and several drainage wells, more than 25 percent of the anions consisted of sulfate plus chloride and more than 15 percent of the cations consisted of sodium plus potassium."
>
> "Water from drainage wells generally has slightly higher concentrations of most constituents than water from supply wells. Moreover, for some constituents, water from drainage wells has a marked tendency toward higher concentrations. The larger differences between the quality of water from drainage wells and supply


ORANGE COUNTY
FLORIDA
WELLS
= Orange County Public Utilities
= Orlando Utilities Commission
= Winter Park Utilities
= Maitland Utilities
= City of Eatonville
= Utilities Inc. of Florida (Windermere and Maitland)
= Southern States Utilities
= Econ Utilities (Bridgefield)
= Park Manor Utilities
GENERAL LEGEND
DIVIDED HIGHWAY
PAVED ROAD
UNPAVED ROAD
INTERSTATE HIGHWAY
U.S. HIGHWAY
STATE ROAD
COUNTY ROAD
RAILROAD
CANAL - PRIMARY
CANAL - SECONDARY
N
1/4" = 1 MILE
SCALE
R 27 E
R 28 E
R 29 E
R 30 E
R 31 E
R 32 E
R 33 E
R 34 E
T 20 S
T 21 S
T 22 S
T 23 S
T 24 S

FOR OFFICIAL USE ONLY

22 February 1994

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
2155 EAGLE DRIVE, P. O. BOX 190010
NORTH CHARLESTON, SC 29419-9010

RECEIVED
MAR 29 1995
C. PERRY

ENVIRONMENTAL IMPACT STATEMENT
FOR THE
DISPOSAL AND REUSE OF
NAVAL TRAINING CENTER, ORLANDO, FLORIDA

A/E CONTRACT N62467-93-D-0868

STATEMENT OF WORK

I. INTRODUCTION

Contractor shall prepare environmental documentation as a contract effort. All work shall be in accordance with this Statement of Work; the National Environmental Policy Act (NEPA) of 1969; Council on Environmental Quality (CEQ) regulations; OPNAVINST 5090.1A; and the Guide for Architect-Engineer Firms Performing Services for the Southern Division, Naval Facilities Engineering Command.

The Commanding Officer, SOUTHNAVFACENGCOM, is designated as the Officer-in-Charge (OIC). The OIC will designate a representative to administer the contract who will be the Contracting Officer. The Contractor shall perform such services as described in the Statement of Work and shall receive direction only from the Contracting Officer. No other person or agency is authorized to direct work under this contract or to affect planning or engineering decisions or evaluations except as approved by the Contracting Officer, unless otherwise directed by the OIC in writing.

II. PROJECT DESCRIPTION

A. Background

The Base Closure and Realignment Commission (BRAC) has recommended the closure of Naval Training Center, Orlando and its remote sites. This is a major federal action requiring environmental documentation in accordance with requirements of NEPA. As shown in Attachment I to this Statement of Work, minor modifications to the NEPA requirements have been made for these BRAC actions.

The closure of NTC Orlando will result in all Navy functions and personnel leaving the Base. This will provide the opportunity, most likely by the local community, for reuse of the remaining assets.

The Orlando REUSE Committee will contract with various consultants to develop a strategic reuse plan for Naval Training Center. It is envisioned that the reuse plan adopted by the Orlando Reuse committee will be the preferred alternative addressed in this Environmental Impact Statement. In as much as a large amount of the data required by the Contractor and the Reuse consultants will be the same, close coordination between these firms will be required.

B. Objective

The objective of this study is the collection, analysis, and portrayal of data in sufficient depth to allow an unbiased comparison of various alternatives for proposed Navy actions. The resultant study to be completed under this contract shall be of sufficient quality (and quantity) to warrant approval by the U. S. Environmental Protection Agency (EPA) and assure that all primary and secondary adverse environmental effects that may result from the proposed action have been identified and discussed.

C. Work Description

This contract provides for the preparation of one Environmental Impact Statement (EIS) as identified in Attachment II.

D. Coordination with REUSE Committee

The Contractor will fully interact with Planning/Architecture/Engineering/Economic consultants contracted to develop reuse plans for the Naval Training Center. The Contractor will meet with the prime reuse consultant on at least a monthly schedule during development of the Draft Environmental Impact Statement (DEIS) (1st submittal) for the express purpose of exchanging data and coordination of schedules.

E. General Procedures and Guidance.

1. Meetings and Submission Schedule

The description of meeting/submission milestones is noted in Section IV and the contract schedule is noted in Section . Changes may be made by the Government at any time. Any schedule changes desired by the Contractor, shall be submitted in writing to SOUTHNAVFACENGCOM for review and approval. The Contractor will then update and forward the revised schedule. The intent is to develop a firm schedule and only allow extensions with sufficient justification, after approval by the Contracting Officer. In this regard, the Contractor's responsibility is the actual time to prepare the documents/submissions; the Government's responsibility is the review and comment period.

The proposed Schedule requires the DEIS (1st submittal) 150 days after contract award. This assumes that an approved REUSE PLAN has been provided to the Contractor at least 30 days before the DEIS (1st submittal). If an approved reuse plan is not available, the remaining portion of the EIS schedule will be delayed until the approved reuse plan has been available to the Contractor for at least 30 days. If the reuse plan is not available within 6 months from date indicated in the Schedule, the government may identify reuse alternatives to be addressed in the EIS.

All meetings, including conferences and telephone conversations, which have an impact on this contract, shall be recorded in writing by the Contractor and one copy of the record sent to the Contracting Officer within seven days.

2. Security

The public scoping hearing, DEIS, public hearing presentation, and the Final Environmental Impact Statement (FEIS) shall not contain any classified information. All information, data, and reports generated under this contract will be considered Navy property and shall not be disseminated, either verbally or written, without written approval by the Contracting Officer.

III. CONTRACT REQUIREMENTS

A. Public Scoping Hearing

An appropriate visual presentation and text pertaining to the proposed action shall be prepared. Text shall include a logical assessment of the proposed action. The visual presentation shall consist of color slides which shall present a display of pertinent information and conclusions necessary for reinforcing the verbal presentation of the text. The visual presentation and text shall be suitable for presenting to small or large groups.
Specific requirements for the development of the public hearing presentation are listed in Attachment II.

B. Draft Environmental Impact Statement

This task requires conducting environmental impact studies and the subsequent preparation of a DEIS.

The DEIS shall provide a detailed description of the disposal action and environmentally assess all aspects of various alternatives.

The Contractor's role in the scoping process shall include, in addition to the public scoping hearing described above; preparation of all notices and announcements described in Section V; placement of notices and announcements in local newspaper; development of a list of agencies and groups who should receive copies of all notices and announcements; distribution of notices and announcements as directed by the Contracting Officer; and meetings with appropriate federal, state and local regulatory and elected officials.

All environmental studies and the preparation of the DEIS shall be planned and implemented to minimize duplication of efforts during all aspects of the project. Existing literature shall be used to establish environmental baseline when available.

The Contractor shall develop the DEIS in accordance with the CEQ Regulations (40 CFR 1500 Series), and OPNAVINST 5090.1A which implements, within the Department of the Navy, the requirements set forth by NEPA.

Specific work identification and contract requirements describing minimum information to be included in the DEIS are listed in Attachment II.

C. Public Hearing Presentation

An appropriate visual presentation and text pertaining to the proposed action shall be prepared. Text shall succinctly summarize the contents of the DEIS presenting a logical assessment of the proposed action. The visual presentation shall consist of color slides which shall present a display of pertinent information and conclusions necessary for reinforcing the verbal presentation of the text. The visual presentation and text shall be suitable for presenting to small or large groups.

Specific requirements for the development of the public hearing presentation are listed in Attachment II.

D. Final Environmental Impact Statement.

The Consultant shall prepare a Final Environmental Impact Statement (FEIS). The FEIS shall adequately address all comments received during the public comment period.

Specific requirements for the preparation of the FEIS are included in Attachment II.

E. Printing and Distribution

The Consultant shall be responsible for printing and distribution of the DEIS and FEIS in accordance with Section V, Schedule.

Specific requirements for the printing and distribution are listed in Section IV and Attachment II.

IV. MEETINGS/SUBMISSIONS

A. Meetings

1. Progress Meetings

Progress meetings shall be held in accordance with the schedule listed in Section V to review progress on the various tasks to be completed under this contact and to provide forums for discussions and information exchange. Formal presentations by the Contractor at these progress meetings are not required.

2. Review Meetings

Review meetings shall be held in accordance with the schedule noted on Section V. The purpose of these meetings will be to review the Contractors planned presentations for the public hearings and also to review Government comments on the DEIS (1st submittal) and the FEIS (1st submittal).

3. Coordination Meetings

Coordination meetings shall be held in accordance with the schedule noted in Section V. These meetings are intended to keep the Contractor, local transition/closure personnel, and the local REUSE personnel appraised of progress, potential problems, and to serve as a forum for the exchange of the latest information regarding the closure and disposal of NTC Orlando.

B. Submissions

1. Progress Meeting Status Report

Meeting minutes of each progress meeting shall be prepared by the Contractor and submitted to the Contracting Officer within one week following each meeting. The format of the report is left to the discretion of the Contractor, however, each report shall include the following, as a minimum:

- Percent complete on various tasks
- Problems to be resolved/additional Navy input requested/desired
- Agencies contacted
- Consultant's perception of community/public reaction to proposed action
- Other points of interest/concern, etc.

Copies of the reports shall be mailed to Navy representatives as directed by the Contracting Officer.

2. Public Scoping Hearing Presentation

The Contractor shall prepare and submit to the Contracting Officer a draft text including sketches of proposed slides of the public scoping hearing presentation. The Contracting Officer will coordinate a Navy review of the proposed presentation and provide comments. Final text and one set of slides shall be delivered to the Contracting Officer in accordance with a negotiated schedule.

3. DEIS (1st and 2nd Submission)

Fifty (50) copies of the DEIS (1st submittal) and 5 copies of the DEIS (2nd submittal) shall be submitted by the Contractor in accordance with the schedule in Section V. The Contractor shall distribute the copies as directed by the Contracting Officer. Government review comments shall be coordinated by the Contracting Officer and returned to the Contractor in accordance with the schedule.

4. DEIS (Final Submittal)

Two hundred and fifty (200) offset printed copies of the DEIS (final submittal) shall be submitted by the Contractor in accordance with the schedule in Section V. The Contractor shall distribute the 200 copies for public review as directed by the Contracting Officer.

5. Public Hearing Presentation

The Contractor shall prepare and submit to the Contracting Officer a draft text including sketches of proposed slides of the public hearing presentation. The Contracting Officer will review the proposed public hearing presentation and provide comments. Final text and one set of slides shall be delivered to the Contracting Officer in accordance with a negotiated schedule.

6. FEIS (1st and 2nd Submission)

Fifty (50) copies of the draft FEIS (first submission) and five (5) copies oft he DEIS (2nd submittal) shall be submitted in accordance with the schedule in Section V. The Contractor shall distribute the copies as directed by the Contracting Officer. Government comments shall

be coordinated by the Contracting Officer and returned to the Contractor as noted in the schedule in Section V.

7. FEIS (Final Submittal)

Two hundred (200) copies of the FEIS (final submittal) (incorporating all Government and public comments), offset printed copies, shall be submitted by the Contractor in accordance with the schedule in Section V. The Contractor shall distribute the 150 copies for public review as directed by the Contracting Officer.

V. SCHEDULE

These dates are subject to change at the discretion of the government and concurrence of the Contractor. For instance, the schedule of events following the DEIS comment period could be compressed if only minor comments are received.

EVENT	DAYS FROM CONTRACT AWARD
Contract Award/Notice to Proceed	000
Kickoff Meeting @ Activity	005
Notice of Intent (Published by OP-44E) Includes A/E mailing to federal, state, and local parties, and placement in local newspaper.	015
Notice of Public Scoping Hearing Includes A/E mailing to federal, state, and local parties, and placement in local newspaper	015
Public Scoping Hearing *	030
Coordination Meeting #1 @ Orlando**	040
Progress Meeting #1 @ SOUTHDIV	050
Coordination Meeting #2 @ Orlando**	065
Progress Meeting #2 @ Activity	080

Progress Meeting #3 @ Activity. 120
(REUSE Plan provided to A/E)

DEIS (1st Submittal) to SOUTHDIV and other addressees *** 150

DEIS (1st Submittal) Review Meeting @ Activity. 170
(Government Draft DEIS comments to A/E)

DEIS (2nd Submittal) to SOUTHDIV. 185

DEIS (Final Submittal) Distributed. 190
Includes A/E mailing to federal, state,
and local parties, and hand delivery to
CNO 44E

CNO N44E Forwards DEIS to ASN(I&E) for. 200
Approval for Filing with EPA

EPA Publishes Notice of Availability of DEIS. 210
(Initiates 45 day minimum public review
period) Includes A/E mailing to federal,
state, and local parties, and placement in
local newspaper

Notice of Public Hearing. 210
(At least 15 days prior to hearing)
Includes A/E mailing to federal, state,
and local parties, and placement in
local newspaper

Public Hearing Review Meeting @ SOUTHDIV 230

Public Hearing @ Activity. 240

Public Comment Period Closes. 255

Progress Meeting #4 @ Activity. 265

Coordination Meeting #3 @ Orlando 275

FEIS (1st Submittal) to SOUTHDIV and Other Navy Commands. 295

FEIS (1st Submittal) Review Meeting @ Activity. 320
(Government Draft FEIS comments to A/E)

FEIS (2nd Submittal) to SOUTHDIV. 340

FEIS (Final Submittal) Distributed. 345
Includes A/E mailing to federal, state,
and local parties, and delivery to CNO N44E

CNO N44E Coordinates with ASN(I&E) and Files FEIS with EPA. 355

EPA Publishes Notice of Availability of FEIS. 365
(Initiates 30 day public review period)
Includes A/E mailing to federal, state,
and local parties

Public Comment Period Ends. 395

Record Of Decision

* Exact date of Public Scoping Meeting is dependent upon NOI publication and other events as directed by the Contracting Officer.

** Exact date of Coordination Meetings will be dependent upon community, Navy, or Contractor necessity.

*** The DEIS (1st Submittal) schedule is dependent upon at least 30 day advanced availability of approved Reuse Plan.

To ensure a complete understanding of the Statement of Work and schedule, the Consultant shall provide a detailed project milestone schedule and flow diagram to the Contracting Officer for approval at the kickoff meeting (5 copies).

ATTACHMENT I

CONTRACT NO. N62467-93-D-0868

ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL AND REUSE OF THE NAVAL TRAINING CENTER, ORLANDO, FLORIDA

I. BACKGROUND

The Secretary of Defense Commission on BRAC was chartered on May 3, 1988, to recommend military installations within the United States, its commonwealths, territories, and possessions for realignment and closure. Subsequently, the Base Closure and Realignment Act endorsed the Secretary's Commission and required the Secretary of Defense to implement its recommendations unless he rejected them in their entirety or the Congress passed (and the President signed) a Joint Resolution disapproving the Commission's recommendations.

On June 28, 1993, the Commission recommended the realignment or closure of 76 military installations. Included in the Commission's recommendations was the closure of the Naval Training Center Orlando.

The Base Closure and Realignment Act requires the implementing actions to conform to the provisions of the National Environmental Policy Act as propagated by the President's CEQ regulations. However the Act modified some of the NEPA requirements to the extent that the environmental analysis need not consider the following:

(i) the need for closing or realigning a military installation selected for closure or realignment;

(ii) the need for transferring functions to another military installation which has been selected as the receiving installation; or

(iii) alternative military installations to those selected.

II. OBJECTIVES

The primary objective of this effort is the collection, analysis and portrayal of data in sufficient depth to describe the existing assets and liabilities of Naval Training Center Orlando, disposal alternatives, and impacts to the environment associated with various reuse alternatives, including the "No Action Alternative". The resultant EIS to be completed under this contract shall be of sufficient quality (and quantity) to warrant approval by the U.S. Environmental Protection Agency and assure all primary and secondary adverse environmental

effects that may result from the disposal and reuse of the Naval Base and its associated properties have been identified and fully discussed.

A copy of the current Master Plan for Naval Training Center, Orlando, dated 26 February 1986, will be provided to the Contractor by the Navy. The Contractor will use this information to develop an inventory of current facility assets at the Naval Training Center. The Contractor shall update and verify the accuracy of any information taken from the Master Plan through discussions with activity and other appropriate personnel and other documents available to the Contractor.

An Intensive Cultural Resources Survey identifying structures and archeological sites eligible and potentially eligible for listing on the register of historic places will be developed as a part of the EIS effort. The Contractor shall also assist the Navy in the full coordination of the National Historic Preservation Act, Section 106 process as it pertains to the disposal and reuse of Naval Training Center Orlando.

It is not anticipated that any Clean Water Act, Section 404 permits will be required for the proposed disposal and reuse of Naval Training Center, Orlando. The Navy will provide a Wetlands Inventory Map of the various NTC sites to the Contractor. The Contractor will be required to provide cursory field verification of these wetlands and of the wetlands on the discontinuous properties, for inclusion into the EIS.

An Endangered and Threatened Plant Species Survey has been completed for the NTC Annex and will be provided to the Contractor. An endangered and threatened animal species survey has been completed for the Annex also. A limited amount of field verification regarding species of interest will be required at the other NTC sites. The Contractor shall coordinate proposed reuse alternatives with federal and state wildlife agencies in accordance with requirements of the Endangered Species Act.

An inventory of environmental liabilities will be provided to the Contractor by the Navy, although gathering this data will be the Contractor's responsibility. This inventory is not currently complete but will be developed in phases during the time that the Contractor is completing the EIS. The Contractor will be responsible for reviewing these reports, studies, papers, conducting interviews with SOUTHDIV, activity and agency personnel, etc., and incorporating this information, as it becomes available, into the EIS and addressing its impact on the disposal and reuse of Training Center. The EIS is to clearly describe, with location maps, all types of liabilities including areas of contamination, under ground storage tanks, spills, as Reuses material, lead paints, PCB transformers, etc. The extent of contamination, areas of impact, cleanup schedule, short and long term monitoring requirements, etc. should be clearly documented.

The EIS shall include an analysis of all reasonable alternatives for disposal of Naval Training Center, Orlando, Florida. Alternatives shall include but not be limited to: sale to a state or local government; transfer to another federal agency; sale to a private sector firm; and transfer

or sale to a homeless provider /or drug rehabilitation center through the McKinney Act process. The "No Action Alternative" will be placement of Naval Training Center, Orlando into a caretaker status.

The EIS shall include an analysis of all viable alternatives for reuse of the Naval Training Center. The proposed alternatives for reuse will come from the reuse committee representing the local community, and the final resolutions of the Federal Screening Process.

III. SITES

The Naval Complex Orlando is comprised of the NTC and its three remote sites: Area "C", Herndon Annex, and the NTC Annex. In addition, the Naval Hospital which is located on the NTC proper, is part of the plant account for he NTC.

The following is a description of each site:

The Naval Training Center is located four miles from the Orlando Central Business District and occupies 1,093.21 acres. This acreage includes the Naval Hospital and 254 acres of unusable land contained in the four lakes at NTC.

The mission of NTC is to exercise command over and coordinate the efforts of assigned subordinate commands and activities in effecting basic indoctrination for enlisted personnel. NTC also provides initial skill, advanced or other specialized training for officer and enlisted personnel of the Navy and the Naval Reserve, and supports other activities as directed by higher authority.

NTC includes three remote sites. The description and functions of these sites are as follows:

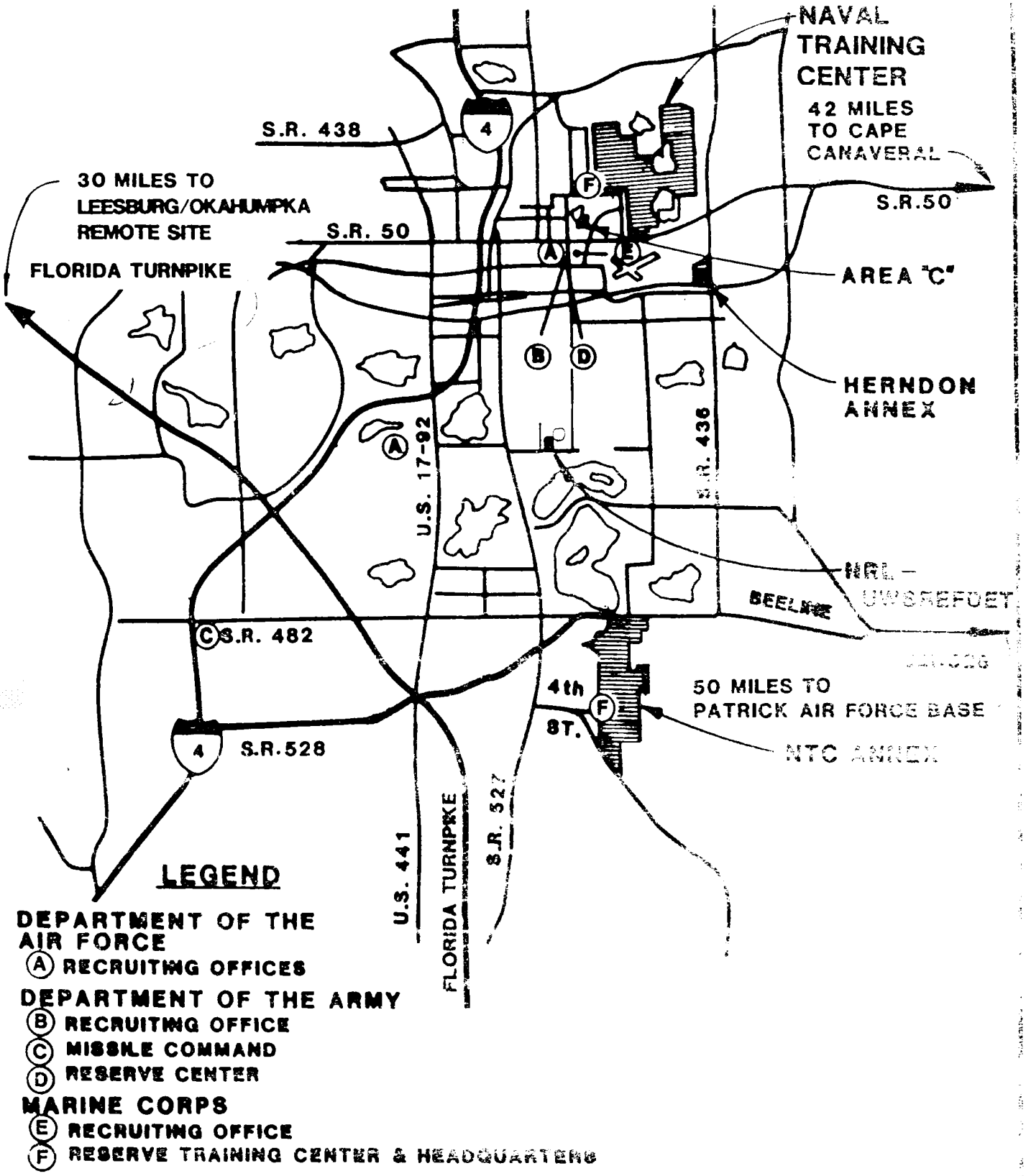
Area "C" is located two miles west of NTC and occupies 45.8 acres with 4.6 acres of unusable land in Lake Druid. Its primary function is that of a supply complex, although the Defense property Disposal Office and the laundry and dry cleaning facility for NTC are also located there.

Herndon Annex is located five miles south of NTC adjacent to the city of Orlando-owned Herndon Airport and occupies 54.02 acres of land. facilities which support the mission of NAVTRASYSCEN, such as the technical services lab and research lab, are located at this Annex.

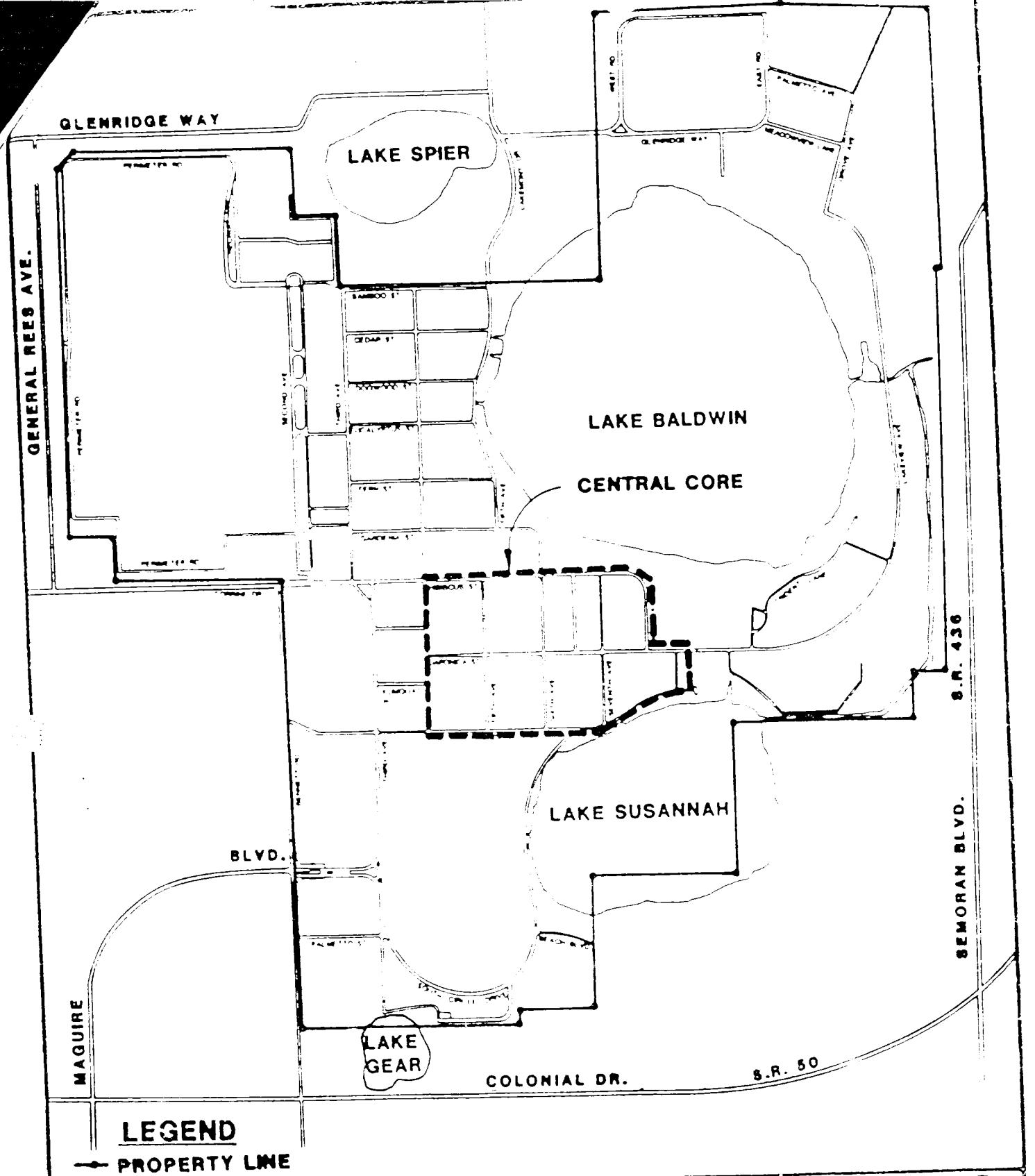
The NTC Annex is primarily a family housing and community support area for NTC. This Annex occupies 826.22 acres of land twelve miles south of NTC and is located adjacent to the Orlando International Airport.

The Naval Hospital is located in the northeast corner of NTC and has 102.7 acres of the NTC real estate set aside for the Naval Hospital and its expansion. A portion of this acreage is located in Lake Baldwin.

Approximate Locations of NTC and its remote sites are illustrated by the following sheets.



MASTER PLAN **NAVAL COMPLEX** **ORLANDO, FLORIDA**	**DEPARTMENT OF DEFENSE OFFICES-ORLANDO**	NOT TO SCALE **FIGURE 7**



750 0 750 1500

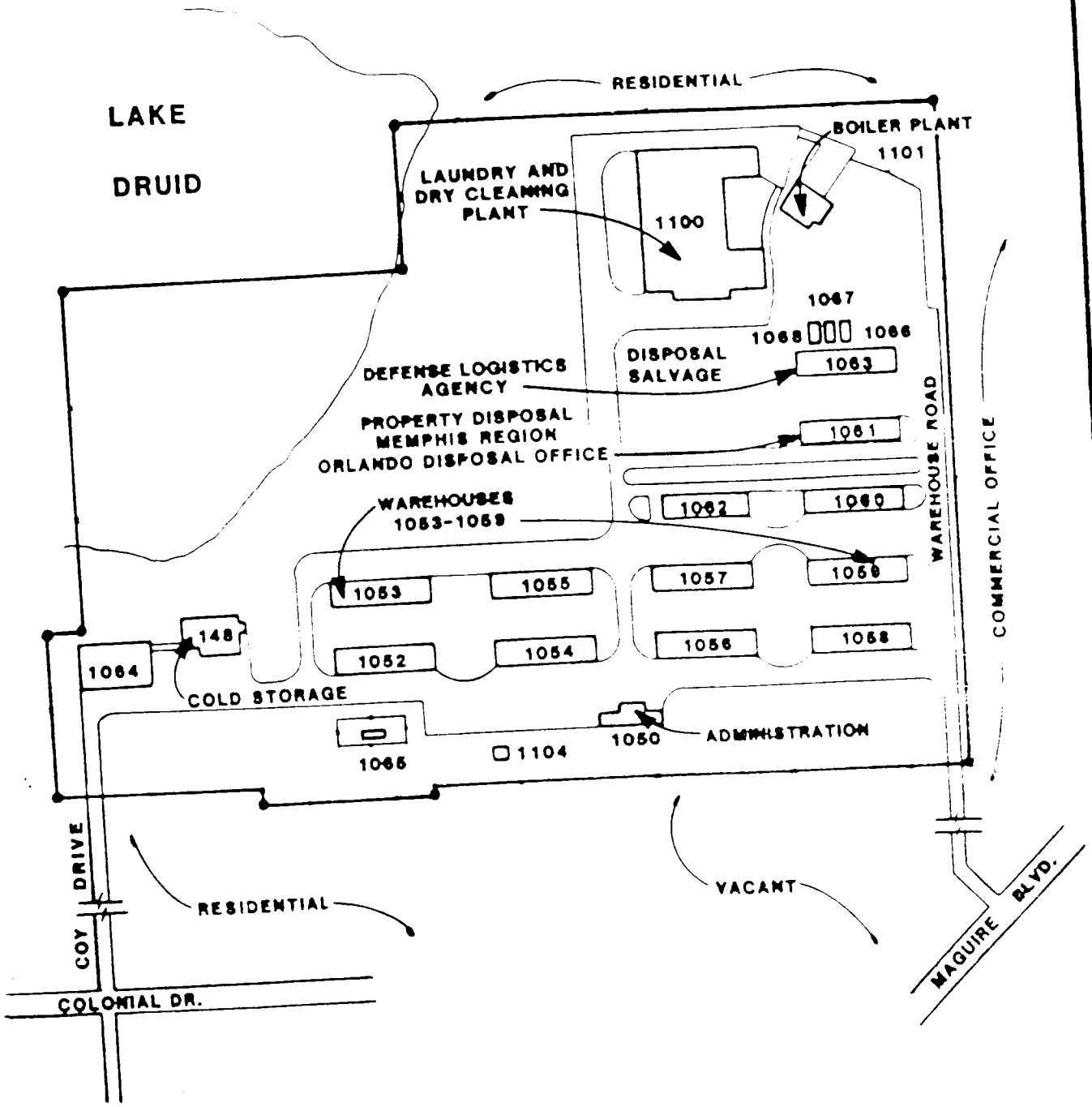
SCALE IN FEET

MASTER PLAN
NAVAL COMPLEX
ORLANDO, FLORIDA

NAVAL TRAINING CENTER

LOCATION MAP

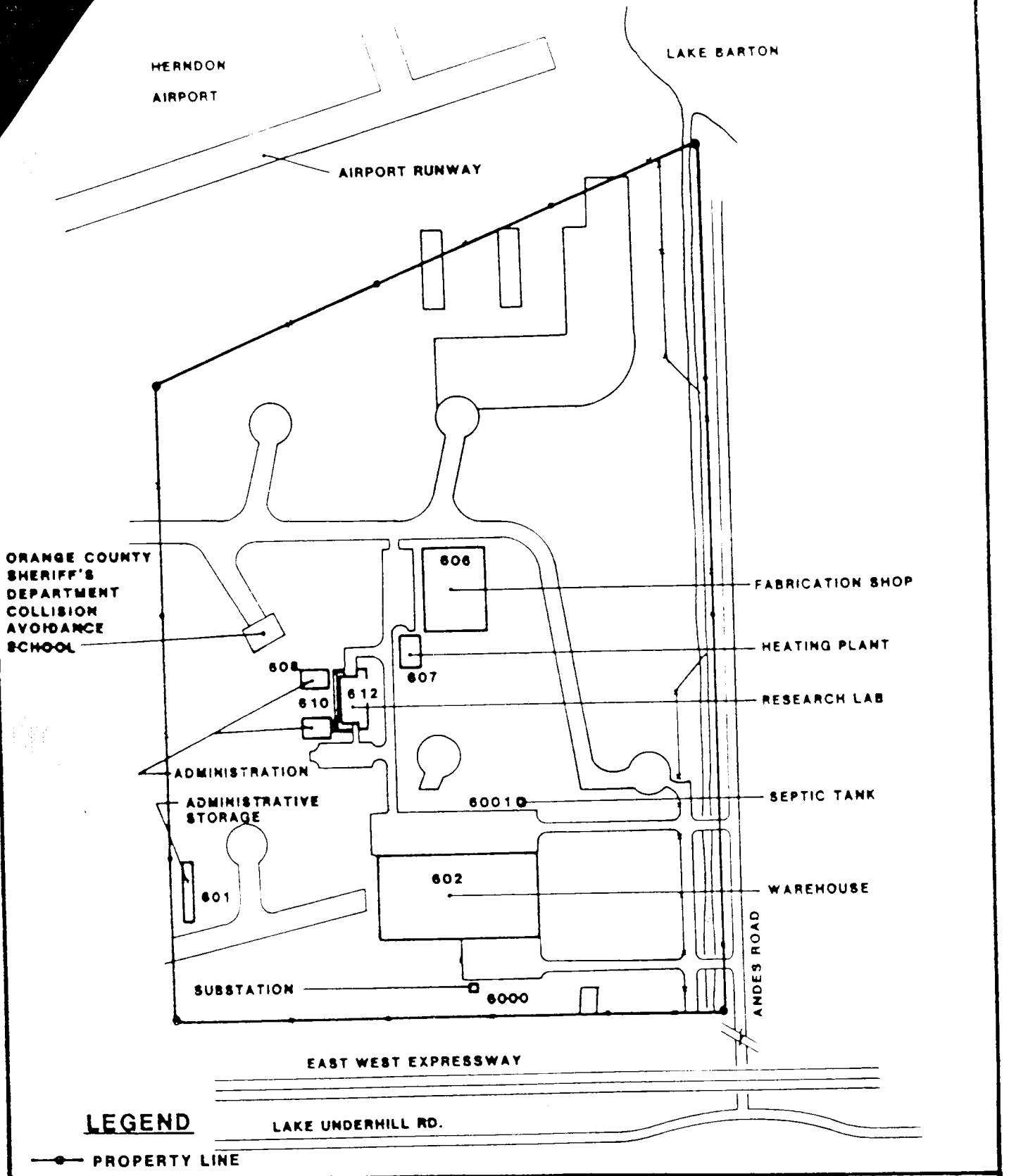
FIGURE 8



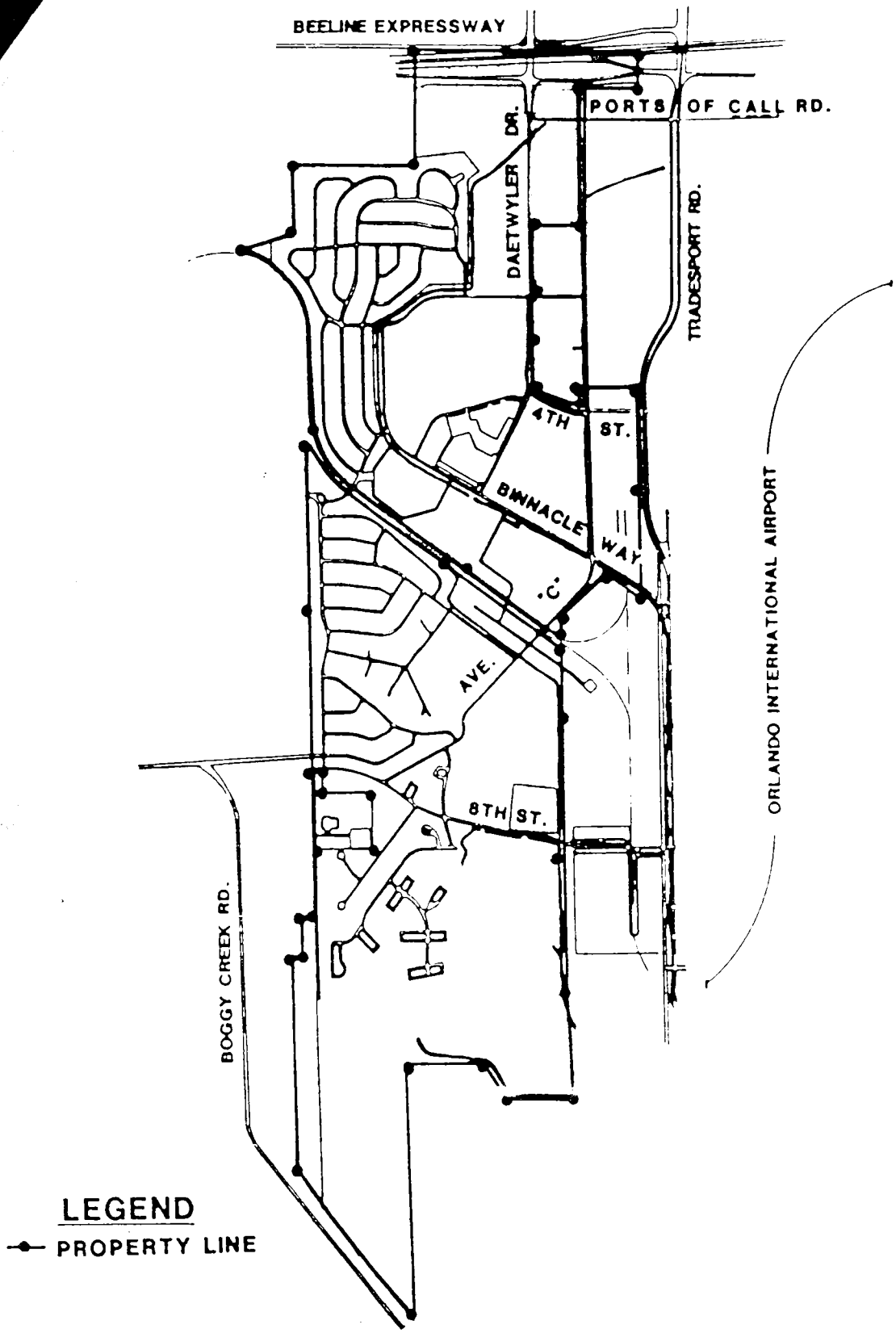
LEGEND

PROPERTY LINE

MASTER PLAN **NAVAL COMPLEX** **ORLANDO, FLORIDA**	**AREA "C"** **LOCATION MAP**	75 0 175 350 SCALE IN FEET **FIGURE 9**



MASTER PLAN NAVAL COMPLEX ORLANDO, FLORIDA	HERNDON ANNEX LOCATION MAP	175 0 175 350 SCALE IN FEET FIGURE 10



MASTER PLAN AVAL COMPLEX ORLANDO, FLORIDA	NAVAL TRAINING CENTER ANNEX LOCATION MAP	1000 0 1000 2000 SCALE IN FEET FIGURE 1

ATTACHMENT II

CONTRACT NO, N62467-93-D-0868

ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL AND REUSE OF NAVAL TRAINING CENTER, ORLANDO, FLORIDA

I. PUBLIC SCOPING HEARING PRESENTATION

A. The Contractor shall prepare a public scoping presentation consisting of written text and accompanying graphics (slides) to adequately portray the intent of the EIS process.

B. The presentation shall be comprehensive in nature but should not exceed 45 minutes in length. The text shall be tailored to the following major topics:

- What the Navy proposes to do.
- Interaction with the Orlando REUSE Committee
- Why the Navy is proposing this action.
- What environments are affected.
- Disposal process.
- Possible alternatives.
- Information on NEPA procedures (comments).
- NHPA Section 106 process.

C. In accordance with the negotiated schedule, the Contractor shall prepare a preliminary draft of the public hearing text with either sketches or slides. The text (narrative) shall be written such that it can be read verbatim at the public hearing or other presentations.

D. Upon direction from the Contracting Officer, the Contractor shall prepare final narrative and slides. One set of slides and final narrative shall be delivered to the Contracting Officer.

E. The Contractor shall be required to coordinate and attend the public scoping hearing presentation. The Contractor's role at the public scoping hearing shall be to respond to questions/comments received from the audience. The Contractor shall be responsible for arranging the public scoping hearing presentation (location, time, verbatim stenographer, tables, microphones, other equipment, etc.) and providing and making distribution of Hearing Notices to interested parties as directed by the Contracting Officer. The Contractor shall be prepared to deliver the presentation if required. The Contractor shall arrange for a court stenographer to be present at the hearing to record testimony of all speakers.

F. The notices of the scoping hearing and the hearing presentation shall satisfy the scoping requirements of the NHPA Section 106 Process.

II. DEIS

The Contractor shall develop the DEIS in accordance with the requirements and objectives of the CEQ Regulations (40 CFR 1500-1508). The format and organization of the DEIS shall be as described in OPNAVINST 5090.1A with the following minimum inclusions:

A. Cover sheet shall contain the Title of the Document, Data, Responsible Agency, any Cooperating Agencies, and Point of Contact.

B. Summary

C. Purpose and Need

1. Project Need
2. Strategic Considerations
3. Budgetary Considerations
4. Proposed Action
   - Description
   - Schedule
   - Potential Development

5. Permitting by COE, EPA and state regulatory agencies

D. Analysis of Alternatives Including the Proposed Action

1. Site Description
2. Comparison of Environmental Impacts (Socioeconomic, Physical and Biological Systems, etc.)
3. Comparison of Costs
4. Comparison of Schedules

E. Existing Environment

A description of the existing environment, including a summary of technical data, maps and diagrams where relevant, adequate to permit an assessment of impacted areas or areas of potential impact. This section shall include a detailed description of existing on-base assets (facilities, historic resources, etc.) and liabilities (contaminated sites, utilities, etc.). This section shall also include detailed description of surrounding environmental and socioeconomic conditions as well as conditions of the adjacent (regional) area potentially affected by the

proposed alternatives. Other Federal activities within the impact area, if any, shall be thoroughly described.

As a minimum, the following specific topics shall be addressed in this section:

1. Physical Systems

- Earth Resources (Topography, Soils, Geology)
- Air Resources (Climatology, Air Quality, Air Pollution Sources)
- Noise
- Water Resources (Ground water, Surface Fresh Water,
- Estuarine and Marine Waters, Oceanography, Wetlands)
- Facilities
- Historical and Archeological Resources

2. Biological Systems, including Endangered and Threatened Fauna and Flora

- Terrestrial Systems
- Aquatic Systems

3. Socioeconomic Systems

- Delineation of the Existing Region
- Community and Cultural Characteristics
- History
- Demographics
- Income
- Employment
- Economic Activity
- Housing
- Public Utilities
- Transportation
- Land Use
- Aesthetics
- Government and Regulatory Agencies
- Community Services (Education, Health Care, Recreation, Fire Protection, Criminal Justice, etc.)

F. Environmental Consequences

1. Direct effects and their significance.

2. Indirect effects and their significance.

3. Possible conflicts between the proposed action and the objectives of Federal, Regional, State and Local land use plans, policies and controls for the area concerned.

A discussion shall be provided showing how the proposed action may conform or conflict with the objectives and specific terms of approved or proposed federal, state, regional and local land use plans, policies and controls including, but not limited to, the following:

- Historical and Archeological Sites
- Zoning Restrictions and Requirements
- Wetlands, Clean Water and Clean Air Acts
- Coastal Zone Management
- Other plans, policies or conflicts as they may apply

Specific input of local/regional planning, conservation and special interest groups shall be sought for inclusion in this section.

4. The environmental effects of the alternatives including the proposed action.

5. Energy requirements and conservation potential of the various alternatives.

6. Any irreversible and irretrievable commitments of resources that would be involved in the proposed action if implemented.

7. Relationship between local short-term use of man's environment and maintenance and enhancement of long-term productivity.

8. Urban quality, historic and cultural resources and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.

9. Means to mitigate adverse environmental impacts.

10. Any probable adverse environmental effects which cannot be avoided should the proposal be implemented.

11. Cumulative impacts to the region.

G. List of Preparers

H. Appendix

I. Other Considerations

The following items shall be integrated into the environmental documentation as appropriate:

1. Historical, Cultural and Archeological

The Contractor shall, as identified in Attachment III, conduct archival research, an intensive architectural survey and a reconnaissance archeological survey. This work shall be conducted in accordance with the Department of the Interior's guidelines entitled "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines". The work shall be completed by personnel who meet the "Secretary of the Interior's Professional Qualification Standards". The objective of this effort is to discover all cultural resources and evaluate the discovered sites and properties for National Register of Historic Places eligibility, and provide recommendations for evaluative testing of selected sites should additional information be needed. the Contractor shall also assist the Navy in its consultation with the State Historic Preservation Officer, and the Advisory Council on Historic Preservation if necessary, by providing any documentation required to substantiate conclusions that are made. The Contractor shall submit the results of the above research and surveys in accordance with the schedule in Section V, and also incorporate the information into the EIS. This EIS will serve as technical support for the National Historic Preservation Act Section 106 consultation process.

2. The Endangered Species Act

The Endangered Species Act requires that any action authorized by a federal agency is not likely to jeopardize he continued existence of an endangered or threaten species or results in the destruction or adverse modification of habitat of such species which is determined to be critical.

Section 7 of the Endangered Species Act of 1973, as amended, requires the responsible federal agency to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service concerning endangered and threatened species under their jurisdiction. The Contractor shall, in coordination with the contract Contracting Officer, initiate and fully coordinate this Section 7 consultation process. The DEIS shall serve as the Section 7 Biological Assessment as required.

3. State Implementation Plan Conformity

The Clean Air Act, as amended, provides for protection and enhancement of the nation's air resources. In those instances where ambient air standards are not in compliance with established EPA requirements, the states have developed State Implementation Plans (SIP) in order to achieve compliance. The DEIS shall serve to show that the proposed Navy action will be in "Conformance with the SIP".

4. Coastal Zone Management

The Coastal Zone Management Act of 1972, as amended, provides for preservation, protection, development, and, where feasible, restoration or enhancement of the resources of the nation's coastal zone. The Navy is obligated to ensure that it's activities directly affecting or conducted in the coastal zone will be carried out in a manner which is, to the maximum extent practicable, consistent with approved CZM programs. The DEIS shall serve as that "consistency determination".

III. PUBLIC HEARING PRESENTATION

A. The Contractor shall prepare a public hearing presentation consisting of written text and accompanying graphics (slides) to adequately portray the findings of the DEIS.

B. The presentation shall be comprehensive in nature but the length of the presentation should not exceed 45 minutes. The text shall be tailored to the following major topics:

- What the Navy proposes to do.
- Specific actions proposed.
- Reuse Alternatives
- What environments are affected.
- How the proposed alternatives affect the environment.
- Comparison of the proposed action to the alternatives.
- Unavoidable adverse impacts.
- Environmental losses and productivity gains.
- Irreversible commitments of resources.
- Offsetting considerations.
- Information on EIS procedures (comments).

C. In accordance with the negotiated schedule, the Contractor shall prepare a preliminary draft of the public hearing text with either sketches or slides. The text (narrative) shall be written such that it can be read verbatim at the public hearing or other presentations.

D. Upon direction from the Contracting Officer, the Contractor shall prepare final narrative and slides. One set of slides and one copy of the final narrative shall be delivered to the Contracting Officer.

E. The Contractor shall be required to coordinate and attend the public hearing presentation. The Contractor's role at the public hearing will be to respond to questions/comments received from the audience. The Contractor shall be responsible for arranging the public hearing

presentation (location, time, verbatim stenographer, tables, microphones, other equipment, etc.) and providing and making distribution of Hearing Notices to interested parties as directed by the Contracting Officer. The Contractor shall be prepared to deliver the presentation if required. The Contractor shall arrange for a court stenographer to be present at the public hearing to record testimony of all speakers.

IV. FINAL ENVIRONMENTAL IMPACT STATEMENT

A. The Consultant shall prepare the final environmental impact statement following the close of the public comment period. The FEIS shall address all comments received by mail or delivered in person at the public hearings.

B. The Consultant shall organize, in the following manner, responses/comments from:

- U.S. Senators/Representatives
- Federal Agencies
- Governors and Other State Elected Officials
- State Agencies
- Mayors and Other Local Elected Officials
- Local Agencies
- Organizations and Special Interest Groups
- Private Citizens

C. Comments shall be numbered within each group and individual statements/ questions within each comment shall be numbered; i.e., 1.1, 1.2, 1.3, etc.

D. The Contractor shall prepare responses to comments and utilize a cross-reference or referral system to avoid repeating answers for similar comments. For comments that do not require prepared answers such as statements of personal opinion, the Consultant shall provide the response "Comment is noted."

E. The Contractor shall extract comments from the testimony given at public hearings and provide responses as appropriate. A copy of the transcript (testimony) from the public hearings will <u>not</u> be a part of the FEIS.

V. PRINTING AND DISTRIBUTION OF EIS

The Contractor shall print 50 copies each of the draft DEIS and of the draft FEIS, in accordance with the schedule in Section V and distribute them as directed by the Contracting Officer. The Contractor shall submit one unbound, reproducible, camera-ready original each of the final DEIS and final FEIS in accordance with the Schedule in Section V. The Contractor shall also supply 200 copies of each of the final DEIS and the final FEIS, and

distribute them as directed by the Contracting Officer. The mailing and distribution costs are the responsibility of the Contractor.

ATTACHMENT III
PART I

INTENSIVE SURVEY
OF
HISTORIC PROPERTIES
AT NAVAL TRAINING CENTER, ORLANDO, FLORIDA

I. Project Description

The purpose of this delivery order is to conduct an intensive survey for National Register of Historic Places eligible properties at the Naval Training Center (NTC), Orlando, Florida, in accordance with Section 110 of the National Historic Preservation Act (NHPA) of 1966 (as amended) and OPNAVINST 5090.1A, Chapter 20, to identify any buildings, structures, sites, districts, or object that would meet eligibility criteria established for listing in the National Register. Inasmuch as NTC Orlando is scheduled for base closure, it is important that the facilities located on NTC Orlando not only be evaluated applying the normal "50-year rule", but that all structures be evaluated based upon any World War II, Korean War, Vietnam/Cold War significance which might be found. The final product of this work will be utilized in satisfying all NHPA Section 106 requirements for the closure, disposal and reuse of NTC, Orlando and must meet the requirements for doing so.

II. Scope of Services

The Contractor will conduct an Intensive Survey of historic properties at the NTC Orlando (including its three remote sites) and shall complete Florida Historical and Architectural Resource Forms and National Register of Historic Places (hereinafter referred to as National Register) nomination forms for any historic properties determined to meet National Register criteria for inclusion in the National Register of Historic Places. The Contractor will also take photographs depicting all significant features of the exterior, interior or site of each eligible resource. All work will be fully coordinated with the Florida State Historic Preservation Officer (SHPO), including a final report which summarizes the results of the survey. The final report will conform to the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

III. Additional Requirements

A. Definitions

1. "Preservation Officer" as used herein shall be the Historic Preservation Officer, Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina, who shall be the administrator of this contract.

2. "Contractor" as used herein shall mean the firm employed for the purpose of conducting professional historic, archeological and cultural surveys and evaluations, completion of state historical and archeological forms, photographic and narrative documentation, and nomination forms for submission to the Keeper of the National Register. The Contractor, or their selected sub-Contractor, shall meet all professional qualifications for conduct of this work as defined by the Secretary of the Interior's standards and guidelines for professional qualifications.

3. "Contracting Officer" as used herein shall be the Commanding Officer, Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina.

4. "Contract" as used herein shall mean this delivery order for the accomplishment of the work set forth herein under an existing Indefinite Delivery Order contract with Water and Air Research, Inc.

B. Government/Contractor Relationships and Responsibilities

1. Administration of the Contract: Unless otherwise directed, during the execution of this project, the Contractor shall direct all contact concerning this particular project to the Preservation Officer. All deliverables (review submittals and final documents) shall be sent or delivered to the Preservation Officer c/o Commanding Officer, Southern Division, Naval Facilities Engineering Command, 2155 Eagle Drive, North Charleston, SC 29418.

2. Consultation with NTC Orlando or Tenant Activities: During the course of the work, the Contractor shall follow such instructions as may be issued to him by the Preservation Officer. The Contractor will consult with NTC Orlando and/or Tenant activities in matters concerning existing conditions and operation requirements, however, the Contractor will be responsible directly to the Contracting Officer for ensuring that project limitations incorporated herein are not exceeded. Matters of discussion which conflict with the directions from the Preservation Officer or the Contracting Officer will be brought to the attention of the Preservation Officer immediately.

3. Field Investigations: The Contractor shall be responsible for obtaining such site data and information as may be necessary to identify and evaluate the properties at NTC Orlando in accordance with the *National Historic Preservation Act of 1966, as amended*, and *36 CFR, Part 800*, regarding their eligibility for inclusion in the National Register. In the course of obtaining such data, the Contractor shall rely entirely on his own investigations and field surveys and measurements, though archival research will be an important aspect of the work completion. Records of existing facilities and background data, will be provided by the Preservation Officer or NTC Orlando. These records are the property of the U.S. Navy and are for the Contractor's assistance only, and the Contractor shall be solely responsible for verifying the accuracy of any and all information. All field notes, transcriptions, computer diskettes, graphics, photographs, slides, negatives, maps, and other materials developed as a result of this work, including the preliminary, pre-final, and final reports are the property of

the U.S. Navy, and will be submitted to the Preservation Officer within thirty days of the conclusion of this work.

IV. Format Requirements

A. Report: The final report should be lucid and succinct with emphasis on procedures and findings. It shall conform to the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, and should satisfy all requirements for compliance with the Identification and Evaluation aspects of Section 110 of the *National Historic Preservation Act of 1966, as amended*, and its regulations. The report should be fully coordinated with the Florida SHPO, and will ultimately be utilized in the NHPA Section 106 process addressing base closure and disposal. The following, while not mandatory or all inclusive, is a recommended outline of contents:

1. Inner Title Page
2. Executive Summary and Recommendations
3. Table of Contents
4. Introduction and Methodology
5. Physical and Environmental Description
6. Historical Overview of NAS Glenview
7. Historical Context
8. Architecture and Property Types
9. Archeological Findings
10. Cultural Background
11. Results of Investigations
12. Conclusions and Management Summary
13. References Cited and/or Investigated
14. Bibliography
15. Appendices
    a. Catalog of Inventoried Properties
    b. Qualifications of Investigators
    c. Glossary
    d. Budget for Recommended Additional Work
    e. Proposed Scope of Work for Additional Work
    f. Summary of SHPO Coordination

V. Submission Requirements

A. Preliminary Concept: The Contractor shall submit to the Preservation Officer three (3) copies of an outline providing sufficient detail for determination that his concept of the project is in conformance with this Scope of Work.

B. Preliminary Submittal: Upon completion of the fieldwork, the Contractor shall submit to the Preservation Officer for review and comments the following:

3 copies of outline report

A summary of Significant Issues and Findings

C. Pre-Final Submittal: At the 98% completion stage, the Contractor shall submit to the Preservation Officer three (3) copies of the Pre-Final Report, complete with all maps, photos, graphics, and other inclusions, for review and comment.

D. Final Submittal: After incorporation of the comments resulting from the review of the Pre-Final Submittal and approval of the work, the Contractor shall furnish twelve (12) copies of the Final Report to the Preservation Officer.

VI. Schedule

A. Times for Completion: The following completion schedule applies to the project as described in this Scope of Work:

1. Planning Conference: As required.

2. Preliminary Concept Submittal: Due within seven (7) calendar days after the effective date of the delivery order. This allows two (2) days for mailing.

3. Preliminary Report Submittal: Due sixty (60) calendar days after the receipt of the Preservation Officer's comments on the Preliminary Concept Submittal.

4. Pre-Final Submittal: Due thirty (30) days after receipt of the Preservation Officer's comments on the Preliminary Report Submittal.

5. Final Submittal: Due fifteen (15) calendar days after receipt of the Preservation Officer's comments on the Pre-Final Submittal. The Final Submittal will be reviewed to ensure inclusion of the Pre-Final comments. Should errors or omissions be found, the Contractor shall make the necessary corrections and resubmit the required final documents for Navy distribution.

ATTACHMENT III
PART II

INTENSIVE SURVEY OF ARCHEOLOGICAL RESOURCES SURVEY AT NAVAL TRAINING CENTER, ORLANDO, FLORIDA

I. Introduction

Location: Naval Training Center (NTC), Orlando, Florida

Purpose: This statement of work is designed to obtain the professional services, labor, materials, and equipment necessary to complete an archeological resources survey meeting the requirements of Section 110 of the National Historic Preservation Act of 1966, as amended. This survey will be conducted on the 2025± acres at the NTC Orlando, in Orange County, Florida. The purpose of the survey is to determine what, if any, archeological resources could possible be affected by disposal and reuse of NTC Orlando. This survey will locate and evaluate to the extent possible from survey data the National Register of Historic Places eligibility of historic and prehistoric archeological sites present in the area proposed for disposal and reuse.

Authority: This program is being conducted in accordance with Public Law 91-190, the National Environmental Policy Act of 1969; Public Law 93-291, Preservation of Historic and Archeological Data, amending Public Law 96-523; and the National Historic Preservation Act of 1966, as amended by Public Law 94-43. Also applicable is OPNAVINST 5090.1 (series), Chapter 20, Historic and Archeological Resources Protection, and 36 CFR 800, Protection of Historic Properties.

II. General

Southern Division (SOUTHDIV), Naval Facilities Engineering Command, proposes to assist in the disposal and reuse of the NTC Orlando. The Navy acquired the NTC property, including area "C" and Herndon Annex from the Air Force in 1968. Upon the closure of McCoy AFB, additional land, primarily housing, was acquired in 1973 and is the third NTC remote site, known as the NTC Annex.

III. Professional Standards and Ethics

The Contractor's professional employees shall adhere to the highest research standards and ethics of the profession.

A. Research Standards

For the purposes of this delivery order, the Contracting Officer will accept as minimal guidelines any set of research standards promulgated by any recognized national or regional professional society or organization acceptable to the Contractor. The Government considers as minimal guidelines a set of standards similar to those published by the National Park Service in the Federal Register on January 28, 1977 (36 CFR 66), or those published as Appendix C in the Airlie House Report (McGimsey and Davis 1977). The Contractor should also be familiar with Treatment of Archeological Properties (Advisory Council on Historic Preservation 1980).

B. Ethics

The Contracting Officer will accept as minimal guidelines any set of professional ethics promulgated by any recognized national or regional professional society or organization appropriate to cultural resources investigations and acceptable to the Contractor.

IV. Program Schedule

A. The progress report for this delivery is due with the submission of progress reports and will follow the same submission schedule until the delivery order is complete.

B. Draft Technical Synthesis Report

The draft Technical Synthesis Report is due within forty-five (45) calendar days of the issuance of this delivery order.

C. The Government will review the draft Technical Synthesis Report within thirty (30) calendar days of receipt of draft. A concurrent review will be requested of the State Historic Preservation Office, and comments arising from both reviews will be compiled into a single comment submittal to the Contractor.

D. Technical Synthesis Report

The final Technical Synthesis Report is due within thirty (30) calendar days of receipt of Government review comments for the draft Technical Synthesis Report.

V. Summary of Tasks

The work to be performed under this delivery order consists of the following:

A. Records and Literature Search

The Contractor shall complete a records and literature search and appropriate archival research to determine the potential for cultural resources within the study area. This research shall also establish the contexts for evaluating the National Register significance of sites found in the area.

B. Archeological Resources Survey

The Contractor shall complete an intensive archeological survey of the subject property. As much of the area is developed with civil improvements, a walk-over survey shall be completed first, and areas will be noted that require shovel test pits to complete the assessment. Where shovel test pits are required, the shovel test pit interval shall be 100 feet. While it is expected field notes shall be made for soil types and characteristics, soil profile data for those shovel test pits that yield no cultural materials will not be individually recorded. Shovel test pits that yield positive cultural resources data will be noted and additional units in the vicinity will be excavated to ascertain to the extent practicable the areal extent and nature of the deposit.

All soils will be screened through 1/4-inch hardware fabric, and all lithic, ceramic, glass, and metal artifacts will be collected for further analysis. Faunal remains such as bone and shell shall also be collected. Additional data such as soil profile, depth of excavation, and areal extent of deposit will be recorded. The materials shall be washed, catalogued, and analyzed and the results shall be presented in the Technical Synthesis Report. The Contractor shall retain all cultural materials of significance until the Navy can arrange for permanent curation.

C. All sites shall be recorded according to the criteria established by the Florida State Historic Preservation Officer. The Navy will complete all formal consultation with the Florida's SHPO's Office.

VI. Reports

The Contractor's performance under this contract will be evaluated on the quality, adequacy, and completeness of reports submitted. Three classes of reports are required under this delivery order:

A. Monthly Progress Report: The Monthly Progress Report is a brief summary of the work accomplished each month. The Contractor's principal investigator shall be the author of the Monthly Progress Report.

B. Draft Technical Synthesis Report:

The draft report shall be a polished product and an accurate representation of the final rep. The draft report shall be an essentially complete document that only requires editorial, drafting, or cartographic revisions to be a publishable quality monograph.

C. Technical Synthesis Report:

The final report shall incorporate review comments submitted to the Contractor. If there is a disagreement regarding comments, the Contractor will meet with the Government to resolve differences. If the disagreement cannot be resolved, the Government comments will be incorporated. The report shall include the following:

1. Executive Summary: a brief synopsis, suitable for publication in an abstract journal summarizing the findings, conclusions, and recommendations of the report;

2. Table of Contents;

3. Introduction: shall include a statement of purpose for the investigation and the means by which the goals of the investigation were met;

4. Environmental Setting;

5. Regional Setting: includes culture history, prehistory, and history;

6. Results of the Investigation: synthesis, integration, and interpretation of all data collected. This should include:

(a) a statement of the significance of each cultural resource within the study area;

(b) definition and rationale for the delineation of any historic districts, if any; and,

(c) recommendations for a program to further evaluate each resource or resource area with respect to eligibility for inclusion in the National Register of Historic Places:

7. References Cited;

8. Appendices: which shall include all site forms, non-sensitive maps, and other information gathered during the investigation.

VII. Report Format

A. Monthly Progress Report

This report shall be submitted in letter format, normally not to exceed two pages in each delivery order, and shall be accompanied by a cover letter.

B. Draft Technical Synthesis Report

The draft report shall be submitted in bound form. This document will be double-spaced and may be dot-matrix printed. Two copies of the draft report shall be submitted. Photographs, plates, drawings, and other graphic material shall appear in the same size, format, and general location in the daft report as they will appear in the final report.

C. Technical Synthesis Report

The Technical Synthesis Report shall be a publishable quality monograph that shall conform to general practice in the profession. The document shall conform to the style guide of the American Anthropological Association, or some other nationally recognized style guide that is appropriate for archeological reports. The text shall be typed or printed single spaced in a one or two column format.

1. The Contractor shall submit the original of the final Technical Synthesis Report, letter quality typescript, and ready for reproduction by photo-optical copying on 8.5 by 11 inch paper (except for those pages that may be 8.5 by 17, 22, or 34 inch fold-out figures) with a binding edge of one inch.

2. All hand prepared pages such as maps and drawings shall be professionally drafted. Maps shall be drawn on vellum and shall have a legend that is clear and readable, including such information as the scale, north indication, and symbol identification. All survey maps indicating areas surveyed and locations of archeological sites shall be on U.S.G. 7.5" topographic maps with appropriate legend. The features to be illustrated such as site locations must stand out clearly against the other features on the map. All maps shall have a half inch border and a binding edge of one inch. The original(s) must be submitted.

3. Photographs shall be original black and white positive prints or half-tones. A caption shall be typed for each photograph and properly mounted.

4. In addition to the original documents described in VII.C.1 through VII.C.3. above, a total of fifty (50) printed copies of the final report shall accompany the original documentation and camera-ready graphics submitted.

D. Dissemination of Data

The Contractor will not disseminate the data collected under this delivery order without . expressed, written consent of the activity's Major Claimant and SOUTHNAVFACENGCOM. Historic Preservation Officer.

VIII. Other Considerations

A. Ownership of Data and Materials

Title to all data recovered or generated under this solicitation is vested in the United States Navy.

B. Security

Since the materials and data generated under this solicitation are the property of the Government and since the Contractor will be acting as an agent of the Government, the Contractor shall continually provide for the secure safekeeping of the data, or any other material in their custody.

C. Publicity

During the terms of this delivery order, the Contractor and employees and sub-consultants shall not release for publication any sketch, photograph, report, account, or any other material of any nature pertaining to the work for which services are performed under the terms of this delivery order unless express, written permission is obtained from the Contracting Officer.

D. Inspection and Coordination

The Contracting Officer or his authorized representative may at all reasonable times inspect or otherwise evaluate the work being performed under this contract and the premises on which it is being performed. All inspections and evaluations will be performed in such a manner as will not unduly delay progress of the work. It is necessary that close coordination between the Contractor and SOUTHNAVFACENGCOM's Historic Preservation Officer be maintained throughout the life of the contract to ensure its satisfactory completion. Any communication with the Contractor of a directional nature will be made in written form by the Contracting Officer or his authorized representative.

E. Notice to the Government of Delays

In the event the Contractor encounters difficulty in meeting performance requirements, or when he anticipates difficulty in complying with the contract delivery schedule or data, or whenever the Contractor has knowledge that any actual or potential Situation is delaying or threatening to delay the timely performance of this delivery order, the Contractor shall

immediately notify the Contracting Officer in writing, giving pertinent details; pr
however, that this data shall be informational only in character and that this provisio
be construed as a waiver by the Government of any delivery schedule, of data, or of any
or remedies provided by law or under this delivery order.

From: ☺"schemer" <APPS/SCHEMER>
☺To: ☺"LCDR Ballinger" <APPS/PWO>
☺Date: ☺Fri, 3 Jun 1994 07:19:22
☺Subject: ☺Re: BUILDING DEMOLITION SCHEDULE
☺

The 8 June date refers to the next BRAC BOS working group meeting called by CDR Devine. Remember, at the Planning Board, CAPT L "gave" the tasking to the BOS group to work out the demolition schedule to include giving priority to the buildings within the Nuke compound?

I told Andy some facilities, like the existing Vet Clinic, 2053, 2055, etc. might get inserted at a higher priority because they would be within the Nuke compound and the Nukes don't want them.

v/r

Mike

RECEIVED
JUN 06 1994
C. PERRY

From: ☺APPS/ANDERSON
☺To: ☺PWO
☺Date: ☺Fri, 10 Jun 1994 11:08:32
☺Subject: ☺Bldg Demo List as of Mtg 9 Jun
☺

Called Mike Schemmer morn'g of 10 Jun, this is the new demo bldg list:

Bldg	2053	NEX's Vending
"	2055	HVAC Contractor's & MWR
"	2262	Janitorial Contractor
"	2266	Base Vet.

Mike is now starting the paper request for demo approval of these bldgs. It will take several weeks to obtain the approval.

The Phase II demo request has been sent in. If it returns prior to the above four bldgs and CBU 419 has sufficient time remaining on Station, they then will be given permission to demo what they can of RTC 2700 group.

I've already have everything in readiness to take lead samples on the RTC 2700 group; however, can not until these six bldgs have been vacated. These people were originally scheduled to go into Bldg 386, since they now will not, Mike is seeking new relocation sites. Until he has these bldgs vacated I can not take samples for TCLP tests. Our Contracts also will have to arrange with a lab to do the TCLP tests. This could be another 5 working days.

Our current demo window - notification to Florida's Dept. of Environmental Protection - was extended to 15 June. CBU 419 still hase to clean up 2015 site, at least 2 more working days. Then Bldg 2450 is next. Will be requesting another extension from the State. This one will be till the end of July.

Recommend that when Bldg 2450 is down, CBU 419 do no more demo projects, unless, when their written orders arrive on Station stating that they do not disban/transfer until after Jan '95.

ANDY

NTC 01021GA, 21 Apr 1994

BLDG #	SQ FT	"TONNAGE" .10487 TONS PER SQ FT	"DUMP FEE" $17.20/TON	"TRIP FEE" 17 TONS/TRIP @ $75/TRIP	"EQUIP/LABOR" 0.55/SF	"LEAD"	"ASBESTOS"
PHASE I - IDENTIFIED FACILITIES:							
2717	2121	222.4 TONS	3825.8	13 X 75= 975	1167		
2718	2121	222.4 TONS	3825.8	13 X 75= 975	1167		
2719	2121	222.4 TONS	3825.8	13 X 75= 975	1167		
2093	19043	1997.0 TONS	34348.4	118 X 75= 8850	10473		
2015	8328	873.4 TONS	15022.5	52 X 75= 3900	4580		
2450	9267	971.8 TONS	16714.9	57 X 75= 4275	5097		
PHASE I SUB TOT...		**4509.4 TONS**	**$77563.2**	**$19950**	**$23651**	**$5000**	**$130,000**
PHASE II - IDENTIFIED FACILITIES: (NOTE BLDG 2451 NOW ADDED)							
2045	8,741	916.7 TON	$ 15,767	54x75=$ 4,050	4808		(NO RECORD)
2095	11,968	1,255.1 "	421,587	74x75= 5,550	6582		(NO RECORD)
2709	2,121	222.4 "	3,825	13x75= 975	1167		18700
2712	2,121	222.4 "	3,825	13x75= 975	1167		18700
2713	2,121	222.4 "	3,825	13x75= 975	1167		5900
2720	2,121	222.4 "	3,825	13x75= 975	1167		12375
2723	2,121	222.4 "	3,825	13x75= 975	1167		12025
2724	2,121	222.4 "	3,825	13x75= 975	1167		17300
2451	2,121	222.4 "	3,825	13x75= 975	1167		300
PHASE II SUB TOT.....		**3,728.6 TONS**	**$ 64,129**	**$ 16,425**	**$19559**	**$5000**	**$85300**
(Special note::Bldg 2451 was added to Phase II on 11 Apr)							
PHASE III - IDENTIFIED FACILITIES:							
2003	8,200	859.9 "	$ 14,790	51x75=$ 3,825	4510		3500
2004	8,200	859.9 "	14,790	51x75= 3,825	4510		1000
2012	2,692	282.3 "	4,855	17x75= 1,275	1481		5000
2036	7,094	743.9 "	12,795	44x75= 3,300	3902		1200
2087	336	35.2 "	605	3x75= 225	185		210
2105	4,904	514.2 "	9,360	31x75= 2,325	2697		0
PHASE III SUB TOT....		**3,295.4 TONS**	**$57,195**	**$14,775**	**$17285**	**$5000**	**$10910**
PHASE IV - IDENTIFIED FACILITIES:							
2008	7,105	745.1 "	12,815	44x75=$ 3,300	3901		800
2009	2,400	206.9 "	4,487	16x75= 1,200	1320		2440
2010	12,148	1,273.9 "	21,911	75x75= 5,625	6681		5700
2026	41,463	4,348.2 "	74,789	256x75= 19,200	22805		19940
2034	6,273	657.8 "	11,314	38x75= 2,925	3450		NO RECORD
2035	2,541	266.5 "	4,583	16x75= 1,200	1398		NO RECORD
2047	8,613	903.2 "	15,535	54x75= 4,050	4737		NO RECORD
2049	8,677	909.9 "	15,650	54x75= 4,050	4772		580
2053	8,613	903.2 "	15,535	54x75= 4,050	4737		4944
2055	8,613	903.2 "	15,535	54x75= 4,050	4737		300
2073	448	46.9 "	808	3x75= 225	246		1200
2076	4,080	427.9 "	7,359	25x75= 1,875	2244		300
2078	32,292	3,386.7 "	58,251	200x75= 15,000	17761		6126
2113	6,720	704.7 "	12,120	42x75= 3,150	3696		6020
2410	2,121	222.4 "	3,825	13x75= 975	1167		1100
PHASE IV SUB TOT....		**15,960.5 "**	**$274,517**	**$70,875**	**$83652**	**$5000**	**$49,450**
							$275,660
							$ 70,000 (CONTINGENCY PHASES II-IV)
GRAND TOTALS.....		**27,493.9 TONS**	**$473,404***	**.....$122,025***	**..$144,147**	**....$20,000**	**..$345,660**

* GRAND TOTAL (ALL COSTS) = $1,105,236

Southern Bell
4100 Corrine Drive
Bldg 2078

Sandy Sproull
646-4401

Send Catherine a copy of
SOW for Orlando

BOGGY CREEK
DRAINAGE BASIN
REPORT
ORANGE COUNTY FLORIDA

PREPARED BY

ORANGE COUNTY POLLUTION CONTROL DEPARTMENT

ORLANDO, FLORIDA

FEBRUARY, 1973

INTRODUCTION

OBJECTIVE

It is the purpose of this report to delineate water quality relating to land usage and pollution sources within the Boggy Creek Drainage Basin. It is intended that this information will be utilized by the public, other governmental agencies, and groups interested in maintaining high standards of water quality in Orange County.

GENERAL

The Boggy Creek Drainage Basin lies in the intermediate topographic region of Orange County. Elevations in this region range from thirty (35) feet Mean Sea Level (MSL) to one hundred and five (105) feet MSL. The basin drains eighty eight and eight tenths (88.8) square miles of nearly level plain. In the wet areas (elevations from seventy (70) feet to eighty(80) feet, approximate) stands of cypress, myrtle, bays and other hydrophytic vegetation form Florida swamplands. At higher elevations, slash pine-palmetto and grass-sedge plant communities typify the vegetation.

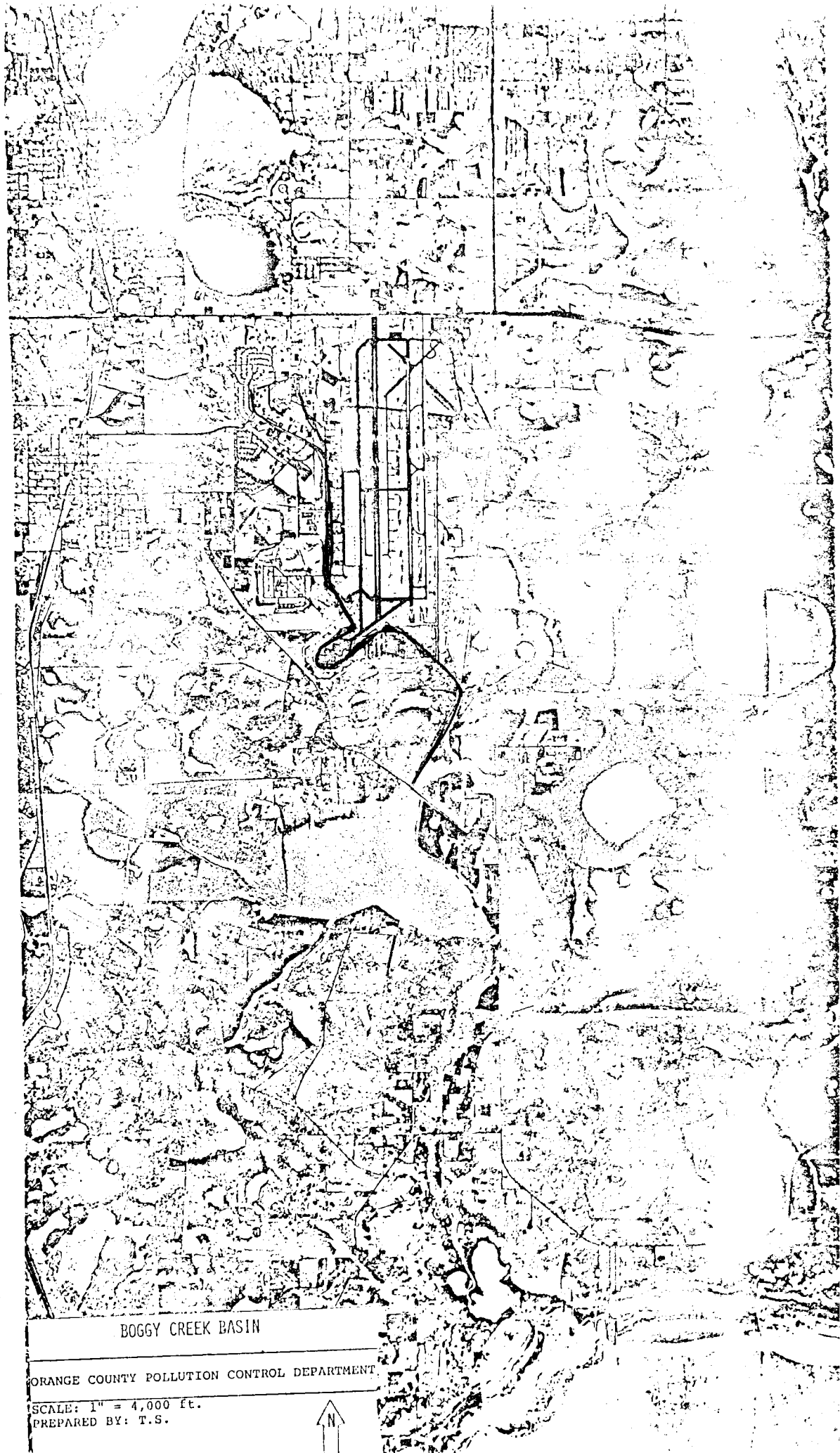
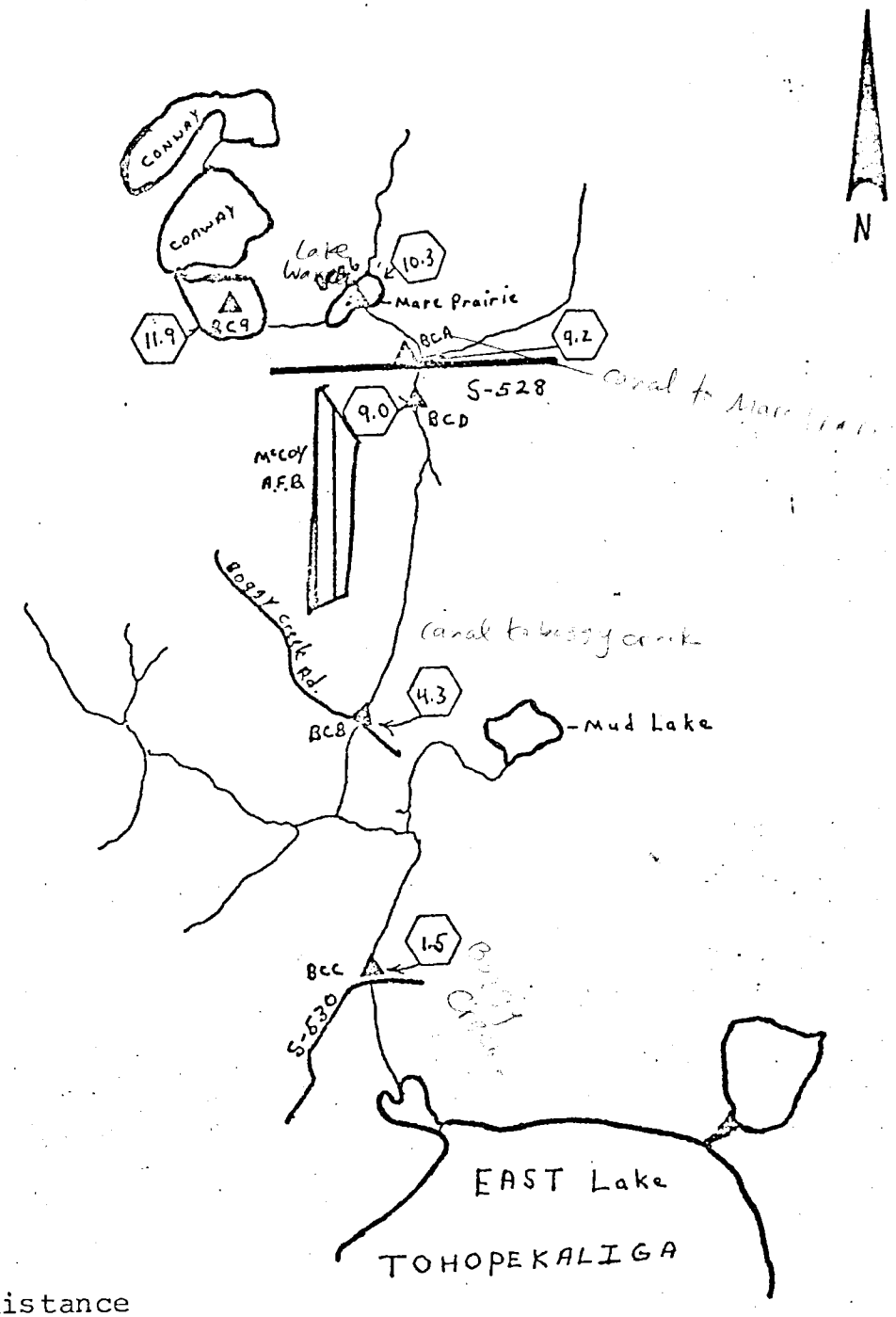

BOGGY CREEK BASIN
ORANGE COUNTY POLLUTION CONTROL DEPARTMENT
SCALE: 1" = 4,000 ft.
PREPARED BY: T.S.
N

FIGURE 3

BOGGY CREEK

Orange County Pollution Control Dept, 1992
Pg 1 of 6



⬡ Approx. distance from East Lake Tohopekaliga

△ Sampling station

with housing, trailer parks and a public bathing beach.

STATION BC 26

Lake Mare Prairie consists of 129 surface acres. Station BC 26 is located in the geographical center of the lake.

Lake level is maintained at 84 MSL by a control structure located at the southeast side of the lake. Drainage is derived from approximately eight (8) square miles of surrounding dairy pasturage. There is sparse housing development on the west shore of the lake.

STATION BCA

Stream station located on the north side of S.R. 528 (McCoy Road) where the road crosses Boggy Creek. Surrounding terrain is being utilized for pasture lands and dairy farms. Extensive commercial development is taking place in the vicinity of the City of Orlando Jetport. The streambed has been channalized from McCoy Road to Boggy Creek Road, a distance of 4.9 miles.

STATION BCB

Stream station located where Boggy Creek Road crosses McCoy Canal. Some of the land in the vicinity of this

Soils within the Basin consist of poorly drained soils (Rutledge, Plummer and Freshwater swamp) and very poorly drained organic soils, (Everglades, Brighton and Pamlico). Rutledge and Plummer soils are deposits of sand occurring in depressions or in low wet areas. Brighton, Everglades and Pamlico are organic soils derived from hydrophytic vegetation.

The sub-tropical climate of the area is clearly indicated by the climatograph (Figure 1). Figure 2 is the monthly mean discharge in cubic feet per second, collected at the U.S.G.S. gauging station; location south of Taft, Florida. It should be noted that the decrease in the mean monthly discharge during the past three years has resulted from a decrease in annual rainfall.

In an effort to monitor and determine existing water quality within the Boggy Creek Drainage Basin (Figure 3), the following stations* were selected:

STATION BC9 Lake Conway consists of 1,075 surface acres, that is divided into three (3) distinct lakes. The geographical center of the southern most lake was the station selected as representative, with regards to water quality. It discharges through a water control structure into Lake Mare Prairie. The land surrounding this lake is developed

*listed in order of flow

FIGURE I

CLIMATOGRAPH

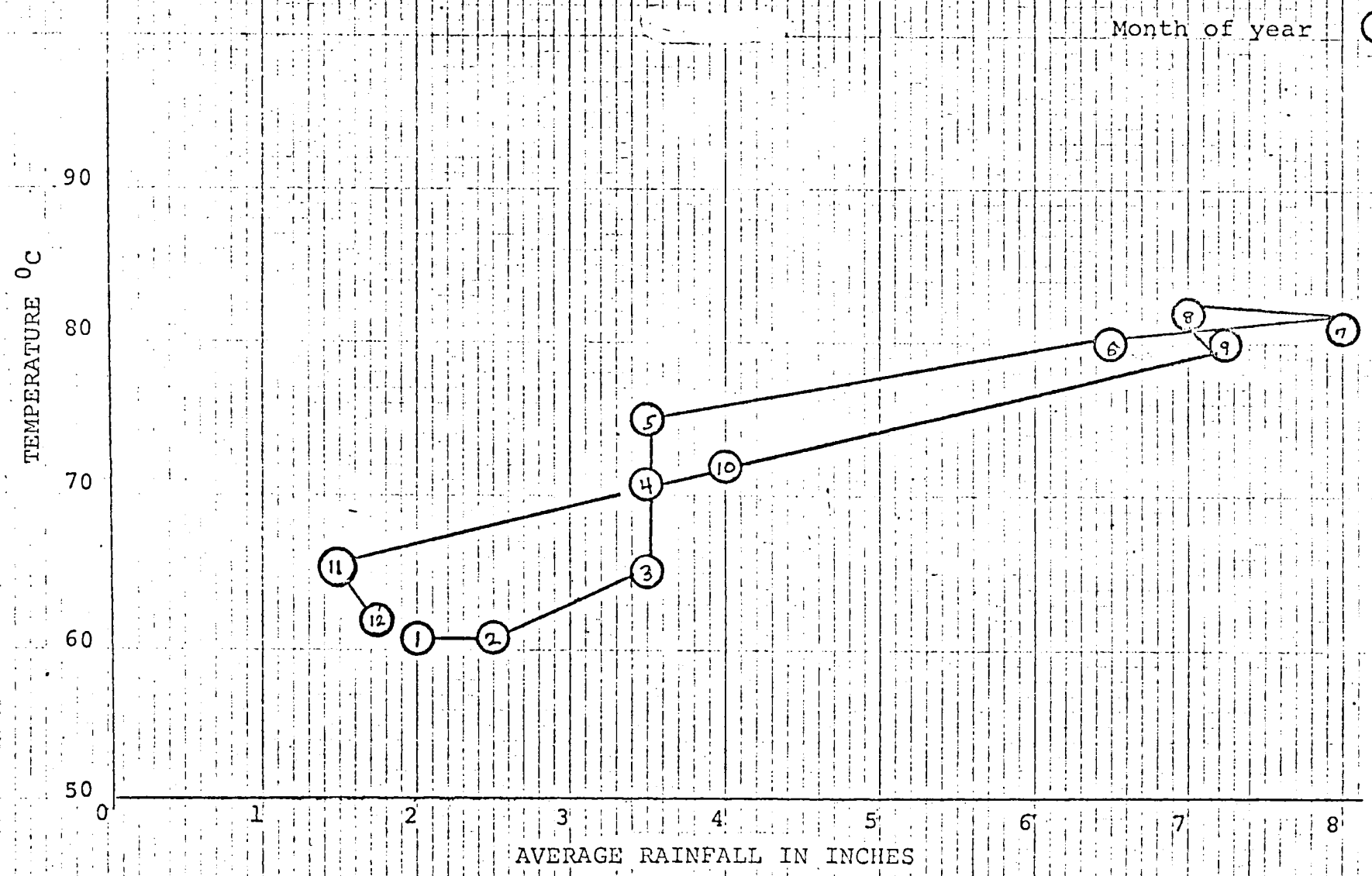
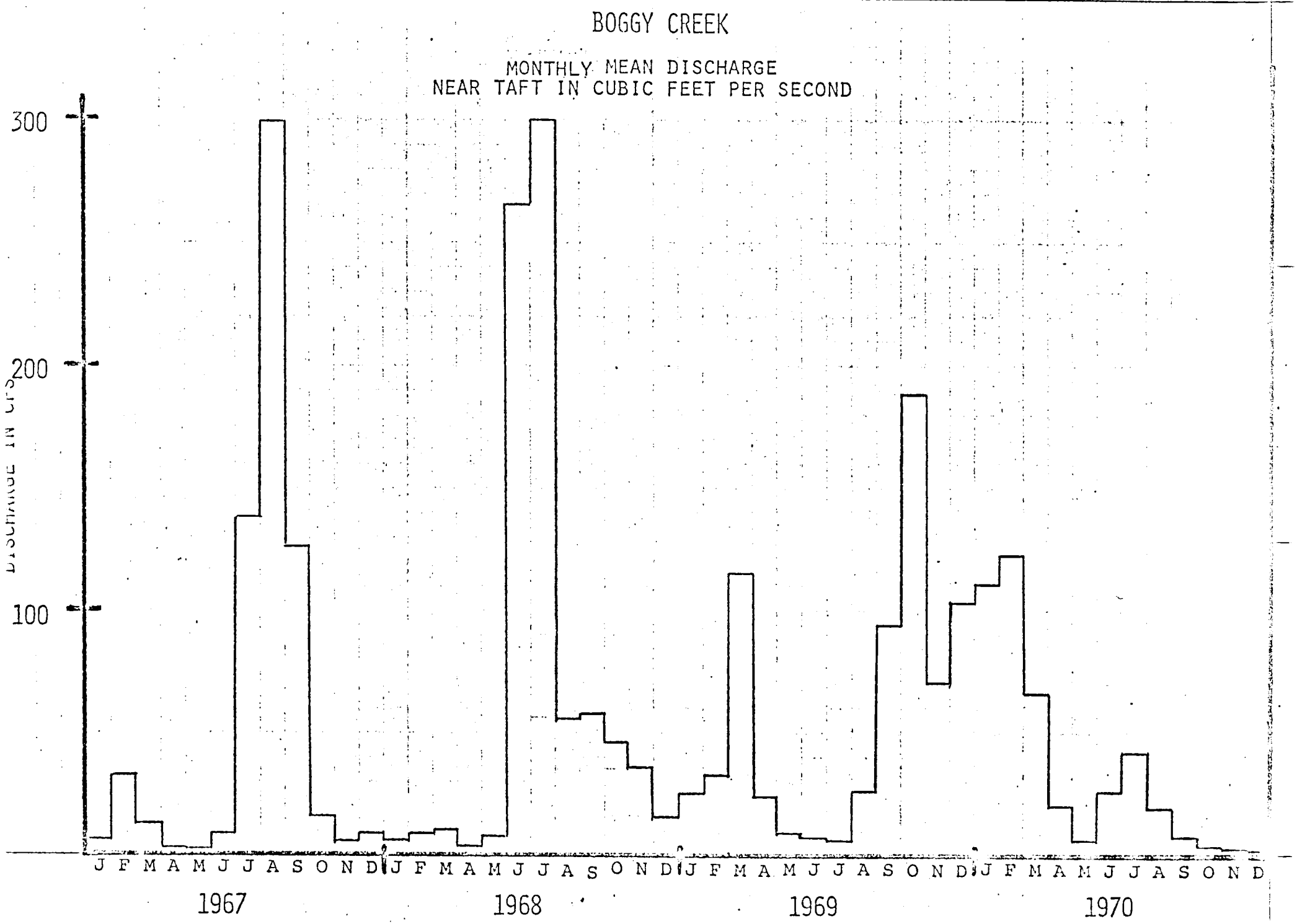


FIGURE I
CLIMATOGRAPH


BOGGY CREEK
MONTHLY MEAN DISCHARGE
NEAR TAFT IN CUBIC FEET PER SECOND
300
200
100
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1967
1968
1969
1970

NATIONAL 42-381 200 SHEETS 5 SQUARE

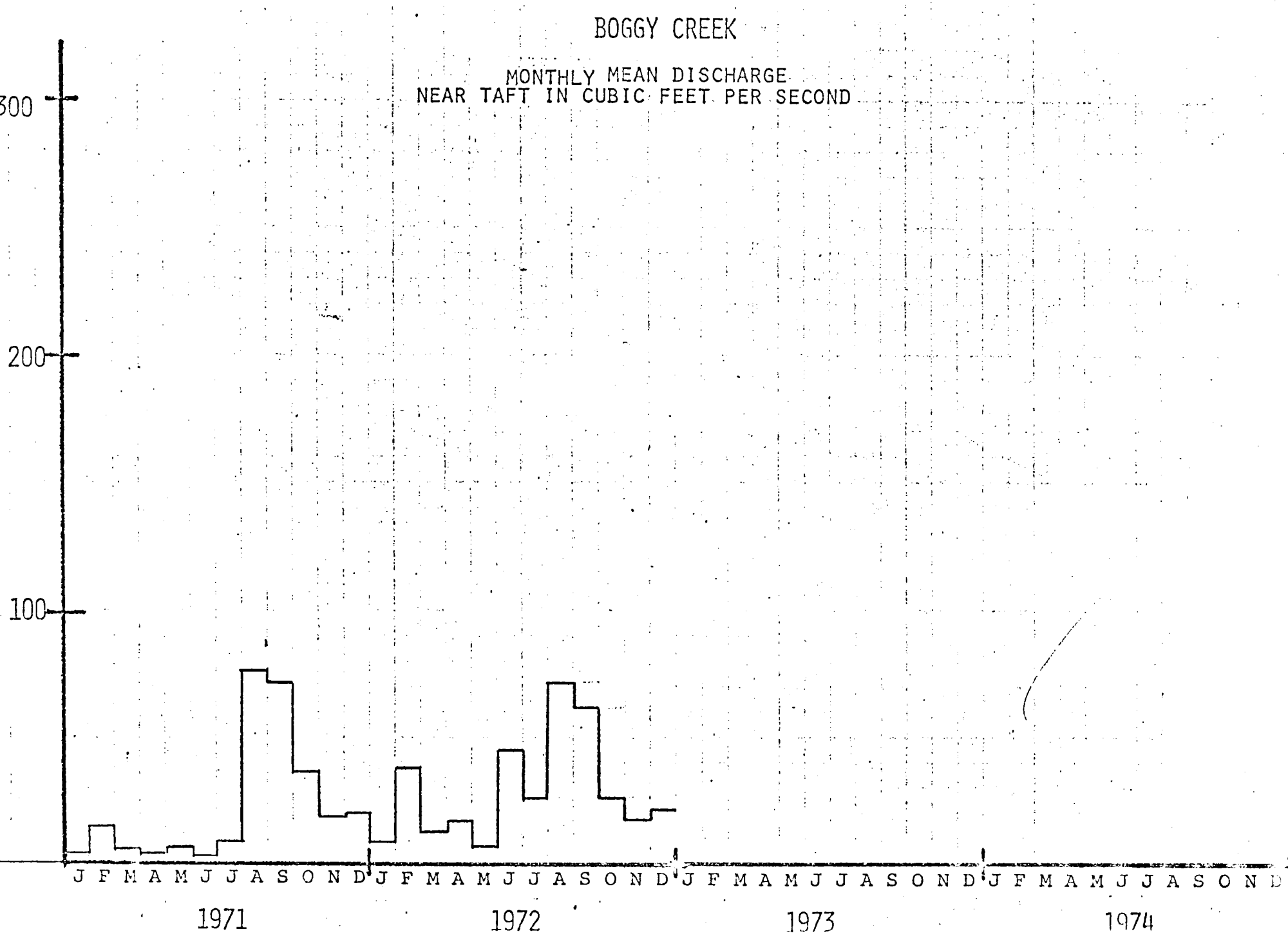


FIGURE 7

station is utilized for agricultural activities. The Orlando Jetport and McCoy Air Force Base are located between stations BCA and BCB. The City of Orlando Jetport waste water treatment plant discharges into the canal upstream from this station.

STATION BCC

Stream station BCC is located where S.R. 530 crosses Boggy Creek. This station is approximately ten and four tenths (10.4) miles from the headwaters of the drainage basin. Surrounding terrain is utilized for agricultural purposes.

STATION BCD

Station is located one hundred (100) feet downstream from the effluent canal of the City of Orlando Jetport Sewage Treatment Plant. This is approximately one-quarter (¼) mile downstream from the McCoy Road Station (BCA).

The remaining lakes occurring within the basin have been previously sampled by the Orange County Pollution Control Department on a periodic basis. Questions regarding water quality of lakes not covered in this report should be directed to the Pollution Control Officer, Orange County Pollution Control Department.

WATER QUALITY - GENERAL

The ecology of the aquatic habitat varies extensively with flow and other natural seasonal changes. However, aquatic habitats that are relatively free from pollution sources and other cultural activities show a more balanced ecology.

Phytoplankton (free floating algae) and macroinvertebrates (bottom and littoral zone dwelling organisms) have been studied in order to evaluate the stream and lakes occurring within the basin. Phytoplankton samples were analyzed for total chlorophyll-a as an estimation of algal biomass. Phytoplankton counts and identifications were made to establish the presence or absence of indicator species and algal standing crop. Generally, an unpolluted aquatic habitat, will exhibit a sparse phytoplankton community being low in biomass and standing crop. The opposite is true for aquatic habitats that have received some type of pollution.

Species composition of the phytoplankton population is very important because the species present are indicative of water quality, e.g., they are indicator species.

Macroinvertebrate collections were analyzed qualitatively and quanitatively. These organisms are very responsive to changes in the aquatic habitat from pollution sources or other natural and artificial changes. Generally, an unpolluted aquatic habitat will reveal a macroinvertebrate population that is diverse in species composition. Generally, no species or class of organisms will dominate the population to the exclusion of other species and classes of organisms. The opposite is true for polluted stations.

Numerous chemical parameters are utilized to establish the water quality and to evaluate the influences of pollution sources occurring in the basin.

Dissolved oxygen (D.O.) values determine the suitability of a body of water to aquatic life. The biochemical oxygen demands (BOD) indicate the potential for oxygen comsumption due to oxidizable organic material present in the water. BOD creating sources can be decaying organic detritus , industrial, domestic and animal wastes.

Nutrient values (nitrogen and phosphorus) are of interest due to their association with eutrophication problems, algae growths, and aquatic weed populations.

Residues (solids) indicate the over-all quantity of dissolved and suspended material present in the water, and volatile and fixed portions can indicate the amount of organic and biological residue that are present.

Alkalinity, acidity, and pH reflect the buffering capacity of a body of water and the suitability of the water for propogation of healthy aquatic habitats.

Other parameters such as chlorides, specific conductance, and metals assist in the determination of water quality and evaluation.

Bacteriological tests performed were used to evaluate the sanitary quality and the suitability of Boggy Creek for primary contact recreational activities.

The coliform group includes coliforms of fecal origin as well as organisms from the soil environment. The coliform test is run to check for the presence of fecal contamination and indirectly demonstrates the possible presence of human pathogens.

Fecal coliforms are that portion of the coliform group that is found in the gut and feces of warm-blooded animals. The fecal coliform test is performed to demonstrate the presence of fecal contamination and to differentiate between coliforms of non-fecal origin. The number of fecal coliforms present in a given sample is directly proportional to the probability that human pathogens are present in that sample.

The fecal streptococci are characteristically found in the gut and intestines of warm blooded animals and indicate pollution from domestic and animal waste.

The standard plate count is a highly emperical test which is used to approximate the total bacterial population in a given water sample. This test is used as a general indicator of water quality.

CONWAY CHAIN OF LAKES-BC9

Water quality data from the Conway Chain of Lakes has been collected since 1966. The data indicates a high degree of water quality throughout the three lakes in the Conway Chain. The most southern Conway Lake (BC9) drains into Lake Mare Prairie (BC26), and is part of the headwaters of Boggy Creek.

The average dissolved oxygen value for this lake is 7.8 mg/L with a 5 day BOD of 1.2 mg/L. Average nutrient values for total nitrogen and total phosphate (as P) are 0.53 and 0.052 mg/L respectively and indicate the absence of organic or nutrient pollution in the lake. Chemical data on the southern Conway Lake is included in Table 1.

TABLE I

BOGGY CREEK CHEMICAL DATA
All concentrations as mg/l

		D.O.	BOD	pH	ALK	ACID	PHOSPHATE as P TOTAL	PHOSPHATE as P ORTHO	NITROGEN NO_3	NITROGEN NO_2	NITROGEN NH_3	NITROGEN ORG	COND	CL	SOLIDS TS	SOLIDS TSS	TURB
BC9	# Anal.	9	9	11	11	11	11	11	11	11	11	11	9	9	9	11	8
1968-73	High	12.4	3.6	7.9	66	6	0.18	0.023	0.2	0.011	0.33	0.67	222	24	127	9	8
	Avg.	7.8	1.2	7.4	36	2.9	0.052	0.005	0.09	0.004	0.07	0.40	185	21	111	4.2	3
	Low	5.1	0.0	7.0	29	1	0.0	0.0	0.04	0.0	0.0	0.19	120	18	92	1	1
BC26																	
1967-73	# Anal.	9	12	13	13	13	13	13	13	13	13	13	9	12	12	12	2
	High	14.4	8.8	10.2	83	5.5	2.42	1.06	0.6	0.055	0.21	3.34	400	31	219	50	15
	Avg.	7.2	5.0	8.1	38	2.5	0.63	0.38	0.18	0.009	0.12	1.91	255	25	157	21	13
	Low	3.2	1.8	6.6	20	0.0	0.3	0.2	0.0	0.0	0.00	0.85	170	20	108	2	11.5
BCA																	
1972	# Anal.	5	5	5	5	5	5	5	5	5	3	3	5	3	5	5	5
Only	High	6.3	20+	7.4	57	27	2.2	1.5	0.2	0.05	1.95	1.50	312	36	196	20	24
	Avg.	2.6	12+	6.7	38	17	1.45	0.91	0.14	0.01	1.12	1.13	268	32	169	10	12
	Low	0.4	6.0	6.4	26	2	0.45	0.44	0.03	0.001	0.7	0.87	207	27	116	3	3.1
BCD																	
1969-73	# Anal.	4	3	6	5	5	7	7	6	7	6	6	6	6	7	7	
	High	4.9	15.3	7.4	63	18	3.19	1.59	1.49	0.166	2.12	1.73	460	27	274	20	--
	Avg.	3.0	13.1	7.0	43	13	1.11	0.72	0.94	0.068	1.28	1.61	275	24	155	11.4	--
	Low	0.2	10	6.7	28	11	0.39	0.39	0.13	0.002	0.0	0.80	155	20	86	6	--
BCB																	
1966-73	# Anal.	13	10	13	13	13	12	13	10	9	13	12	8	10	12	12	6
	High	8.2	3.4	7.2	78	26	2.65	2.65	0.67	0.47	1.27	1.69	258	22	190	18	35
	Avg.	4.4	2.3	6.8	43	11.5	1.11	1.04	0.26	0.017	0.22	1.01	190	18	138	11	7.8
	Low	0.4	0.6	6.6	20	5	0.04	0.01	0.0	0.0	0.0	0.5	105	15	102	1	1
BCC																	
1966-73	# Anal.	17	16	18	18	17	17	17	16	15	15	15	12	13	16	15	10
	High	9.1	3.7	7.4	37	34	1.78	0.85	0.42	0.06	0.43	1.2	185	22	146	14	7.5
	Avg.	5.3	2.3	6.7	23	8.8	0.5	0.31	0.16	0.009	0.11	0.86	145	17	110	5	3.3
	Low	3.1	0.6	5.8	63	1	0.03	0.007	0.02	0.0	0.0	0.5	100	7	94	1	1

TABLE II

MACROINVERTEBRATE DATA

BOGGY CREEK BASIN

STATION/DATE	SAMPLE DEPTH	FLOW CFS	BIOTIC INDEX	DIVERSITY # OF SP.	STANDING CROP # ORGANISMS/m^2	% POLLUTION TOLERANT	% POLLUTION INTOLERANT	REMARKS
BC9								
7-29-68-1	5		N.A.*	13	990	N.A.	N.A.	Quanitative
7-29-68-2	23		N.A.	1	22	N.A.	N.A.	Quanitative
10-23-68-11	4.5		N.A.	12	704	N.A.	N.A.	Quanitative
10-28-68-12	15		N.A.	1	22	N.A.	N.A.	Quanitative
10-23-68-13	26		N.A.	5	616	N.A.	N.A.	Quanitative
10-29-68-1	8		N.A.	12	594	N.A.	N.A.	Quanitative
10-29-68-2	30		N.A.	6	506	N.A.	N.A.	Quanitative
10-29-68-3	35		N.A.	5	506	N.A.	N.A.	Quanitative
BC26								
6-28-71-3	7		N.A.	1	84	N.A.	N.A.	Quanitative
6-28-71-4	4		N.A.	4	840	N.A.	N.A.	Quanitative
BCA								
9-5-72	--	Mod	5	14	4535	99	2	Quanitative
10-3-72	--	Mod	1	19	2360	94	1	Quanitative
10-3-72	--	Mod	1	10	N.A.	30	10	Qualitative
BCB								
10-3-72	--	Mod	6	24	805	36	19	Quanitative
10-3-72	--	Mod	5	18	N.A.	39	17	Qualitative
BCC								
1-21-71	--		15	27	N.A.	12	38	Quanitative
3-13-72	--	Low	12	28	N.A.	7	32	Quanitative
9-5-72	--		15	25	685	12	42	Quanitative
10-3-72	--	Mod	17	23	330	16	32	Quanitative
10-3-72	--	Mod	7	18	N.A.	33	38	Quanitativ
2-6-73	--	Low	13	21	270	24	50	Qualitative

*N.A. - Not Applicable

TABLE III

MEAN BACTERIAL DENSITIES *

FOR THE BOGGY CREEK BASIN

LOCATION	DISTANCE DOWNSTREAM (miles)	TOTAL COLIFORM per 100 ml	FECAL COLIFORM per 100 ml	FECAL STREPS per 100 ml	STANDARD PLATE CT. per ml
BC9	0	1.2×10^2	2.4×10^1	9.0×10^1	100
BC26	1.6	8.6×10^2	2.2×10^2	5.2×10^1	---
BCA	2.7	3.3×10^4	1×10^3	4×10^3	2.3×10^4
BCD	2.9	5.3×10^4	2×10^3	5.8×10^3	7.1×10^3
BCB	7.6	3.6×10^3	2.4×10^1	3×10^3	2×10^3
BCC	10.4	8.7×10^3	4.3×10^1	2.4×10^2	3.5×10^3

* All bacteriological data in this report has been obtained since January 1, 1972.

Phytoplankton analysis for this station resulted in chlorophyll-a ranging from 1.40 ppb (parts per billion) to 2.86 ppb (Figure 4). Chlorophyll-a averaged 2.19 ppb for samples taken over a three year period. Algal counts rarely exceed 200 u/ml (algae units* per milliliter). These values are very low indicating good water quality.

Shoreline vegetation (emergent reeds and grasses) have been removed to create private bathing beaches. Some of the nutrients that were being utilized by the shoreline vegetation is now taken up by the submerged aquatic weed, Hydrilla verticillata (Florida élodea). The uptake of nutrients by the aquatic weeds is one reason why the phytoplankton do not flourish in the lake.

Bottom samples revealed macroinvertebrate populations numbering less than 1,000 individuals per square meter and consisted of at least five (5) different species. Some of the samples collected near the littoral zone contained less than 1,000 individual and consisted of at least fourteen (14) species (Table II). This indicates a balanced benthic population (bottom organism) which indicates an unpolluted environment.

The low bacterial densities found in south Lake Conway (Table III) indicate that this body of water is highly suited

*1 Unit = 1 cell or 1 colony of cells

for primary contact water recreation. Furthermore, the bacteriological information indicates that the water from Lake Conway is not contributing to the degraded, unsanitary water quality of the remainder of the Boggy Creek Basin.

MARE PRAIRIE-BC26

Water quality data from Lake Mare Prairie (BC26) has been collected since 1967. Water quality data indicates a large amount of organic and nutrient pollution has been accumulating in the lake.

Mare Prairie receives surface runoff from a large agricultural dairy operation. The water quality data collected from this area indicates it is the source of the degradation of the water quality. This will be discussed in the section on point sources of pollution.

Average dissolved oxygen in the lake is 7.2 mg/L and the five (5) day BOD is 5.0 mg/L. A five (5) day BOD of 5 mg/L represents that a significant amount of oxidizable material is present in the lakes water. Average nutrient values for total nitrogen and total phosphate (as P) are 2.14 and 0.63 mg/L respectively. The average organic nitrogen was 1.91 mg/L. The suspended solids value of 21 mg/L, the majority of which is volatile suspended solids, reflects the large standing crop of algae in the lake. Chemical data on Lake Mare Prairie is included in Table 1.

Chlorophyll-a analysis averaged 62.86 ppb and ranged from 11 ppb to 180 ppb. Phytoplankton counts averaged 10,000 u/ml and ranged from 4,000 u/ml to 18,000 u/ml (Figure 4). Several species comprising the phytoplankton population were nuisance varieties of coccoid and filamentous blue green algae.

Essentially there is a continuous noxious algae bloom that is being supported by pollutants from surface runoff and upstream discharges. This lake is in an accelerated rate of enrichment and will continue to have fish kills and other associated problems.

Two bottom samples were taken from Lake Mare Prairie on June 28, 1971. Substrate in this lake consists of mud, sand and silt. Macroinvertebrates were present in small numbers (less than 1,000 per square meter) (Table II). Of these, only three species of organisms were present. These species are all pollution tolerant and are able to withstand low oxygen tensions. There was a notable absence of clean water indicator organisms.

The marginal total coliform densities in conjunction with the unacceptable fecal coliform counts (Table III) demonstrate the fact that Lake Mare Prairie is not suitable for primary contact water recreation. The poor bacteriological

water quality of the lake is partially responsible for the sanitary degradation of all the downstream locations on Boggy Creek.

STREAM STATIONS

All stream stations exhibit a wide range of variation in the results of the chemical, biological and microbiological data that has been collected over a period of years. These variations are partially explained by flows at the stations when the samples were taken. Figure 2 illustrates that flow has varied from less than 1 CFS to 300 CFS.

MC COY ROAD-BCA

Water quality data at the McCoy Road sampling station (BCA) on Boggy Creek has been collected since March, 1972. The water quality data indicates that the stream is grossly polluted (Figure 5, 6, 7). Boggy Creek at Station BCA discharges approximately 14% of the total daily flow and drains approximately 20 square miles which is one-quarter (¼) of the total drainage basin. Chemical analysis and flow data show that the nutrient (pollutants, N, P, etc.) loadings from this area are contributing fifty (50) percent of the total nutrient budget for the entire system.

Chemical analyses give evidence that a large amount of oxidizable material is entering the stream and has consist-

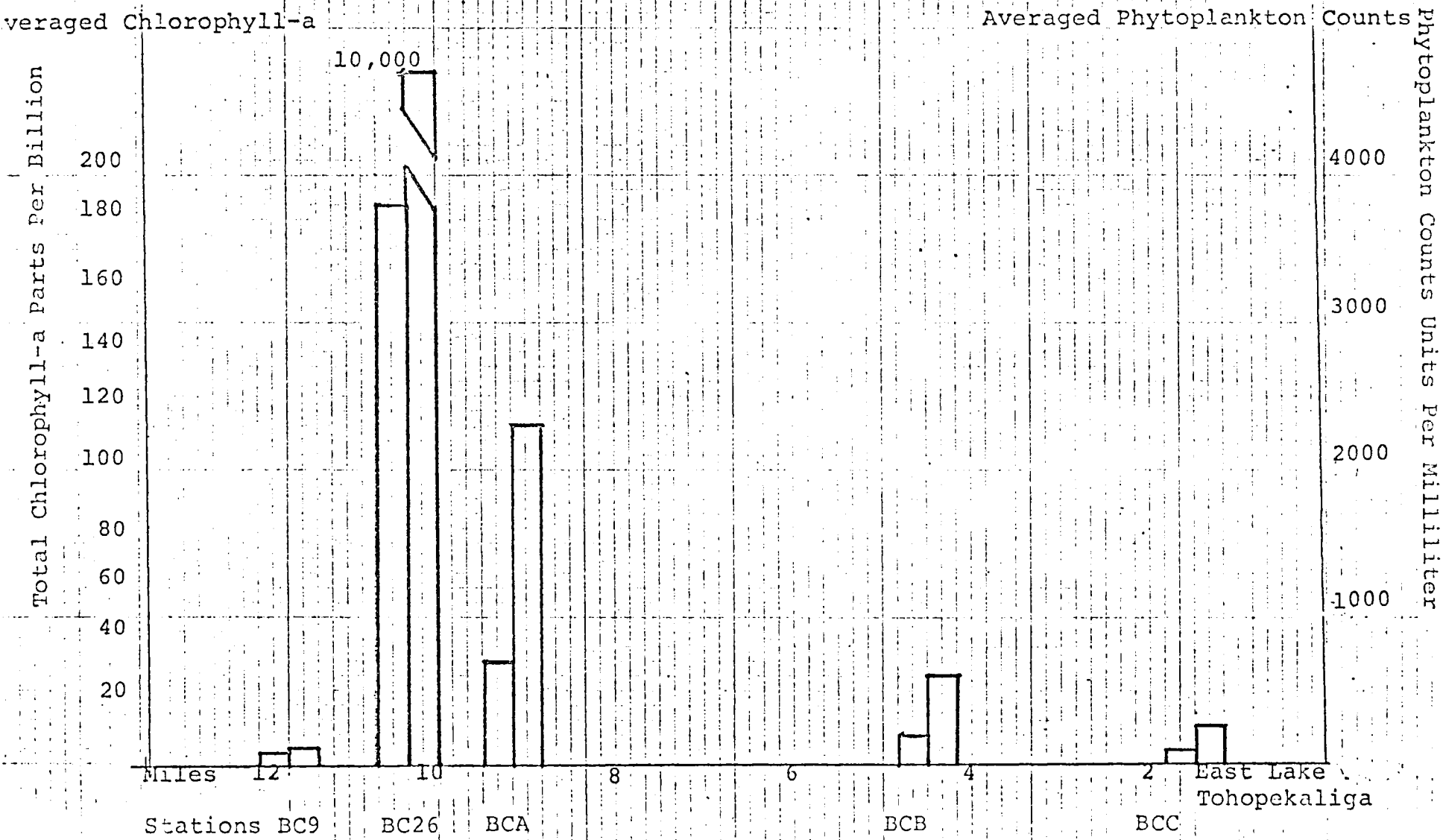

veraged Chlorophyll-a
Averaged Phytoplankton Counts
Total Chlorophyll-a Parts Per Billion
Phytoplankton Counts Units Per Milliliter
10,000
200
180
160
140
120
100
80
60
40
20
4000
3000
2000
1000
Miles
12
10
8
6
4
2
East Lake Tohopekaliga
Stations BC9
BC26
BCA
BCB
BCC

FIGURE 4

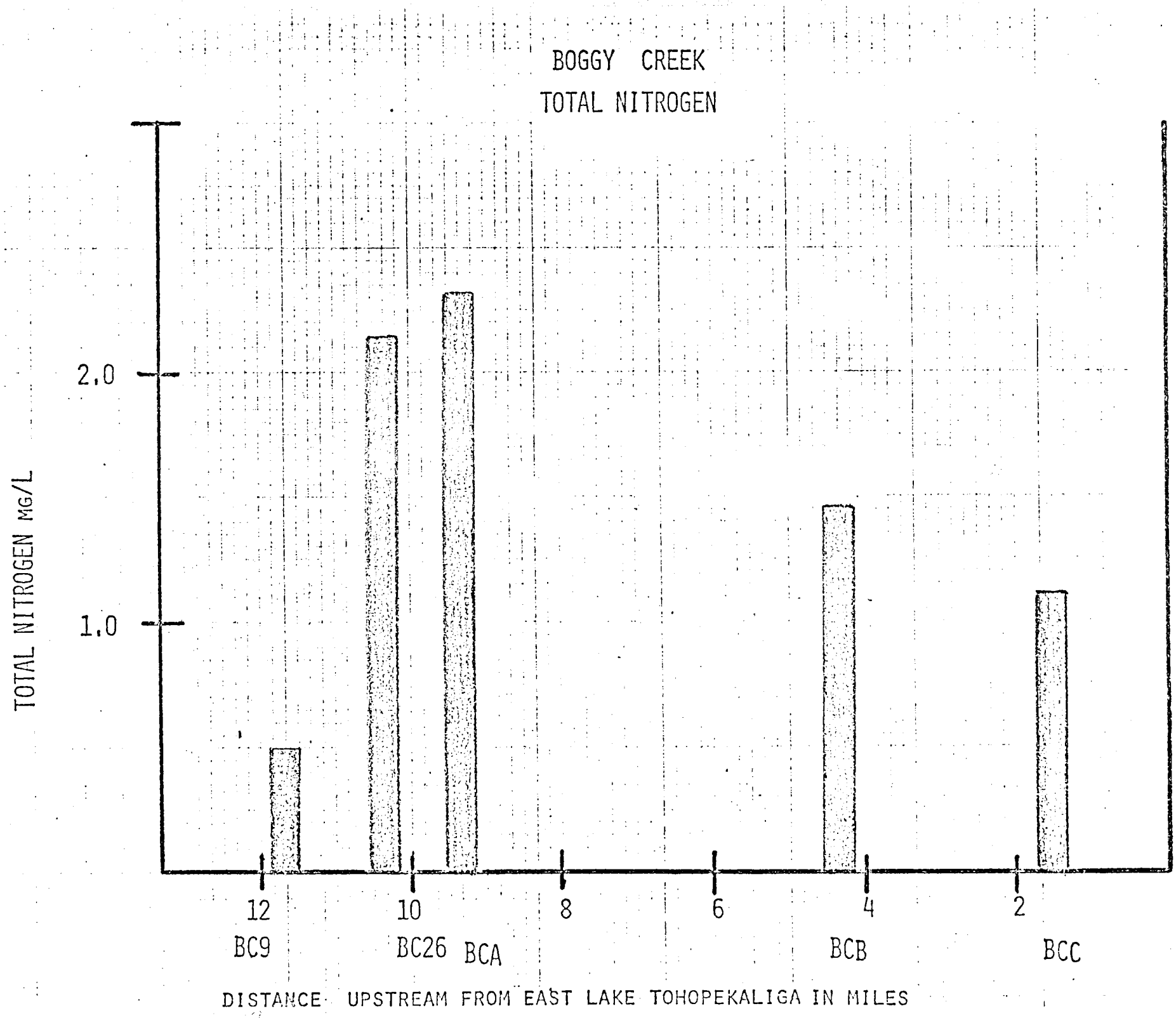

BOGGY CREEK
TOTAL NITROGEN
TOTAL NITROGEN MG/L
2.0
1.0
12
10
8
6
4
2
BC9
BC26
BCA
BCB
BCC
DISTANCE UPSTREAM FROM EAST LAKE TOHOPEKALIGA IN MILES

FIGURE 5

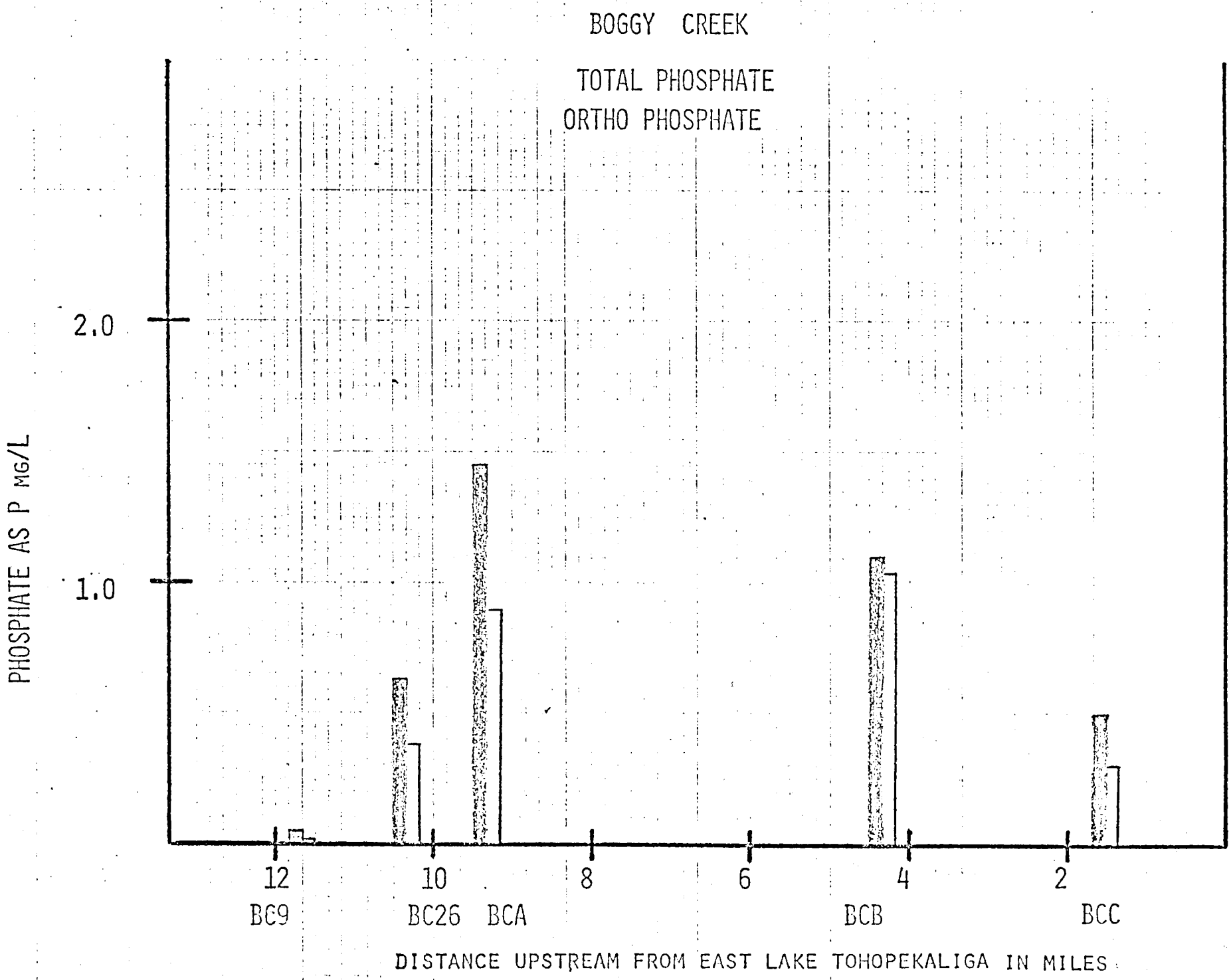

BOGGY CREEK
TOTAL PHOSPHATE
ORTHO PHOSPHATE
PHOSPHATE AS P MG/L
2.0
1.0
12
10
8
6
4
2
BC9
BC26
BCA
BCB
BCC
DISTANCE UPSTREAM FROM EAST LAKE TOHOPEKALIGA IN MILES

FIGURE 6

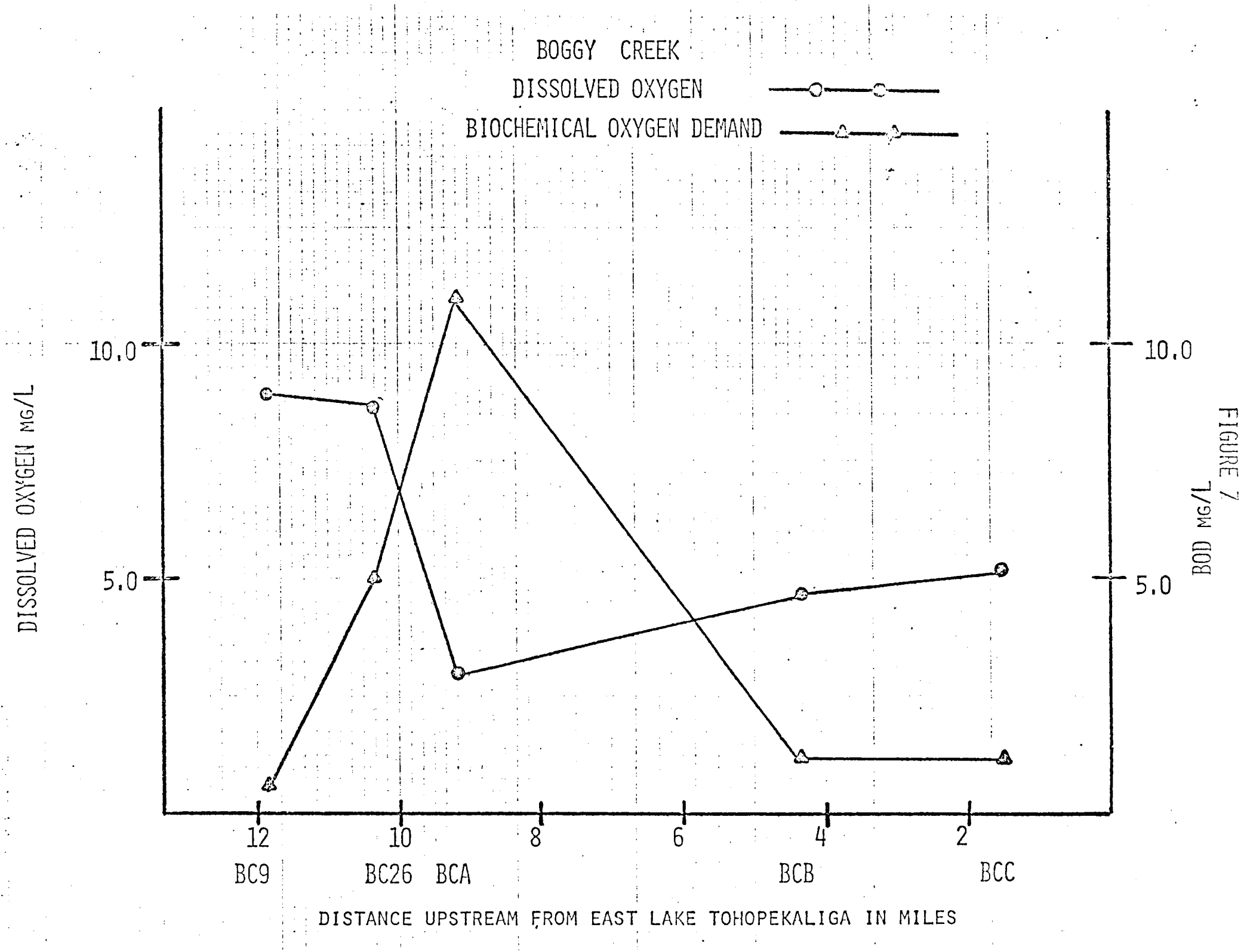

BOGGY CREEK
DISSOLVED OXYGEN
BIOCHEMICAL OXYGEN DEMAND
DISSOLVED OXYGEN MG/L
BOD MG/L
10.0
5.0
10.0
5.0
12
10
8
6
4
2
BC9
BC26
BCA
BCB
BCC
DISTANCE UPSTREAM FROM EAST LAKE TOHOPEKALIGA IN MILES

FIGURE 7

tantly depressed the dissolved oxygen below 4.0 mg/L. The average five (5) day BOD of 12+ mg/L is directly reflected by the average dissolved oxygen value of only 2.8 mg/L (Figure 7). The average nutrient values for total nitrogen and total phosphate (as P) are 2.33 and 1.45 mg/L respectively and presents a heavy nutrient load for the stream to assimilate (Table I).

Phytoplankton analyses resulted in total chlorophyll-a values ranging from 3.42 ppb to 102 ppb, while algal counts ranged from 87 u/ml to 4,437 u/ml. See Figure 4 for summarization of all phytoplankton data. At this station, a wide range of variability exists. Generally, the standing crop of phytoplankton is much higher at this station when compared to Stations BCB and BCC (Figure 4). The phytoplankton population is composed primarily of a variety of filamentous blue greens and coccoid green algae which reflects discharge from Lake Mare Prairie. The majority of the species found at this station are pollution indicators.

Macroinvertebrate samples revealed that this population is comprised of organisms that are pollution tolerant. In September and October of 1972, quanitative samples revealed that 99% and 94% respectively of the population was composed of this class of organism. The total population counts were

4,535 and 2,360 organisms per square meter of substrate, respectively. Biotic Index values* calculated for these dates were five (5) and one (1) respectively (Table II).

The extremely high fecal-indicator densities (Table III) at this station results from degraded water discharged to BCA from Lake Mare Prairie and from an agricultural operation. Field investigations have reported the direct discharge of fecal material from the agricultural operation. The bacteriological data at BCA indicates a hazard to public health due to the increased probability that human pathogens are present. Station BCA should not be used for primary contact water recreation. Chemical, biological and microbiological data indicates that this stream station is polluted by materials of fecal origin.

BCD - Water quality at BCD (one hundred (100) feet downstream from City of Orlando Jetport Sewage Treatment Plant effuent canal)has been collected since 1969

The chemical and biological data does not clearly reflect the influences of the treatment plant due to poor water quality at BCA, upstream from the sewage treatment plant effluent.

*Numerical index which indicate presence or absence of organic pollution in the aquatic habitat. Biotic Index of 10 or below indicates degraded water quality.

Chemical data shows an increase in total nitrogen, but generally reflects the same poor water quality as the upstream station. Greater changes in nutrient parameters would be realized if it were not for the extremely poor water quality of the upstream station. Chemical data for the BCD Station is included in Table I.

The extremely high bacterial densities at this station (Table III) reflect the discharge of fecal material from the Orlando Jetport sewage treatment facility. The bacteriological data indicates that the water quality at this station poses a serious hazard to public health with respect to primary contact water recreation. The extremely degraded water quality at this station results from animal wastes entering Boggy Creek at Station A, plus the sewage treatment plant discharge.

BOGGY CREEK ROAD BCB

Water quality data at Boggy Creek Road (BCB) has been collected since 1966. The data indicates poor water quality, but improvement in nutrient concentrations, five (5) day BOD and some recovery in the dissolved oxygen (Figures 5, 6, 7).

Boggy Creek (McCoy canal) at Station BCB discharges approximately thirty one percent (31%) of the daily flow and drains approximately twenty two (22) square miles.

The chemical data shows an average dissolved oxygen of 4.4 mg/L, but numerous values of less than 4.0 mg/L have been obtained. The average five (5) day BOD of only 2.3 mg/L indicates that most of the oxidizable material has been utilized. The depression in dissolved oxygen shows recovery to a more acceptable level (Figure 7). The nutrient values decreased significantly as the stream progresses (Figures 5, 6) but the average total nitrogen value 1.47 mg/L and total phosphate (as P) value of 1.11 mg/L are still high.

Chemical analysis and flow data reveal nutrient concentrations that are substantially lower than BCA. This is due primarily to dilution. Nutrient concentration at this station are still relatively high when compared to natural background data. All parameters show that the stream is enriched, but that some recovery from upstream pollution sources has occurred.

Compared to Station BCA this station exhibits a much smaller standing crop of phytoplankton. Chlorophyll-a averaged 8.39 ppb and ranged from 2.0 ppb to 20.0 ppb.

Phytoplankton counts ranged from less than 46 u/ml to 2,763 u/ml. and averaged 659 u/ml (Figure 4). This station is still quite variable and exhibits a plankton population that is not indicative of natural conditions.

Thirty six percent (36%) of the macroinvertebrate population is composed of pollution tolerant organisms. Twenty percent (20%) of the population is composed of pollution intolerant organisms. The remainder of the macroinvertebrate population has not been classified. Biotic indices for this station are less than ten (10) (Table II).

The low fecal coliform counts at Station B (Table III) displays the partial recovery of Boggy Creek to the fecal pollution load entering the stream at Stations A and D. Although the mean bacterial densities (Table III) are lower, the water at this station is not suitable for primary contact water recreation.

S.R. 530 BCC

Boggy Creek at Station C discharges approximately fifty four percent (54%) of the daily flow and receives drainage from approximately forty one (41) square miles. Chemical analysis reveals that nutrients are at their lowest concentration at this station. However, these concentrations are

higher than natural background. Flow data and nutrient levels indicate that the stream can not assimilate the nutrient load from upstream pollution sources and additional loading from surface runoff. As a result, even though concentrations are lower than the upstream stations, the stream is discharging large amounts (lbs/day) of nutrients into East Lake Tohopekaliga on a yearly basis.

Water quality data has been collected at SR 530 on Boggy Creek (BCC) since 1966. The data indicates poor water quality with respect to nutrients, however, the dissolved oxygen has recovered to an acceptable level (Figures 5, 6, 7).

The average dissolved oxygen has recovered to 5.3 mg/L with the five (5) day BOD remaining 2.3 mg/L. The nutrient values have been reduced significantly to 1.11 mg/L for total nitrogen and 0.5 mg/L for total phosphate (as P), due to dilution of the stream.

Flow calculations show that actual lbs/day loading at this station for BOD, total nitrogen and total phosphorus are higher than the upstream stations which is due mainly to the increased flow from Boggy Creek swamp which enters the stream just south of station.

Total Chlorophyll-a ranged from 1.0 ppb to 12.48 ppb and averaged 3.65 ppb. Phytoplankton counts ranged from 20 u/ml to 1,446 u/ml and averaged 236 u/ml (Figure 4). The species composition of the phytoplankton population is quite different at this station. Diatoms (golden algae) and a variety of green algae make up a significant portion of the algal population. Diatom associations are indicative of natural conditions with regards to this population in the stream habitat.

At least fifty percent (50%) of the macroinvertebrate population is comprised of pollution intolerant organisms. Only fifteen percent (15%) of these organisms are pollution tolerant species. Biotic indices are above ten (10) at this station (Table II).

The mean bacterial densities at this station show an uptrend from Station B (Figures 8, 9). This trend is a result of the confluence of latteral canals with Boggy Creek upstream from this station. The fecal coliform-fecal streptococci ratio at this station indicates that the uptrend in mean bacterial densities has resulted from the addition of animal wastes downstream from Station B. The sanitary

FIGURE 8

MEAN FECAL COLIFORM AND
FECAL STREPTOCOCCI DENSITIES
IN RELATIONSHIP TO POSITION
DOWNSTREAM

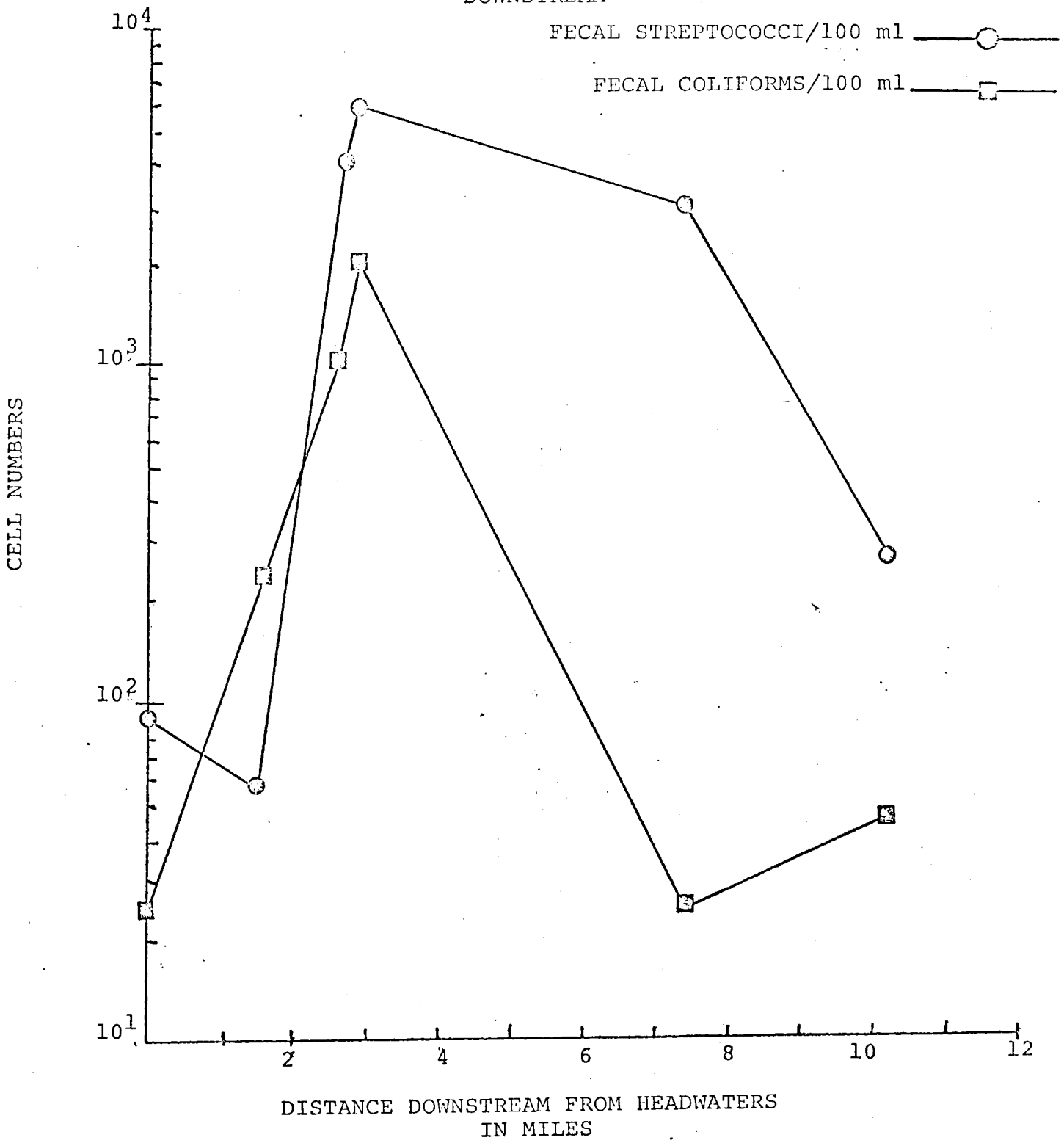
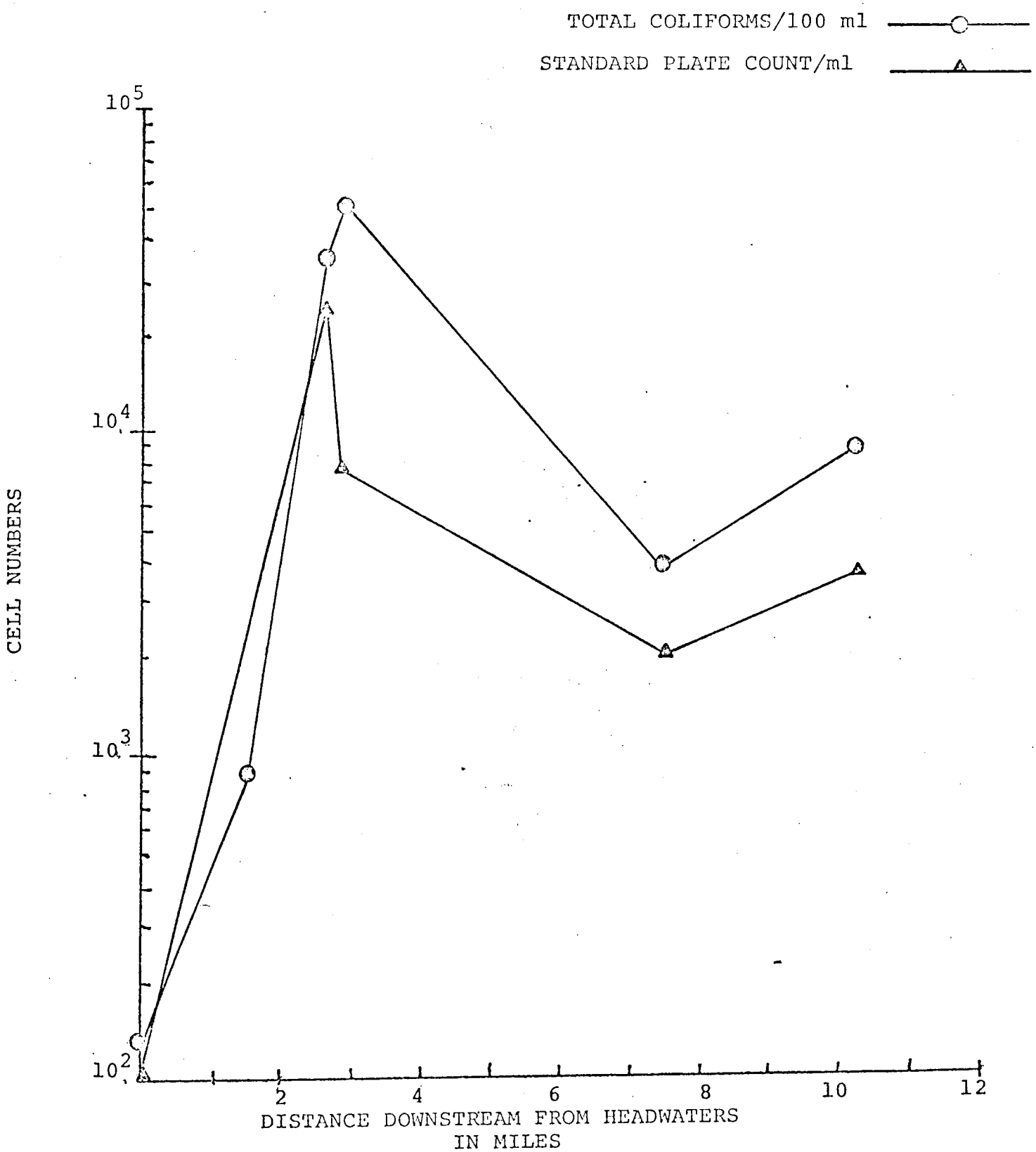


FIGURE 9

MEAN TOTAL COLIFORM AND STANDARD PLATE COUNT DENSITIES IN RELATIONSHIP TO POSITION DOWNSTREAM



quality of water at this station is poor and should not be used for primary contact recreational activities.

POLLUTION SOURCES - AGRICULTURAL

Much of the Boggy Creek drainage area is utilized for cattle ranching and dairy farming.

A large dairy farm operation in the northern part of the basin drains into Lake Mare Prairie and into Boggy Creek above the BCA station. The pollution of Lake Mare Prairie and Boggy Creek at Station BCA are a direct result of the runoff from milking barns, feed lots, and pasture lands which drain into these waters.

The southern part of the basin is used extensively for cattle ranching. Flow calculations reveal increases in pollution loadings occur between BCB and BCC. These increases are probably due to natural runoff from these areas which drains into feeder streams and eventually into Boggy Creek above station BCC.

DOMESTIC WASTE TREATMENT PLANTS

There are currently ten (10) domestic waste treatment plants in operation throughout the basin. Table IV includes a listing of the sewage treatment plants, type of operation and treatment efficiency if available. Only one of the ten plants discharge into County waters.

TABLE IV

DOMESTIC WASTE TREATMENT PLANTS
BOGGY CREEK BASIN

PLANT	TYPE	DESIGN CAPACITY (mgd)	A.D.F. (mgd)	DISCHARGE	% REMOVAL	
					BOD	TOTAL SUSPENDED SOLIDS
Orlando's Jetport	E.A.	0.07	0.125	McCoy Canal	95	97
Sheraton Jetport Inn	E.A.	0.4	U.K.	Pond	95	93
Honey's Beehive	E.A.	0.004	U.K.	Pond	78	39
Golden Acres Tr. Pk.	E.A.	0.005	U.K.	D.F.	82	89
Nubar Indust.	E.A.	0.003	U.K.	Marsh	90	69
Cypress Park Elem. School	T.F.	0.001	0.001	Pond	97	95
McCoy Plaza Shopping Ctr.	E.A.	0.0075	U.K.	Pond	---	---
Mary Jess S.T.P.	E.A.	0.003	0.003	D.F.	---	---
Orange County Convalescent	E.A.	0.025	0.019	Pond	---	---
Pershing Elem. Sch.	T.F.	0.0125	0.01	Pond	---	---

KEY:
E.A. - EXTENDED AEREATION
T.F. - TRICKLING FILTER
D.F. - DRAIN FIELD
U.K. - UNKNOWN
A.D.F.- AVERAGE DAILY FLOW

The City of Orlando Jetport Sewage Treatment Plant discharges into the McCoy canal below BCA. The design capacity of the plant is 0.07 mgd with an average flow of 0.125 mgd. The most recent chemical anaylsis of the effluent from the polishing pond indicates the following poundage is being discharged to Boggy Creek:

Five (5) day BOD	5.7 lbs/day
Total suspended solids	4.7 lbs/day
Total nitrogen	4.7 lbs/day
Total soluble phosphate	13.6 lbs/day

Evaluation of the operation efficiency on November 6, 1972 for removal of five (5) day BOD and total suspended solids indicates ninety five (95%) and ninety seven (97%) percent removal respectively.

The other plants discharge into percolation ponds or drain fields and provide a potential for nutrient pollution due to seepage and surface runoff.

CONCLUSION

The data collected by the Orange County Pollution Control Department indicates that the lakes and streams comprising the Boggy Creek Drainage Basin are in a stressed condition for the following reasons:

(1) Continued development within the basin is accelerating the eutrophication process with regards to the ecology of the lakes and streams.

(2) Several pollution point sources are contributing significant amounts of pollutants to the stream proper.

(3) These pollutants are being passed downstream to the larger Kissimmee Drainage Basin.

Lake Mare Prairie and Boggy Creek are polluted due to drainage received from agricultural sources and the discharge from domestic waste treatment plants. In order to solve some of these problems strict compliance to Orange County Rules and Regulations is essential in the following areas:

(1) Pollution control

(2) Building codes, zoning codes and planning rules

(3) Public health aspects

APPENDIX

BOGGY CREEK DRAINAGE BASIN LAKES

LOCATION	STATION
Lake Anderson	BC1
Lake Barber	BC2
Bass Lake	BC3
Bearhead Lake	BC4
Lake Bumby	BC5
Lake Conway N.E.	Lobe
Lake Conway N.W.	Lobe
Lake Conway Middle	BC8
Lake Conway Mid-South	BC9
Lake Farrar	BC10
Lake Gatlin	BC11
Lake Gem Mary	BC12
Lake Gloria	BC13
Lake Holden	BC14
Lake Inwood	BC15
Lake Jennie Jewel	BC16
Lake Jessamine	BC17
Lake LaGrange	BC18
Lake Margaret	BC19
Lake Mary	BC20
Mud Lake	BC21
Lake Pinelock	BC22
Lake Porter	BC23

Boggy Creek Drainage Basin Lakes Cont.

LOCATION	STATION
Lake Tennessee	BC24
Lake Tyner	BC25
Lake Mare Prairie	BC26
Lake Willisara	BC27
Lake Y	BC28

ORANGE COUNTY FLORIDA
ORLANDO, FLORIDA 32801 / (305) 241-4311

POLLUTION CONTROL BOARD
2008 E. MICHIGAN AVE.
ORLANDO, FLORIDA 32806
PHONE 422-2384

POLLUTION BOARD
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LAURENCE PARKER, VICE CHAIRMAN
MATTHEW CROSS
WILLIAM LONG
BEN SIBLEY

C. W. SHEFFIELD, P. E.
POLLUTION CONTROL OFFICER

February 28, 1973

Memorandum for Reference

From: C.W. Sheffield, Pollution Control Officer

Subject: Flow determinations in Boggie Creek upstream of Taft USGS gauging station.

The upstream flows at BCA (McCoy Rd.) and BCB where Boggie Creek Rd. crosses McCoy A.F.B. canal were determined using flowing assumption.

1. Flow upstream is reduced in direct proportion to downstream flow at Taft gauging station.

2. The area affecting flow at BCA station will be reduced by a factor of 0.5 due to the fact area is mainly lakes which afford much evaporation.

3. The area for BCB and BCC will be weighed by a factor of 1.25 to proportion the flow due to reduced flow from BCA.

4. Flow at BCB will assume Flow at BCA plus City of Orlando Jet Port Sewage Treatment Plant and McCoy Air Force Base sewage treatment plant flow are included in flow values at USGS Taft gauging station.

5. Flow at BCC will be flow at Taft USGS gauging station plus flow off land correlated as direct proportion to flow above BCC station.

<u>Calculations</u>:

Areas:

BCA = 24 sq. mi.
BCB = 21 sq. mi.
BCC = above Taft USGS Sta. 22 sq. mi.
below Taft USGS Sta. 19 sq. mi.
41 sq. mi.

Total Area:

Above Taft USGS Sta. = 67 sq. mi.
Above BCC = 86 sq. mi.

(Total Area) : Total (Flow) = coeft. (area): (flow)

Flow Calculated for Year 1972:

Av. cfs 1972 at USGS Sta = 28.6 cfs

BCA

$\frac{67}{28.6} = 0.5 \left(\frac{24}{X}\right)$ Flow = 5.1 cfs Total Flow = 5.1 cfs

x = 5.1 cfs

BCB

$\frac{67}{28.6} = 1.25 \left(\frac{21}{X}\right)$ Flow = 11.2 Total flow = 16.3 cfs

X = 11.2 cfs

BCC

1) Above Taft USGS Sta.

$\frac{67}{28.6} = 1.25 \frac{(22)}{(X)}$

X = 11.74 cfs Total flow = .28 cfs

2) Below Taft USGS Sta.

$\frac{86}{26} = 1.25 \frac{(19)}{(X)}$ Flow = 19.74 cfs Total flow = .36 cfs

X = 8 cfs

% Flow from each basin area

Total Flow = 36 cfs
BCA = 14%
BCB = = 31%
BCC = 55%

MICROBIOLOGY LABORATORY

WORK LOAD SUMMARY

BOGGY CREEK BASIN

STATION	NUMBER OF SAMPLES	NUMBER OF DETERMINATIONS
BC9	3	28
BC26	3	28
BCA	7	54
BCD	1	14
BCB	1	14
BCC	7	54
TOTAL	22	192

BIOLOGICAL LABORATORY

SUMMARIZATION OF WORK LOAD

SAMPLES COLLECTED SINCE 1968

BOGGY CREEK BASIN

STATION	NUMBER OF SAMPLES	ANALYSIS	IDENTIFICATIONS
BC9	17	39	480
BC26	16	48	640
BCA	20	60	3000
BCB	20	60	1500
BCC	32	90	2500
BCD	1	6	50
TOTAL	106	303	8170

FIELD DATA REPORT

Fish Kill in canal

LOCATION Lake Baldwin Canal STATION NO. LE 7

DATE 9-12-78 TIME 13:25

AMBIENT DATA: CLOUD COVER 80% /WIND DIR. 360 /TEMP 37°C /SURFACE Choppy

INSITU DATA

DEPTH (M)	D.O. mg/l	TEMP °C	pH	COND.	ORP	LIGHT TRANS.	SECCI DISC	OTHER

VISUAL CONDITIONS/OBSERVATIONS/REMARKS: Water is grayish with slight oily film - water smells like wash water from a mess hall where pots & pans are scrubbed - Several dead catfish & one dying one, this one was sunken gutted 4 bream & 3 small bass & nearly lifeless -

TYPE AQUATIC VEGETATION: Hydrilla & Cattails

TOPOGRAPHY:

SAMPLE DATA

	DEPTH	D.O.#	B.O.D. #	BIO #	CHEM #	MICRO #	ODOR	VISUAL
1	Surf	37C	at canal head		DO 3.7		wash water	Grayish
2	Surf	127	at outfall		DO 4.7		wash water	Grayish

SIGNED B Swaddle

MICROBIOLOGY LABORATORY

CERTIFICATE OF ANALYSIS

"NOT FOR PUBLICATION"

7-19-77 CE7-RB + 7-20 77 CE7 RB
MICROBIOLOGY LOG #

21 July 77
DATE RECEIVED

SAMPLE SOURCE AND LOCATION Lake Baldwin

TOTAL COLIFORMS PER 100 ml (7-19) > 160 (7-20) 710

FECAL COLIFORMS PER 100 ml (7-19) > 120 (7-20) 270

FECAL STREPTOCOCCI PER 100 ml

TOTAL PLATE COUNT PER ml

PATHOGENS ISOLATED YES NO

DISSOLVED OXYGEN (PPM)

B.O.D.$_5$ (PPM)

SPECIAL TESTS

COMMENT Lake is unsuitable for body contact recreation.

TRANSMITTED TO: DATE

ALL ANALYSES HAVE BEEN PERFORMED IN ACCORDANCE WITH THE 13TH EDITION OF STANDARD METHODS (APHA, AWWA, WPCF). IF NOT COVERED BY STANDARD METHODS THE ANALYSES HAVE BEEN PERFORMED BY THE MOST CURRENT "STATE OF THE ART" TECHNIQUES

CERTIFIED BY: J. Adams
(MICROBIOLOGIST)

DATE COMPLETED

APPROVED BY John M. Bateman
ORANGE COUNTY POLLUTION CONTROL OFFICER

REQUEST FOR
BACTERIOLOGICAL EXAMINATION OF
SURFACE WATER

DATE 8-16-77 TIME _____

NAME OF REQUESTOR Chief Butcher, Environmental Health, Code 13

ADDRESS Naval Regional Medical Center, Orl. 32813 PHONE 646-4613
STREET TOWN

DIRECTIONS TO WATER BODY Lake Baldwin, Center

SPECIAL COMMENTS BY REQUESTOR _____

RECEIVED BY J.A.

DATE SAMPLED 8-16-77

MICRO BOTTLE # _____

SAMPLED BY JA & DT

TEST COMPLETED (Date) _____

TEST RESULTS

AEROMONAS HYDROPHILA/100 ml	20
TOTAL AEROBIC BACTERIA	5.5×10^2
PSEUDOMONAS AERUGINOSA/100 ml	44
TOTAL COLIFORMS/100 ml	300
FECAL COLIFORMS/100 ml	30
STAPHYLOCOCCUS AUREUS/100 ml	40
FECAL STREP/100 ml	<20

COMMENTS

Meets Orange County recreational standards

J. Adams
MICROBIOLOGIST

REQUEST FOR
BACTERIOLOGICAL EXAMINATION OF
SURFACE WATER

DATE 7-10-81 TIME

NAME OF REQUESTOR Mr. Gardner

ADDRESS 1803 Barker (STREET) Winter Park (TOWN) 32789 PHONE

DIRECTIONS TO WATER BODY Lake Spier

SPECIAL COMMENTS BY REQUESTOR water quality

RECEIVED BY

DATE SAMPLED 10-12-81

MICRO BOTTLE # 609

SAMPLED BY J.A. & A.C.

TEST COMPLETED (Date) 10-20-81

TEST RESULTS

FECAL COLIFORMS/100ml	<20
FECAL STREP/100ml	<20
TOTAL COLIFORMS/100ml	32
TOTAL AEROBIC BACTERIA (Standard Plate Count)	380
PSEUDOMONAS AERUGINOSA/100ml	<20
STAPHYLOCOCCUS AUREUS/100ml	<100
AEROMONAS HYDROPHILA/100ml	<100

COMMENTS

This lake meets Orange County recreational lake standards.

Richard C. Bailey Jr.
MICROBIOLOGIST

ORANGE COUNTY
POLLUTION CONTROL DEPARTMENT

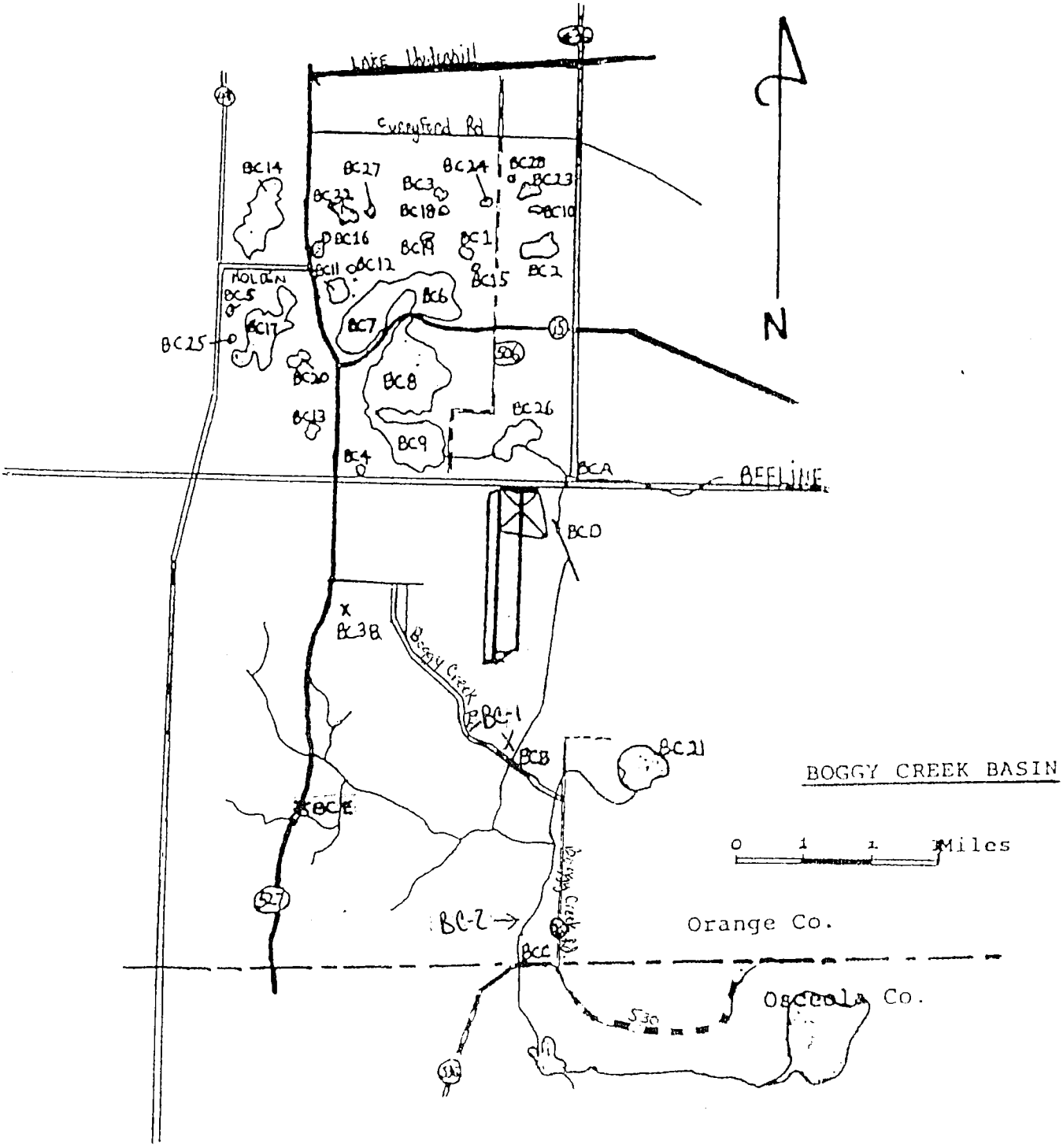
STATION NUMBERS AND LOCATIONS

BASIN CODE	BASIN	PAGE NUMBERS
A	Apopka Basin	1 - 6
LA	Lake Apopka Stations	7
BC	Boggy Creek	8 - 11
CC	Cypress Creek	12 - 14
BE	Big Econlockhatchee	15 - 16
LE	Little Econlockhatchee	17 - 21
H	Hart Basin	22 - 23
HB	Howell Branch	24 - 26
RC	Reedy Creek	27 - 29
SJ	St. Johns	30 - 33
SC	Shingle Creek	34 - 38
BW	Big Wekiwa	39 - 43
LW	Little Wekiwa	44 - 46
	Alphabetical Listing of Orange County Lakes	47 - 53

IB = IRON BRIDGE (5 wells) 42 wetland influent
43 " effluent
44 final discharge @ SJ

PLANT
FORCE MAIN
SPOTFICH BOX
SS 42
SS43
WETLAND
CANAL
SJ JOHNS
SJ 44 FINAL

BOGGY CREEK BASIN


BOGGY CREEK BASIN
N
0 1 2 3 Miles
Orange Co.
Osceola Co.
BEELINE
Boggy Creek
BC14
BC27
BC24
BC28
BC23
BC3
BC22
BC18
BC10
BC16
BC19
BC1
BC11
BC12
BC15
BC2
HOLDEN
BC5
BC6
BC7
BC17
BC25
BC20
BC8
BC26
BC13
BC9
BC4
BC0
BC3B
BC-1
BC8
BC21
BCE
BC-2
BCC
530

BOGGY CREEK DRAINAGE BASIN (CONT'D)

COUNTY STATION NUMBER	NAME	COMMENTS
BC26	Lake Mare Prairie (Lake Warren)	
BC27	Lake Willisara	Private
BC28	Lake "Y"	
BC31	Cypress Park Elem. S.T.P.	
BC32	Lake Mary Jess S.T.P.	
BC33	Sheraton Inn S.T.P.	McCoy Road at Jet Port
BC34	Honey BeeHive S.T.P.	
BC38	Boggy Creek Village	
BC39	Golden Acres Tr. Pk.	
BC40	Days Inn Motel	
BC41	McCoy Plaza Shopping Ctr.	
BC42	Dobbs House	
BC43	McCoy Navy Annex N. S.T.P. Final Effluent	
BC45	Detention Pond - Bumby & Gatlin	
BC46	Pipe North Side Gatlin Discharge to Canal	
BC25A	Lake Tyner Canal Discharge	
BCA	McCoy Road (Bee-Line)	
BCB	Boggy Creek Road SR 527A S. of McCoy AFB	
BCC	Boggy Creek - Hwy 530	
BCD	100' downstream from Jet Port S.T.P.	
BCE	SR 527 - 1st bridge south of railroad crossing S. of Taft	

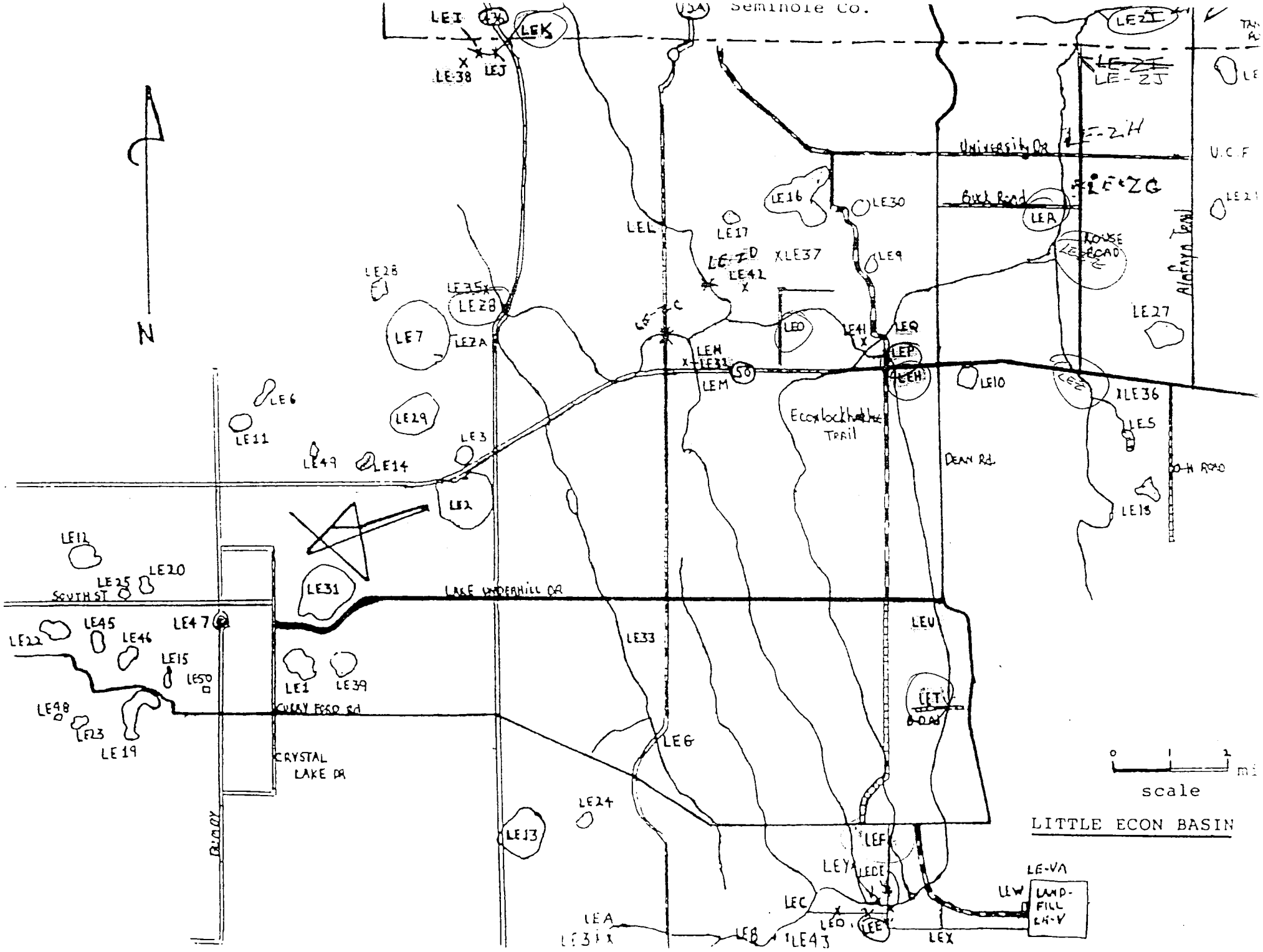
BOGGY CREEK DRAINAGE BASIN

COUNTY STATION NUMBER	NAME	COMMENTS
BC1	Lake Anderson	
BC2	Lake Barber (George)	Private
BC3	Bass Lake	Private
BC4	Bearhead Lake	
BC5	Lake Bumby	
BC6	Lake Conway N.E. lobe - mid	
BC7	Lake Conway N.W. lobe - mid	
BC8	Lake Conway mid-lobe	
BC9	Lake Conway South-lobe	
BC10	Lake Farrar	
BC11	Lake Gatlin	
BC12	Lake Gem Mary	
BC13	Lake Gloria	
BC14	Lake Holden	
BC15	Lake Inwood	Private
BC16	Lake Jennie Jewel	
BC17	Lake Jessamine	
BC18	Lake LaGrange	
BC19	Lake Margaret	
BC20	Lake Mary	
BC21	Mud Lake	Inaccessable
BC22	Lake Pinelock	
BC23	Lake Porter	
BC24	Lake Tennessee	
BC25	Lake Tyner	

BOGGY CREEK DRAINAGE BASIN (CONT'D)
LAKE CONWAY CHAIN - WHITE AMUR CONTRACT

COUNTY STATION NUMBER	NAME	COMMENTS
CW1	South Lobe SE End	
CW2	South Lobe N End	
CW3	Middle Lobe W. End	
CW4	Middle Lobe E End	
CW5	Middle Lobe N End	
CW6	East Lobe S End	
CW7	East Lobe NE End	
CW8	West Lobe N End	
CW9	West Lobe SW End	
CW10	West Lobe NW End	
CW11	Lk. Gatlin - Middle	

LITTLE ECONLOCKHATCHEE RIVER BASIN


Seminole Co.
N
LE-2I
LE-2J
LE-2H
University Dr
U.C.F
LE-2G
Oxford Road
LE16
LE30
LE17
LE-2D
XLE37
LE42
LE9
LEL
LE28
LE35
LE7
LE2A
LE-2C
LEO
LE41
LEQ
LEP
LEN
LE33
LEM
LEH
LE10
LE27
Alafaya Trail
LE6
LE11
LE29
LE3
LE49
LE14
Econlockhatchee Trail
Dean Rd
LE36
LE5
LE13
LE2
LE12
LE20
LE25
SOUTH ST
LE31
LAKE UNDERHILL DR
LE47
LE45
LE46
LE22
LE15
LE50
LE1
LE39
LE33
LEU
LE48
LE23
LE19
CURRY FORD RD
CRYSTAL LAKE DR
LE6
LE24
LE13
LEF
LEY
LEE
LEC
LEA
LE31
LE8
LE43
LEX
LEW
LE-VA
LAND-FILL LA-V
scale
LITTLE ECON BASIN

LITTLE ECONLOCKHATCHEE RIVER DRAINAGE BASIN

COUNTY STATION NUMBER	NAME	COMMENTS
LE1	Lake Arnold	
LE2	Lake Barton	
LE3	Little Lake Barton	
LE5	Lake Burge	Inaccessible
LE6	Lake Caydee	
LE7	Lake Corrine (Baldwin)	
LE9	Lake Douglas	
LE10	Lake Downey	
LE11	Lake Druid	Inaccessible
LE12	Lake Eola	
LE13	Lake Fredrica	
LE14	Lake Gear	Inaccessible
LE15	Lake Hourglass	
LE16	Lake Irma	
LE17	Lake Jean	Inaccessible
LE18	Lake Kehoe	
LE19	Lake Lancaster	
LE20	Lake Lawsona	
LE21	Lake Lee	
LE22	Lake Lucerne	
LE23	Lake Lurna	
LE25	Lake Olive	
LE27	Lake Rouse	
LE28	Lake Spier	

LITTLE ECON BASIN (CONT'D)

COUNTY STATION NUMBER	NAME	COMMENTS
LE29	Lake Susan	
LE30	Lake Telfer	
LE31	Lake Underhill	
LE32	City of Orlando STP #1	
LE33	Azalea Park S.T.P.	
LE34	Conway Manor S.T.P.	
LE35	Corrine Terrace S.T.P.	
LE36	Park Manor S.T.P.	
LE37	Sun Haven S.T.P.	
LE38	Winter Park Est.STP	
LE39	Lake Giles	Private
LE40	Union Pk.-Winn Dixie S.T.P.	
LE41	Union Park Jr.High School S.T.P.	
LE42	Arcadia Acres S.T.P.	
LE43	East Orlando EST.S.T.P.	
LE44	Bonneville S.T.P.	
LE45	Lake Cherokee	
LE46	Lake Davis	
LE47	Lake Como	
LE48	Lake Beauty	
LE49	Lake Weldona	
LE50	Det.Pond - Groveland & Vine	
LE51	University Park STP	

LITTLE ECON BASIN (CONT'D)

COUNTY STATION NUMBER	NAME	COMMENTS
LEA	Conway Est.Canal after STP	
LEB	15A East Orlando Est.	
LEC	East Orlando Canal after STP	
LED	East Orlando Canal SWD Station 3	
√LEE	North-South Canal SWD Station 2	
LEDE	Before Power Line Bridge after East Orlando Canal (see map)	
LEF	Power Line Bridge SWD Station 5	
LEG	15A ½ mile N. Curry Ford Rd. Azalea Park	
√LEH	Hwy. 50 - Union Park	
LEK	Crane Strand Hwy. 436	
LEL	15A south of Goldenrod	
LEM	Hwy. 50 before S.T.P.	
LEN	100 yds. after S.T.P.	
√LEO	Harrell Rd. before Banner Dam	
√LEP	Econlockhatchee Trail	
LEQ	Dean Rd. (Michaels Dam Res.)	
√LER	Buck Rd. SWD Station 8	
LES	Tanner Rd.(Seminole Co) SWD Station 9	
√LET	Gauging Sta.B-D Rd. SWD Sta. 6	
LEU	300 yds. S.of Lk.Underhill 7	
LEV	Pond A	
LEVA	Pond Influent	
LEW	Pond A after	
LEX	East-West Canal SWD Sta. 1	
LEVN	[illegible] discharge outfall into wetland [illegible]	
LEVM	[illegible]	
LEVS	[illegible]	

LITTLE ECON BASIN (CONT'D)

COUNTY STATION NUMBER	NAME	COMMENTS
LEY	Upstream from Confl.SWD Sta.4	
✓LEZ	Hwy.50 1/8 mi.W.of entrance to Park Manor	
LEZA	Lake Baldwin outfall at Truman Road	
✓LEZB	Lake Baldwin Outfall at Hwy.436	
LEZC	15A (Baldwin outfall)	
LEZD	Bates Road	
LEZF	In wood off Alafaya Tr.before iron bridge discharge	100 yds upstream
LEZG	Rouse Road	
LEZH	U.C.F. Blvd	
✓LEZI	Downstream of Iron Bridge discharge approx. 100 yds	

Orange County Landfill Wells

SW-#1 thru #39 with the exception of 2, 29, 30, 33 & 34

DW - A, B, C, D

LEZZ - Blanchard Pk

LEZJ - Berry Dace Rd.

LEZK 100 yds upstream from University Shores discharge at Hennel Rd

Being enforced by county
Not yet approved by State - most taken from State.

from Land Development Code
January 1992
Orange County Board of County Commissioners
Section from Planning Dept.

B. INTERIM AQUIFER/WELLFIELD PROTECTION

1. RELATIONSHIP TO THE COMPREHENSIVE POLICY PLAN

The following regulations are intended to implement and be consistent with the potable water wellhead protection policies established in the Potable Water Element, Aquifer Recharge Element and Future Land Use Element of the adopted Comprehensive Policy Plan and the requirements for land development regulations pursuant to Chapter 163, Florida Statutes.

2. REGULATIONS

Sec. 1. Purpose and Intent

It shall be the purpose and intent of this Regulation to require all businesses which use, generate, or produce any material as characterized or listed on the Resource Conservation and Recovery Act's or the Environmental Protection Agency's hazardous waste lists to register with the County, and allow on-site inspections as requested by the County and prohibit these regulated businesses from locating within two hundred (200) feet from public potable water supply wells.

Sec. 2. Definitions

Unless the context clearly indicates otherwise, the following words and phrases used in this Regulation shall have the meanings set forth below:

Abandoned Well - A well which is no longer in use, and is not constructed to State standards and for which no valid St. Johns River Water Management District (SJRWMD) or South Florida Water Management District (SFWMD) permit has been issued. Any well not presently in use and which is in a state of disrepair or is a potential source of groundwater contamination, and whose existence is detrimental to the water resources of the County shall be deemed abandoned.

Air Entrainment - Any process by which air is introduced into ground water.

Aquifer - A groundwater bearing geologic formation or formations that contains enough saturated permeable material to yield significant quantities of water.

Best Management Practices - Those practices that a person can follow which minimize or negate the potential for a release of Regulated Substances to groundwater or soils.

Closure - The termination of any regulated nonresidential land use or activity covered by this Regulation.

Containment - A system that is used to prevent the release of Regulated Substances to the environment. The system shall be constructed of an impervious material such that release of Regulated Substances to the environment is prevented. The size of the containment system should be sufficient to contain spills, leaks, overflows and rainfall until appropriate action can be taken.

Contamination - The presence of any harmful or deleterious substances in the groundwater supply, surface water, or land surface.

Continuous Transit - The nonstop movement of a mobile vehicle except for stops required by traffic laws.

Discharge - Includes, but is not limited to, any spilling, leaking, seeping, pouring, misapplying, emitting, emptying, or dumping of any Regulated Substance which may affect the groundwater.

EPA - The United States Environmental Protection Agency.

FDER - Florida Department of Environmental Regulation.

Geotechnical Boring - Any excavation that is drilled, cored, washed, driven, or dug for the purpose of geological investigation or for obtaining a soil sample.

Groundwater - Water beneath the surface of the ground whether or not flowing through known and definite channels.

Hazardous Substance - A substance that has one or more of the following characteristics: ignitability, corrositivity, reactivity, Toxicity Characteristic Leaching Procedure (TCLP), or toxicity.

Injection/Heat Exchange Wells - Any well used specifically for the purpose of introducing under pressure any water into underground formations. Air conditioning return wells are considered injection wells for the purposes of this Regulation.

OCEPD - Orange County Environmental Protection Department.

Person - An individual, corporation, unincorporated association, partnership, trust, governmental body or officer, or any other similar entity.

Pollution - The presence of any substance (organic, inorganic, radiological, or biological) or physical condition in water which degrades the quality so as to constitute a hazard or impair the use of the water.

Potable Water Sources - Sources of water that meet County, State, Federal drinking water standards and are intended for drinking, culinary and domestic purposes.

Regulated Business - Any operation listed in the Standard Industrial Classification that manufactures, stores, or uses Regulated Substances.

Regulated Substances - Any hazardous or toxic substance regulated under this Regulation as described in Section 3. Any hazardous or toxic substance that may cause groundwater pollution.

Standard Industrial Classification - (SIC) - A Federally developed code that identifies a business or industrial activity with a unique four digit number.

Storage System - Any tank, container, drum, or storage component together with all integral piping or pumping equipment that contain Regulated Substances.

Well - Any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is to conduct ground water to the surface.

Sec. 3. Aquifer/Wellhead Protection Identification of Potential Sources

Section 3.1. Registration

(a) Any business that manufactures, stores or uses Regulated Substances listed in this section in quantities equal to or greater than five (5) gallons if liquid or twenty-five (25) pounds if solid shall be required to register on forms provided by the Orange County Environmental Protection Department within 120 days of the effective date of this Regulation.

(b) Any businesses that are currently being inspected under the Chapter 17-761 Florida Administrative Code (F.A.C.) Storage Tank Compliance Verification Program or the Orange County Small Quantity Generator Program shall be registered by a transfer of existing records and will not be required to complete the Aquifer/Wellhead Protection Registration Form unless the information obtained in the records transfer is incomplete. In such cases the registration form will be sent for completion.

(1) Regulated Substances

a. The discharge of Regulated Substances in a manner that may cause groundwater pollution shall be a violation of this Regulation.

b. Regulated Substances shall include, substances which have one or more of the following characteristics:

1. Substances, including degradation and interaction products, which because of their quality, concentration, or physical, chemical characteristics (including ignitability, corrosivity, reactiveness and toxicity), radioactivity, mutagenicity, bioaccumulative effect, persistence (non degradability) in nature; OR
2. Those substances set forth in the lists, as amended from time to time, entitled, Lists of Hazardous Waste (40 CFR Part 261, Subpart D), 40 CFR Part 261, Appendix VIII - Hazardous Constituents, and EPA Designation Reportable Quantities and Notification Requirements for Hazardous Substances Under CERCLA (40 CFR 302); OR
3. Known hazardous and toxic properties as listed in 40 CFR 302 by the EPA; OR
4. Priority toxic pollutants listed in 40 CFR 122.21 by the EPA; OR
5. Are restricted-use pesticides as that term is used in Chapter 487, Florida Statutes and which are listed in Chapters 5E-2 and 5E-9 F.A.C.; OR
6. Water which contains Total Dissolved Solids (TDS) in excess of 1,000 parts per million (ppm) and chlorides in excess of 500 ppm.

(2) Types of Regulated Businesses

The following list of businesses for the purposes of this Regulation may manufacture, store or use Regulated Substances. All businesses listed below shall register following the registration provisions in Section 3.1 of this Regulation, unless specifically exempted in Section 3.2. The Standard Industrial Classification (SIC) Code for each listed business activity is provided for use on the Wellhead Protection Registration Forms and for use on Orange County Business License Forms.

SIC CODES

Acrylic Resins/Manufacturing	2821
Agricultural Chemical Warehouse and Distribution	5191
Aircraft/Airline Services	5172
Asphalt Batching Plants/Pavers/Asphalt Products	3531
Automobile Repair Facilities Using or Dispensing Fuels, Greases, Oils or Solvents	7538
Automobile Paint and Body Shops	7532
Automobile Parts and Supplies	5013
Automobile Rental	7514
Automobile Leasing	7515
Automobile Sales Facilities (New)	5511
Automobile Sales Facilities (Used)	5521
Battery Sales	5531
Battery Manufacturing	3692
Boat Sales	5551
Boat Repair Facilities	4493
Boat Manufacturing	3732
Building Materials Production/Sales Facilities	5932
Bus Lines/Repair Shops	4111
Cabinet Makers and Distributors	2434
Carpet Cleaners	7217
Chemical Manufacturing Plants	2833
Chemical Warehousing and Distribution Facilities	5169
Cleaning Supplies Manufacturing	2842
Commercial Laundries	7211
Concrete Products/Ready Mix Sales	5032
Contamination Control Companies/Waste Management Service Companies	9511
Contractors Equipment Sales and Rental	7353
Dry Cleaning Establishments	7215
Electrical and Electronic Manufacturing	4911
Electroplators, Circuit Board Manufacturers, or Metal Finishers	3548
Engine Repair Facilities (Small)	7699
Equipment/Tool Rental Operations	7359
Fire Extinguisher Repair Operations	7389
Funeral Homes	7261
Furniture Manufacturers and Refinishers	7641
Geotechnical Testing/Building Products Testing Laboratories	8734
Golf Courses	7992
Hydraulic Equipment Sales and Service Facilities	5085
Industrial Manufacturing Facilities	6512
Janitorial Suppliers	5087
Junk Yards/Automotive Wrecking for Scrap	5093
Laboratories -	
Photo	7384
Chemical	8731

Industrial	8731
Environmental	8731
Dental-X-Ray	8071
Medical	8071
Machine Shops	3599
Manufacturers Using Acids, Caustics, or Solvents	8611
Medical Facilities and Medical Related Manufacturing	8733
Metal Fabricators	3441
Paint Manufacturers	2851
Paint Stores	5231
Painting Shops	7532
Pest Control Operations and Structures	7342
Pest Control for Lawns or Forests	0782
Petroleum Products Production, Storage, and Bulk Distribution Facilities	5171
Plant Nurseries	5261
Pool Maintenance Companies	7389
Printers-	2731
Blue Printers	7334
Tee Shirt Screen Printers	5699
Roofers	1761
Scrap Metal yards	5093
Service Stations and Fuel Depots	5541
Sign Companies	7389
Soap and Detergent Manufacturers and Distributors	2841
Tractor Sales	5084
Tractor Service	7699
Transformer Use and Storage Areas	5063
Trucking/Transport Companies	4231
Water Conditioning Companies	5074
Water Treatment Facilities	4952
Wastewater Treatment Facilities	9511
Wood Preserving/Wood Treatment Facilities	2491

Section 3.2. Exemptions From Registration

The following categories shall be exempt from only the registration provisions of this Regulation provided that all listed conditions are met. All establishments that use Regulated Substances are required to meet or exceed all groundwater protection provisions of this Regulation even if registration is not required.

(a) **Emergency Services** - Existing fire, police, emergency medical services and County Emergency Management Center Facilities are exempt from the registration provisions of this Regulation.

(b) **Continuous Transit** - The transportation of any Regulated Substance shall be exempt from the registration provisions of this Regulation provided the transporting

motor vehicle is in continuous transit. If the transporting device containing Regulated Substances is stored for a period greater than or equal to one week, (7 days) it shall be considered stationary and must be registered. The transport of Regulated Substances through existing permanent pipelines is also exempt provided that the current use is not changed and provided that leak detection and monitoring are employed.

(c) **Vehicular and Lawn Maintenance Fuels & Lubricants** - The use in a vehicle or lawn maintenance equipment of any Regulated Substance solely as fuel in that vehicle or equipment fuel tank or as lubricant in that vehicle or equipment shall be exempt from registration. Extreme care must be taken to prevent spillage or discharging fuels and lubricants to soils, groundwater, or surface water.

(d) **Retail/Wholesale Sales Activities** - Retail/Wholesale sales establishments that store and handle Regulated Substances for resale in their original unopened containers shall be exempt from registration requirements provided that no individual container of Regulated Substances exceeds five (5) gallons, if liquid or twenty-five (25) pounds, if solid.

(e) **Office Use** - Office uses, including the use of Regulated Substances for the maintenance and cleaning of office buildings, shall be exempt from the registration requirements of this Regulation.

(f) **Residential** - The use of commonly used Regulated Substances for cleaning, maintaining, pest control, and any other strictly residential use shall be exempt from the registration requirements of this Regulation.

(g) **Construction Activities** - The activities of constructing, repairing or improving any facility shall be exempt from the registration provisions of this Regulation provided that all contractors, subcontractors, laborers, materialmen and their employees when using, handling, storing or producing Regulated Substances use those applicable Best Management Practices set forth in Section 12, attached hereto and incorporated herein.

(h) **Special Exemptions** - An affected person may request a special exemption from the requirements of this Regulation. In order to obtain such an exemption, such person must demonstrate by a preponderance of competent, substantial evidence to the Orange County Environmental Protection Department that special or unusual circumstances and adequate technology exists to isolate the facility or activity from soils, groundwater, or surface water. In granting the Special Exemption, the Orange County

Environmental Protection Department may prescribe any additional appropriate conditions that are necessary to protect soils, groundwater, or surface water.

Sec. 4. Aquifer/Wellhead Protection Measures

Section 4.1. Facility Inspections by Orange County Personnel

(a) Inspectors are hereby authorized and empowered to make inspections at reasonable hours of all land uses or activities regulated by this Regulation including non-residential buildings, structures and land in unincorporated Orange County in order to determine if applicable provisions of this Regulation are being followed.

(b) Inspections may be made without notice, and refusal to allow such an inspection shall be sufficient grounds for enforcement procedures and penalties.

(c) In the event a person who has common authority over a building, structure or land shall not permit an inspection, the inspection shall be rescheduled and shall be noticed by United States certified mail. Failure of such person to thereafter permit an inspection shall be sufficient grounds and probable cause for a court of competent jurisdiction to issue an administrative warrant for the purpose of inspecting, surveying or examining such premises.

(d) In the event a building, structure or land appears to be vacant or abandoned, and the property owner cannot be readily contacted in order to obtain consent for an inspection, the Inspector may enter into or upon any open or unsecured portion of the premises in order to conduct an inspection thereof.

(e) The Inspector shall be provided with official identification and shall exhibit such identification when making any inspection.

(f) It shall be the duty of all law enforcement officers to assist in making inspections when such assistance is requested by the Orange County Environmental Protection Department.

Section 4.2. Reporting of Spills

Any discharge of a regulated substance of 5 gallons (liquid) or 25 pounds (solid) to the soils, surface water, or groundwater in unincorporated Orange County shall be reported by the facility owner or operator to the Orange County Fire/Rescue Division. Any person knowing or having evidence of a discharge shall report such information. If the substance discharged is known, the owner, operator, or

person providing notification shall inform the Fire/ Rescue Division of the substance discharged and the hazard potential if known.

Section 4.3. Investigation and Monitoring of Suspected or Known Spills

If during inspection by Orange County personnel a facility is found to have visible signs of contamination or if a reportable discharge occurs that may affect soil, surface water, or groundwater, the facility owner shall conduct an investigation which may include soil boring, soil sampling and analysis, monitoring well installation following the provisions of this section.

(1) Applicable Rules and Guidance - Petroleum and Petroleum Product contamination shall follow the procedures established in Chapter 17-770, Florida Administrative Code (F.A.C.). Established Department of Environmental Regulation (DER) enforcement cases shall follow DER's "Model Orders for Corrective Action" or the procedures established by consent order. All other Regulated Substances shall follow the procedures outlined in Section 11 (Spill Investigation Procedure Flow Chart), or the sampling procedures set forth by the Orange County Environmental Protection Department on a case by case basis. Sampling procedures and laboratory analysis shall meet the requirements of Chapter 17-160, F.A.C.

(2) Soil Borings/Well Monitoring Installation

a. Soil Borings - Soil samples obtained from soil borings shall be field tested for visual and vapor/liquid phase contamination according to Chapter 17-770, F.A.C. or for volatilization if the Regulated Substance has the potential to volatilize using an Organic Vapor Analyzer or a Photoionization Detector. Any other Regulated Substance shall be field or laboratory tested for parameters that are diagnostic for the chemical discharged. No soil boring may be drilled to a depth greater than 50 feet without the permission of the Orange County Environmental Protection Department. All borings deeper than 25 feet shall be neat cement grouted to the surface to prevent downward migration of surface and subsurface contaminants along the borehole to the Floridan Aquifer.

b. Monitoring Well Installation - If any soil sample is found to be contaminated, the contamination must be delineated in a horizontal and vertical direction and remediated. If the

water table is intercepted through the soil contamination delineation such that groundwater contamination may have occurred, a monitoring well shall be installed in the contaminated area and a groundwater analysis for the diagnostic constituents of the discharged substance must be performed by a state certified lab. If during laboratory analysis, groundwater contamination is detected, a sufficient number of monitoring wells shall be installed so that groundwater contamination is delineated in both a horizontal and vertical direction. All monitoring wells must be drilled by a licensed well driller and shall obtain a permit from the South Florida Water Management District or St. Johns River Water Management District. The Orange County Environmental Protection Department shall be notified by telephone or by mail at least 10 days prior to any well installation or groundwater sampling. In areas of known or discovered groundwater contamination, extreme care must be taken to ensure that contamination is not transmitted downward into the Floridan Aquifer. The use of surface casing will be required for wells that will be completed in the Floridan Aquifer. Surface casing should be set at the depth where soil contamination levels are reduced, in a competent soil type such as clay. After grouting, the surface casing shall be flushed with clean water to ensure that all contaminants have been removed before further drilling can be continued.

c. Sampling Frequency - The frequency of groundwater sampling shall be determined on a case by case basis by the Orange County Environmental Protection Department depending on the chemical properties of the discharged regulated substance or by the schedule established in Chapter 17-770, F.A.C. if the substance is a petroleum product. Orange County reserves the right to conduct split sampling to verify any and all results.

d. Site Rehabilitation - If sampling results of soil or groundwater indicate that contamination exists, the soil and groundwater shall be remediated. Contaminated soil must be removed and remediated or disposed of using environmentally acceptable methods. Contaminated groundwater shall be remediated using sound Hydrogeological and Engineering principals. Groundwater contamination levels must be below all Drinking Water Standards or must be free from all contaminates that are not Drinking Water Standards or must meet the requirements of

Chapter 17-770, F.A.C. Site owners or operators shall submit a monthly status report describing the cleanup progress on the site if the discharged Regulated Substance is not a petroleum product. If the substance discharged is a petroleum product, the reports and time schedules in Chapter 17-770, F.A.C. shall be followed. All technical reports required by any State law or this Regulation regarding a discharge of Regulated Substances shall be submitted to the Orange County Environmental Protection Department within 10 days of completion.

e. Closure of Groundwater Monitoring Requirements - The monitoring wells shall be sampled for a period not to exceed one year beyond four consecutive quarterly sampling events that are free from all contaminants that are not on the Drinking Water Standards list or if the levels are below all Drinking Water Standards. The well(s) shall be properly abandoned upon notification from the Orange County Environmental Protection Department that closure is appropriate. Orange County reserves the right to conduct split sampling to verify any and all results.

f. Contamination of Potable Drinking Water Sources - Any discharge of a Regulated Substance that is proven to contaminate a public or private potable well shall be remediated by the Regulated Substance property owner or operator at their own expense including but not limited to costs associated with reporting, technical report preparation, providing alternative potable water sources, monitoring groundwater contamination in public, private, and monitoring wells, and any action taken by Local Officials to respond to, and provide assistance to the responsible party.

g. Identification of Existing Sources - The Wellhead Protection Program shall undertake the identification of existing sources and may perform investigative procedures, remedial action, or any other action necessary to protect the Floridan Aquifer at the property owner's expense if the property owner of record does not undertake the prescribed investigative procedures resulting from a property inspection.

Section 4.4. Injection Wells/Heat Exchange Wells

(a) Injection wells/heat exchange wells

(1) Any wells or wells used for the purpose of withdrawal and subsequent reinjection to the Floridan Aquifer shall not alter existing chemical, radiological, physical or biological water quality.

(2) All reinjected water from any Heat Exchange/ Injection Well shall meet or exceed all drinking water quality standards.

(3) The owner of any well operated in Orange County used for the purpose of withdrawal and subsequent reinjection to the Floridan Aquifer shall notify the Orange County Environmental Protection Department within 24 hours of any loss or discharge of refrigerants.

(4) All newly installed reinjection wells shall be designed to prevent air entrainment in the reinjection process. All other existing permitted wells must retrofit to prevent air entrainment by January 1, 1995.

(5) All wells used for withdrawal and subsequent reinjection shall be required to sample the withdrawn and reinjected water for the following parameters.

a. Volatile Organic Chemicals (EPA Method 8021)
b. Total Dissolved Solids or Specific Conductance
c. Lead - Weekly or Monthly
d. Copper - Weekly or Monthly
e. Iron - Quarterly
f. Calcium - Quarterly
g. Magnesium - Quarterly
h. Temperature - Continuous
i. pH - Continuous

(6) Frequency of Sampling and Reporting Requirements

a. All withdrawal and reinjection wells shall install a sampling tap that will be suitable for sample collection on both wells.
b. Reinjection of less than 1,000 gallons per day (gpd) for non-residential uses shall be sampled semiannually and reported to the Orange County Environmental Protection Department once annually.
c. Reinjection of between 1,000 gpd and 1,000,000 gpd for non-residential uses shall be sampled continuously for Temperature, pH and Specific Conductance. All other parameters shall be sampled quarterly and reported to the Orange County Public Utilities Division, Water Department, once annually.

d. Reinjection of greater than 1,000,000 gpd shall be sampled continuously for Temperature, pH and Specific Conductance. All other parameters shall be sampled weekly, monthly, or quarterly as listed in Section 4.4(5) and reported to the Orange County Public Utilities Division, Water Department, quarterly.

(7) Injection Well/Heat Exchange Well Flow

The system operator or operators shall be required to install a flow meter and flow totalizer and record daily flow in the reinjection well(s) and production well(s). Flow information must be provided in addition to the sampling results for the required reporting period to the Orange County Environmental Protection Department.

(8) Corrective Action

a. In the event of a loss to the reinjection system of any regulated substance, or if the reinjection water does not meet all drinking water quality standards, the well owner will be required to remediate the reinjection water and the affected withdrawal water to all drinking water standards at their own expense.
b. Remediation must be conducted using sound hydrogeological and engineering principles and must continue until the reinjection water meets all drinking water quality standards.
c. All remediation projects are required to keep the Orange County Environmental Protection Department informed of their progress, any problems or changes in status of the remediation process. Orange County reserves the right to conduct split sampling to verify any and all results.

Section 4.5. Well Abandonment and Geotechnical Borings

(a) Well abandonment

(1) Any excavation (well) that is not being used for removing groundwater from an aquifer; recharge; determining quantity, quality, level or movement of groundwater; and removing or exchanging heat shall be properly abandoned at the property owner's expense following the guidelines established by the South Florida Water Management District (SFWMD) or St. Johns River Water Management District by January 1, 1995.

(2) In certain circumstances the well may not need to be abandoned but the evaluation and determination of the necessity of abandonment shall be coordinated through the South Florida Water Management District or St. Johns River Water Management District.

(b) Geotechnical borings

(1) No geotechnical boring shall be drilled to a depth greater than 50 feet without the permission of the Orange County Environmental Protection Department.

(2) All borings deeper than 25 feet shall be neat cement grouted to the surface to prevent downward migration of surface and subsurface contaminants along the borehole to the Floridan Aquifer.

(3) All borings less than 25 feet deep shall be backfilled with the original drilled soil to the surface to prevent the creation of a sump. Where the boring is advanced through asphalt or concrete it shall be patched at the surface with a similar impervious material.

(4) If contamination is detected in any geotechnical boring, the contaminated soil shall not be used as replacement material and the horizontal and vertical extent of the contamination must be assessed and reported following the applicable provisions of this Regulation.

Section 4.6. Septic Tanks/Drain Fields

(a) The discharge of any Regulated Substance to a septic system shall be considered a violation of this Regulation.

(b) Septic tank, drainfield and drainfield expansion shall be located no less than 200 feet from public potable water supply wells and no less than 75 feet from private water wells.

(c) If upon testing, a Regulated Substance is identified in the septic tank or drain field, the Regulated Business will be required to conduct the investigation required by Section 4.3 of this Regulation.

(d) As of the effective date of this Regulation, the following types of Regulated Businesses may not be constructed with septic systems.

(1) Agricultural Chemical Warehouse and Distribution Centers
(2) Asphalt Batching Plants/Pavers/Asphalt Products

(3) Automobile Repair Facilities Using or Dispensing Fuels, Greases, Oils or Solvents
(4) Automobile Paint and Body Shops
(5) Boat Sales/Repair Facilities
(6) Bus Lines/Repair Shops
(7) Cabinet Makers and Distributors
(8) Chemical Manufacturing Plants
(9) Chemical Warehousing and Distribution Facilities
(10) Cleaning Supplies Manufacturing/Distribution Facilities
(11) Commercial Laundries
(12) Contamination Control Companies/Waste Management Service Companies
(13) Dry Cleaning Establishments
(14) Electrical and Electronic Manufacturing Facilities
(15) Electroplators, Circuit Board Manufacturers, or Metal Finishers
(16) Engine Repair Facilities (small)
(17) Equipment Rental Operations
(18) Fiberglas Formers or Acrylic Manufacturers
(19) Funeral Homes
(20) Furniture Manufacturers and Refinishers
(21) Golf Courses/Country Clubs
(22) Industrial Facilities
(23) Laboratories - Photo, Chemical, Industrial, Environmental, Dental-X-Ray, and Medical
(24) Machine Shops
(25) Manufacturers Using Acids, Caustics, or Solvents
(26) Medical Facilities
(27) Paint Manufacturers and Paint Stores
(28) Painting Shops
(29) Pest Control Operations
(30) Petroleum Products Production, Storage, and Bulk Distribution Facilities
(31) Printers, Blue Printers, and T-Shirt Screen Printers
(32) Service Stations and Fuel Depots
(33) Sign Companies
(34) Tractor Sales and Service
(35) Transformer Use and Storage Areas
(36) Trucking/Transport Companies
(37) Wood Preserving/Treatment Facilities

(e) Floor Drains, Grease traps and Oil Water Separators shall be constructed to prevent infiltration of Regulated Substances to soil, groundwater, or surface water.

Section 4.7. Inventory/Proof of Proper Disposal/Recycling Regulated Substances

(a) Inventory

(1) All Regulated Facilities shall be required to keep an accurate, up to date inventory of the type(s) and amount(s) of Regulated Substances stored at the facility.

(2) Inventory records shall be made available for inspection at reasonable hours during a facility inspection or if an emergency situation exists to provide information on stored Regulated Substances to Emergency Personnel.

(b) Proof of proper disposal

(1) Inventory/Manifest documentation shall be required to be kept by each facility for all substances that are used or considered waste products to ensure that all substances are handled in an environmentally acceptable manner for each Regulated Substance.

(2) Each Regulated Facility shall provide documentation such as a contract or agreement with a Certified Waste Hauler or documentation that shows that used or waste by products are being disposed of using environmentally acceptable methods or are being recycled.

(3) Disposal records shall be made available at reasonable hours for the purpose of inspection.

(4) Disposal of any Regulated Substance to the Sanitary Sewer above the levels established in the Industrial Pretreatment Regulations shall be considered a violation of County Code.

(5) Disposal of any Regulated Substance to a Septic Tank or Drain Field System shall be a violation of this Regulation.

(c) Recycling regulated substances. It shall be required that whenever possible Regulated Substances should be recycled or reused if economically and technically feasible.

Section 4.8. Facility Closure Requirements

Any business that does or did store, handle, use, or produce Regulated Substances that proposes to abandon, replace or retrofit any storage system, or change the

property status to a land use not regulated by this Regulation shall be required to obtain a closure permit and follow the provisions of this section.

(a) Closure permit

(1) The Closure Permit Form can be obtained from the Orange County Environmental Protection Department located at 2002 E. Michigan Street, Orlando, Florida, 32806.

(2) The Orange County Board of County Commissioners shall establish, by Resolution, a schedule of fees for the Closure Permit.

(3) The Closure Permit must be secured at least fifteen (15) working days prior to the commencement of closure activities. The Orange County Environmental Protection Department shall have ten (10) working days to review and approve or request additional information to approve the permit. The permit shall be approved if complete, within five (5) working days upon receipt of any requested additional information.

(4) If the Regulated Substance is or has the possibility of being flammable or explosive, the Orange County Fire/Rescue Division shall be notified at least Five (5) working days before the closure procedures are implemented in order to establish requirements necessary to protect health, safety, and welfare.

(5) In addition to the completed Closure Permit Application Form, the following information shall be provided:

a. A schedule of events to complete the closure to facilitate inspections and coordination with other agency's;
b. The proposed disposition of all Regulated Substances and contaminated containers; and,
c. Certification by a Registered Professional Engineer or Professional Geologist licensed in the State of Florida that any cleanup of discovered contamination will follow technically acceptable methods that meet all Local, State and Federal rules and regulations and shall preclude leaching of unacceptable levels or residual Regulated Substances into the Floridan Aquifer. Certification may be waived if the applicant provides evidence that all of the following conditions apply to the subject land use or activity:

- The entire operation is maintained inside the building(s) of the facility;
- The standard method of removing operation waste is not by septic tank, sewer mains, or floor drains;
- There is no evidence of spills permeating floors or the environs;
- There are no outstanding or past notices of violation from any regulatory agency concerned with hazardous, industrial or domestic waste; and,
- There is no evidence of past contamination in the public drinking water well(s) or site specific monitoring wells if present.

(b) Indemnification - A signed agreement must be provided with the Permit Application Form to identify and hold Orange County harmless from any and all claims, liabilities, causes of action, or damages arising out of issuance of the permit. Orange County shall provide reasonable notice to the permittee of any claims.

(c) Contamination - If contamination is found during site closure, the procedures described in Section 4.3 of this Regulation shall be followed.

(d) Closure inspection

1. A closure inspection shall be performed by Orange County to ensure compliance with the provisions of this Regulation.
2. If closure takes place at a Petroleum Storage facility, the provisions of the closure requirements of Chapter 17-761, F.A.C. shall be followed and coordination for inspection with the Orange County Environmental Protection Department will be required.
3. If vapors are present that may potentially endanger health, safety, and welfare, the Facility owner or contractor must contact the Orange County Fire/Rescue Division.
4. All other inspections will be performed by the Orange County Environmental Protection Department or their designee. The inspection will need to be coordinated at a time during closure that provides the best possible access to determine if any potential for groundwater, surface water, or soil contamination has occurred.
5. A written acknowledgment of the results of the inspection will be sent to the property owner within five (5) working days of completion of closure activities where the site is not contaminated.

Sec. 5. Regulated Business Review and Location Requirements

(a) No review and approval shall be required for existing operations provided that no occupancy change occurs, the site is registered with the Aquifer/Wellhead Protection Program, and all requirements of this Regulation are being met.

(b) If a change in land use/property occupancy occurs at a facility that stores, uses, or manufactures Regulated Substances, the closure provisions of Section 4.8 of this Regulation shall be followed.

(c) If a site has satisfied the closure requirements and a new Regulated Business obtains or occupies the property that will continue to store, use, or manufacture Regulated Substances, the following conditions shall apply.

(1) The new business owner or property owner must register the business following the registration provisions of this Regulation.

(2) The new business owner or operator must obtain any other licenses or permits required by Orange County.

(3) The new business owner or operator shall follow all applicable provisions of this Regulation.

(4) The new business owner must adhere to the "Best Management Practices" of this Regulation.

(5) Secondary containment of Regulated Substances sufficient enough to preclude any loss to the external environment shall be required.

(d) Businesses that manufacture, store or use Regulated Substances listed in Section 3.1 that are not exempt as per Sec. 3.2 of this Regulation shall not be allowed to locate within two hundred (200) feet of a public potable water supply well.

Sec. 6. Program Funding

Fees may be established by resolution in accordance with the Comprehensive Plan requirement that user fees be collected in order to establish a self sufficient program.

Sec. 7. Remediation Activities

(a) Remediation Activities involving already established contamination are described in Section 4.3 of this Regulation.

(b) Remediation Activities involving Injection/Heat Exchange Wells are described in Section 4.4 of this Regulation

(c) Any spill, regardless of the contaminant(s) that occurs within one thousand (1,000) feet of any public supply well shall be remediated by the responsible party within seven (7) days. The following cleanup criteria shall apply.

(1) Any affected ground or surface water must be remediated to drinking water standards or background water quality.

(2) Affected soils shall be remediated using best available technologies for the particular contaminant that has been released. The disposal option should be identified if soils are to be removed from the site. Stockpiling contaminated soil indefinitely is not an option within 1,000 feet of a public supply well.

(3) If any soil work is to be performed, all stormwater sedimentation erosion controls must be in place in accordance with all Orange County Environmental Protection Department's Management Codes.

Sec. 8. Violations, Notification, Penalties, and Enforcement

(a) Violations

(1) Violations - Failure to comply with the requirements of this Regulation or any other State or Federal Regulations for the listed Regulated Substances shall be considered a violation of this Regulation.

(2) Notice of Violation - Whenever a violation of Regulation has occurred the Inspector shall immediately issue written notice to the person in violation, identifying the nature and location of the violation and specify that remedial action is necessary to bring the violation into compliance. The person in violation shall have thirty (30) calendar days after the receipt of the notice or such longer time as may be specified in the notice, to complete the remedial actions required to bring the activity into compliance with this Regulation.

(3) Failure to Comply After Notice of Violation - If the person in violation, including the property owner, fails to complete recommended remedial action within the time allowed, the Orange County Environmental Protection Department may refer such matter to a

duly established Code Enforcement Board or may initiate any other enforcement action authorized by law.

(4) Immediate Corrective Actions - Whenever it is determined by the Inspector that a discharge of Regulated Substances is within one thousand (1,000) feet of a public supply well or is resulting in danger to life or property, the Orange County Environmental Protection Department may require immediate corrective action. Initiation of any required clean-up activities shall commence within 24 hours and shall be completed within a time specified by the Orange County Environmental Protection Department. Failure to take such immediate corrective action when notified of the need for such action shall constitute a violation of this Regulation. If immediate corrective measures are not taken and there is danger or hardship to the public, the Inspector may enter upon lands, take corrective actions, and place a lien on the real property of such person or persons to recover the costs of the corrective measures.

(b) Notification

(1) Notice of Violation - A copy of any notice of violation issued pursuant to this Regulation shall be served upon the affected persons by either personal delivery or certified mail and shall be posted on the site. A notice of violation may be directed to the person owning the land upon which the non-compliance is occurring or to any person actually physically committing the violation. When immediate corrective actions are warranted under the provisions of Section 8.A.4., reasonable effort shall be made to provide notice as specified above, but where such notice cannot be immediately affected thereby sufficient notice may be given by physically leaving a copy of the notice or order at the address of the owner of the property, or with any person at such address who is eighteen (18) years of age or older and informing such person of the contents of the notice or order.

(2) Notice of Compliance - Upon satisfactory completion of corrective action and remedial steps required by a notice of violation, the Orange County Environmental Protection Department or the Department of Environmental Regulation shall forthwith issue a notice of compliance or a site Rehabilitation Completion Order if the site was governed by Chapter 17-770, F.A.C. The notice of compliance shall cancel the notice of violation.

(3) Lien - Any lien determined under the authority of this Regulation shall be imposed only after actual or constructive notice to the owner of the property upon which the lien is sought to be imposed, and such person shall be given a reasonable opportunity to be heard. Such lien shall be recorded with the Clerk of the Circuit Court and may be enforced under the provisions of Chapter 85, Florida Statutes.

(c) Penalties

(1) General - Any person violating any provision of this Regulation shall be punished according to law or in accordance with the findings of a duly established Code Enforcement Board. Each day any violation continues shall be a separate offense.

(2) Building Permits - No building permit shall be issued for a site while any violation of this Regulation exists on the site. Building permits shall not be issued to businesses that manufacture, store or use Regulated Substances as listed in Section 3.1, that are not exempt as per Sec. 3.2, if such business is within two hundred (200) feet of a public potable water supply well.

(3) Injunctions - Any affected person may seek an injunction against any violation of the provisions of this Regulation and recover from the violator such damages as he or she may suffer, including but not limited to, the damage to property as a result of a release of Regulated Substances.

(4) Publication of Violation - In addition to any other penalties allowed under this Regulation, when a violation has been found to exist by the Orange County Code Enforcement Board, the Code Enforcement Board may recommend to the Board of County Commissioners, and the Board of County Commissioners may require, that the violator publish in a newspaper of daily publication and circulation in the County an advertisement to notify the general public of the following:

a. The nature of the violation;
b. The date of the occurrence;
c. The remedial work which is to be required to mitigate the violation;
d. The name and address of the violator or property owner, and;
e. The names of the business owners, all general partners if a partnership, all shareholders if a corporation, and all chief operating officers. If the business is a corporation with more than

twenty (20) stockholders, then only stockholders holding more than twenty (20) percent of the outstanding stock shall be required to be identified.

(d) Enforcement - This Regulation shall be strictly enforced in accordance with the enforcement procedures established in Chapter 11, Orange County Code in addition to any established Federal or State Enforcement Procedures.

Sec. 9. Aquifer/Wellhead Protection Registration Form

Tax Parcel ID#_____
Office Use Only

AQUIFER/WELLHEAD PROTECTION REGISTRATION FORM

The purpose of this Form is to document the type(s) of Regulated Substance(s) that are stored at your facility. We would also like to document the methods used for waste storage and disposal. Please answer all the questions you can possibly answer and return the form within 14 days to.

Orange County Environmental
Protection Department
2002 East Michigan Street
Orlando, Florida 32806

Your cooperation will help protect our environment and will avoid further disruption of your business activities. If you have any questions concerning the form, please contact the Orange County Environmental Protection Department at (407) 836-7400.

I. General Information

Date:_____

1. Facility Name:_____
2. Facility Location:_____
   Street Address
   _____
   City
3. Facility Mailing Address:_____
4. Facility Contact:_____
5. Facility Contact Title:_____
6. Facility Owner:_____
7. Original Owner:_____
8. Facility Phone#:_____
9. Years of Operation:_____

10. Previous Commercial Use of Property: _____

_____

II. General Site Information

11. Facility Area (Square Feet): _____

12. Products Produced/Sold: _____

13. Number of Employees: _____

14. SIC Codes (See List): _____

15. Water Supply: Private Well_____ Central Water Service_____

16. Central Water Service_____Yes _____No Year Connected_____

17. Septic Tank Present____Yes _____No Period of use_____

18. Floor Drain_____Yes _____No Routed to:_____

III. Regulated Substance Storage Information

Review the categories of Regulated Substances below. For each substance stored at the facility, circle the code letter and provide an estimated annual quantity stored within each code. Indicate the proper units of the substance, for example, pounds, tons, kilograms, cubic feet, gallons or other appropriate units.

Substance Category	Code Letter	Annual Quantity Stored	Indicate Appropriate Units
1. Pesticides & Herbicides Examples: Parathion, Toxalene, Dieldrin, Carbamates	A	_____ _____	_____ _____
2. Heavy Metals or Metal Salts Examples: Chromium, Copper, Arsenic, Cadnium, Lead, Mercury, Selenium, Silver.	F	_____ _____	_____ _____
3. Inks	I	_____ _____	_____ _____
4. Paints	J	_____ _____	_____ _____
5. Solvents Examples: Benzene, Toluene, Trichloroethylene, Perchloroethylene, Methelene Chloride	L	_____ _____	_____ _____

Substance Category	Code Letter	Annual Quantity Stored	Indicate Appropriate Units
6. Reactives Examples: Cyanides, Acids, Bases, Cleaning Supplies, Fertilizers, Plating Chemicals, Explosives	O	_____ _____	_____ _____
7. Photographic Chemicals	S	_____ _____	_____ _____
8. Ignitable Chemicals	T	_____ _____	_____ _____
9. Wood Preservatives	U	_____ _____	_____ _____
10. Lead Acid Batteries	W	_____ _____	_____ _____
11. Oils, Greases, Lubricants	X	_____ _____	_____ _____
12. Coolants, Industrial Coolants	Y	_____ _____	_____ _____
13. Other Example: PCB's, Brine Solutions, Food Processing Wastes, Etc.	Z	_____ _____	_____ _____

IV. Waste Regulated Substance Information

	WASTE TYPE	MONTHLY AMOUNT GENERATED	STORAGE METHODS	DISPOSAL METHODS
Example:	**LO**	**20 gallons**	**03**	**05**
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.				
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	Non-generator:	_____		

Does your facility bury solid waste on site? YES _____ NO _____
Does your facility have cooling towers? YES _____ NO _____
Does your facility have a FDER Air Permit? (# _____)
Does your facility have underground tanks? _____

If yes, what is stored in them? gas: _____ diesel: _____ or other: _____

Number of employees at facility during the past year? _____

WASTE TYPE CODES AND DESCRIPTIONS

CODE	DESCRIPTION
AO	PESTICIDE WASTE
BO	PESTICIDE WASTEWATER
CO	EMPTY PESTICIDE CONTAINERS
DO	WASTEWATERS WITH PETROLEUM
EO	SLUDGES & SOLIDS WITH PETROLEUM
FO	DUST & SOLIDS WITH PETROLEUM
GO	WASH, RINSE & WASTEWATERS WITH HEAVY METALS/ANTI-FREEZE
G1	ANTI-FREEZE WITH LOW LEAD
HO	SLUDGES WITH HEAVY METAL
IO	WASTE INKS-FLASH POINT <140 F OR CONTAINING HEAVY METALS
I1	WASTE INKS-FLASH POINT <140 F
I2	WASTE INKS-CONTAINS HEAVY METALS
JO	IGNITABLE PAINT WASTE FLASH POINT <140 F
KO	OTHER PAINT WASTE CONTAINING HEAVY METALS
LO	SPENT SOLVENTS
L1	HALOGENATED SOLVENTS
L2	NON-HALOGENATED SOLVENTS INCLUDES MINERAL SPIRITS
MO	SOLVENT DISTILLATION BOTTOMS
M1	HALOGENATED DISTILLATION BOTTOMS FROM SOLVENT STILL
M2	NON-HALOGENATED DISTILLATION BOTTOMS FROM SOLVENT STILL
NO	DRY CLEANING FILTERS
OO	REACTIVE WASTES-THOSE CONTAINING CYANIDES
PO	ACIDIC OR ALKALINE WASTES pH $\leq$ OR $\geq$12.5
QO	SPENT PLATING WASTES
RO	DISCARDED GASOLINE, DIESEL OTHER FUELS
SO	PHOTOGRAPHIC WASTES
TO	OTHER IGNITABLE WASTES
UO	WOOD PRESERVING WASTES
VO	DISCARDED UNUSED OR OFF-SPEC COMMERCIAL CHEMICAL PRODUCT
WO	LEAD-ACID BATTERIES
XO	WASTE EXPLOSIVES
YO	USED OIL & LUBRICANTS
Y1	METALWORKING (CUTTING) OILS

STORAGE METHOD CODES

CODE	DESCRIPTION
01	TANKS-ABOVEGROUND
02	TANKS-BELOWGROUND
03	40-55 GALLON DRUMS
04	SMALL CONTAINERS
05	OPEN PITS, PONDS
06	ON GROUND, FLOOR
07	BULK WASTE CONTAINERS
08	LAB PACKS
09	OTHER
10	PARTS CLEANER
11	MEDIUM CONTAINERS (10 TO 39 GALLONS)

DISPOSAL METHOD CODES

CODE	DESCRIPTION
01	LANDFILL: HAULED BY GOVT/PRIVATE
02	LANDFILL: HAULED BY GENERATOR
03	BURIED ON PROPERTY
04	PIT OR POND
05	PERMITTED HAZARDOUS WASTE FACILITY
06	PUBLIC SEWER
07	SEPTIC TANK
08	RECYCLED OR REUSED
09	BLENDED OR BURNED
10	INCINERATION
11	DEEP WELL INJECTION
12	FILTRATION
13	NEUTRALIZATION
14	WASTEWATER TREATMENT UNIT
15	UNSPECIFIED TREATMENT
16	HAZARDOUS WASTE TRANSPORTER
17	SURFACE DISCHARGE

Y2 USED OIL FILTERS
Y3 HYDRAULIC OIL

18 OPEN BURNING
19 EVAPORATION
20 USED OIL HAULER

THANK YOU FOR COMPLETING THE AQUIFER/WELLHEAD PROTECTION REGISTRATION FORM. BY COMPLETING THIS FORM YOU ARE NOW REGISTERED FOR THE ORANGE COUNTY AQUIFER/WELLHEAD PROTECTION PROGRAM. AT SOME POINT IN THE FUTURE A COUNTY INSPECTOR WILL CONDUCT A SITE INSPECTION TO VERIFY THIS INFORMATION AND ATTEMPT TO RESOLVE ANY STORAGE/DISPOSAL PRACTICES THAT MAY NOT MEET THE REQUIREMENTS OF THE REGULATION.

THANK YOU!

Sec. 10. WELLHEAD PROTECTION CLOSURE PERMIT FORM

Owners of storage tank systems or businesses that are replacing, removing or closing in place storage tanks or any business where Regulated Substances have been stored, used, or manufactured, or where a change in the property status is planned to a business not regulated by this Regulation shall complete this form to file for the Closure Permit required by this Regulation.

Please Print or Type
Complete All Applicable Blanks

1. Date: _____

2. Facility Name: _____

3. Facility Owner: _____

4. Facility Address: _____

5. Mailing Address: _____

6. Telephone Number: (___)_____ 7. Facility Operator: _____

8. Tax Parcel ID# _____

9. Are the Storage Tanks (circle all that apply)

   A. Aboveground B. Underground C. Drums

10. Type(s) of Products Stored: _____

    _____

    _____

11. Are any potable wells located within 1/4 of a mile radius of the facility? Yes No

12. Is there a surface water body within 1/4 mile radius of the site? Yes No If yes, indicate distance: _____

13. Attach a site drawing to this form showing your facility. Hand drawings which are neatly drawn are acceptable. The drawing should identify:

    a. All buildings on site

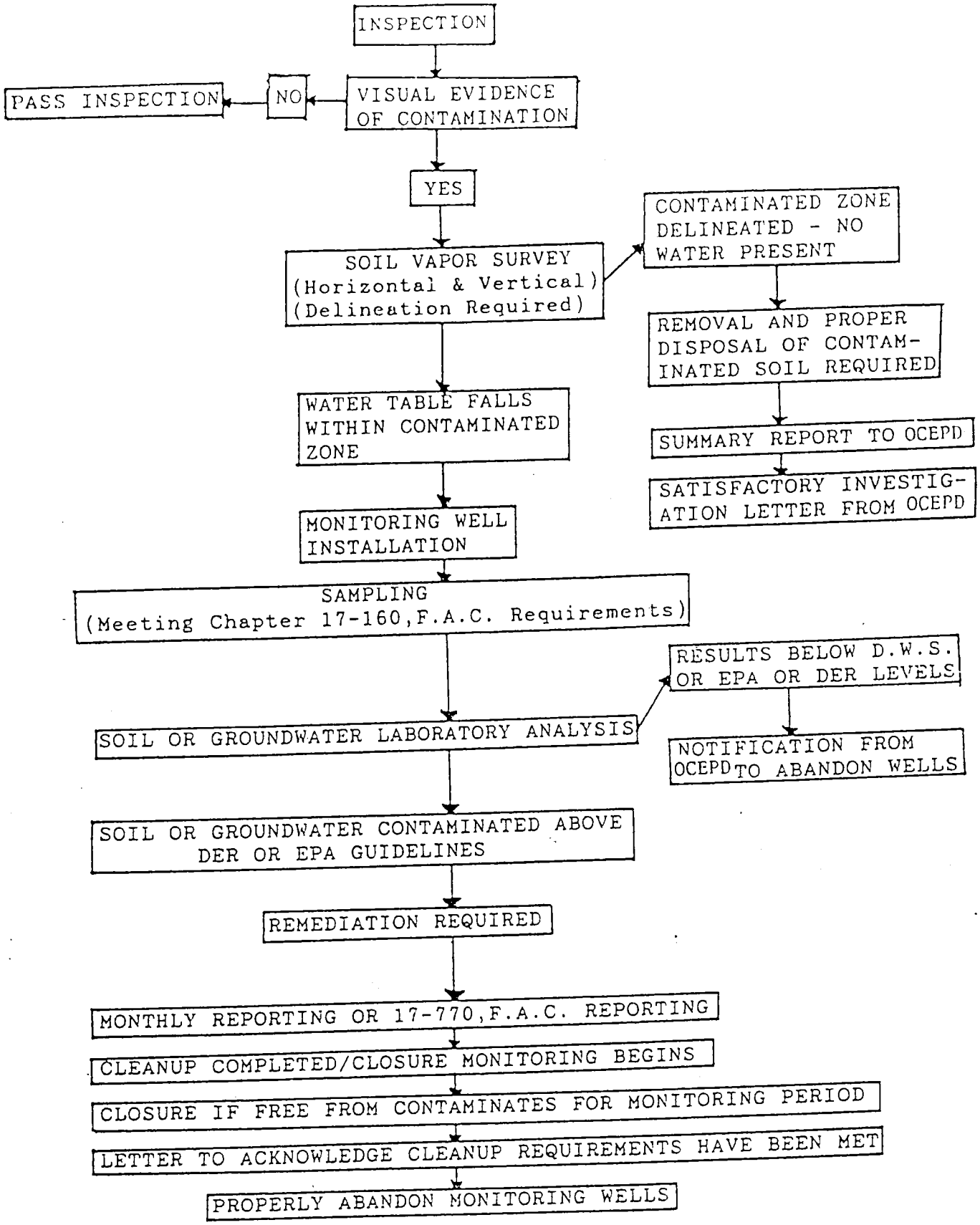
    b. Hazardous Materials and Hazardous Waste Storage areas. (Specify if these areas have secondary containment).

c. Locations of underground and above ground storage tanks and septic tanks.

d. Locations of gas mains, monitoring wells, water supply wells, and fire hydrants.

e. Locations of surface water bodies, fences, access points, property boundaries.

f. Locations of any materials which are water-reactive.



OCEPD=ORANGE COUNTY ENVIRONMENTAL PROTECTION DEPARTMENT
D.W.S.=DRINKING WATER STANDARDS

Sec. 12. Best Management Practices to Prevent Discharges of Regulated Substances

(a) Construction industry

(1) The general contractor, or if none, the property owner, shall be responsible for assuring that each contractor or subcontractor evaluates each site before construction is initiated to determine if any site conditions may pose particular problems for the handling of any Regulated Substances. For instance, handling Regulated Substances in the proximity of water bodies or wetlands may be improper.

(2) If any Regulated Substances are stored on the construction site, including fuel storage containers and dispensers, during the construction process, they shall be stored in a location and manner which will minimize any possible risk of release to the environment. Any storage container of 55 gallons (liquid), or 440 pounds (solid), or more containing regulated substances shall have constructed below them an impervious containment system constructed of material of sufficient thickness, density and composition that will prevent the discharge to the land, groundwaters, or surface waters of any pollutant which may emanate from said storage tank or tanks. Each containment system shall be able to contain 150 percent of the contents of all storage containers above the containment system.

(3) Each contractor shall familiarize his/herself with the manufacturer's safety data sheet supplied with each material containing a Regulated Substance and shall be familiar with procedures required to contain and clean up any releases of the Regulated Substance. Any tools or equipment necessary to accomplish same shall be available in case of a release.

(4) Upon completion of construction, all unused and waste regulated substances and containment system shall be removed from the construction site by the responsible contractor and shall be disposed of in a proper manner as prescribed by law.

(5) Contractors shall be responsible for preventative measures that could discourage vandalism which causes releases of Regulated Substances from containers or vehicles on the construction site.

(6) Extreme care should be taken when performing maintenance or fueling equipment so that spillage of fuels, oils and greases does not occur.

(7) If a discharge occurs, it should be the responsibility of the general contractor or the property owner to follow the provisions of this Regulation. It shall be considered a violation of this Regulation if a discharge of Regulated Substances occurs and no cleanup is performed. Orange County reserves the right to deny the issuance of a Certificate of Occupancy until all provisions regarding this Regulation have been met.

(b) General business practices

(1) All regulated businesses shall inspect for leaks any container holding regulated substances daily. Visual inspection is satisfactory provided that the location of the containers can be inspected to a degree which reasonable assures that breakage or leakage can be detected by the inspection. Monitoring and inspection records shall be kept if they are required by other State and Federal regulations. Storage tank owners shall follow the inspection and inventory requirements of Chapter 17-761, Florida Administrative Code.

(2) Containment of Regulated Substances

a. New Construction - Leak-proof trays under containers, floor curbing or other containment systems to provide secondary liquid containment shall be installed. The containment shall be of adequate size to handle all spills, leaks, overflows, and precipitation until appropriate action can be taken. The specific design and selection of materials shall be sufficient to preclude any Regulated Substance loss to the external environment. Containment systems shall be sheltered so that the intrusion of precipitation is effectively prevented. These requirements shall apply to all areas of use, production, and handling, to all storage areas, to leading and off-loading areas, and to above ground and underground storage areas. The containment devices must be specified in the building plans and shall be certified by a Registered Professional Engineer.

b. Retrofitting - All property owners who store, handle, use or produce Regulated Substances shall retrofit (upgrade) to new construction containment standards whenever building improvements are planned or by January 1, 1998. All new construction provisions must be met and will be reviewed either during plan review or by the inspection by Orange County required by this Regulation.

Sec. 13. Generic Regulated Substances

Regulated Substances shall also include the generic items listed below and by-products, reaction products, and waste products generated from the use, handling, storage, or production of these items.

Acid and basic cleaning solutions
Antifreeze and coolants
Arsenic and arsenic compounds
Batteries
Bleaches, peroxides
Brake and transmission fluid
Oils/Greases/Lubricants
Brine solution
Casting and foundry chemical
Caulking agents and sealants
Cleaning solvents
Corrosion and rust prevention
Cutting fluids
Degreasing solvents
Disinfectants
Electroplating solutions
Explosives
Fertilizers
Fire extinguishing chemicals
Food processing wastes
Fuels and additives
Glues, adhesives, and resins
Greases
Hydraulic fluid
Industrial and commercial janitorial supplies
Industrial sludges and stillbottoms
Inks, printing and photocopying chemical
Laboratory chemicals
Medical, pharmaceutical, dental, veterinary, and hospital solutions
Metal finishing solutions
Oils (petroleum base)
Paints, primers, thinners, dyes, stains, wood preservatives, paint solvents and paint removing compounds
Pesticides and herbicides
Plastic resins, and catalysts
Plasticizers
Photo development chemicals
Pool chemicals
Roofing chemicals
Solders and fluexes
Tanning industry chemicals
Transformer and capacitor oils/fluids

CENSUS TRACT REPORT
SUMMARY STATISTICAL REPORT
-1990-

County	Census Tract No.	Total Persons	Total White	Total Black	Total White >18 Yrs.	Total Black >18 Yrs.	Total Housing Units
ORANGE	101.00	860	812	29	801	28	685
	102.00	4,062	3,613	287	3,286	222	2,561
	103.00	3,067	2,761	235	2,528	161	1,951
	104.00	2,173	36	2,125	18	1,292	923
	105.00	2,428	104	2,309	101	1,686	997
	106.00	3,690	769	2,873	727	2,001	1,255
	107.01	879	861	13	724	9	413
	107.02	2,138	2,065	47	1,700	34	1,112
	108.01	1,685	1,529	78	1,283	51	843
	108.02	3,359	3,205	51	2,679	36	1,697
	109.00	1,695	1,507	89	1,270	55	936
	110.00	3,462	2,959	266	2,365	143	1,754
	111.00	2,838	2,746	32	2,368	21	1,462
	112.00	3,731	3,627	19	2,984	13	1,641
	113.00	5,060	4,787	114	3,864	74	2,452
	114.00	582	458	91	391	59	238
	115.00	3,282	1,248	1,958	1,010	1,167	1,305
	116.00	5,380	2,325	2,934	1,959	1,726	2,137
	117.01	4,821	109	4,699	88	3,130	1,689
	117.02	5,342	24	5,310	21	3,271	1,966
	118.00	2,416	696	1,676	619	1,199	1,042
	119.01	4,592	576	3,939	510	2,067	1,557
	119.02	1,355	1,051	269	795	167	540
	120.00	6,279	3,477	2,441	2,589	1,441	2,205
	121.00	4,446	3,319	938	2,635	535	1,929
	122.00	8,286	5,790	2,176	4,553	1,425	3,060
	123.01	10,862	8,204	1,990	6,017	1,269	4,128
	123.02	9,264	7,427	1,416	5,560	846	3,302
	124.00	13,119	10,793	1,667	8,885	1,174	6,289
	125.00	2,381	2,326	18	1,963	12	1,215
	126.00	3,937	3,859	31	3,167	21	1,910
	127.01	4,697	4,478	79	3,695	49	2,413
	127.02	947	832	52	725	40	541
	128.00	4,010	3,895	51	3,148	38	1,630
	129.00	2,734	2,647	17	2,221	17	1,299
	130.01	9,216	7,388	1,300	7,292	1,288	4
	130.02	4,038	3,469	285	2,786	210	1,874
	131.00	168	144	1	124	1	66
	131.01	750	642	0	499	0	257
	132.00	6,240	5,348	154	4,217	109	2,582
	133.00	7,069	6,401	146	5,045	98	2,960
	134.01	8,884	7,104	589	5,416	374	3,583
	134.02	2,856	2,622	70	1,935	54	1,084
	135.01	7,901	6,799	550	5,819	406	5,335
	135.02	7,940	7,354	233	6,067	145	3,901
	136.01	10,721	9,759	402	7,981	291	5,854
	136.02	6,179	5,681	164	4,234	124	2,465
	137.00	7,989	7,274	327	5,940	232	4,168
	138.00	8,419	7,903	249	6,112	77	3,181

Prepared By: Orange County/Orlando GIS
Report No.: 1

Source: Census of Population and Housing, 1990:
Public Law (P.L.) 94-171 Data (Florida)

CENSUS TRACT REPORT
SUMMARY STATISTICAL REPORT
-1990-

County	Census Tract No.	Total Persons	Total White	Total Black	Total White >18 Yrs.	Total Black >18 Yrs.	Total Housing Units
ORANGE	139.00	4,063	3,870	123	3,202	98	2,095
	140.00	6,047	5,854	52	4,742	36	2,483
	141.00	5,618	5,368	135	4,157	95	2,251
	142.00	7,569	6,081	798	4,606	463	2,644
	143.01	3,468	2,991	256	2,454	183	1,569
	143.02	4,364	3,260	574	2,579	375	1,933
	144.00	3,283	2,960	247	2,475	169	1,162
	145.00	10,452	6,070	3,738	5,356	2,792	4,278
	146.01	3,738	306	3,399	230	2,084	1,155
	146.02	10,371	608	9,694	533	6,370	3,375
	146.03	7,577	6,448	661	5,835	529	4,820
	147.00	8,406	6,885	1,064	5,427	669	3,878
	148.01	9,840	8,104	1,061	5,989	685	4,124
	148.02	5,751	5,453	108	3,877	68	2,118
	148.03	16,061	14,312	647	10,406	444	6,314
	149.01	7,677	4,925	2,396	3,824	1,518	2,823
	149.02	4,591	4,120	302	2,986	216	1,642
	150.00	12,912	12,154	181	8,269	109	4,440
	151.01	10,156	8,607	1,080	6,225	597	3,864
	151.02	6,298	5,464	483	3,888	307	2,350
	152.01	2,555	1,515	1,003	1,130	613	951
	152.02	5,786	3,926	1,628	3,065	893	2,336
	153.00	4,019	3,853	66	3,154	41	1,846
	154.01	2,080	1,125	879	918	475	895
	154.02	2,431	2,302	68	1,924	45	1,271
	155.01	4,119	3,542	516	2,831	381	1,766
	155.02	1,092	20	1,072	11	694	356
	156.01	2,080	2,014	33	1,511	22	752
	156.02	2,418	2,384	9	1,774	8	851
	157.01	2,141	2,085	20	1,704	12	1,089
	157.02	1,823	1,761	18	1,408	13	749
	158.01	1,507	1,401	87	1,164	76	678
	158.02	2,309	2,280	7	1,828	4	1,030
	159.01	2,670	538	2,105	502	1,521	1,183
	159.02	1,647	1,575	42	1,443	33	1,090
	160.01	2,126	2,014	61	1,974	58	892
	160.02	2,237	2,199	14	1,767	9	1,046
	161.00	4,016	3,957	13	3,438	10	2,041
	162.00	7,402	6,917	208	5,696	155	3,246
	163.01	5,369	4,835	258	4,184	165	2,490
	163.02	3,146	2,722	250	2,114	161	1,529
	164.01	7,103	6,395	333	5,470	247	3,876
	164.02	1,806	1,620	36	1,288	28	827
	164.04	5,238	4,832	92	3,643	65	2,045
	164.05	12,394	11,149	351	8,383	257	5,029
	165.01	10,109	8,904	340	7,391	275	4,580
	165.02	9,907	9,117	313	7,509	282	3,857
	166.00	8,617	8,323	45	6,099	32	3,490
	167.02	11,188	10,137	258	7,286	168	4,141

Prepared By: Orange County/Orlando GIS
Report No.: 1

Source: Census of Population and Housing, 1990:
Public Law (P.L.) 94-171 Data (Florida)

CENSUS TRACT REPORT
SUMMARY STATISTICAL REPORT
-1990-

County	Census Tract No.	Total Persons	Total White	Total Black	Total White >18 Yrs.	Total Black >18 Yrs.	Total Housing Units
ORANGE	167.04	1,912	1,874	13	1,416	6	688
	167.05	12,660	11,305	433	8,569	287	5,179
	167.06	11,273	9,901	332	7,187	220	3,873
	167.07	5,442	5,060	68	3,764	44	1,860
	167.08	5,617	4,653	683	3,534	626	1,809
	168.01	7,929	6,073	808	4,300	519	2,805
	168.02	4,127	3,111	722	1,793	383	1,078
	169.01	15,158	10,629	2,613	8,485	1,848	6,783
	169.02	4,223	3,517	374	2,773	246	1,730
	170.01	2,737	266	2,440	208	1,527	815
	170.02	9,982	9,305	148	8,653	126	6,716
	170.03	13,075	10,722	820	7,890	559	4,834
	171.01	3,910	3,319	481	2,369	308	1,423
	171.02	7,822	7,170	147	5,540	106	3,430
	171.03	1,526	1,478	5	1,186	5	1,217
	172.00	1,275	809	437	662	269	588
	173.00	5,872	5,271	280	4,117	177	2,354
	174.00	6,542	4,597	1,797	3,448	1,168	2,420
	175.01	5,244	2,815	2,191	2,162	1,284	1,605
	175.02	6,974	6,392	294	4,922	190	2,948
	176.00	5,200	1,403	3,558	1,040	2,135	1,821
	177.00	6,581	5,843	375	4,241	204	2,431
	178.01	6,006	5,743	60	4,067	36	2,201
	178.02	3,955	3,629	147	2,925	82	1,925
	178.03	9,020	8,344	348	6,076	211	3,247
	179.00	7,623	5,747	1,605	4,757	949	3,265
Totals:		677,491	539,061	103,092	424,469	66,953	282,686

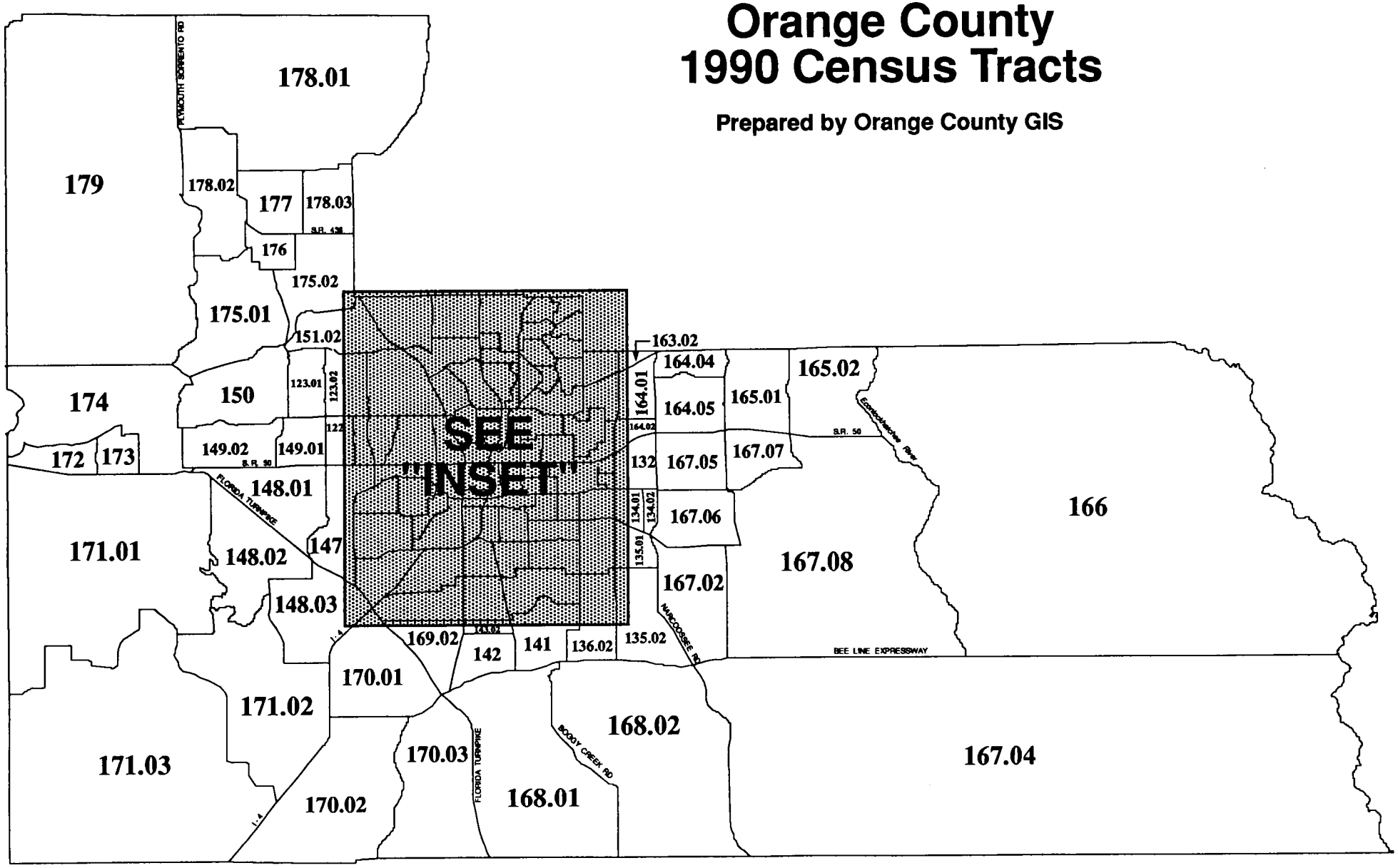
2.4

Prepared By: Orange County/Orlando GIS
Report No.: 1

Source: Census of Population and Housing, 1990:
Public Law (P.L.) 94-171 Data (Florida)

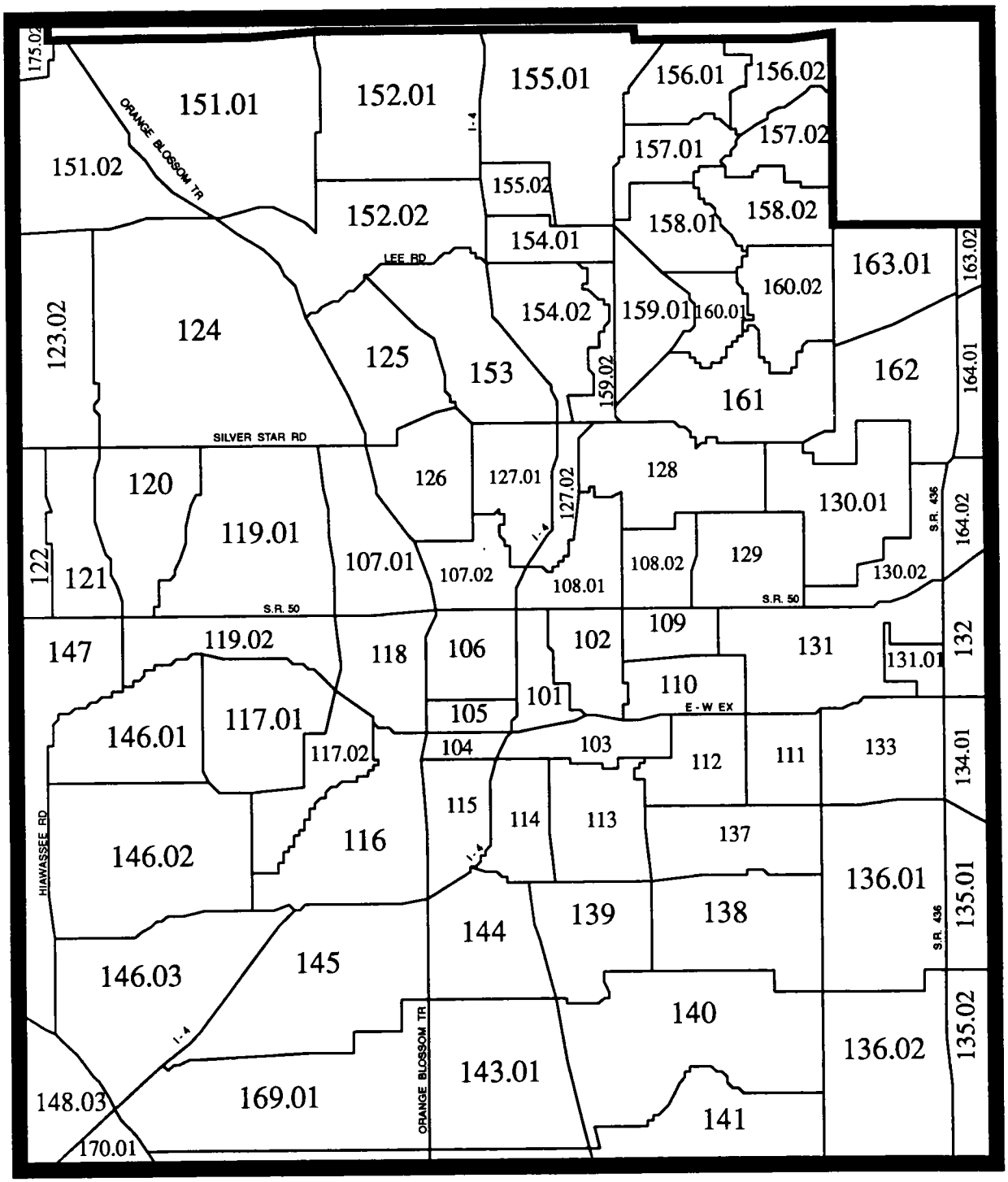
Orange County
1990 Census Tracts

Prepared by Orange County GIS



Orange County
1990 Census Tracts
"INSET"

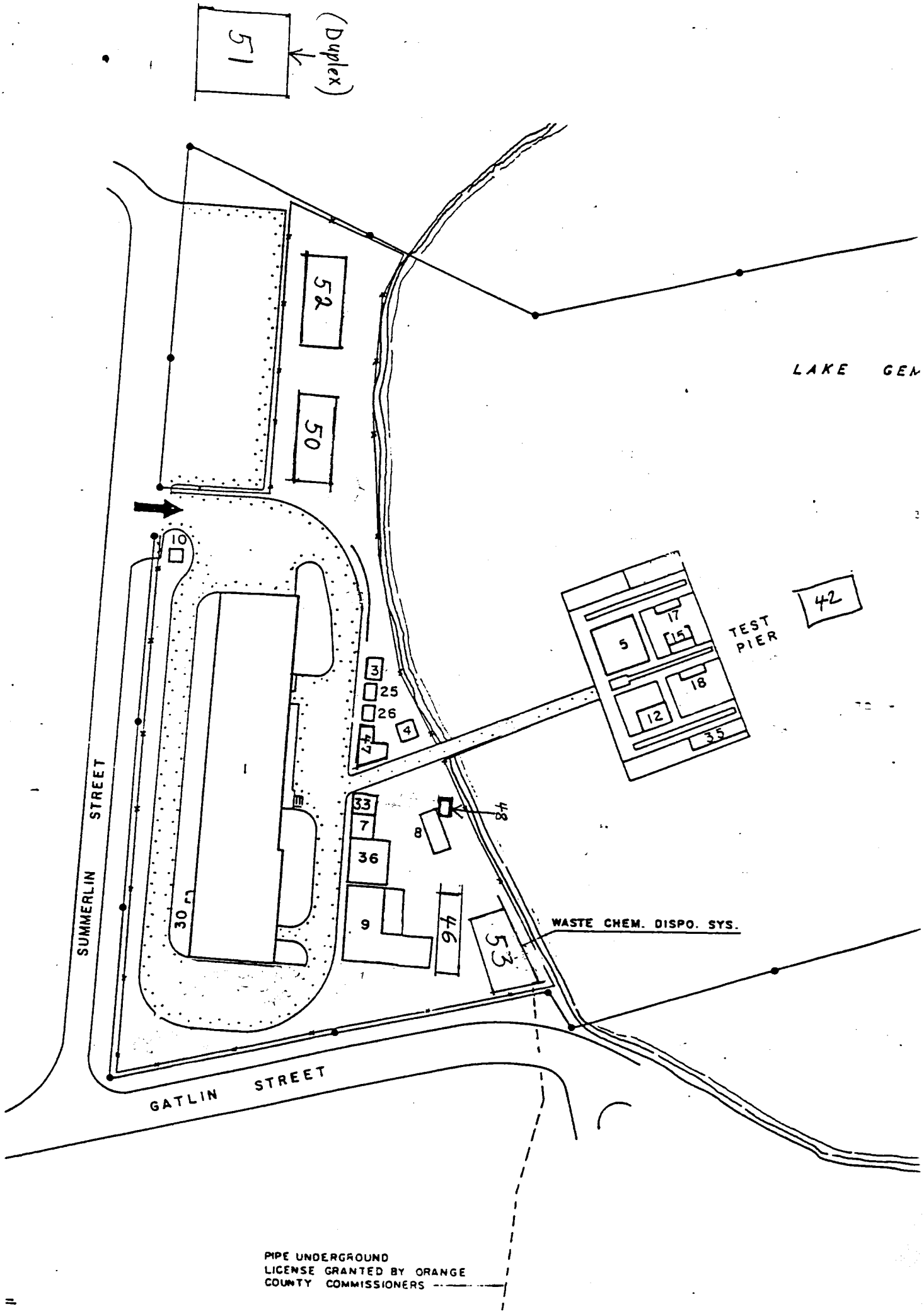
Prepared by Orange County GIS

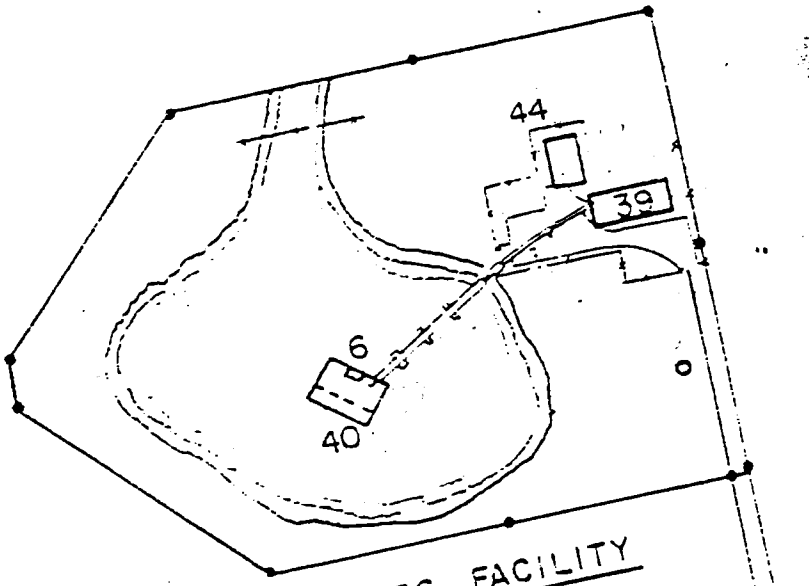


BUILDING NUMBER INDEX FOR NRL-USRD
(June 1, 1992)

BLDG. NO.	DESCRIPTIVE TITLE (CURRENT USAGE)	
1	Main Laboratory Building	Bulk
3	Underwater Equipment Laboratory	2
4	Underwater Systems Facility	
5	Instrument Test House (Pier)	
6	Instrument Test House **(LEEFAC)**	1
7	Materials Laboratory	1
8	Painting and Related Operations Building	
9	Materials Laboratory	7
10	Gatehouse (Guardhouse)	2
12	South Pier Test Building (Pier)	2
15	Electronics Shed (Pier)	3
17	Rigging Shed (Pier)	2
18	Rigging Shed (Pier)	1
25	Water Storage Tank	
26	Water Storage Tank	
33	Hazardous Materials Storehouse	
35	Transducer Assembly Building	
36	Low Frequency Building	3
39	Operations Building **(LEEFAC)**	3
40	Electronic System Building **(LEEFAC - on barge)**	3
44	Bulk and Assembly Building **(LEEFAC)**	
46	Shock Tube Facility	1
47	Electric Distribution Building	
48	Pressure Cycling Facility, ATFII	2
50	Conference Building	4
51	Duplex	7
52	Computer & Electronics Branch Building	
53	Chiller Equipment Storage Building	3

/171


51
(Duplex)
52
50
LAKE GEN
10
1
30
SUMMERLIN STREET
3
25
26
4
47
33
7
36
9
8
48
46
53
WASTE CHEM. DISPO. SYS.
TEST PIER
42
5
17
15
18
12
35
GATLIN STREET
PIPE UNDERGROUND
LICENSE GRANTED BY ORANGE
COUNTY COMMISSIONERS



LEESBURG FACILITY
(BUGG SPRING)
SCALE 1" = 200'

FACILITY

DEPARTMENT OF THE NAVY
NAVAL TRAINING CENTER
ORLANDO FLORIDA 32813 5005

5314
NTC SP
19 May 92

MEMORANDUM FOR DISTRIBUTION

Subj: BASE LOADING DATA REPORT AS OF 30 APRIL 1992

Ref: (a) NTCORLINST 5314.1N

Encl: (1) Current NTC Orlando Complex Personnel Base Loading Totals for period ending 30 April 1992

1. Per reference (a), enclosure (1) lists current military and civilian personnel population onboard NTC Orlando as of 30 April 1992. Average onboard projections for FY 93-95 and authorized billet information is kept on file in NTC SP office.

2. COMNTC Orlando point of contact is Sharon Brann, NTC SP, 646-4991.

Sharon E. Brann
SHARON E. BRANN
By direction

Distribution: (NTCORLINST 5605.1Y)
List I-II, Case 3

TO: Andrea Donlin
FROM: Andrea Marks, NTC

8 July 92
10 pages

I have included the base loading report and facility maps for the main base and the annex.

Mike has marked on the Base loading - which are at the annex. If you have any questions - Please call me at 407-646-5214. Mike also wanted me to pass on that the wastewater treatment plant at the annex was demolished - which I didn't know but I assume you do. TK - Andrea

P.S No luck on this end for page 48.

COMMAND/ACTIVITY	CATEGORY	CURRENT
NAVAL TRAINING CENTER (NTC)	STAFF	
	OFFICER	35
	ENLISTED	488
	CIVILIAN	434
	MWR	404
	NEX	686
	CONTRACT PERSONNEL	384
	TRANSIENTS (TPU)	200
	TOTAL	2631
SERVICE SCHOOL COMMAND (SERVSCOLCOM)	STAFF	
	OFFICER	14
	ENLISTED	283
	CIVILIAN	20
	STUDENT	
	OFFICER	0
	ENLISTED	644
	CONTRACT PERSONNEL	44
	TOTAL	1005
RECRUIT TRAINING COMMAND (RTC)	STAFF	
	OFFICER	27
	ENLISTED	477
	RECRUITS	
	MALE	3058
	FEMALE	1428
	AT'S	774
	NAVET'S	0
	CIVILIAN	1
	TOTAL	5768
PERSONNEL SUPPORT ACTIVITY DETACHMENT (PSD/NTC)	STAFF	
	OFFICER	2
	ENLISTED	65
	CIVILIAN (AF)	62
	TOTAL	129

COMMAND/ACTIVITY	CATEGORY	CURRENT
PERSONNEL SUPPORT ACTIVITY DETACHMENT (PSD/RTC)	STAFF	
	OFFICER	2
	ENLISTED	57
	CIVILIAN (AF)	33
	TOTAL	92
NAVAL CONSTRUCTION BATTALION UNIT 419 (CBU 419) (ANNEX)	STAFF	
	OFFICER	1
	ENLISTED	53
	TOTAL	54
NAVAL NUCLEAR POWER SCHOOL (NAVNUPWRSCOL)	STAFF	
	OFFICER	171
	ENLISTED	137
	STUDENT	
	OFFICER	329
	ENLISTED	1446
	TRANSIENTS	111
	TOTAL	2194
NAVAL NUCLEAR FIELD "A "SCHOOL (NUFLDASCOL)	STAFF	
	OFFICER	20
	ENLISTED	292
	STUDENT	
	ENLISTED	1951
	TOTAL	2263
NAVAL DENTAL CENTER (NAVDENCTR)	STAFF	
	OFFICER	47
	ENLISTED	104
	CIVILIAN (AF)	19
	CONTRACT PERSONNEL	14
	TOTAL	184

COMMAND/ACTIVITY	CATEGORY	CURRENT
NAVAL HOSPITAL (NAVHOSP)	STAFF	
	OFFICER	175
	ENLISTED	610
	CIVILIAN (AF)	280
	CONTRACT PERSONNEL	10
	TOTAL	1075
AMERICAN RED CROSS	NON-GOVERNMENT CIVILIAN	3
	TOTAL	3
DEFENSE REUTILIZATION MARKETING OFFICE (DRMO)	CIVILIAN (AF)	6
	TOTAL	6
NAVAL EDUCATIONAL TRAINING MANAGEMENT SYSTEMS (NETPMSA)	CIVILIAN (AF)	5
	CONTRACT PERSONNEL	18
	TOTAL	23
NAVAL FINANCIAL INFORMATION PROCESSING CENTER (FIPC)	CIVILIAN (AF)	8
	TOTAL	8
NAVAL INVESTIGATIVE SERVICE (NIS)	CIVILIAN (AF)	14
	TOTAL	14
NAVAL LEGAL SERVICE (NLSOD)	STAFF	
	OFFICER	5
	ENLISTED	3
	CIVILIAN (AF)	2
	TOTAL	10

COMMAND/ACTIVITY	CATEGORY	CURRENT
NAVAL SECURITY GROUP FIELD OFFICE (NAVSECGRU F O)	CIVILIAN (AF)	5
	TOTAL	5
NAVY BAND ORLANDO (NBO)	STAFF	
	OFFICER	1
	ENLISTED	35
	TOTAL	36
NAVY CAMPUS (NCEC)	CIVILIAN (AF)	3
	CONTRACT PERSONNEL	5
	TOTAL	8
NJROTC	STAFF	
	OFFICER	1
	ENLISTED	1
	TOTAL	2
NAVY PUBLICATIONS AND PRINTING SERVICE BRANCH OFFICE (NPPSPO)	CIVILIAN (AF)	13
	TOTAL	13
ROICC	STAFF	
	OFFICER	3
	CIVILIAN	14
	TOTAL	17
ARMY RETIREMENT SERVICE (ARS)	CIVILIAN (AF)	2
	TOTAL	2
USO	NON-GOVERNMENT CIVILIAN	21
	TOTAL	21

COMMAND/ACTIVITY	CATEGORY	CURRENT
SATO	NON-GOVERNMENT CIVILIAN	13
	TOTAL	13
NAVY RELIEF	NON-GOVERNMENT CIVILIAN	4
	TOTAL	4
NORTH CAROLINA NATIONAL BANK (NCNB) ANNEX	NON-GOVERNMENT CIVILIAN	6
	TOTAL	6
NAVAL ORLANDO CREDIT UNION	NON-GOVERNMENT CIVILIAN	63
	TOTAL	63
POST OFFICE	CIVILIAN (AF)	2
	TOTAL	2
ARMY MILITARY INTELLIGENCE UNIT	STAFF	
	OFFICER	70
(ANNEX)	ENLISTED	470
	TOTAL	540
CIVILIAN PERSONNEL OFFICE	CIVILIAN (AF)	10
	TOTAL	10
ORLANDO COMMISSARY	STAFF	
	ENLISTED	10
(ANNEX)	CIVILIAN	68
	TOTAL	78

COMMAND/ACTIVITY	CATEGORY	CURRENT
NAVY AND MARINE CORPS RESERVE CENTER	STAFF	
	OFFICER	4
	ENLISTED	44
	CIVILIAN (AF)	1
	TOTAL	49
NAVAL FEDERAL CREDIT UNION	NON-GOVERNMENT CIVILIAN	19
	TOTAL	19
VETERINARY SERVICES	STAFF	
	OFFICER	1
	ENLISTED	6
	CIVILIAN (AF)	2
	TOTAL	9
NAVAL UNDERWATER RESEARCH LAB	CIVILIAN (AF)	125
	TOTAL	125
NAVAL TELECOMMUNICATIONS CENTER	STAFF	
	ENLISTED	13
	CIVILIAN	4
	TOTAL	17

ORLANDO COMPLEX GRAND TOTALS AS OF 30 APRIL 1992

		TOTAL
STAFF	OFFICER	579
	ENLISTED	3148
	CIVILIAN	1134
	NEX CIVILIAN (NAF) INCLUDES	
	PART TIME EMPLOYEES	686
	MWR CIVILIAN (NAF) INCLUDES	
	PART TIME EMPLOYEES	404
NON-GOVERNMENT CIVILIAN		129
CONTRACT PERSONNEL		475
STUDENTS (LESS RECRUITS)		
	OFFICER	329
	ENLISTED	4041
RECRUITS (INCLUDING A/Ts)		5260
NAVETS		0
TRANSIENTS (NNPS AND TPD)		311
	GRAND TOTAL:	16496

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 4

To STEVE MAGUIRE	From LAWSON SNYDER
Co. ABB ENVIRON. SERV	Co. FL. GAME & FISH COMM.
Dept.	Phone # 407 846-5304
Fax # 362 797 6501	Fax # 407 846-5310

STATE OF FLORIDA

GAME AND FRESH WATER FISH COMMISSION

1986 - 91

COMPLETION REPORT

FOR

KISSIMMEE CHAIN OF LAKES STUDIES

STUDY III. BOGGY CREEK/EAST LAKE TOHOPEKALIGA INVESTIGATIONS

Project Leader: Edwin J. Moyer
Asst. Project Leader: Mikel W. Hulon
Project Biologist: Robert S. Butler
Project Biologist: Robert W. Hujik
Project Biologist: Jon Buntz
Laboratory Technician: Donald C. Arwood
Laboratory Technician: Chris S. Michael
Administrative Secretary: Anna C. Jasent

Colonel Robert M. Brantly
Executive Director

Dennis E. Holcomb, Director
Division of Fisheries

Robert J. Wattendorf, Assistant Director
Division of Fisheries/Federal Aid Coordinator

Thomas L. Vaughn, Chief
Bureau of Fisheries
Management

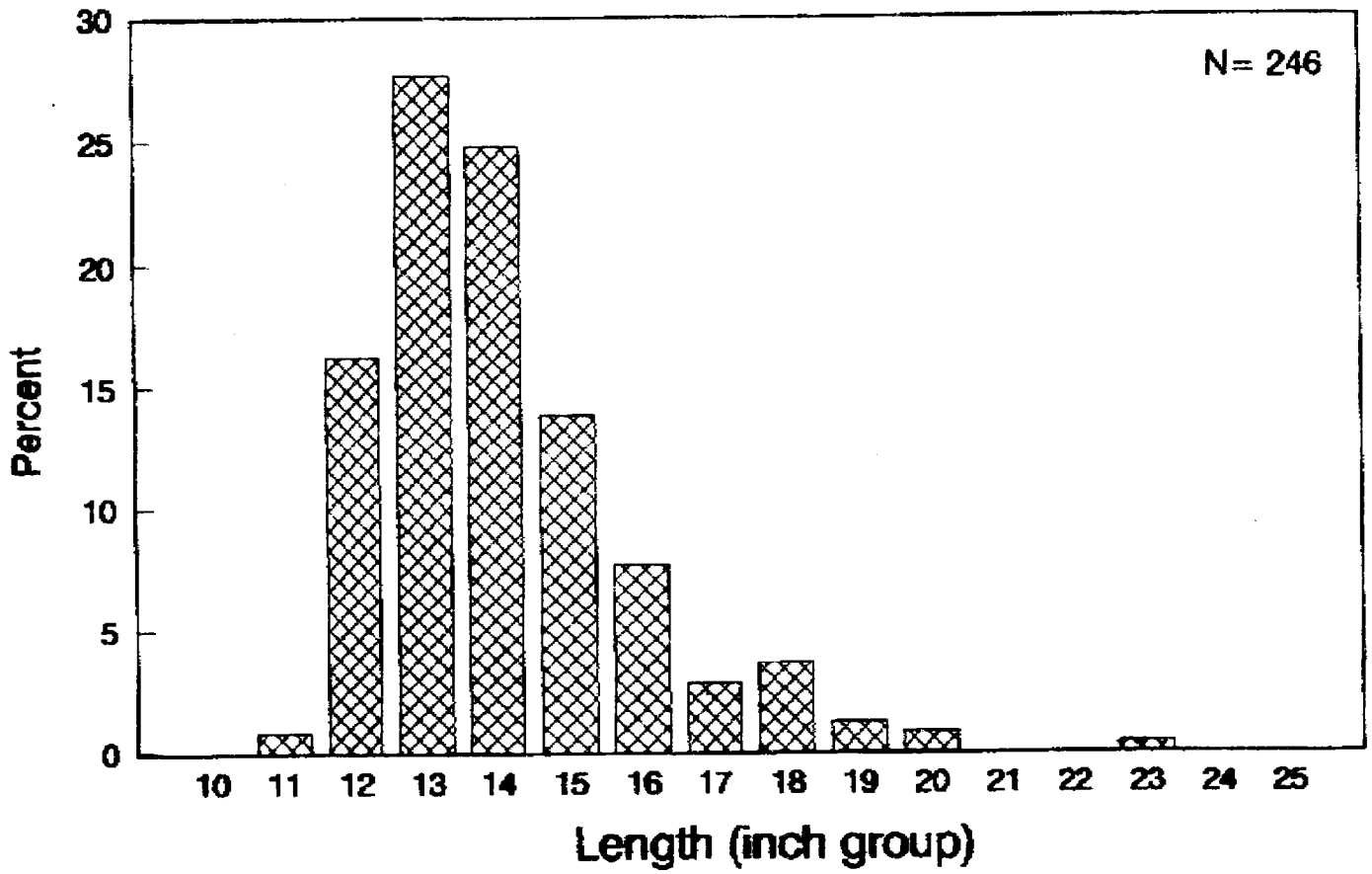


FIGURE 3.-Length frequency distribution of largemouth bass caught by bass fishermen from East Lake Tohopekaliga during the 1989 spring creel survey.

TABLE 1.-Expended harvest, effort and success estimates from East Lake Tohopekaliga during spring quarter 1989.

	Spring 1989 (2-17-89/5-11-89)	
	Harvest	Effort
Bass	3404	29086
Crappie	353	3029
Panfish	6704	7896
Misc.	44	37
Total	10505	40048
	Computer Success	Calculated Success
Bass	0.11	0.12
Crappie	0.13	0.12
Panfish	0.89	0.85

PANFISH = BLUEGILL
REDEAR SUNFISH

000

Largemouth bass harvested from East Lake Toho during creel 1989
Length frequency

Inch grp	Number	% comp.
10	0	0.00
11	2	0.81
12	40	16.26
13	68	27.64
14	61	24.80
15	34	13.82
16	19	7.72
17	7	2.85
18	9	3.66
19	3	1.22
20	2	0.81
21	0	0.00
22	0	0.00
23	1	0.41
24	0	0.00
25	0	0.00
Totals	246	100

GOES WITH GRAPH

FILE COPY

BASEWIDE BINDER CONTENT LIST
NTC Orlando, FL

Binder 1

1. Base Realignment and Closure (BRAC) Environmental Baseline Survey Report Summary of Data (On-Base-Properties).

2. Historical Articles.

3. Real Estate Records;
   - -Topography
   - -Soils and Geology

4. NTC Building List.

5. Chain of Occupancy - Ownership History.

6. Historical Maps, Topographical Maps.

Binder 2

1. 1985 Masterplan Update.

2. Installation Mission Suitability.

3. Long Range Land Management Plan.

4. Installation Mission Suitability Data Sheets.

5. BCP

6. Fish and Wildlife Section of NRMP.

7. NRMP.

8. Base Section NRMP.

9. Long Range Forest Management Plan.

Binder 3

1. Historical Information Sheets.

2. Quarterly Hazardous Material/Waste Report.

3. SOUTHNAVFACENGCOM Activity Visit.

4. Cleaning of Hazardous Waste Disposal Sites and Hazardous Material.

5. Preliminary Field Assessment - Report on Waste Drum Sampling and Classification.

Binder 3 (cont)

6. Local Hazardous Waste Assessment Survey Form.

7. Initial Assessment Study of NTC Orlando, FL.

8. (Final Report) Hydrogeologic Assessment and Ground-Water Monitoring Plan, NTC Orlando, FL.

9. EBS through Appendix L.

Binder 4, Section 3.2 (cont)

1. Appendix M through EBS.

Binder 5, Sections 3.3-3.14

1. Verification Study Assessment of Potential Soil and Groundwater Contamination.

2. Soil Survey of Orange County.

3. Air Permits.

4. ARAR Sewers.

5. RI Report.

Binder 6

1. NTC Orlando Final Oil Spill Control and Countermeasure (SPCC) Plan. 18 Nov 91.

2. Oil Spill Prevention Control and Countermeasure Plan. September 1976, Amended January 1980 and 1983.

3. Contract N62467-87-D-0158, NTC Orlando OHS Spill Contingency Plan.

4. National Pollutant Discharge Elimination System (NPDES) Permit No. FL0026069 for Naval Training Center. Orlando Annex Wastewater Treatment Plant.

5. Notice of Violation.

6. Hazardous Waste Warning Notice.

Binder 7, Sections 4.3-5.2

1. FY93 Federal Facilities Compliance and Inspection Report.

2. Hospital Environmental Audit.

3. Facility Environmental Compliance Profile '93,'92 and 91'.

Binder 7 (cont)

4. Compliance Status Report '90,'88,'87,'86 and '85.

5. Hazardous Waste Compliance Audit.

6. Hazardous Waste Compliance Assessment.

7. Hazardous Waste Annual Report '92,'91 and '90.

8. 1991 Exemption Postcards

9. Annual Hazardous Waste Reports '89,'88,'87 and '86.

10. 100% Report.

11. Hazardous Waste Questionaire.

12. Hazardous Waste Management Plan.

13. Status Report on Hazardous Waste Accumulated at Defense Property Disposal Office (DPDO).

14. Hazardous Material Program - Reference DPDO letter, SAB, dated 28 January 1985.

15. Memo's in regard to the Hazardous Waste Noncompliance - Notice of Violation.

16. Receipt of Environmental Violation Warning Notice.

17. Warning Notice - OWN-85-003, RCRA Compliance Inspection Report.

18. Letter addressing the Military's Installation Restoration Program (IRP).

19. Consolidated Survey Form.

20. RCRA Permit Application, Part B, 10 Feb 1983.

21. RCRA Hazardous Waste Management Regulations.

22. Notification of Hazardous Waste Activity Forms.

Binder 8, Sections 5.3-6.1

1. TIMS.

2. Tank Management Plan.

3. Regulated Storage Tanks List.

4. Tank Stats.

5. Department of Environmental Resources Inspection Report Form.

6. Release Detection Program for UST's.

Binder 9, Sections 6.3-7.4

1. Navy-Florida Underground Storage Tank (UST) Consent Agreement (Alternate Procedures Agreement (APA)).

2. UST Compliance Strategy.

3. Approval Letter.

4. Hazardous Material Inventory List.

5. Local Hazardous Waste Assessment Survey Form for Naval Training Center, Orlando, FL.

6. Audit Report on Hazardous Waste Management, NTC Orlando, FL.

7. Hazardous Waste Compliance Assessment, 2 Nov 1984.

8. Hazardous Waste (HW) Compliance Assessment, 31 Oct 1984.

9. Bulk Acid Storage.

10. Interim Storage and Transfer Facilities for Hazardous Wastes.

11. Facility Annual Hazardous Waste Report for DPDO-Orlando, FL.

12. Hazardous Materials/Wastes Survey, Final Submittal, NTC Orlando, FL
13. Generator Annual Hazardous Waste Reports, 1985.

14. CY85 Hazardous Waste Annual Report.

15. Hazardous Waste Annual Report.

16. Spill of Oil Switch Fluid and Various Drums stored in fenced area south west of Bldgs 7193 and 7191 at the NTC Annex.

17. Disposal Sites and Potentially Contaminated Areas, NTC Orlando, FL.

18. Hazardous Waste Management Plan for NTC Orlando, FL.

19. Renewal of Requirements Contract for Disposition of Hazardous Property.

20. Dump Site at NTC Annex.

21. Hazardous Waste Compliance Assessment.

22. Instructions for NTEC Materials with Expired Shelf Life.

Binder 10, Sections 7.4-7.9

1. CY92 Navy and Marine Corps Polychlorinated Biphenyls Inventory Status.

2. CY91 Navy Polychlorinated Biphenyls (PCB) Inventory Report.

Binder 10 (cont)

3. Final PCB Audit and Compliance Assessment.

4. Groundwater Info.

5. Hydrogeologic Info.

6. Appendix A - Bulk Sample Analysis Quality Control.

7. Partial Listing of Navy Activities.

8. Notice of Intent to use General Permit for Wastewater Collection System/Drinking Water Distribution System.

9. Application for Renewal NPDES Permit No. FL0031941.

10. State of Florida Department of Environmental Regulation Domestic Wastewater Treatment Plant Monthly Operating Report.

11. Basis of Design for Municipal Sewerage System Demolition.

12. Correspondance for NTC Annex Sewage Treatment Plant - Orlando.

13. Navy Annex McCoy Sanitary Sewer Inflow/Infiltration Study.

14. NTC Annex STP Application.

15. Signatory Requirements for Environmental Permit Applications.

16. ESR No. 5127-137, Preparation of NPDES Stormwater Permit Application.

17. Meeting between SOUTHNAVFACENGCOM and the Greater Orlando Aviation Authority (GOAA), 2 June 1983.

18. Wastewater Disposal Alternatives - NTC Orlando, FL.

19. Wastewater Treatment Plant Monthly Operating Report.

20. Basis of Design for Municipal Sewerage System Demolition.

Binder 11, Sections 7.10-10.3

1. Lead Test Report (Paint).

2. Drinking Water Inventory List (Lead).

3. Lead and Copper Tap Sample Analysis Ranking Report Form.

4. Air Permit Database.

5. Air Quality Regulations.