SITE: Tender Touch Dry Cleaners
BREAK: 1.9
OTHER: v. 1

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BUREAU OF WASTE CLEANUP

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TECHNICAL REVIEW SECTION

Site Inspection Work Plan for the Tender Touch Drycleaners Site, Winter Haven, Polk County, Florida

EPA I.D. No. FLD982136384

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Prepared for:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Screening Superfund Subsection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Prepared by:

ecology and environment, inc.
International Specialists in the Environment

10765019

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List of Acronyms and Abbreviations

BGS	below ground surface
BNA	base, neutral and acid extractable organic compound
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (of 1980)
CLP	Contract Laboratory Program
DQO	data quality objective
E & E	Ecology and Environment, Inc.
EISOPQAM	Environmental Investigation Standard Operating Procedures and Quality Assurance Manual
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
FDEP	Florida Department of Environmental Protection
FAC	Florida Administrative Code
FS	Florida Statute
HRS	hazard ranking system
ID	inside diameter
IDW	investigation-derived waste
msl	mean sea level
µg/kg	micrograms per kilogram
NTU	nephelometric turbidity unit
PA	Preliminary Assessment
PCE	tetrachloroethene
QA/QC	quality assurance/quality control
SARA	Superfund Amendments and Reauthorization Act
SESD	(EPA) Science and Ecosystem Support Division
SI	site inspection
SOP	standard operating procedure

List of Acronyms, cont.

TAL	target analyte list
TCL	target compound list
TTD	Tender Touch Drycleaners
USC	United States Code
VOA	volatile organic analysis
VOCs	volatile organic compounds

1 Introduction

This site inspection (SI) work plan for the Tender Touch Drycleaner Site (TTD; United States Environmental Protection Agency [EPA] identification number FLD982136384; Florida Department of Environmental Protection [FDEP] facility ID number 539501361) in Winter Haven, Polk County, Florida has been prepared by Ecology and Environment, Inc. The work plan was tasked by FDEP in February 2004 (Task #33) under contract HW-363. This work is being conducted pursuant to the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 United States Code (USC) 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act (SARA), Public Law 99-499, and Florida Statutes (FS), Chapter 403.

The proposed scope of work has been developed based on meetings conducted with personnel representing FDEP and E & E, the observations and findings during the site reconnaissance conducted on February 18, 2004, and a FDEP Preliminary Assessment (PA) submitted in July 1998.

The objectives of this SI work plan are as follows:

- Discuss the available site history, including the findings of any previous investigations;
- Evaluate whether or not the site has been impacted by contamination from drycleaning activities;
- Identify migration pathways and hazard ranking system[1] (HRS) data gaps;
- Propose a scope of work that will collect data to fill the HRS data gaps; and
- Ensure that all data quality objectives (DQOs) will be performed in accordance with FDEP's Standard Operating Procedures (SOPs) and EPA's Science and Ecosystem Support Division (SESD) Region 4 Environmental Investigation Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). The DQOs of this work plan specifically apply to sampling locations, sampling procedures, sample types, use of data, data types, and field quality assurance/quality control (QA/QC).

[1] The hazard ranking system is EPA's primary tool for determining whether a site warrants listing on the National Priorities List (NPL). This includes evaluation of the groundwater, surface water, and air migration pathways, as well as exposure pathways.

The results of the SI will be reviewed to determine if EPA requires further Superfund response actions.

To maintain consistency with the existing site file, the reference list for the PA (references 1 through 44) has been incorporated into the reference list for this work plan. New references used in the preparation of this work plan begin with reference 45.

2 Site Description

The TTD site is located at 1515 NW 1st Street, on the southwest corner of the intersection of Avenue P Northwest and NW 1st Street in the city of Winter Haven, Polk County, Florida (see Figures 1 and 2) [1, 2, 3]. The site occupies approximately 0.275 acres and lies at the latitudinal and longitudinal coordinates of 28.0372 N and 81.7269 W (28° 02' 14" N and 81° 43" 37" W), respectively (1, 2). The site is currently an operating drycleaner that uses chlorinated solvents in the process of drycleaning activities. The facility is surrounded by concrete pavement, and land surface lies at an elevation of approximately 150 feet above mean sea level (msl) [1]. Stormwater is diverted into drainage conduits along NW 1st and Ave. P Northwest. Land use in the immediate vicinity of the TTD property is a mix of residential, commercial, and industrial. The area immediately west of the TTD site is residential. Beyond the residential area, Brown International Corporation (a food processing equipment manufacturer) operates a large facility approximately 0.25 mile west of the site. The property north of the TTD facility is mixed residential and commercial. Immediately east of the TTD property is 1st Street North and east of this road are residential properties. South of the TDD site is mixed use residential and commercial.

Three sinkhole lakes are located within 0.5 mile west (Spring Lake), south (Lake Silver), and east (Lake Maude) of the site [1]. According to the preliminary assessment, the closest supply wells lie within a 0.5- to 1-mile radius of the site. The preliminary assessment states that six supply wells lie within this radius with the closest one located 3,200 feet southeast of the site [45]. A supply well located approximately 1,250 feet east of the TTD property was identified during the February 18, 2004 reconnaissance. This supply well is located at the eastern end of Avenue P NE, across 1st Street North. The current operational status of this well has not been determined. Based on information obtained during the PA, no private potable wells are within 1 mile of the site [16, 45].

2.1 Waste Characterization

The TTD site is an active drycleaning facility. The TTD drycleaning machine uses the chlorinated solvent tetrachloroethene (PCE; perchloroethene, a.k.a "perc") for the removal of soils, greases, and other unwanted substances from clothing. The clothing is immersed and tumbled in the PCE in the cleaning process. The PCE containing the unwanted substances is then drained from the clothing and distilled to separate the PCE from unwanted substances (sludge or spent bottoms). The distilled PCE is recycled back into the drycleaning machine. The sludge/spent bottoms are removed from the facility as hazardous waste. Over time the level of PCE drops in the machine and it is necessary to add PCE. In addition, a lint filter is used in the machines. Modern filters are disposable, and are removed as hazardous waste with the spent bottoms.

Petroleum solvents, such as Stoddard and mineral spirits, are often used in dryclean practices as a spotting agent. Spotting agents are used as a pre-treatment to particularly stubborn stains to aid in their removal during the machine wash process. It was not determined during the reconnaissance whether petroleum solvents were currently in use or had been historically.

2.2 Site Geology/Hydrogeology

The TTD site is situated on the Winter Haven /Ridge of the Polk Upland geomorphologic feature of the Central Zone Geomorphologic Province of Florida. This area contains numerous closed basin karst terrain features including cover-collapse sinkholes and sinkhole lakes. A post-Oligocene age fault, associated with the Ocala Platform, is interpreted to exist northeast of the site area. This fault trends northwest-southeast and is located within 4.2 miles of the site. There are three hydrostatigraphic units in Polk County. These units are the surficial aquifer, intermediate aquifer/confining unit and Floridan aquifer systems [1,17,18,19,20,21,24,38].

This surficial aquifer system is principally composed of unconsolidated to poorly indurated sediments of Pleistocene to Holocene age. These sediments are between 45 to 70 feet thick in the Winter Haven area. The surficial aquifer system exists under unconfined conditions and it's found between 4.5 to 5.5 feet below ground surface (BGS) at the site. This aquifer is recharged primarily by rainfall. Water levels fluctuate in the surficial aquifer system as a result of recharge by rainfall, and discharge by natural gravity flow downgradient to lakes and streams, evapotranspiration, downward loss into underlying aquifers and pumping from wells [16,17,18,22,27].

The surficial aquifer system is moderately to highly acidic, high in iron content and is highly colored. The surficial aquifer system is not a major source of water and is limited to domestic supply, lawn and irrigation and to a limited extent, small agricultural irrigation along the central ridge areas.

The average yield from wells tapping the aquifer is between 20 to 30 gallons per minute (gpm) [16,17,18,22,27].

The intermediate aquifer system/confining unit, which is present over much of western Polk County (south of Polk City), consists of discontinuous sand, gravel, shell, limestone and dolostone beds within the Hawthorn Group. The intermediate aquifer system/confining unit includes the Peace River and Arcadia Formations [16,17,18,22,27].

The Bone Valley Member (early Pliocene to Miocene age) forms the upper part of the Peace River Formation and consists of pebble or gravel-sized phosphate fragments and sand-sized phosphate grains in a matrix of quartz and clay. The Peace River Formation is underlain by the Arcadia Formation of lower Miocene Age. The Arcadia Formation, with the exception of the Nocatee member, consists predominantly of limestone and dolostone with varying amounts of sand, clay and phosphate grains. The Nocatee and Tampa members of the formation are absent in the site area [1,16,17,18,22,27,28,39].

The Peace River and Arcadia Formations form the Hawthorne Group in this area of Polk County. The top of the Hawthorn Group is found approximately 60 feet BGS and is between 50 to 100 feet thick in the Winter Haven area. The lower confining layer for the surficial aquifer system consists of clayey sediments of the Peace River Formation (Bone Valley member) of the Hawthorne Group. The top of the unit appears to be approximately 55 feet BGS at the site. The lower confining unit of the intermediate aquifer system consists of low permeability units in the Arcadia Formation [1,16,17,18,22,27,28,39].

The intermediate aquifer system exhibits high alkalinity (high bicarbonate ion concentration) and elevated levels of magnesium. Recent water quality data indicates elevated levels of gross beta (suspended and dissolved) and gross alpha (suspended) in a number of wells screened in the intermediate aquifer system. Phosphatic sediments within the Hawthorn Group are the cause of the elevated levels. Water from the intermediate aquifer system is primarily used for domestic supply in Polk County. Other uses include stock watering, irrigation and small public supplies [1,16,17,18,22,27,28,39].

The Floridan aquifer system consists of carbonate (limestone and dolomites) units ranging from Eocene to Oligocene age. The units comprising the Floridan aquifer system include, in ascending order, the Avon Park Formation, Ocala Limestone and the Suwannee Limestone. The top of the Floridan aquifer system (Suwannee Limestone) is found approximately 140 feet BGS in the site area and the aquifer is approximately 1,000 feet thick in this section of Polk County[1,17,18,19,20,21,22,24,25,27.38].

The Suwannee Limestone of Oligocene age underlies the Hawthorn Group and consists primarily of variably vuggy and muddy limestone (grainstone to packstone). Post-Oligocene age erosional processes have removed the Suwannee Limestone on the upthrown (east) side of the nearby fault. The Suwannee Limestone is underlain by the late Eocene age Ocala Limestone [1,17,18,19,20,21,22,24,25,27,38].

The Ocala Limestone consists of white to light gray, light orange, fossilferous, calcarenitic limestone. The limestone has poor to good induration and contains benthic foraminifera. The Avon Park Formation of middle Eocene age underlies the Ocala Limestone and is composed of white to light orange, grayish-brown fossiliferous limestone interbedded with vuggy dolostone. The Avon Park Formation is highly fractured [1,17,18,19,20,21,22,24,25,27,38].

Most of the lakes, depressions and sinkholes located in this area of Polk County may provide conduits for recharge to the aquifer [20]. Accordingly, Winter Haven is located in an area of high recharge to the Floridan aquifer system [1,17,18,19,20,21,22,24,25,27,38].

The potentiometric surface of the upper Floridan aquifer system varies between 110 to 120 feet above Nation Geodetic Vertical Datum (NGVD). The regional groundwater flow of the Floridan aquifer system is towards the south-southwest from the Green Swamp High. The transmissivity of the aquifer has been found to range from 51,471 to 280,749 ft2/day and is controlled by the presence of solutions features and fractures [1,17,18,19,20,21,22,24,25,27,38].

The Floridan aquifer system is primarily a calcium bicarbonate aquifer with hardness values in the upper Floridan aquifer ranging from 40-284 mg/l. The water quality of the Floridan aquifer system generally deteriorates (i.e. high TDS, hardness, chloride and sulfate values) with increasing depth and towards the coast. The upper Floridan aquifer system is the principal source all major municipal, industrial, irrigation and domestic water supplies. Large diameter wells that tap the upper Floridan aquifer can yield as much as 8,000 gpm [17,18,19,22,24,27,38].

3 Site History

According to the current owner, Mr. William Chamberlain, prior to 1988 the TTD property was a residential dwelling that was owned and occupied by one of his relatives. Don Chamberlain, Mr. Chamberlain's nephew, converted the building into a drycleaning facility in 1988 [46]. The facility applied for inclusion in the State of Florida Drycleaning Solvent Cleanup Program. However, an FDEP letter dated January 16, 1998 rendered the site not eligible for participation within the program because the appropriate taxes were not remitted to the Department of Revenue, as required by the Florida Administrative Code (FAC) Chapter 62-781 [5]. In September 2003, William Chamberlain purchased the TTD property and business. William Chamberlain continues to conduct drycleaning services at the facility.

Investigational History. In May 1997, Environmental Safety Consultants, Inc. collected a soil sample from 1 foot BGS in the vicinity of the TTD drycleaning machine. Upon laboratory analysis, the soil sample exhibited a PCE concentration of 241 micrograms per kilogram (µg/kg). This sample was collected in preparation for application to the State of Florida Drycleaning Solvent Cleanup Program.

FDEP conducted a preliminary assessment (PA) of the TTD site in July 1998. The PA concluded that further CERCLA action at the TTD site was warranted. No other investigations have been conducted at the TDD facility.

A site reconnaissance conducted by E & E and FDEP personnel at the TTD on February 18, 2004, confirmed the approximate locations of property boundaries and surface features. During this site visit, dryclean activities, disposal practices and surrounding land use were observed and photographed, including the following:

- Mr. William Chamberlain disposes of spent filters from the drycleaning machine through a contracted waste disposal company from Georgia;
- The drycleaning machine boils off used/dirty solvent and has two vent lines that hang out of the rear of the building approximately two feet above the ground.

- Mr. Chamberlain indicated a small leak from the door of the drycleaning machine that is captured by the existing secondary containment.

4 Data Quality Objectives

The DQOs for this investigation are:

- determine if a release of hazardous substances has occurred and/or if a contaminant source is present at the TTD property;
- provide FDEP with sufficient data to complete an EPA HRS score;
- discuss available site history, including the findings of any previous investigations;
- collect subsurface unsaturated soil samples and groundwater grab samples for field screening using E & E's color-tec method to better target areas of suspected contamination for laboratory confirmation analysis.
- use field screening data to select subsurface soil samples for laboratory analysis to determine the potential impacts to soils associated with the drycleaning activities.
- use groundwater profiling data to determine the placement of four shallow groundwater monitoring wells. All wells will be placed on the drycleaner property. One of these wells will be employed as a background well and will be installed in an area of the property that does not exhibit contamination.
- collect groundwater samples from newly-installed shallow monitoring wells and conduct laboratory analyses to determine the potential impacts to groundwater associated with the drycleaning activities;
- request the appropriate analytical methods or modified methods from the EPA Contract Laboratory Programs (CLP) lab to use and meet QA Targets for Precision, Accuracy, method detection limits, and practical quantitation limits. The various methods listed in tables included as Appendix C have been compared to the target levels for the constituents of concern, and the appropriate laboratory analytical method has been specified in the following sections. Where various modification of the same method exists, the appropriate modified method will be requested from the laboratory to meet data quality objectives based on DQOs;
- compare sample results to background/control conditions, State of Florida Soil Cleanup Target Levels, and state and federal Primary/Secondary Drinking Water Standards; and
- determine whether further actions are warranted by the EPA and/or FDEP based on EPA Superfund and State Waste Cleanup criteria.

5 Scope of Work/Methodology

The proposed scope of work and methodology for completing field-sampling activities at the TTD site is provided below. The field investigation will focus on potential contaminant sources and impacted areas within the boundaries of the Tender Touch Drycleaners property and will only expand onto surrounding properties if necessary. The proposed overall approach involves the use of field-based analytical screening of soil and groundwater samples collected from locations throughout the site, which target suspected potential source areas and off-site migration pathways. The data obtained from the field-based screening effort will be used in the field to locate and select potentially impacted areas of soil and/or groundwater for focused sampling using laboratory-based analysis. Adjustments to the sampling plan and sampling locations provided in this scope of work may be made based on field conditions, pending approval of the FDEP project manager.

5.1 Field Based Analytical Screening Activities

5.1.1 Color-Tec Field Screening Analysis

All soil and groundwater samples will be field screened with a Color-Tec kit, which is used to detect low levels of chlorinated solvents. E & E's Color-Tec screening technique uses colorimetric detector tubes capable of detecting chlorinated alkenes to a detection limit of less than 50 parts per billion (ppb). For each soil sample, a 25-gram soil aliquot will be collected from the soil core and field screened for chlorinated compounds using the Color-Tec method. Each aliquot will be prepared in the following manner. Approximately 10 grams of soil sample will be collected and mixed with 10 milliliters (ml) of analyte-free water in a 40-ml volatile organic analysis (VOA) vial. Groundwater samples to be tested are poured directly into VOA vials to 70% capacity and tightly sealed. Two needles will be pierced through the VOA vial septa. One will be stationed near the top of the vial in the headspace (sample extraction needle), and the other will be stationed near the base of the vial in the water soil mixture (inlet purging needle). A colorimetric detector tube and pump will be

connected to the sampling needle and a sample will be drawn from the vial headspace. Tentative analyte quantitation and identification will be based on tube concentration readings and color changes. The Color-Tec data will be used as a preliminary evaluation of the selected sample locations and as a screen to select soil samples for laboratory analysis.

5.1.2 Soil/Groundwater Profiling and Sample Collection for Field Screening

To target suspected potential source areas and migration pathways, direct-push profiling techniques will be used to collect soil and groundwater samples for initial field-based analysis using E & E's Color-Tec method (described in Section 5.1). The profiling activities will consist of six soil/groundwater profile borings. Each direct-push soil profile will begin at ground surface and continue to a depth ranging from 5 to 15 feet BGS (depending on the depth to water) with continuous 4-foot soil core samples through the unsaturated interval to the water table surface. The soil cores will be collected into acetate core sleeves inside the direct-push core barrel. At 2-foot intervals along the core sections of each boring, sub-samples will be collected for Color-Tec field screening. The remainder of the soil cores will then be capped and placed on ice until the field-based screening is completed. Based on the data recorded during the screening, selected soil samples will be collected from the capped acetate liners for laboratory confirmation analysis.

Following soil sample collection to the top of the water table, groundwater profiling will be conducted to delineate vertically any on-site groundwater contamination. The water table is expected to be approximately 10 feet BGS. Once the final soil core is collected, the casing will be advanced an additional 4 feet below the water table surface with a 4-foot long, 0.01-inch slotted, stainless steel screen, sealed within a retractable steel casing. The steel screen will be opened to allow collection of a groundwater grab sample from the 4-foot interval. After collection of the first groundwater sample, three more 4-foot intervals will be selected for collection, with the total profile depth not to exceed 40 feet BGS. Intervals selected for field-based screening will be averaged over the vertical length between the water table surface and 40 feet BGS until tentative plume characteristics are revealed. Based on information gathered from preliminary borings, more discrete zones may be targeted in subsequent borings. Groundwater samples will be collected after development for field screening with E & E's Color-Tec method. Groundwater samples will be collected with a peristaltic pump. The groundwater screening data will provide preliminary data results and enable the project managers to select monitoring well locations. The groundwater screening data will also be used in conjunction with data collected from the subsurface soil screening to adjust locations of subsequent soil/groundwater borings.

5.2 Laboratory Confirmation Sampling Activities

5.2.1 Soil Sampling

Seven soil samples will be collected to evaluate potential environmental impacts. One subsurface soil will be collected from each direct-push profiling location. Also, one hand auger boring will be conducted inside the drycleaning facility in front of the dryclean machine. This hand auger boring will be completed by coring through the concrete floor of the facility to achieve access to underlying soil. The soil sample from this boring will be collected within the top two feet of soil beneath the concrete surface. One of these samples will be selected as a control sample that is collected from an undisturbed area, which will be determined on-site. Each of these samples will be collected for analysis of target compound list (TCL) volatile organic compounds (VOCs) and TCL Base, Neutral, and Acid (BNA) extractable organics from a 2-foot interval. The approximate lateral locations of the subsurface soils are exhibited on Figure 2. The depth interval that the sample volume will be collected from will be based on field analytical screening data. Aliquots for VOC analysis will be collected directly from the soil core using an Encore sampler. The remaining sample volume will be homogenized in a stainless steel bowl prior to filling the sample bottles for BNA analysis.

5.2.2 Monitoring Well Installation

A total of four monitoring wells will be installed after the direct push groundwater profiling is completed. Monitoring well locations and depths will be determined in the field and based on the results of the groundwater profiling. One background well will be installed in an area of the property that does not exhibit contamination. Three wells will be completed within the potential plume area. All wells will be placed on the drycleaner property.

It will be determined in the field prior to installation whether to permanently install these monitoring wells or use as temporary monitoring wells. This decision will be based on the identification or absence of a plume. If a groundwater contaminant plume is identified, permanent monitoring wells will be installed. Each well will be installed using direct-push techniques employing pre-packed screens. The wells will be constructed of 1-inch schedule 40 flush-joint PVC casing (the length of which will be determined in the field) attached to 10 feet of 0.010-inch factory slotted flush-joint threaded PVC screen, and a threaded PVC end cap. The screen annulus will be filled with clean silica sand (20/30 mesh) to the top of the screen and a bentonite seal will be used above the screen to a height of approximately 6-inches. Permanent monitoring wells will be completed by filling remaining annular space with cement grout, a locking cap and flush-mount security cover surrounded by a concrete pad. If temporary monitoring wells are employed, they will be removed from the

borehole and filled with cement grout after sampling activities have been completed. The wells will be developed by surging and over-pumping using a pump until the water appears clear, and the pH, specific conductance, turbidity, and temperature have stabilized.

5.2.3 Groundwater Sampling

Groundwater samples will be collected for laboratory analysis from the four newly installed monitoring wells. Each groundwater sample will be analyzed for TCL VOCs, and TCL BNA extractable organics. Prior to sampling, groundwater will be purged from the monitoring wells while field parameters (pH, specific conductance, turbidity, dissolved oxygen, and temperature) are recorded, at a minimum of five-minute intervals. Groundwater samples will be collected after three consecutive sets of readings indicate that all these parameters have stabilized and the turbidity readings are below 10 nephelometric turbidity units (NTUs). If these parameters have not stabilized after the removal of three well volumes, purging will continue. However, no more than five well volumes will be removed. Groundwater samples will be collected when the turbidity readings are below 10 NTUs. All monitoring well purging and groundwater sampling will be performed by low-flow methodology using a peristaltic pump with Teflon tubing. All groundwater samples will be collected from the tubing prior to passing through the peristaltic pump.

Following the completion of the monitoring well sampling activities, E & E personnel will conduct a relative wellhead elevation survey including measurement of the water levels in the monitoring wells to determine the prevailing direction of groundwater flow across the site. At this time GPS coordinates for each of the well locations will also be collected.

5.3 Decontamination

Prior to mobilization, all sampling equipment will be pre-cleaned by using a full bath and scrub with an Alconox cleaner solution, followed by an isopropanol rinse, and subsequently an organic free water rinse. The equipment will then be allowed to air dry. After fully drying, each piece of equipment will be wrapped in aluminum foil for transport to the site. During soil/groundwater profiling, subsurface soil sampling, and monitoring well installation, all direct-push rods and associated sampling equipment will be decontaminated according to the method described above or a suitable alternative method. At each soil sampling location, each sampling technician will use a clean pair of nitrile gloves, as well as pre-cleaned or field-cleaned equipment (stainless steel spoons, trowels, bowls, and hand augers). At each monitoring well/groundwater sample location, disposable pre-cleaned Teflon tubing and pump head tubing will be used to purge and develop the well. All samples will be collected prior to entrance through pump head and pump head tubing.

5.4 Quality Assurance/Quality Control

All sampling and field work activities will be conducted in accordance with FDEP's SOPs, EPA Region IV Science and Ecosystems Support Division SOPs for sampling and field investigations, FDOH guidelines, E & E's site-specific health and safety plan (see Appendix A); and E & Es site-specific quality assurance project plan (see Appendix B).

To satisfy QA/QC requirements, one soil and one groundwater equipment rinsate blank will be collected. In addition, one duplicate soil and one duplicate groundwater will be collected. These duplicate sample locations will be determined on site. A trip blank will be sent (for VOC analysis only) with every shipment containing soil/groundwater VOCs samples. Adjustments to the sampling plan and sample locations may be made based on field conditions, pending approval of the FDEP project manager.

5.5 Laboratory Analysis

The proposed locations, rationale, and analytical parameters for each sample are provided in Table 1. EPA's CLP laboratories and EPA's Science and Ecosystem Support Laboratories will conduct laboratory analyses. Analyses will be performed for TCL VOCs, and TCL BNA extractables. FDEP will request that the laboratories use the Low Concentration Organic Analytical Services for both soil and groundwater matrices to meet QA targets for precision, accuracy, method detection limits, and practical quantitation limits.

5.6 Investigation-Derived Wastes

All investigation-derived wastes (IDW) will be disposed of in accordance with FDEP and EPA guidelines.

6 Site Inspection Report

Upon receipt of the analytical results, E & E will prepare a SI report. The report will provide detailed information regarding the site history, site description, and environmental setting; a description of the methodology used during the field investigation; and a discussion of the analytical results.

7 References

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TABLES

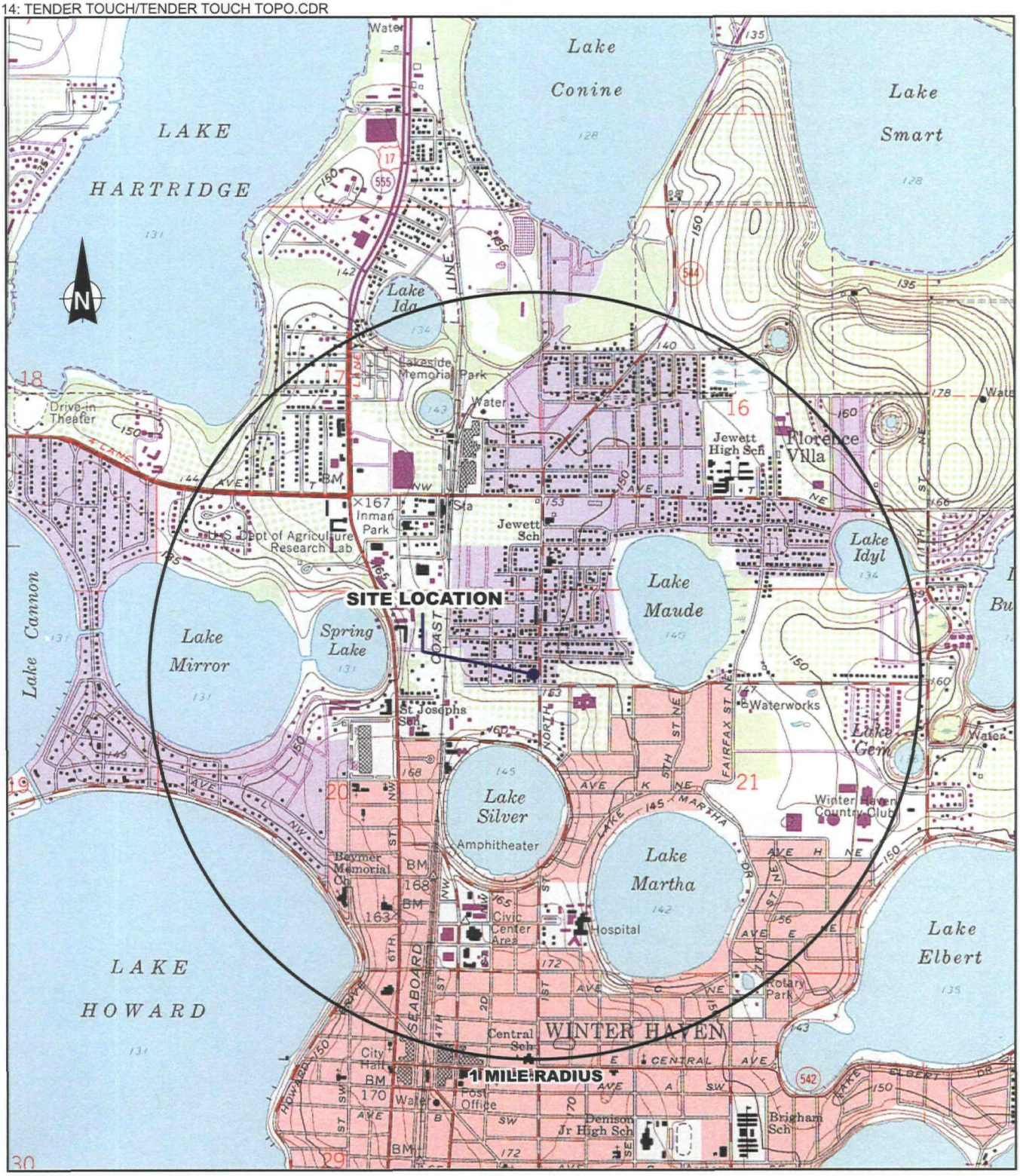
TABLE 1
SAMPLE LOCATIONS AND RATIONALE FOR THE
TENDER TOUCH DRYCLEANERS SITE
WINTER HAVEN, POLK COUNTY, FLORIDA

Sample Type	Sample Designation	Sample Location	Rationale	Laboratory Analysis
Soil	TTDS-1	Control location; To be determined	Control/Comparison	VOCs and BNAs
	TTDS-2	Inside drycleaner, in front of dry clean machine.	Potential Impact/Source Area	VOCs and BNAs
	TTDS-3 through TTDS-7	Within property boundaries.	Potential Impact Area	VOCs and BNAs
Groundwater	TTDGW-1	Control location; To be determined	Control/Comparison	VOCs and BNAs
	TTDGW-2 through TTDGW-4	Within property boundaries.	Potential Impact Area	VOCs and BNAs
Quality Assurance/ Quality Control/Comparison	TTDS-D	To be determined	Potential Impact Area/ Duplicate Soil Sample	VOCs and BNAs
	TTDGW-D	To be determined	Potential Impact Area/Duplicate Groundwater Sample	VOCs and BNAs
	TTDS-RB	NA	Soil Sampling equipment rinsate blank	VOCs and BNAs
	TTDGW-RB	NA	Groundwater sampling equipment blank	VOCs and BNAs
	TTDTB-1 through 5	NA	Trip Blank	VOCs

Key:
VOCs = Volatile organic compounds.
BNAs = Base, neutral, and acid extractable organic compounds.

FIGURES

14: TENDER TOUCH/TENDER TOUCH TOPO.CDR



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle: Winter Haven, Florida 1959, photorevised 1980, photoinspected 1983.

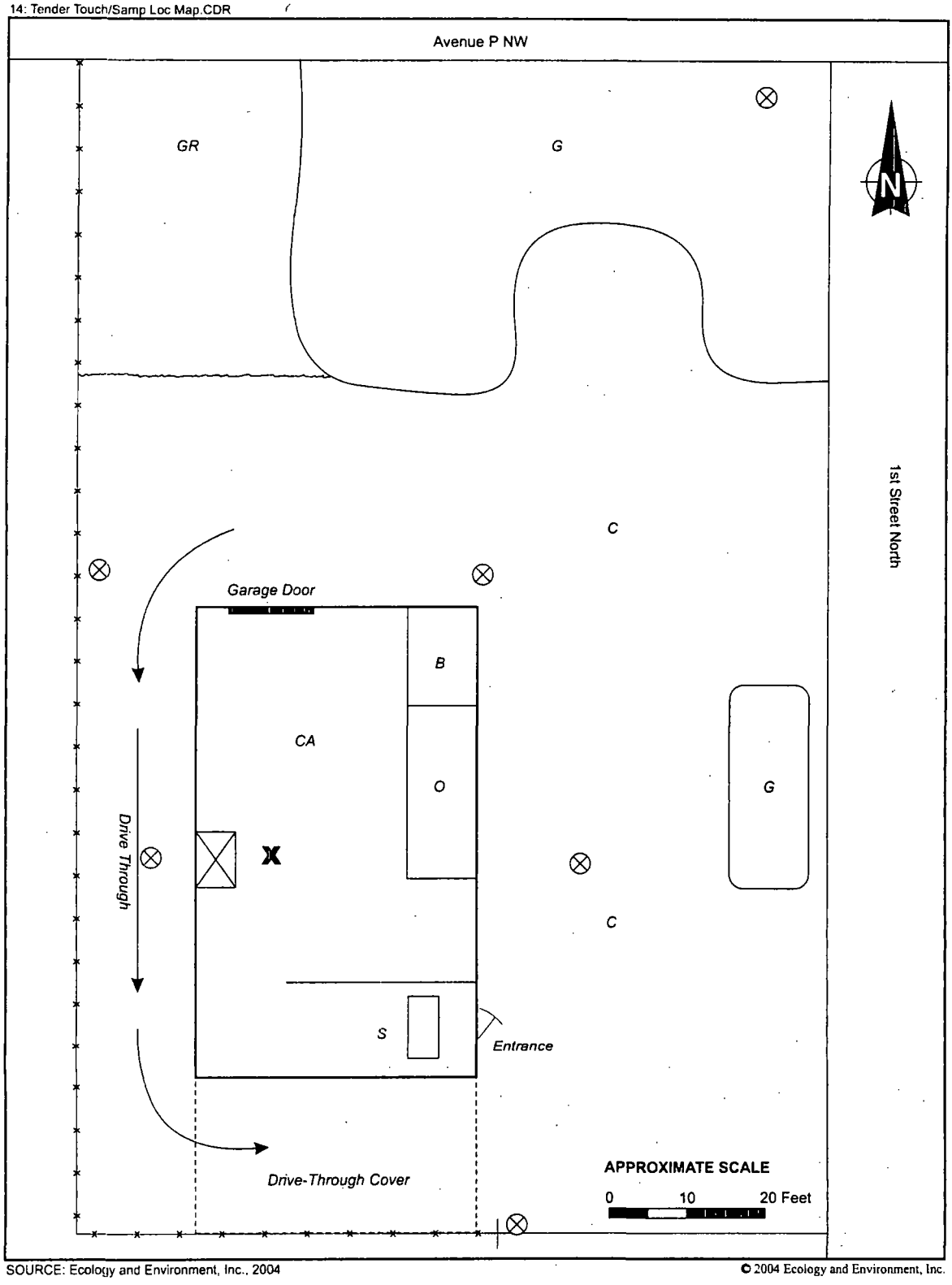
SCALE

0 .5 1 MILE

0 1000 2000 3000 4000 5000 FEET

Figure 1 SITE LOCATION MAP -- TENDER TOUCH DRY CLEANERS SITE, WINTER HAVEN, POLK COUNTY, FLORIDA

14: Tender Touch/Samp Loc Map.CDR



SOURCE: Ecology and Environment, Inc., 2004

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KEY:

- ⊗ Proposed Soil and Groundwater Sampling Location
- X Proposed Soil Sampling Location
- ⊠ Dry Cleaning Machine
- CA Cleaning Area
- O Office
- B Boiler Room
- S Service Area/Desk
- Door
- Fence
- C Concrete
- G Grass
- GR Gravel

Figure 2 **SAMPLE LOCATION MAP -- TENDER TOUCH DRY CLEANERS, WINTER HAVEN, FLORIDA**

APPENDIX A

Health and Safety Plan

March 2004

ecology and environment, inc.

SITE-SPECIFIC
HEALTH AND SAFETY PLAN

Project: Tender Touch Drycleaner Site

Project No.: 754.FF15

TDD/PAN No.: _____

Project Location: 1515 NW 1st Street, Winter Haven, Polk County, Florida 33881

Proposed Date of Field Activities: March 2004

Project Director: Kim Walker

Project Manager: Dan Kennedy

Prepared by: Chris Suttell Date Prepared: 02/26/04

Approved by: Dan Kennedy Date Approved: _____

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1. INTRODUCTION

1.1 POLICY

It is E & E's policy to ensure the health and safety of its employees, the public, and the environment during the performance of work it conducts. This site-specific health and safety plan (SHSP) establishes the procedures and requirements to ensure the health and safety of E & E employees for the above-named project. E & E's overall safety and health program is described in *Corporate Health and Safety Program for Toxic and Hazardous Substances* (CHSP). After reading this plan, applicable E & E employees shall read and sign E & E's Site-Specific Health and Safety Plan Acceptance form.

This SHSP has been developed for the sole use of E & E employees and is not intended for use by firms not participating in E & E's training and health and safety programs. Subcontractors are responsible for developing and providing their own safety plans.

This SHSP has been prepared to meet the following applicable regulatory requirements and guidance:

Applicable Regulation/Guidance
29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)

1.2 SCOPE OF WORK

Description of Work: Collect soil samples; conduct vertical profiling with the direct push method and collect groundwater samples; install monitoring wells and collect groundwater samples.

Equipment/Supplies: Attachment 1 contains a checklist of equipment and supplies that will be needed for this work.

The following is a description of each numbered task:

Task Number	Task Description
1	Collection of soil samples.
2	Vertical profiling with direct push method and collect groundwater samples.
3	Installation of monitoring wells/groundwater sampling
4	Equipment decontamination.

1.3 SITE DESCRIPTION

Site Map: A site map is attached at the end of this plan.

Site History/Description (see project work plan for detailed description): The site is a retail drycleaning facility.

Is the site currently in operation? X Yes ☐ No

Locations of Contaminants/Wastes: Unknown, most likely at and within the vicinity of the dry cleaning machine.

Types and Characteristics of Contaminants/Wastes:

X Liquid	X Solid	☐ Sludge	☐ Gas/Vapor
X Flammable/Ignitable	X Volatile	☐ Corrosive	☐ Acutely Toxic
☐ Explosive	☐ Reactive	X Carcinogenic	☐ Radioactive
☐ Medical/Pathogenic	Other: _____		

2. ORGANIZATION AND RESPONSIBILITIES

E & E team personnel shall have on-site responsibilities as described in E & E's standard operating procedure (SOP) for Site Inspection. The project team, including qualified alternates, is identified below.

Name	Site Role/Responsibility
Dan Kennedy	Project/Task Manager
Chris Suttell	Site Safety Officer

3. TRAINING

Prior to work, E & E team personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan, sampling and analysis plan, and/or quality assurance project plan prior to project work.

Training	Required
40-Hour OSHA HAZWOPER Initial Training and Annual Refresher (29 CFR 1910.120)	X
Annual First Aid/CPR	X
Hazard Communication (29 CFR 1910.1200)	X
40-Hour Radiation Protection Procedures and Investigative Methods	
8-Hour General Radiation Health and Safety	
Radiation Refresher	
DOT and Biannual Refresher	X
Other:	

4. MEDICAL SURVEILLANCE

4.1 MEDICAL SURVEILLANCE PROGRAM

E & E field personnel shall actively participate in E & E's medical surveillance program as described in the CHSP and shall have received, within the past year, an appropriate physical examination and health rating.

E & E's health and safety record (HSR) form will be maintained on site by each E & E employee for the duration of his or her work. E & E employees should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this SHSP applies.

Is there a concern for radiation at the site? ☐ Yes X No

If no, go to 5.1.

4.2 RADIATION EXPOSURE

4.2.1 External Dosimetry

Thermoluminescent Dosimeter (TLD) Badges: TLD badges are required to be worn by all E & E field personnel on all E & E sites.

Pocket Dosimeters: _____

Other: _____

4.2.2 Internal Dosimetry

☐ Whole body count ☐ Bioassay ☐ Other

Requirements: _____

_____

4.2.3 Radiation Dose

Dose Limits: E & E's radiation dose limits are stated in the CHSP. Implementation of these dose limits may be designated on a site-specific basis.

Site-Specific Dose Limits: _____

_____

ALARA Policy: Radiation doses to E & E personnel shall be maintained as low as reasonably achievable (ALARA), taking into account the work objective, state of technology available, economics of improvements in dose reduction with respect to overall health and safety, and other societal and socioeconomic considerations.

5. SITE CONTROL

5.1 SITE LAYOUT AND WORK ZONES

Site Work Zones: Refer to the map or site sketch, attached at the end of this plan, for designated work zones.

Site Access Requirements and Special Considerations: None.

Illumination Requirements: To be determined.

Sanitary Facilities (e.g., toilet, shower, potable water): Available on site.

On-Site Communications: Cellular phone.

Other Site-Control Requirements: To be determined.

5.2 SAFE WORK PRACTICES

Daily Safety Meeting: A daily safety meeting will be conducted for all E & E personnel and all subcontractors and documented on the Daily Safety Meeting Record form or in the field logbook. The information and data obtained from applicable site characterization and analysis will be addressed in the safety meetings and also used to update this SHSP, as necessary.

Work Limitations: Work shall be limited to a maximum of 12 hours per day. If 12 consecutive days are worked, at least one day off shall be provided before work is resumed. Work will be conducted in daylight hours unless prior approval is obtained and the illumination requirements in 29 CFR 1910.120(m) are satisfied.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather (e.g., rain, snow) will be approved by project management and the regional safety coordinator or designee.

Other Work Limitations:

Buddy System: Field work will be conducted in pairs of team members according to the buddy system.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other team member.

Eating, Drinking, and Smoking: Eating, drinking, smoking, and the use of tobacco products shall be prohibited in the exclusion and contamination reduction areas, at a minimum, and shall only be permitted in designated areas.

Contamination Avoidance: Field personnel shall avoid unnecessary contamination of personnel, equipment, and materials to the extent practicable.

Sample Handling: Protective gloves of a type designated in Section 7 will be worn when containerized samples are handled for labeling, packaging, transportation, and other purposes.

Vermiculite Handling: Respiratory protection (i.e., high-efficiency particulate air filtration) is recommended when vermiculite is used to package samples into shipping containers (some vermiculite contains low concentrations of asbestos).

Other Safe Work Practices:

6. HAZARD EVALUATION AND CONTROL

6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Potential physical hazards and their applicable control measures are described in the following table for each task.

Hazard	Task Number	Hazard Control Measures
Biological (flora, fauna, etc.)		· Potential hazard: _____ · Establish site-specific procedures for working around identified hazards. · Other: _____
Cold Stress		· Provide warm break area and adequate breaks. · Provide warm noncaffeinated beverages. · Promote cold stress awareness. · See *Cold Stress Prevention and Treatment* (attached at the end of this plan if cold stress is a potential hazard).
Compressed Gas Cylinders		· Use caution when moving or storing cylinders. · A cylinder is a projectile hazard if it is damaged or its neck is broken. · Store cylinders upright and secure them by chains or other means. · Other:
Confined Space		· Ensure compliance with 29 CFR 1910.146. · See SOP for Confined Space Entry. Additional documentation is required. · Other: _____
Drilling	1, 2, 3	· See SOP for Health and Safety on Drilling Rig Operations. Additional documentation may be required. · Other: _____ · Other: _____
Drums and Containers	1, 2, 3, 4	· Ensure compliance with 29 CFR 1910.120(j). · Consider unlabeled drums or containers to contain hazardous substances and handle accordingly until the contents are identified. · Inspect drums or containers and assure integrity prior to handling. · Move drums or containers only as necessary; use caution and warn nearby personnel of potential hazards. · Open, sample, and/or move drums or containers in accordance with established procedures; use approved drum/container-handling equipment. · Other:
Electrical	1, 2, 3	· Ensure compliance with 29 CFR 1910 Subparts J and S. · Locate and mark energized lines. · De-energize lines as necessary. · Ground all electrical circuits. · Guard or isolate temporary wiring to prevent accidental contact. · Evaluate potential areas of high moisture or standing water and define special electrical needs. · Other: _____

Hazard	Task Number	Hazard Control Measures
Excavation and Trenching		· Ensure that excavations comply with and personnel are informed of the requirements of 29 CFR 1926 Subpart P. · Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P. · Identify special personal protective equipment (PPE) (see Section 7) and monitoring (see Section 8) needs if personnel are required to enter approved excavated areas or trenches. · Maintain line of sight between equipment operators and personnel in excavations/trenches. Such personnel are prohibited from working in close proximity to operating machinery. · Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results. · Other: _____ · Other: _____
Fire and Explosion	1, 2, 3	· Inform personnel of the location(s) of potential fire/explosion hazards. · Establish site-specific procedures for working around flammables. · Ensure that appropriate fire suppression equipment and systems are available and in good working order. · Define requirements for intrinsically safe equipment. · Identify special monitoring needs (see Section 8). · Remove ignition sources from flammable atmospheres. · Coordinate with local fire-fighting groups regarding potential fire/explosion situations. · Establish contingency plans and review daily with team members. · Other: _____
Heat Stress	1, 2, 3, 4	· Provide cool break area and adequate breaks. · Provide cool noncaffeinated beverages. · Promote heat stress awareness. · Use active cooling devices (e.g., cooling vests) where specified. · See *Heat Stress Prevention and Treatment* (attached at the end of this plan if heat stress is a potential hazard).
Heavy Equipment Operation	1, 2, 3	· Define equipment routes, traffic patterns, and site-specific safety measures. · Ensure that operators are properly trained and equipment has been properly inspected and maintained. Verify back-up alarms. · Ensure that ground spotters are assigned and informed of proper hand signals and communication protocols. · Identify special PPE (Section 7) and monitoring (Section 8) needs.
		· Ensure that field personnel do not work in close proximity to operating equipment. · Ensure that lifting capacities, load limits, etc., are not exceeded. · Other: _____
Heights (Scaffolding, Ladders, etc.)		· Ensure compliance with applicable subparts of 29 CFR 1910. · Identify special PPE needs (e.g., lanyards, safety nets, etc.) · Other: _____

Hazard	Task Number	Hazard Control Measures
Noise	1, 2, 3	· Establish noise level standards for on-site equipment/operations. · Inform personnel of hearing protection requirements (Section 7). · Define site-specific requirements for noise monitoring (Section 8). · Other: _____
Overhead Obstructions	1, 2, 3	· Wear hard hat. · Other: _____
Power Tools	1, 2, 3	· Ensure compliance with 29 CFR 1910 Subpart P. · Other: _____
Sunburn	1, 2, 3, 4	· Apply sunscreen. · Wear hats/caps and long sleeves. · Other: _____
Utility Lines	1, 2, 3	· Identify/locate existing utilities prior to work. · Ensure that overhead utility lines are at least 25 feet away from project activities. · Contact utilities to confirm locations, as necessary. · Other: _____
Weather Extremes	1, 2, 3, 4	· Potential hazards: Thunderstorms, lightning, flooding, high winds. · Establish site-specific contingencies for severe weather situations. · Provide for frequent weather broadcasts. · Weatherize safety gear, as necessary (e.g., ensure eye wash units cannot freeze, etc.). · Identify special PPE (Section 7) needs. · Discontinue work during severe weather. · Other: _____
Other: slips, trips, falls	1, 2, 3, 4	· _____ · _____
Other: _____		· _____ · _____

6.2 CHEMICAL HAZARD EVALUATION AND CONTROL

6.2.1 Chemical Hazard Evaluation

Potential chemical hazards are described by task number in Table 6-1. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Table 6-1

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/ Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
	Perchloroethylene (PCE)*	25		50	N	Inh, Ing, Direct Contact	Irritation, nausea, vertigo	Ether Chloroform		
	Trichloroethene (TCE)*	50		50	Y	Inh, Ing	Irritation, nausea, vomiting	Chloroform-like		
	1,2-Dichloroethene (DCE)*	1		5	Y	Inh, Ing, Dermal	Dizziness, Drunkenness, Skin and eye irritation	Sweet/chloroform-like		
	Vinyl Chloride*	1		1	N	Inh	Giddiness, Intoxication, nausea, light-headedness	Odorless gas, sweet		
	1,1,1-Trichloroethane (TCA)	350		350	Y	Inh, Ing, Dermal	Irritation, drowsiness, headache	Chloroform-like		
	Dichloroethane (DCA)*	100		100	Y	Inh, Ing, Dermal, Ocular	Nausea, vomiting, drunkenness, chemical burns	Sweet		
	Chloroethane									
	Carbon tetrachloride*	2		2	Y	Inh, Ing, Abs, Dermal	Intoxication, headache, dizziness, sleepiness, nausea, vomiting	Aromatic sweet		
	Chloroform*	2		—	Y	Inh, Ing, Abs, Dermal	Blurred vision, confusion, delirium, nausea, vomiting	Sweet/suffocating		
	Methylene chloride	50	—	—	Y	Inh, Ing, Dermal, Oral	Mental confusion, light-headedness, nausea, vomiting, headache, unconsciousness	Sweet, pleasant odor, chloroform-like		
	Methyl chloride*	100		50	N	Inh, Con	Dizziness, nausea, vomiting, skin irritation	Faint, sweet		

Note: Use an asterisk (*) to indicate known or suspected carcinogens.

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below published exposure levels (see Section 6.2.1).

Applicable Engineering/Administrative Control Measures: _____

_____

PPE: See Section 7. _____

6.3 RADIOLOGICAL HAZARD EVALUATION AND CONTROL

6.3.1 Radiological Hazard Evaluation

Potential radiological hazards are described below by task number. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Task Number	Radionuclide	DAC (μCi/ml)	Route(s) of Exposure	Major Radiation(s)	Energy(s) (MeV)	Half-Life

6.3.2 Radiological Hazard Control

Engineering/administrative controls and work practices shall be instituted to reduce and maintain employee exposures to a level at or below the permissible exposure/dose limits (see sections 4.2.3 and 6.3.1). Whenever engineering/administrative controls and work practices are not feasible or effective, any reasonable combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below permissible exposure/dose limits.

Applicable Engineering/Administrative Control Measures: _____

_____

PPE: See Section 7. _____

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

7.1 LEVEL OF PROTECTION

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and the performance specifications of the PPE. On-site monitoring results and other information obtained from on-site activities will be used to modify these LOPs and the PPE, as necessary, to ensure sufficient personnel protection. The authorized LOP and PPE shall only be changed with the approval of the regional safety coordinator or designee. Level A is not included below because Level A activities, which are performed infrequently, will require special planning and addenda to this SHSP.

Task Number	B	C	D	Modifications Allowed
1		(X)	"X"	
2		(X)	"X"	
3		(X)	"X"	
4		(X)	"X"	

Note: Use "X" for initial levels of protection. Use "(X)" to indicate levels of protection that may be used as site conditions warrant.

7.2 PERSONAL PROTECTIVE EQUIPMENT

The PPE selected for each task is indicated below. E & E's PPE program complies with 29 CFR 1910.120 and 29 CFR 1910 Subpart I and is described in detail in the CHSP. Refer to 29 CFR 1910 for the minimum PPE required for each LOP.

PPE	Task Number/LOP					
	1	2	3	4		
Full-face APR	(X)	(X)	(X)	(X)		
PAPR						
Cartridges:						
H						
GMC-H	(X)	(X)	(X)	(X)		
GMA-H						
Other:						
Positive-pressure, full-face SCBA						
Spare air tanks (Grade D air)						
Positive-pressure, full-face, supplied-air system						
Cascade system (Grade D air)						

PPE	Task Number/LOP					
	1	2	3	4		
Manifold system						
5-Minute escape mask						
Safety glasses	X	X	X	X		
Monogoggles						
Coveralls/clothing						
Protective clothing:						
Tyvek	(X)	(X)	(X)	(X)		
Saranex						
Other:						
Splash apron						
Inner gloves:						
Cotton						
Nitrile	X	X	X	X		
Latex						
Other:						
Outer gloves:						
Viton						
Rubber						
Neoprene				X		
Nitrile						
Other:						
Work gloves	X	X	X	X		
Safety boots (as per ANSI Z41)	X	X	X	X		
Neoprene safety boots (as per ANSI Z41)						
Boot covers (type: _____)						
Hearing protection (type: _)		X	X			
Hard hat	X	X	X			
Face shield				X		
Other: ___						
Other: ___						

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will be conducted to ensure proper selection of engineering/administrative controls, work practices, and/or PPE so that employees are not exposed to hazardous substances at levels that exceed permissible exposure/dose limits or published exposure levels. Health and safety monitoring will be conducted using the instruments, frequency, and action levels described in Table 8-1. Health and safety monitoring instruments shall have been appropriately calibrated and/or performance-checked prior to use.

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]	
☐ PID (e.g., HNu IS-101) X FID (e.g., OVA 128-GC)	2, 3	Organic compounds	Breathing zone	To be determined	Unknown Vapors Background to 1 ppm: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	Contaminant-Specific (UST) Background to 5 ppm: Level D 5 to 150 ppm above background: Level C 150 to 500 ppm above background: Level B >500 ppm above background: Level A
Oxygen Meter/Explosimeter	2	N/A	At the rear of the drilling rig	To be determined	Oxygen <19.5% or >25.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 25.0%: Continue work in accordance with action levels for other instruments.	Explosivity ≤10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)	NA				<0.1 mR/hr: Continue work in accordance with action levels for other instruments. ≥0.1 mR/hr: Evacuate area; reassess work plan and contact radiation safety specialist.	
Mini-Ram Particulate Monitor	NA				General/Unknown Evaluate health and safety measures when dust levels exceed 2.5 milligrams per cubic meter.	Contaminant-Specific
HCN/H_2S (Monitox)	NA				≥4 ppm: Leave area and consult with SSO.	
Draeger Colorimetric Tubes	NA				Tube Action Level Action	

Table 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]
Air Monitor/Sampler Type:_____ Sampling medium: _____	NA				Action Level — Action
Personal Sampling Pump Type:_____ Sampling medium: _____	NA				Action Level — Action
Micro R Meter	NA				<2 mR/hr: Continue work in accordance with action levels for other instruments. 2 to 5 mR/hr: In conjunction with a radiation safety specialist, continue work and perform stay-time calculations to ensure compliance with dose limits and ALARA policy. >5 mR/hr: Evacuate area to reassess work plan and evaluate options to maintain personnel exposures ALARA and within dose limits.
Ion Chamber	NA				See micro R meter action levels above.
Radiation Survey Ratemeter/Scaler with External Detector(s)	NA				Detector — Action Level — Action
Noise Dosimeter (Sound Level Meter)	NA				≤85 decibels as measured using the A-weighed network (dBa): Use hearing protection if exposure will be sustained throughout work shift. >85 dBA: Use hearing protection. >120 dBA: Leave area and consult with safety personnel.
Other:					

[a] Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/NIOSH/ACGIH and/or NRC exposure limits.

9. DECONTAMINATION PROCEDURES

All equipment, materials, and personnel will be evaluated for contamination upon leaving the exclusion area. Equipment and materials will be decontaminated and/or disposed and personnel will be decontaminated, as necessary. Decontamination will be performed in the contamination reduction area or any designated area such that the exposure of uncontaminated employees, equipment, and materials will be minimized. Specific procedures are described below.

Equipment/Material Decontamination Procedures (specified by work plan): Steam clean (drill equipment) or clean water rinse immediately after use; detergent (liquinox) scrub with brushes; clean water rinse (with a steam cleaner for drilling equipment); deionized water rinse; nanograde isopropanol rinse; air drying; and, if not dry then, analyte-free water rinse; aluminum foil wrap.

Ventilation: All decontamination procedures will be conducted in a well-ventilated area.

Personnel Decontamination Procedures: Boot and glove wash - Alconox/liquinox and tap water wash with clean rinse. Field personnel will take a hygienic shower off-site following completion of each day's fieldwork.

PPE Requirements for Personnel Performing Decontamination: Nitrile gloves, tyvek, safety glasses, safety boots, overalls/clothing, and viton outer gloves (if needed).

Personnel Decontamination in General: Following appropriate decontamination procedures, all field personnel will wash their hands and face with soap and potable water. Personnel should shower at the end of each work shift.

Disposition of Disposable PPE: Disposable PPE must be rendered unusable and disposed as indicated in the work plan.

Disposition of Decontamination Wastes (e.g., dry wastes, decontamination fluids, etc.): All expendable clothing and materials will be double bagged and fluids and soil cuttings will be contained on site in 55-gallon drums for final disposal by an Investigation-Derived Waste Management subcontractor. Method of disposal pending analysis.

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in earlier sections of this plan (e.g., site layout, monitoring equipment, etc.). Emergency response procedures will be rehearsed regularly, as applicable, during project activities.

10.1 EMERGENCY RESPONSIBILITIES

All Personnel: All personnel shall be alert to the possibility of an on-site emergency; report potential or actual emergency situations to the team leader and SSO; and notify appropriate emergency resources, as necessary.

Team Leader: The team leader will determine the emergency actions to be performed by E & E personnel and will direct these actions. The team leader also will ensure that applicable incidents are reported to appropriate E & E and client project personnel and government agencies.

SSO: The SSO will recommend health/safety and protective measures appropriate to the emergency.

Other: _____

10.2 LOCAL AND SITE RESOURCES (including phone numbers)

Ambulance: 911

Hospital: Winter Haven Hospital – 200 Avenue F NE, Winter Haven, Polk County, Florida 33881
863/293-1121

Directions to Hospital (see Attachment G): From site, go south (right) on 1st Street North to East Lake Silver Drive NE, go southeast (left) to Avenue F NE, go east (left) to hospital (on right).

Poison Control: 800/282-3171

Police Department: 911

Fire Department: 911

Client Contact: Jesus Diaz (FDEP) (850) 245-8986

Site Contact: Facility Operator: William Chamberlain 863/299-6191

On-Site Telephone Number: Property Owner Contact: William Chamberlain 863/299-6191

Cellular Telephone Number: To be determined.

Radios Available: N/A

Other: N/A

10.3 E & E EMERGENCY CONTACTS

E & E Emergency Response Center (24 Hours):	716/684-8940
Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)
Regional Safety Coordinator: Dan Foss	850/574-1400 (office) 850/656-8486 (home)
Regional Office Manager: Gerry Gallagher III	850/574-1400 (office) 850/893-7245 (home)

10.4 OTHER EMERGENCY RESPONSE PROCEDURES

On-Site Evacuation Signal/Alarm (must be audible and perceptible above ambient noise and light levels): To be determined

On-Site Assembly Area: To be determined.

Emergency Egress Route to Get Off Site: To be determined.

Off-Site Assembly Area: To be determined.

Preferred Means of Reporting Emergencies: Cellular phone.

Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access.

Emergency Decontamination Procedures: To be determined.

PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and Section 7 of this plan will provide guidance regarding appropriate PPE.

Emergency Equipment: Appropriate emergency equipment is listed in Attachment 1. Adequate supplies of this equipment shall be maintained in the support area or other approved work location.

Incident Reporting Procedures:

ATTACHMENT 1 EQUIPMENT/SUPPLIES CHECKLIST			
INSTRUMENTATION	No.	EMERGENCY EQUIPMENT	No.
OVA	X	First aid kit	X
Thermal desorber		Stretcher	
O_2/explosimeter w/cal. kit	X	Portable eye wash	
Photovac tip		Blood pressure monitor	
HNu (probe: eV)		Fire blanket	
Magnetometer		Fire extinguisher	X
Pipe locator		Thermometer (medical)	
Weather station		Spill kit	
Draeger tube kit (tubes:)			
Brunton compass			
Real-time cyanide monitor			
Real-time H_2S monitor			
Heat stress monitor			
Noise equipment		DECONTAMINATION EQUIPMENT	
Personal sampling pumps and supplies	X	Wash tubs	X
MiniRam dust monitor		Buckets	X
Mercury monitor		Scrub brushes	X
Spare batteries (type:)		Pressurized sprayer	
		Spray bottle	
		Detergent (type: Liquinox)	X
RADIATION EQUIPMENT/SUPPLIES		Solvent (type: Isopropanol)	X
Documentation forms		Plastic sheeting	X
Portable ratemeter		Tarps and poles	
Scaler/ratemeter		Trash bags	X
1" NaI gamma probe		Trash cans	
2" NaI gamma probe		Masking tape	
ZnS alpha probe		Duct tape	X
GM pancake probe		Paper towels	X
Tungsten-shielded GM probe		Face mask	
Micro R meter		Face mask sanitizer	
Ion chamber		Step ladders	
Alert monitor		Distilled water	X
Pocket dosimeter	X	Deionized water	X
Dosimeter charger			
Radiation warning tape			
Radiation decon supplies			
Spare batteries (type: _____)			

ATTACHMENT 1 EQUIPMENT/SUPPLIES CHECKLIST			
SAMPLING EQUIPMENT		MISCELLANEOUS (Cont.)	
8-oz. bottles	X	Gatorade or equivalent	X
Half-gallon bottles	X	Tables	
VOA bottles	X	Chairs	
String	X	Weather radio	
Hand bailers	X	Two-way radios	
Thieving rods with bulbs		Binoculars	
Spoons	X	Megaphone	
Knives	X	Cooling vest	
Filter paper	X		
Bottle labels	X		
		SHIPPING EQUIPMENT	
		Coolers	X
MISCELLANEOUS		Paint cans with lids, 7 clips each	
Pump		Vermiculite	X
Surveyor's tape	X	Shipping labels	X
100' Fiberglass tape	X	DOT labels:	
300' Nylon rope		"Up"	X
Nylon string	X	"Danger"	
Surveying flags	X	"Inside Container Complies ..."	X
Camera	X	Hazard Group	
Film	X	Strapping tape	X
Bung wrench	X	Baggies	X
Soil auger	X	Custody seals	X
Pick		Chain-of-custody forms	X
Shovel	X	Federal Express forms	X
Catalytic heater		Clear packing tape	X
Propane gas		Permanent markers	X
Banner tape			
Surveying meter stick	X		
Chaining pins and ring			
Logbooks (large, small)	X		
Required MSDSs	X		
Intrinsically safe flashlight	X		
Potable water	X		

APPENDIX B

Quality Assurance Project Plan

Tender Touch Drycleaners
CERCLA Site Inspection –
Quality Assurance Project Plan

Project Management

Project Organization and Responsibility

FDEP Program Manager:	Joe McGarrity, Bureau of Waste Cleanup, Site Screening Superfund Subsection.
FDEP Project Manager:	Jesus Diaz, Bureau of Waste Cleanup, Site Screening Superfund Subsection.
FDEP Field Manager:	Jesus Diaz, Bureau of Waste Cleanup, Site Screening Superfund Subsection.
E & E Program Manager:	Kim Walker, Tallahassee
E & E Project Manager:	Dan Kennedy, Tallahassee

Problem Identification and Objectives

The purpose of the site inspection (SI) is to determine whether a release of hazardous substances has occurred, if a contaminant source is present at the Tender Touch Drycleaners (TTD) site, if the property has been impacted by contamination from drycleaning activities, and to collect data pursuant to scoring the site according to the EPA Hazard Ranking System (HRS). The results of the screening evaluation will be reviewed to determine if Superfund response actions are required by the U.S. Environmental Protection Agency (EPA). The data quality objectives (DQOs) for this investigation are to:

The DQOs for this investigation are:

- determine if a release of hazardous substances has occurred and/or if a contaminant source is present at the TTD property;
- provide FDEP with sufficient data to complete an EPA HRS score;
- discuss available site history, including the findings of any previous investigations;
- collect subsurface unsaturated soil samples and groundwater grab samples for field screening using E & E's color-tec method to better target areas of suspected contamination for laboratory confirmation analysis.
- use field screening data to select subsurface soil samples for laboratory analysis to determine the potential impacts to soils associated with the drycleaning activities.
- use groundwater profiling data to determine the placement of four shallow groundwater monitoring wells. All wells will be placed on the drycleaner property. One of these wells will be employed as a background well and will be installed in an area of the property that does not exhibit contamination.
- collect groundwater samples from newly-installed shallow monitoring wells and conduct laboratory analyses to determine the potential impacts to groundwater associated with the drycleaning activities;

- request the appropriate analytical methods or modified methods from the EPA Contract Laboratory Programs (CLP) lab to use and meet QA Targets for Precision, Accuracy, method detection limits (MDLs), and practical quantitation limits (PQLs). The various methods listed in tables included as Appendix C have been compared to the target levels for the constituents of concern, and the appropriate laboratory analytical method has been specified in the following sections. Where various modification of the same method exists, the appropriate modified method will be requested from the laboratory to meet data quality objectives based on DQOs;

- determine whether further actions are warranted by the EPA and/or FDEP based on EPA Superfund and State Waste Cleanup criteria.

Project Description/Project Timeline

The TTD site is located at 1515 NW 1st Street on the southwest corner of the intersection of Avenue P Northwest and North 1st Street in the city of Winter Haven, Polk County, Florida (see Figure 1). The site is currently an operating drycleaner that uses chlorinated solvents in the process of dry cleaning activities. The site is not an eligible participant of the State of Florida Drycleaning Solvent Program.

1. Site History

According to the current owner, Mr. William Chamberlain, prior to 1988, the TTD property was occupied as a residential dwelling owned and resided by Mr. Don Chamberlain, William Chamberlain's nephew. Don Chamberlain converted the building to a drycleaning facility in 1988. The facility was intended to be included within the State of Florida Drycleaning Solvent Cleanup Program initiated in 1995. However, an FDEP letter dated January 16, 1998 rendered the site not eligible for participation within the program because the appropriate taxes were not remitted to the Department of Revenue, as required by the Florida Administrative Code (FAC) Chapter 62-781. In September 2003, the TTD property and business was purchased by William Chamberlain. William Chamberlain continues to conduct drycleaning services at the facility.

2. Area Land Usage

The facility is surrounded by concrete pavement. Land use in the immediate vicinity of the TTD property is a mix of residential, commercial and industrial. Brown International Corporation (a food processing equipment manufacturer) operates a large facility within quarter mile to the west of the site. Three sinkhole lakes are located within a half mile to the west (Spring Lake), south (Lake Silver), and east (Lake Maude) of the site. The closest public supply well to the site is located approximately 1,200 feet east of the TTD property at the end of Avenue P NE, across 1st Street North.

A site reconnaissance conducted by E & E and FDEP personnel at the TTD on February 18, 2004, confirmed the approximate locations of property boundaries and surface features. During this site visit, drycleaning activities and disposal practices and surrounding land use were observed and photographed, including the following:

- Mr. William Chamberlain disposes of spent filters from the drycleaning machine through a contracted waste disposal company from Georgia;
- The dry cleaning machine boils off used/dirty solvent and has two vent lines of clear tubing hoses that hang out of the rear of the building approximately two feet above the ground.
- Mr. Chamberlain indicated a small leak from the drycleaning machine that is captured by the installed secondary containment.

The field investigation is proposed to begin in April 2004, and will require up approximately one week to complete.

Measurement Data Acquisition

Color-Tec Field Screening Analysis. All soil and groundwater samples will be screened with a Color-Tec kit, which is used to detect low levels of chlorinated solvents. The Color-Tec data will be used as a preliminary evaluation of the selected sample locations. Sample locations may be moved based on the Color-Tec results.

Sampling Design

E & E will conduct vertical soil and groundwater contaminant profiling at 6 locations shown on Figure 1 utilizing a direct-push drill rig. Also, one hand auger boring will be conducted inside the drycleaning facility in front of the dry clean machine. Four-foot continuous soil cores will be collected from land surface to the water table. Each core will be split into two-foot sections and will be screened for chlorinated compounds using the Color-Tec method. The hand auger boring will be completed by coring through the concrete floor of the facility to achieve access to underlying soil. Groundwater samples will be collected at 5-foot intervals from the water table to an approximate depth of 40 feet below ground surface (BGS) at each location. Sample collection depths will be determined in the field. At each profiling location, approximately five groundwater samples will be collected and screened for chlorinated compounds using E & E's color-tec method. Based on results from color-tec screening, select soil and groundwater confirmation samples will be collected and shipped for laboratory analysis. Color-tec screening results will also be used to determine the placement of four shallow monitoring wells to be installed on-site.

Sampling and Analytical Methods Requirements

The proposed locations, rationale, and analytical parameters for each sample are provided in Table 1. EPA's Contract Laboratory Program (CLP) laboratories and EPA's Science and Ecosystem Support Laboratories will conduct laboratory analyses. Analyses will be performed for TCL VOCs, and TCL BNA extractables. FDEP will request that the laboratories use the Low Concentration Organic Analytical Services for both soil and groundwater matrices to meet QA targets for precision, accuracy, MDLs, and PQLs. Method descriptions from the EPA Office of Solid Waste and Emergency Response Analytical Operations/Data Quality Center (Publications 9240.0-F37FS and 540-F-03-005) are included as Appendix C. The method detection limits for the various methods listed in these publications have been compared to the target levels for the constituents of concern, and the most appropriate laboratory analytical method has been specified.

All sampling and fieldwork activities will be conducted in accordance with FDEP's standard operating procedures (SOPs), EPA Region IV Science and Ecosystems Support Division SOPs for sampling and field investigations; and E & E's site-specific health and safety plan (HASP).

Laboratory and Field Equipment

- Preventive Maintenance – Field Equipment: All soil sampling equipment will be decontaminated in accordance with FDEP and EPA SOPs.
- Calibration and Corrective Action – Field Equipment: Field analytical equipment will be calibrated (if applicable) prior to mobilization to the site and recalibrated, off-site, prior to and at the conclusion of each workday.

- Preventive Maintenance – Laboratory Equipment: Laboratory equipment will be maintained in accordance with EPA CLP laboratory SOPs.
- Calibration and Corrective Action – Laboratory Equipment: All laboratory equipment calibrations will be conducted in accordance with EPA SW-846 and CLP analytical methods.

Sample Handling and Custody Requirements

Sampling procedures will be documented in the field notebook. All samples will be documented on a chain of custody using EPA Forms II Lite (EPA CLP samples).

Analytical Precision and Accuracy

All laboratory control limits for accuracy (percent recovery) and precision (relative percent difference; RPD) will be conducted in accordance with applicable laboratory SOPs.

Quality Control Requirements

- Field Quality Control: All field quality control procedures will be conducted in accordance with FDEP and EPA SOPs.
- Laboratory Quality Control: All laboratory quality control procedures will be conducted in accordance with EPA CLP procedures.
- Data Management and Documentation: All analytical data will be managed in accordance with EPA CLP SOPs.

Field Investigation and Report

Field Investigation

The proposed scope of work and methodology for completing field-sampling activities at the Tender Touch Drycleaner is provided below. The field investigation will focus on contaminant sources and impacted areas within the boundaries of the Tender Touch Drycleaners property and will not expand onto surrounding properties at this time. The proposed overall approach involves the use of field-based analytical screening of soil and groundwater samples collected from profile locations throughout the site, which target suspected potential source areas and off-site migration pathways. Direct-push profiling techniques will be used to collect soil and groundwater samples for initial field-based analysis. Each direct-push soil/groundwater profile will begin at ground surface and continue to a depth ranging from 5 to 25 feet BGS (depending on the depth to water) with continuous 4-foot soil core samples through the unsaturated interval to the water table surface. At 2-foot intervals along the core sections of each boring, sub-samples will be collected for Color-Tec field screening. The remainder of the soil cores will then be capped and placed on ice until the field-based screening is completed. Based on the data recorded during the screening, selected soil samples will be collected from the capped acetate liners for laboratory confirmation analysis.

Following soil sample collection to the top of the water table, groundwater profiling will be conducted to delineate vertically any on-site groundwater contamination. The water table is expected to be approximately 10 feet BGS. Once the final soil core is collected, the casing will be advanced an additional 4 feet below the water table surface with a 4-foot long, 0.01-inch slotted, stainless steel screen, sealed within a retractable steel casing. The steel screen will be opened to allow collection of a groundwater grab sample from the 4-foot interval. After collection of the first groundwater sample, three more 4-foot intervals will be selected for collection, with the total profile depth not to exceed 40 feet BGS. Intervals selected for field based screening will be averaged over the vertical length between the water table surface and 40 feet BGS until tentative plume characteristics are revealed. Based on

information gathered from preliminary borings, more discreet zones may be targeted in subsequent borings. Groundwater samples will be collected after development for field screening with E & E's Color-Tec method. Groundwater samples will be collected either with a peristaltic pump or stainless steel bailer. The groundwater screening data will provide preliminary data results and enable the project managers to select monitoring well locations. The groundwater screening data will also be used in conjunction with data collected from the subsurface soil screening to adjust locations of subsequent soil/groundwater borings.

Soil Samples. Seven soil samples will be collected to evaluate potential environmental impacts. One soil will be collected from each direct-push profiling location and one soil sample will be collected from a boring conducted directly adjacent to the drycleaning machine beneath the floor inside the facility. One of these samples will be a control sample that is collected from an undisturbed area that will be determined on-site. Each of these samples will be collected for analysis of target compound list (TCL) volatile organic compounds (VOCs), TCL Base, Neutral, and Acid (BNA) extractable organics. The approximate horizontal locations of the soil samples are exhibited on Figure 2. The depth interval (2-feet) that the sample volume will be collected from will be based on field analytical screening data. Aliquots for VOC analysis will be collected directly from the soil core using an Encore sampler. The remaining sample volume will be homogenized in a stainless steel bowl prior to filling the sample bottles.

Groundwater Samples. Based on screening results from groundwater profiling, four monitoring wells will be installed on-site. One well will be installed in an area that does not exhibit any subsurface contamination. The wells will be developed by surging and over-pumping using a pump until the water appears clear, and the pH, specific conductance, turbidity, and temperature have stabilized. Twenty-four hours after well development groundwater samples will be collected for laboratory analysis from the four monitoring wells. Each groundwater sample will be analyzed for TCL VOCs, and TCL BNA extractable organics. Prior to sampling, a volume equivalent to three times the standing water column will be purged from each monitoring well. After each well volume has been removed, the pH, specific conductance, turbidity, dissolved oxygen, and temperature will be recorded. If these parameters have not stabilized after the removal of three well volumes, purging will continue. However, no more than five well volumes will be removed. Groundwater samples will be collected when the turbidity readings are below 10 nephelometric turbidity units (NTUs).All monitoring well purging and groundwater sampling will be performed by low-flow methodology using a peristaltic pump with Teflon tubing. All groundwater samples will be collected from the tubing prior to passing through the peristaltic pump.

Project Reports

Upon completion of the field investigation and receipt of the analytical data, E & E will provide FDEP with a draft Site Inspection report. The report will provide FDEP with a summary of the field investigation; figures illustrating all soil and groundwater sampling locations; monitoring well construction information; data summary tables showing all positive data compared to the applicable standards; and conclusions and recommendations for each property.

Data Validation and Usability

Verification of Sampling Procedures

All field sampling will be conducted in accordance with FDEP's SOPs; EPA Region IV Science and Ecosystems Support Division SOPs for sampling and field investigations; and E & E's work plan. Any deviations from the proposed scope of work and/or field SOPs will be documented in the field log book and reported in the methodology section of the report.

Data Usability

All validated data will be compared to applicable regulatory criteria.

APPENDIX C

EPA Superfund
Analytical Services/Contract Laboratory Program
Fact Sheets

United States Environmental Protection Agency | Office of Solid Waste and Emergency Response | OSWER Document 9240.1-42-FSD
EPA Publication 540-F-03-005
August 2003

EPA

Multi-Media, Multi-Concentration, Organic Analytical Service for Superfund (OLM04.3)

Office of Superfund Remediation and Technology Innovations
Analytical Operations/Data Quality Center (5204G)

Quick Reference Fact Sheet

Under the legislative authority granted to the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), EPA develops standardized analytical methods for the measurement of various pollutants in environmental samples from known or suspected hazardous waste sites. Among the pollutants that are of concern to the EPA at such sites, are a series of volatile, semivolatile, and pesticide/Aroclor (pesticide/PCB) compounds that are analyzed using Gas Chromatography coupled with Mass Spectrometry (GC/MS) and Gas Chromatography with Electron Capture (GC/EC). The Analytical Operations/Data Quality Center (AOC) of the Office of Superfund Remediation and Technology Innovations (OSRTI) offers an analytical service that provides data from the analysis of water and soil/sediment samples for organic compounds for use in the Superfund decision-making process. Through a series of standardized procedures and a strict chain-of-custody, the organic analytical service produces data of known and documented quality. This service is available through the Superfund Contract Laboratory Program (CLP).

DESCRIPTION OF SERVICES

The new organic analytical service is available as of March 2003. It provides a technical and contractual frame work for laboratories to apply EPA/CLP analytical methods for the isolation, detection, and quantitative measurement of 48 volatile, 65 semivolatile, and 28 pesticide/Aroclor target compounds in water and soil/sediment environmental samples. The CLP provides the methods to be used and the specific technical, reporting, and contractual requirements, including Quality Assurance (QA), Quality Control (QC), and Standard Operating Procedures (SOPs), by which EPA evaluates the data. This service uses GC/MS and GC/EC methods to analyze the target compounds. Three data delivery turnarounds are available to CLP customers: 7, 14, and 21-day turnaround after laboratory receipt of the last sample in the set. In addition, there are 48 (for volatiles) and 72-hour (or semivolatiles and pesticides/Aroclors) preliminary data submission options available. The data associated with these Preliminary Results is due within the specified time after receipt of each sample at the laboratory. Options under this service include a closed system purge-and-trap method for low-level volatile soil analysis and methanol preservation for medium-level volatile soil analysis. In addition, data users may request modifications to the SOW that may include, but are not limited to, additional compounds, modified quantitation limits (e.g., lower volatile limits), additional cleanup options, and other requirements to enhance method performance.

DATA USES

This analytical service provides data which EPA uses for a variety of purposes, such as determining the nature and extent of contamination at a hazardous waste site, assessing priorities for response based on risks to human health and the environment, determining appropriate cleanup actions, and determining when remedial actions are complete. The data may be used in all stages in the investigation of a hazardous waste site including site inspections, Hazard Ranking System scoring, remedial investigations/feasibility studies, remedial design, treatability studies, and removal actions. In addition, this service provides data that will be available for use in Superfund enforcement/litigation activities.

TARGET COMPOUNDS

The compounds for which this service is applicable and the corresponding quantitation limits are listed in **Table 1**. For water samples, the lowest reportable quantitation limits are 10 ppb for the volatile compounds, 10 ppb for the semivolatile compounds, and 0.05 ppb for the pesticide/Aroclor compounds. For soil samples, the lowest reportable quantitation limits are 10 ppb for the volatile compounds, 330 ppb for the semivolatile compounds, and 1.7 ppb for the pesticide/Aroclor compounds. Specific sample quantitation limits will be highly matrix-dependent. Compounds identified with concentrations below the quantitation limit will be reported as estimated concentration values.

Table 1. Target Compound List and Contract Required Quantitation Limits (CRQLs) For OLM04.3*

Quantitation Limits				Quantitation Limits			Quantitation Limits		
	Water (µg/L)	Low Soil (µg/Kg)	Modified Cal.[1] Levels (µg/L)		Water (µg/L)	Low Soil (µg/Kg)		Water (µg/L)	Low Soil (µg/Kg)
VOLATILES				**SEMIVOLATILES**			98. Carbazole	10	330
1. Dichlorodifluoromethane	10	10	0.50	49. Benzaldehyde	10	330	99. Di-n-butylphthalate	10	330
2. Chloromethane	10	10	0.50	50. Phenol	10	330	100. Fluoranthene	10	330
3. Vinyl Chloride	10	10	0.50	51. bis-(2-Chloroethyl)ether	10	330	101. Pyrene	10	330
4. Bromomethane	10	10	0.50	52. 2-Chlorophenol	10	330	102. Butylbenzylphthalate	10	330
5. Chloroethane	10	10	0.50	53. 2-Methylphenol	10	330	103. 3,3'-Dichlorobenzidine	10	330
6. Trichlorofluoromethane	10	10	0.50	54. 2,2'-oxybis (1-Chloropropane)	10	330	104. Benzo(a)anthracene	10	330
7. 1,1-Dichloroethene	10	10	0.50	55. Acetophenone	10	330	105. Chrysene	10	330
8. 1,1,2-Trichloro-1,2,2-trifluoroethane	10	10	0.50	56. 4-Methylphenol	10	330	106. bis-(2-Ethylhexyl)phthalate	10	330
9. Acetone	10	10	10	57. N-Nitroso-di-n-propylamine	10	330	107. Di-n-octylphthalate	10	330
10. Carbon Disulfide	10	10	0.50	58. Hexachloroethane	10	330	108. Benzo(b)fluoranthene	10	330
11. Methyl Acetate	10	10	0.50	59. Nitrobenzene	10	330	109. Benzo(k)fluoranthene	10	330
12. Methylene Chloride	10	10	0.50	60. Isophorone	10	330	110. Benzo(a)pyrene	10	330
13. trans-1,2-Dichloroethene	10	10	0.50	61. 2-Nitrophenol	10	330	111. Indeno(1,2,3-cd)pyrene	10	330
14. Methyl tert-Butyl Ether	10	10	0.50	62. 2,4-Dimethylphenol	10	330	112. Dibenz(a,h)anthracene	10	330
15. 1,1-Dichloroethane	10	10	0.50	63. bis-(2-Chloroethoxy) methane	10	330	113. Benzo(g,h,i)perylene	10	330
16. cis-1,2-Dichloroethene	10	10	0.50	64. 2,4-Dichlorophenol	10	330			
17. 2-Butanone	10	10	10	65. Naphthalene	10	330	**PESTICIDES/AROCLORS (PESTICIDES/PCBs)**	**Water (µg/L)**	**Soil (µg/Kg)**
18. Chloroform	10	10	0.50	66. 4-Chloroaniline	10	330			
19. 1,1,1-Trichloroethane	10	10	0.50	67. Hexachlorobutadiene	10	330			
20. Cyclohexane	10	10	0.50	68. Caprolactam	10	330	114. alpha-BHC	0.05	1.7
21. Carbon Tetrachloride	10	10	0.50	69. 4-Chloro-3-methylphenol	10	330	115. beta-BHC	0.05	1.7
22. Benzene	10	10	0.50	70. 2-Methylnaphthalene	10	330	116. delta-BHC	0.05	1.7
23. 1,2-Dichloroethane	10	10	0.50	71. Hexachlorocyclo-pentadiene	10	330	117. gamma-BHC (Lindane)	0.05	1.7
24. Trichloroethene	10	10	0.50	72. 2,4,6-Trichlorophenol	10	330	118. Heptachlor	0.05	1.7
25. Methylcyclohexane	10	10	0.50	73. 2,4,5-Trichlorophenol	25	830	119. Aldrin	0.05	1.7
26. 1,2-Dichloropropane	10	10	0.50	74. 1,1'-Biphenyl	10	330	120. Heptachlor epoxide	0.05	1.7
27. Bromodichloromethane	10	10	0.50	75. 2-Chloronaphthalene	10	330	121. Endosulfan I	0.05	1.7
28. cis-1,3-Dichloropropene	10	10	0.50	76. 2-Nitroaniline	25	830	122. Dieldrin	0.10	3.3
29. 4-Methyl-2-pentanone	10	10	10	77. Dimethylphthalate	10	330	123. 4,4'-DDE	0.10	3.3
30. Toluene	10	10	0.50	78. 2,6-Dinitrotoluene	10	330	124. Endrin	0.10	3.3
31. trans-1,3-Dichloropropene	10	10	0.50	79. Acenaphthylene	10	330	125. Endosulfan II	0.10	3.3
32. 1,1,2-Trichloroethane	10	10	0.50	80. 3-Nitroaniline	25	830	126. 4,4'-DDD	0.10	3.3
33. Tetrachloroethene	10	10	0.50	81. Acenaphthene	10	330	127. Endosulfan sulfate	0.10	3.3
34. 2-Hexanone	10	10	0.50	82. 2,4-Dinitrophenol	25	830	128. 4,4'-DDT	0.10	3.3
35. Dibromochloromethane	10	10	10	83. 4-Nitrophenol	25	830	129. Methoxychlor	0.50	17
36. 1,2-Dibromoethane	10	10	0.50	84. Dibenzofuran	10	330	130. Endrin ketone	0.10	3.3
37. Chlorobenzene	10	10	0.50	85. 2,4-Dinitrotoluene	10	330	131. Endrin aldehyde	0.10	3.3
38. Ethylbenzene	10	10	0.50	86. Diethylphthalate	10	330	132. alpha-Chlordane	0.05	1.7
39. Xylenes (Total)	10	10	0.50	87. Fluorene	10	330	133. gamma-Chlordane	0.05	1.7
40. Styrene	10	10	0.50	88. 4-Chlorophenyl-phenyl ether	10	830	134. Toxaphene	5.0	170
41. Bromoform	10	10	0.50	89. 4-Nitroaniline	25	830	135. Aroclor-1016	1.0	33
42. Isopropylbenzene	10	10	0.50	90. 4,6-Dinitro-2-methylphenol	25	830	136. Aroclor-1221	2.0	67
43. 1,1,2,2-Tetrachloroethane	10	10	0.50	91. N-Nitrosodiphenylamine	10	330	137. Aroclor-1232	1.0	33
44. 1,3-Dichlorobenzene	10	10	0.50	92. 4-Bromophenyl-phenylether	10	330	138. Aroclor-1242	1.0	33
45. 1,4-Dichlorobenzene	10	10	0.50	93. Hexachlorobenzene	10	330	139. Aroclor-1248	1.0	33
46. 1,2-Dichlorobenzene	10	10	0.50	94. Atrazine	10	330	140. Aroclor-1254	1.0	33
47. 1,2-Dibromo-3-chloropropane	10	10	0.50	95. Pentachlorophenol	25	830	141. Aroclor-1260	1.0	33
48. 1,2,4-Triclorobenzene	10	10	0.50	96. Phenanthrene	10	330			
				97. Anthracene	10	330			

*For volatiles, quantitation limits for medium soils are approximately 130 times the quantitation limits for low soils. For semivolatile medium soils, quantitation limits are approximately 30 times the quantitation limits for low soils.

[1]Modified quantitation limits are available under the Flexibility Clause.

The list of target compounds for this service was originally derived from the EPA Priority Pollutant List of 129 compounds. In the years since inception of the CLP, compounds have been added to and removed from the Target Compound List (TCL), based on advances in analytical methods, evaluation of method performance data, and the needs of the Superfund program.

For drinking water and groundwater type samples, use of the low concentration organic analytical service is recommended.

METHODS AND INSTRUMENTATION

For volatile water samples, 5 mL of water sample is added to a purge and trap device and purged with an inert gas at room temperature. For volatile low-level soil samples, a 5 g aliquot of soil is added to a purge and trap device with 5 mL of reagent water then purged with an inert gas at 40°C; or a 5-g aliquot (pre-weighed in the field) is purged from a closed-system purge and trap device at 40°C. For volatile medium-level soil samples, a measured amount is collected/extracted with methanol and an aliquot of the methanol extract is added to reagent water and purged at room temperature. For both water and soil samples, the volatiles purged from the sample are trapped on a solid sorbent. They are subsequently desorbed by rapidly heating the sorbent and then introduced into a GC/MS system.

For semivolatile and pesticide/Aroclor water samples, a 1 L aliquot is extracted with methylene chloride using a continuous liquid-liquid extractor or separatory funnel [for pesticides/Aroclors only]. For low-level semivolatile soil and pesticide/Aroclor soil samples, a 30 g soil/sediment sample is extracted with methylene chloride/acetone using sonication, automated soxhlet, or pressurized fluid extraction techniques. For medium-level semivolatile soil samples, a 1 g aliquot is extracted with methylene chloride using the techniques mentioned above for low-level soil samples. For both water and soil samples, the extract is concentrated, subjected to fraction-specific cleanup procedures, and analyzed by GC/MS for semivolatiles or GC/EC for pesticides/Aroclors. **Table 2** summarizes the methods and instruments used in this analytical service.

PRESERVATION OF VOLATILE SOIL SAMPLES

All soil sample containers that are not chemically preserved should be frozen upon receipt at the laboratory. This includes closed-system vials received from the sampler; closed-system vials generated by the laboratory; low headspace vials containing sample for moisture determination (or for analysis by the old Method 5030 protocol); and all QC samples.

DATA DELIVERABLES

Data deliverables for this service include hardcopy data reporting forms and supporting raw data. In addition to the hardcopy deliverable, contract laboratories must also submit the same data electronically. The laboratory must submit data to EPA within 7, 14, or 21 days after laboratory receipt of the last sample in the set. Preliminary data must be submitted within 48 hours (for volatiles) or 72 hours (for semivolatiles and pesticides/Aroclors) after receipt of each sample at the laboratory. EPA then processes the data through an automated Data Assessment Tool (DAT). DAT is a complete CLP data assessment package. DAT incorporates Contract Compliance Screening (CCS) and Computer-Aided Data Review and Evaluation (CADRE) to provide EPA Regions with PC-compatible reports, spreadsheets, and electronic files within 24 to 48 hours from the receipt of the data. This automated tool facilitates the transfer of analytical data into Regional databases. In addition to the Regional electronic reports, the CLP laboratories are provided with a data assessment report that documents the instances of noncompliance. The laboratory has 6 days to reconcile defective data and resubmit the data to EPA. EPA then reviews the data for noncompliance and sends a final data assessment report to the CLP laboratory and the Region.

QUALITY ASSURANCE

The QA process consists of management review and oversight at the planning, implementation, and completion stages of the environmental data collection activity. This process ensures that the data provided are of the quality required.

During the implementation of the data collection effort, QA activities ensure that the QC system is functioning effectively and that the deficiencies uncovered by the QC system are corrected. After environmental data are collected, QA activities focus on assessing the quality of data to determine its suitability to support enforcement or remedial decisions.

Each contract laboratory prepares a Quality Assurance Plan (QAP) with the objective of providing sound analytical chemical measurements. The QAP must specify the policies, organization, objectives, and functional guidelines, as well as the QA and QC activities designed to achieve the data quality requirements for this analytical service.

QUALITY CONTROL

The QC process includes those activities required during analytical data collection to produce data of known and documented quality. The analytical data acquired from QC procedures are used to estimate and evaluate the analytical results and to determine the necessity for, or the effect of, corrective action procedures. The QC procedures required for this analytical service are shown in **Table 3.**

Table 2. Methods and Instruments

Fraction	Water	Soil
Volatiles	Purge-and-trap followed by GC/MS analysis.	Purge-and-trap or closed-system purge-and-trap followed by GC/MS analysis.
Semivolatiles	Continuous liquid-liquid extraction followed by GC/MS analysis.	Sonication, automated soxhlet, or pressurized fluid extraction followed by GC/MS analysis.
Pesticides/Aroclors	Continuous liquid-liquid or separatory funnel extraction followed by dual column GC/EC analysis.	Sonication, automated soxhlet, or pressurized fluid extraction followed by dual column GC/EC analysis.

Table 3. Quality Control

QC Operation	Frequency
System Monitoring Compounds (volatiles)	Added to each sample, standard, and blank.
Surrogates (for semivolatiles and pesticides/Aroclors)	Added to each sample, standard, and blank.
Method Blanks (volatiles)	Analyzed at least every 12 hours for each matrix and level.
Method Blanks (semivolatiles and pesticides/Aroclors)	Prepared with each group of 20 samples or less of same matrix and level, or each time samples are extracted by the same procedure.
Instrument Blank (volatiles)	Analyzed after a sample that contains compounds at concentrations greater than the calibration range.
Instrument Blank (pesticides/Aroclors)	Every 12 hours on each GC column used for analysis.
Storage Blanks (volatiles)	Prepared and stored with each set of samples.
GC/MS Mass Calibration and Ion Abundance Patterns (volatiles and semivolatiles)	Every 12 hours for each instrument used for analysis.
GC Resolution Check (pesticides/Aroclors)	Prior to initial calibration, on each instrument used for analysis.
Initial Calibration	Upon initial set up of each instrument, whenever instrument maintenance/modification has been performed, and each time continuing calibration fails to meet the acceptance criteria.
Continuing Calibration	Every 12 hours for each instrument used for analysis.
Internal Standards (volatiles and semivolatiles)	Added to each sample, standard, and blank.
Matrix Spike and Matrix Spike Duplicate	Once every 20 or fewer samples of same fraction, matrix, and level in an SDG.

PERFORMANCE MONITORING ACTIVITIES

Laboratory performance monitoring activities are provided primarily by AOC and the Regions to ensure that contract laboratories are producing data of the appropriate quality. EPA performs on-site laboratory audits, data package audits, GC/MS and/or GC/EC tape audits, and evaluates laboratory performance through the use of blind performance evaluation samples.

For more information, or for suggestions to improve this analytical service, please contact:

Terry Smith
Organic Program Manager
EPA/AOC
Ariel Rios Building (5204G)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
703-603-8849
FAX: 703-603-9112

United States Environmental Protection Agency | Office of Solid Waste and Emergency Response | EPA 540-F-01-013 Publication 9240.0-37FS June 2001

EPA

Low Concentration Organic Analytical Service for Superfund (Water Matrix) (OLC03.2)

Office of Emergency and Remedial Response
Analytical Operations/Data Quality Center (5204G)

Quick Reference Fact Sheet

Under the legislative authority granted to the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), EPA develops standardized analytical methods for the measurement of various pollutants in environmental samples from known or suspected hazardous waste sites. Among the pollutants that are of concern to the EPA at such sites are a series of volatile, semivolatile, and pesticide/Aroclor (pesticide/PCB) compounds that are analyzed using Gas Chromatography coupled with Mass Spectrometry (GC/MS) and Gas Chromatography with an Electron Capture Detector (GC/ECD). The Analytical Operations/Data Quality Center (AOC) of the Office of Emergency and Remedial Response (OERR) offers an analytical service that provides data from the analysis of water samples for low concentration organic compounds for use in the Superfund decision-making process. Through a series of standardized procedures and a strict chain-of-custody, the low concentration organic analytical service produces data of known and documented quality. This service is available through the Superfund Contract Laboratory Program (CLP).

DESCRIPTION OF SERVICES

The low concentration organic analytical service provides a contractual framework for laboratories to apply EPA/CLP analytical methods for the isolation, detection, and quantitative measurement of 50 volatile, 65 semivolatile, and 28 pesticide/Aroclor (pesticide/PCB) target compounds in water samples. The analytical service provides the methods to be used and the specific contractual requirements, by which EPA evaluates the data. The options for data turnaround time for this contract are 7, 14, or 21 days after laboratory receipt of the last sample in the Sample Delivery Group (SDG). This service uses Gas Chromatography/Mass Spectrometry (GC/MS) and Gas Chromatography with Electron Capture Detector (GC/ECD) techniques to analyze the target compounds.

DATA USES

This analytical service provides data that EPA uses for a variety of purposes such as: determining the nature and extent of contamination at a hazardous waste site; assessing priorities for response based on risks to human health and the environment; determining appropriate cleanup actions; and determining when remedial actions are complete. The data may be used at all stages in the investigation of hazardous waste sites including: site inspections; Hazard Ranking System (HRS) scoring; remedial investigation/feasibility studies; remedial design; treatability studies; and removal actions. In addition, this service provides data that are available for use in Superfund enforcement/litigation activities.

TARGET COMPOUNDS

The compounds and quantitation limits for which this service is applicable are listed in **Table 1**. The lowest reportable quantitation limits are 0.50 µg/L for the volatile compounds, 5.0 µg/L for the semivolatile compounds, and 0.01 µg/L for the pesticide/Aroclor compounds. The list of target compounds for this service was originally derived from the EPA Priority Pollutant List of 129 compounds. In the years since the inception of the CLP, compounds have been added to and deleted from the Target Compound List (TCL), based on advances in analytical methods, evaluation of method performance data, and the needs of the Superfund program.

METHODS AND INSTRUMENTATION

For volatiles, 25 mL of sample is added to a purge-and-trap device. A solution of 14 Deuterated Monitoring Compounds (DMCs) and a solution of internal standards are added to the sample which is then purged with an inert gas at room temperature.

Table 1. Target Compound List and Contract Required Quantitation Limits (CRQLs) in µg/L (OLC03.2)

	VOLATILES	Quantitation Limits µg/L
1.	Dichlorodifluoromethane	0.5
2.	Chloromethane	0.5
3.	Vinyl Chloride	0.5
4.	Bromomethane	0.5
5.	Chloroethane	0.5
6.	Trichlorofluoromethane	0.5
7.	1,1-Dichloroethene	0.5
8.	1,1,2-Trichloro-1,2,2-trifluoroethane	0.5
9.	Acetone	5
10.	Carbon Disulfide	0.5
11.	Methyl Acetate	0.5
12.	Methylene Chloride	0.5
13.	trans-1,2-Dichloroethene	0.5
14.	Methyl tert-Butyl Ether	0.5
15.	1,1-Dichloroethane	0.5
16.	cis-1,2-Dichloroethene	0.5
17.	2-Butanone	5
18.	Bromochloromethane	0.5
19.	Chloroform	0.5
20.	1,1,1-Trichloroethane	0.5
21.	Cyclohexane	0.5
22.	Carbon Tetrachloride	0.5
23.	Benzene	0.5
24.	1,2-Dichloroethane	0.5
25.	Trichloroethene	0.5
26.	Methylcyclohexane	0.5
27.	1,2-Dichloropropane	0.5
28.	Bromodichloromethane	0.5
29.	cis-1,3-Dichloropropene	0.5
30.	4-Methyl-2-pentanone	5
31.	Toluene	0.5
32.	trans-1,3-Dichloropropene	0.5
33.	1,1,2-Trichloroethane	0.5
34.	Tetrachloroethene	0.5
35.	2-Hexanone	5
36.	Dibromochloromethane	0.5
37.	1,2-Dibromoethane	0.5
38.	Chlorobenzene	0.5
39.	Ethylbenzene	0.5
40.	Xylenes (total)	0.5
41.	Styrene	0.5
42.	Bromoform	0.5
43.	Isopropylbenzene	0.5
44.	1,1,2,2-Tetrachloroethane	0.5
45.	1,3-Dichlorobenzene	0.5
46.	1,4-Dichlorobenzene	0.5
47.	1,2-Dichlorobenzene	0.5
48.	1,2-Dibromo-3-chloropropane	0.5
49.	1,2,4-Trichlorobenzene	0.5
50.	1,2,3-Trichlorobenzene	0.5

	SEMIVOLATILES	Quantitation Limits µg/L
51.	Benzaldehyde	5
52.	Phenol	5
53.	bis-(2-Chloroethyl) ether	5
54.	2-Chlorophenol	5
55.	2-Methylphenol	5
56.	2,2'-oxybis (1-Chloropropane)[1]	5
57.	Acetophenone	5
58.	4-Methylphenol	5
59.	N-Nitroso-di-n-propylamine	5
60.	Hexachloroethane	5
61.	Nitrobenzene	5
62.	Isophorone	5
63.	2-Nitrophenol	5
64.	2,4-Dimethylphenol	5
65.	bis (2-Chloroethoxy) methane	5
66.	2,4-Dichlorophenol	5
67.	Naphthalene	5
68.	4-Chloroaniline	5
69.	Hexachlorobutadiene	5
70.	Caprolactam	5
71.	4-Chloro-3-methylphenol	5
72.	2-Methylnaphthalene	5
73.	Hexachlorocyclopentadiene	5
74.	2,4,6-Trichlorophenol	5
75.	2,4,5-Trichlorophenol	20
76.	1,1'-Biphenyl	5
77.	2-Chloronaphthalene	5
78.	2-Nitroaniline	20
79.	Dimethylphthalate	5
80.	2,6-Dinitrotoluene	5
81.	Acenaphthylene	5
82.	3-Nitroaniline	20
83.	Acenaphthene	5
84.	2,4-Dinitrophenol	20
85.	4-Nitrophenol	20
86.	Dibenzofuran	5
87.	2,4-Dinitrotoluene	5
88.	Diethylphthalate	5
89.	Fluorene	5
90.	4-Chlorophenyl-phenylether	5
91.	4-Nitroaniline	20
92.	4,6-Dinitro-2-methylphenol	20
93.	N-Nitrosodiphenylamine	5
94.	1,2,4,5 Tetrachlorobenzene	5
95.	4-Bromophenyl-phenylether	5
96.	Hexachlorobenzene	5
97.	Atrazine	5
98.	Pentachlorophenol	5
99.	Phenanthrene	5
100.	Anthracene	5

		Quantitation Limits µg/L
101.	Di-n-butylphthalate	5
102.	Fluoranthene	5
103.	Pyrene	5
104.	Butylbenzylphthalate	5
105.	3,3'-Dichlorobenzidine	5
106.	Benzo(a)anthracene	5
107.	Chrysene	5
108.	bis-(2-Ethylhexyl) phthalate	5
109.	Di-n-octylphthalate	5
110.	Benzo(b)fluoranthene	5
111.	Benzo(k)fluoranthene	5
112.	Benzo(a)pyrene	5
113.	Indeno(1,2,3-cd)pyrene	5
114.	Dibenzo(a,h)anthracene	5
115.	Benzo(g,h,i)perylene	5
	PESTICIDES/AROCLORS (PESTICIDES/PCBs)	
116.	alpha-BHC	0.01
117.	beta-BHC	0.01
118.	delta-BHC	0.01
119.	gamma-BHC (Lindane)	0.01
120.	Heptachlor	0.01
121.	Aldrin	0.01
122.	Heptachlor epoxide[2]	0.01
123.	Endosulfan I	0.01
124.	Dieldrin	0.02
125.	4,4'-DDE	0.02
126.	Endrin	0.02
127.	Endosulfan II	0.02
128.	4,4'-DDD	0.02
129.	Endosulfan sulfate	0.02
130.	4,4'-DDT	0.02
131.	Methoxychlor	0.10
132.	Endrin ketone	0.02
133.	Endrin aldehyde	0.02
134.	alpha-Chlordane	0.01
135.	gamma-Chlordane	0.01
136.	Toxaphene	1.0
137.	Aroclor-1016	0.20
138.	Aroclor-1221	0.40
139.	Aroclor-1232	0.20
140.	Aroclor-1242	0.20
141.	Aroclor-1248	0.20
142.	Aroclor-1254	0.20
143.	Aroclor-1260	0.20

[1]Previously known by the name bis (2-chloroisopropyl) ether.
[2]Only the exo-epoxy isomer (isomer B) of heptachlor epoxide is reported on the data reporting forms.

The volatiles purged from the sample are trapped on a solid sorbent. They are subsequently desorbed into a GC/MS system.

For semivolatile and pesticide/Aroclor water samples, a 1-L aliquot is extracted with methylene chloride using continuous liquid-liquid extraction or a separatory funnel (for pesticides/Aroclors only). For pesticide/Aroclors, the aliquot is spiked with a solution of two surrogate compounds before extraction. The extract is dried, concentrated, and subjected to cleanup prior to GC/ECD analysis. For semivolatiles, the aliquot is acidified to a pH of 2.0 and a solution of 16 DMCs is added before extraction. The extract is dried and concentrated, internal standards are added, and then it is analyzed by GC/MS. **Table 2** summarizes the preparation methods and instruments used in this analytical service.

DATA DELIVERABLES

Data deliverables for this service include hardcopy data reporting forms, supporting raw data, and electronic data on diskette or other means specified by EPA. The laboratory must submit data to EPA within 7, 14, or 21 days after laboratory receipt of the last sample in the SDG. EPA then checks the data for compliance with contract requirements. A report of instances of noncompliance is distributed to the laboratory and the Region within 7 days from the receipt of the data. The laboratory has 7 days from receipt of the report to reconcile defective data and resubmit the data to EPA. EPA then screens the data and sends a final data assessment report to the laboratory and the Region.

QUALITY ASSURANCE

The Quality Assurance (QA) process consists of management review and oversight at the planning, implementation, and completion stages of the environmental data collection activity. This process ensures that the data provided are of the quality required.

During the implementation of the data collection effort, QA activities ensure that the Quality Control (QC) system is functioning effectively and that the deficiencies uncovered by the QC system are corrected. After environmental data are collected, QA activities focus on assessing the quality of data to determine its suitability to support enforcement or remedial decisions. Each contract laboratory prepares a Quality Assurance Plan (QAP) with the objective of providing sound analytical chemical measurements. The QAP must specify the policies, organization, objectives, and functional guidelines, as well as the QA/QC activities designed to achieve the data quality requirements for this analytical service.

QUALITY CONTROL

The QC process includes those activities required during analytical data collection to produce data of known and documented quality. The analytical data acquired from QC procedures are used to estimate and evaluate the analytical results and to determine the necessity for, or the effect of, corrective action procedures. The QC requirements for this analytical service are shown in **Table 3**.

PERFORMANCE MONITORING ACTIVITIES

Laboratory performance monitoring activities are provided primarily by AOC and the Regions to ensure that contract laboratories are producing data of the appropriate quality. EPA performs on-site laboratory audits, data package audits, and GC/MS tape audits, and evaluates laboratory performance through the use of blind PE samples.

Table 2. Methods and Instruments

Fraction	Preparation Method	Analytical Instrument
Volatiles	Purge-and-trap	GC/MS analysis
Semivolatiles	Continuous liquid-liquid extraction	GC/MS analysis
Pesticides/Aroclors (Pesticides/PCBs)	Continuous liquid-liquid or separatory funnel extraction	GC/ECD analysis

Table 3. Quality Control

QC Operation	Frequency
Deuterated Monitoring Compounds (DMCs) (volatiles and semivolatiles)	Added to each sample, standard, and blank.
Method Blanks (volatiles)	Analyzed at least every 12 hours.
Method Blanks [semivolatiles and pesticides/Aroclors (pesticides/PCBs)]	Prepared with each group of 20 field samples or less, or each time samples are extracted.
Instrument Blank (volatiles)	Analyzed after a sample that contains compounds at concentrations greater than the calibration range.
Instrument Blank [pesticides/Aroclors (pesticides/PCBs)]	Every 12 hours and preceding all groups of acceptable sample analysis.
Surrogates [pesticides/Aroclors (pesticides/PCBs)]	Added to each sample, standard, and blank.

Table 3. Quality Control (Continued)

QC Operation	Frequency
Storage Blank (volatiles)	Prepared and stored with each group of samples. Analyzed after all samples in the SDG have been analyzed.
Instrument Performance Check (volatiles and semivolatiles)	Prior to any analysis and every 12 hours.
GC Resolution Check [pesticides/Aroclors (pesticides/PCBs)]	Prior to initial calibration on each GC column used for analysis.
Initial Calibration	Upon initial set up of each instrument, after major instrument maintenance or modification, and each time continuing calibration fails to meet the acceptance criteria.
Continuing Calibration (volatiles and semivolatiles)	Every 12 hours for each instrument used for analysis.
Calibration Verification [pesiticides/Aroclor (pesticides/PCBs)]	Beginning and end of each 12-hour data collection period.
Internal Standards (volatiles and semivolatiles)	Added to each sample, standard, and blank.
Laboratory Control Sample (LCS) [pesticides/Aroclor (pesticides/PCBs)]	Prepared and analyzed once per SDG.
Performance Evaluation (PE) Sample	Prepared and analyzed (if provided) with every 20 field samples in an SDG or for each SDG, whichever is most frequent.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Performed only when requested by Region. Performed with every 20 field samples in an SDG or for each SDG, whichever is most frequent.
Method Detection Limit (MDL)	Run before any samples analyzed under contract (annually thereafter) and after major instrument maintenance.
Sulfur Cleanup Blank [pesticides/Aroclor (pesticides/PCBs)]	Only when part of a set of samples extracted together requires sulfur removal.
Sample Cleanup by Florisil Cartridge	Performed on all sample extracts and method blank extracts.
Florisil Cartridge Performance Check [pesticides/Aroclor (pesticides/PCBs)]	Performed at least once on each lot of cartridges used for sample cleanup or every 6 months, whichever is most frequent.

For more information, or for suggestions to improve this analytical service, please contact:

Terry Smith
Organic Program Manager
USEPA/AOC
Ariel Rios Building, (5204G)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
703-603-8849
FAX: 703-603-9112

SITE INSPECTION WORKSHEETS

CERCLIS IDENTIFICATION NUMBER
FLD

SITE LOCATION

SITE NAME: LEGAL, COMMON, OR DESCRIPTIVE NAME OF SITE			
Tender Touch Dry Cleaners			
STREET ADDRESS, ROUTE, OR SPECIAL LOCATION IDENTIFIER			
1515 NW 1st Street			
CITY	**STATE**	**ZIP CODE**	**TELEPHONE**
Winter Haven	FLORIDA	33881	
COORDINATES: LATITUDE AND LONGITUDE		**TOWNSHIP, RANGE, AND SECTION**	
28° 02' 14" N	81° 43' 37" W	S E	

OWNER/OPERATOR IDENTIFICATION

OWNER			OPERATOR		
Don Chamberlain			Same		
OWNER ADDRESS			**OPERATOR ADDRESS**		
1515 NW 1st Street					
CITY			**CITY**		
Winter Haven					
STATE	**ZIP CODE**	**TELEPHONE**	**STATE**	**ZIP CODE**	**TELEPHONE**
FLORIDA	33881		FLORIDA	33881	

SITE EVALUATION

AGENCY/ORGANIZATION		
BUREAU OF WASTE CLEANUP/FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION		
INVESTIGATOR		
Craig Feeny		
CONTACT		
Tillman McAdams		
ADDRESS		
100 Alabama Street. SW		
CITY	**STATE**	**ZIP CODE**
Atlanta	GA	30303
TELEPHONE		
404-562-8933		

GENERAL INFORMATION

Site Description and Operation History: Provide a brief description of the site and its operation history. State the site name, owner, operator, type of facility and operations, size of property, activities that have or may have occured at the site; note whether these activities are documented or alleged. Identity all source types and prior spills, floods, or fires. Summarize highlights of the PA and other investigations. Cite references.

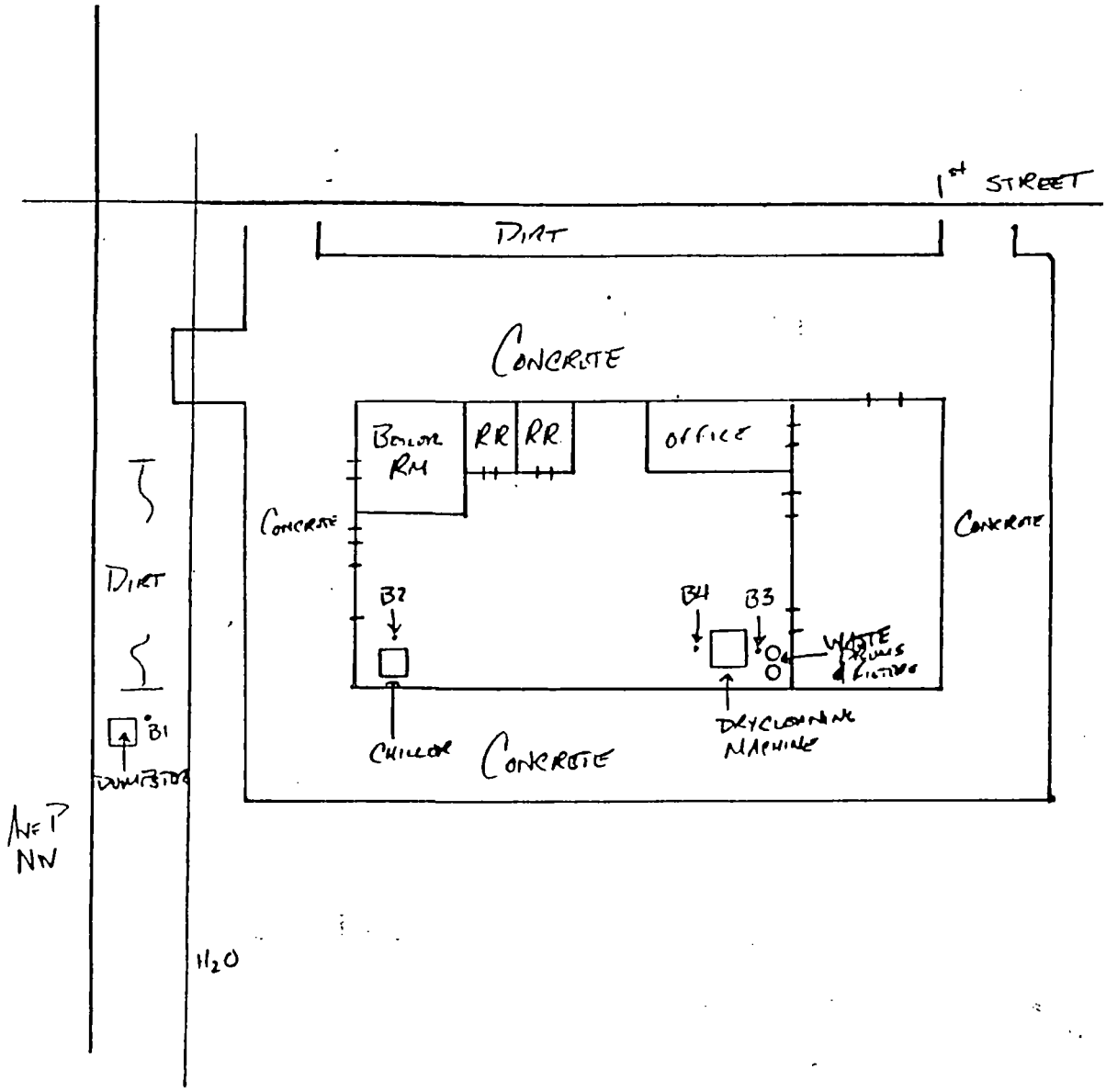
The site is characterized as a dry cleaning business[3]. Facility components include and office, a boiler room, a drycleaning machine, and an appurtenant chiller (refrigerated solvent condenser). The facility is surrounded by concrete pavement[3 (p. 7)]. Land surface at the facility lies at roughly 150 feet above mean sea level (msl) and gently slopes toward the east[1].

The facility annually uses less than 1000 kg/month of chlorinated solvents in the course of dry cleaning activities[6]. Drums of facility waste are stored near the drycleaning machine[4]. Specific facility operations and materials have not been researched. The facility is currently characterized as a Small Quantity RCRA Generator. PCE contamination of on-site soil was discovered during 1997[4], but the facility was recently judged ineligible for participation in the FDEP Drycleaning Solvent Clean-up Program. In addition, the deadline for an appeal of the judgement passed without protest (i.e., Notice of Appeal)[5,8].

On 5/21/97, Environmental Safety Consultants, Inc. sampled soil in the immediate vicinity of the facility's dry cleaning machine. The sample was taken from a depth of 1 foot below land surface (bls). Progress Environmental performed follow-up analyses, which documented a concentration of 241 ug/kg of tetrachloroethylene (perchloroethylene/PCE)—a common dry cleaning solvent[3 (pp. 1,2& 7), 4,29)]. Despite the establishment of site-attributable contamination in facility soils, no pursuant Consent Order has been issued[8].

GENERAL INFORMATION (continued)

Site Sketch: Provide a sketch of the sites. Indicated all pertinent features of the site and nearby environments including sources of wastes, areas of visible and buried wastes, buildings, residences, access roads, parking areas, fences, fields, drainage patterns, water bodies, vegetation, wells, sensitive environments, and other features.



N

SITE NAME: TONDOR TOUCH DRY CLEANERS
ADDRESS: 1515 NW 1st STREET
CITY: WINTER HAVEN
COUNTY: POLK

SOURCE DESCRIPTION: Describe all source at the site. Identify source type and relate to waste disposal operations. Provide source dimensions and the best available waste quantity information. Describe the condition of sources and all containment structures. Cite references.

SOURCE TYPES

Landfill: A man-made (by excavation or construction) or natural hole in the ground into which wastes have come to be disposed by backfilling, or by contemporaneous soil deposition with waste disposal.

Source Impoundment: A natural topographic depression, man-made excavation, or diked area, primarily formed from earthen materials (lined or unlined) and designed hold an accumulation of liquid wastes, waste containing free liquids, or sludges not backfilled or otherwise covered; depression may be wet with exposed liquid or dry if deposited liquid has evaporated, volatilized or leached; structures that may be described as lagoon, pond, aeration pit, settling pond, tailing pond, sludge pit; also a surface impoundment that has been covered with soil after the final deposition of waste materials (i.e., buried or backfilled).

Drum: A portable container designed to hold a standard 55-gallon volume of wastes.

Tank and Non-Drum Container: Any device, other than drum, designed to contain an accumulation of waste that provided structural support and is constructed primarily of fabricated materials (such as wood, concrete, steel, or plastic); any portable or mobile device in which waste is stored or otherwise handled.

Contaminated Soil: An area or volume of soil onto which hazardous substance have been spilled, spread, disposed, or deposited.

Pile: Any non-containerized accumulation above the ground surface of solid, non-flowing wastes; includes open dumps. Some types of waste piles are:

- Chemical Waste Pile: A pile consisting primarily of discarded chemical products, by-products, radioactive waste, or unused feedstocks.
- Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable goods (such as appliances, automobiles, auto parts, batteries, etc.) composed of materials containing hazardous substances.
- Tailings Pile: A pile consisting primarily of any combination of overburdened from a mining operation and tailings from a mineral mining, beneficiation, or processing operation.
- Trash Pile: A pile consisting primarily of paper, garbage, or discarded non-durable goods containing hazardous substances.

Land Treatment: Landfarming or other method of waste management in which liquid wastes or sludges are spread over land and tilled, or liquids are injected at shallow depths into soils.

Other: Sources not in categories listed above.

Source Description: Include description of containment per pathway for ground water (see HRS Table 3-2), surface water (see HRS Table 4-2), and air (see HRS Tables 6-3 and 6-9).

Contaminated soil [Y].

Hazardous Waste Quantity (HWQ) Calculation: SI Tables 1 and 2 (See HRS Table 2-5, 2-6, and 5-2)

SINGLE SOURCE

TIER TYPE	A: Hazardous Constituent Quantity	B: Hazardous Wastestream Quantity	C: Volume	D: Area
Quantity	lbs	lbs		**Unknown**
SOURCE TYPE	Landfill	Surface Impoundment	Drums	Tanks and Non-drum Container
	Contaminated Soil	Pile	Land treatment	Others

MULTIPLE SOURCE

TIER	SOURCE TYPE	QUANTITY	UNIT	WQ
			TOTAL WQ:	10 (Default)

Attach additional pages, if necessary

HWQ = **10 (Default)**

SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES

		Single Source Sites (assigned HWQ scores)	
(Column 1) TIER	(Column 2) Source Type	(Column 3) HWQ = 10	(Column 4) HWQ = 100
A Hazardous Constituent Quantity	N/A	HWQ =1 if Hazardous Constituent Quantity data are complete HWQ =10 if Hazardous Constituent Quantity data are NOT complete	>100 to 10,000 lbs
B Hazardous Wastestream Quantity	N/A	≤500,000 lbs	>500,000 to 50 million lbs
C Volume	Landfill	≤6.75 million ft ^{3} ≤250,000 yd ^{3}	>6.75 million to 675 million ft ^{3} >250,000 to 25 million yd ^{3}
	Surface Impoundment	≤6,750 ft ^{3} ≤250 yd ^{3}	>6,750 to 675,000 ft ^{3} >250 to 25,000 yd ^{3}
	Drums	≤1,000 drums	>1,000 to 100,000 drums
	Tanks and Non-drum Container	≤50,000 gallons	>50,000 to 5 million gallons
	Contaminated Soil	≤6.75 million ft ^{3} ≤250,000 yd ^{3}	>6.75 million to 675 million ft ^{3} ≥250,000 to 25 million yd ^{3}
	Pile	≤6,750 ft ^{3} ≤250 yd ^{3}	>6,750 to 675,000 ft ^{3} >250 to 25,000 yd ^{3}
	Other	≤6,750 ft ^{3} ≤250 yd ^{3}	>6,750 to 675,000 ft ^{3} >250 to 25,000 yd ^{3}
D Area	Landfill	≤340,000 ft ^{2} ≤7.8 acres	>340,000 to 34 million ft ^{2} >7.8 to 780 acres
	Surface Impoundment	≤1,300 ft ^{2} ≤0.029 acres	>1,300 to 130,000 ft ^{2} >0.029 to 2.9 acres
	Contaminated Soil	**≤3.4 million ft ^{2}** **≤78 acres**	>3.4 million to 340 million ft ^{2} >78 to 7,800 acres
	Pile	≤1,300 ft ^{2} ≤0.029 acres	>1,300 to 130,000 ft ^{2} >0.029 to 2.9 acres
	Land Treatment	≤27,000 ft ^{2} ≤0.62 acres	>27,000 to 2.7 million ft ^{2} >0.62 to 62 acres

SI TABLE 1: (CONTINUED) HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES

Single Source Sites (assigned HWQ scores)		Multiple Source Sites		
(Column 5) HWQ = 10,000	(Column 6) HWQ = 1,000,000	(Column 7) Divisor for Assigning Source WQ Value HWQ = 10	(Column 2) Source Type	(Column 1) TIER
>10,000 to 1 million lbs	>1 million lbs	lbs ÷ 1	N/A	**A** Hazardous Constituent Quantity
>50 million to 5 billion lbs	>5 billion lbs	lbs ÷ 5,000	N/A	**B** Hazardous Wastestream Quantity
>675 million to 67.5 billion ft^3 >25 million to 2.5 billion yd^3	>67.5 billion ft^3 >2.5 billion yd^3	ft^3 ÷ 67,500 yd^3 ÷ 2,500	Landfill	
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	>67.5 million ft^3 >2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Surface Impoundment	
>100,000 to 10 million drums	>10 million drums	drums ÷ 10	Drums	
>5 million to 500 million gallons	>500 million gallons	gallons ÷ 500	Tanks and Non-drum Container	**C** Volume
>675 million to 67.5 billion yd^3 >25 million to 2.5 billion yd^3	>67.5 billion yd^3 >2.5 billion yd^3	ft^3 ÷ 67,500 yd^3 2,500	Contaminated Soil	
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	>67.5 million ft^3 >2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Pile	
>675,000 to 67.5 million ft^3 >25,000 to 2.5 million yd^3	>67.5 million ft^3 >2.5 million yd^3	ft^3 ÷ 67.5 yd^3 ÷ 2.5	Other	
>34 million to 3.4 billion ft^2 >780 to 78,000 acres	>3.4 billion ft^2 >78,000 acres	ft^2 ÷ 3,400 acres ÷ 0.078	Landfill	
>130,000 to 13 million ft^2 >2.9 to 290 acres	>13 million ft^2 >290 acres	ft^2 ÷ 13 acres ÷ 0.00029	Surface Impoundment	
>340 million to 34 billion ft^2 >7,800 to 780,000 acres	> 34 billion ft^2 >780,000 acres	ft^2 ÷ 34,000 acres ÷ 0.78	**Contaminated Soil**	**D** Area
>130,000 to 13 million ft^2 >2.9 to 290 acres	>13 million ft^2 >290 acres	ft^2 ÷ 13 acres ÷ 0.00029	Pile	
>2.7 million to 270 million ft^2 >62 to 6,200 acres	>270 million ft^2 >6,200 acres	ft^2 ÷ 270 acres ÷ 0.0062	Land Treatment	

HAZARDOUS WASTE QUANTITY (HWQ) CALCULATION

For each migration pathway, evaluate HWQ associated with sources that are available (i.e., incompletely contained) to migrate to that pathway. (Note: If Actual Contamination Targets exist for ground water, surface water, or air migration pathways, assign the calculated HWQ for one or more of the four tiers (*SI Table 1; HRS Table 2-5*) for which data exist: *constituent quantity, wastestream quantity, source volume, and source area. Select* the tier that gives the highest value as the source HWQ. Select the source volume HWQ rather than source area HWQ if data for both tiers are available.

Column 1 of SI Table 1 indicates the quantity tier. Column 2 lists source types for the four tiers. Columns 3, 4, 5 and 6 provide ranges of waste amount for sites with only one source, corresponding to HWQ scores at the tops of the columns. Column 7 provides formulas to obtain source waste quantity (WQ) values at sites with multiple sources.

1. Identify each source type.
2. Examine all waste quantity data available for each source. Record constituent quantity and waste stream mass or volume. Record dimensions of each source.
3. Convert source measurements to appropriate units for each tier to be evaluated.
4. For each source, use the formulas in the last column of SI Table 1 to determine the waste quantity value for each tier that can be evaluated. Use the waste quantity value obtained from the highest tier as the quantity value for the source.
5. Sum the values assigned to each source to determine the total site waste quantity.
6. Assign HWQ score from SI Table 2 (HRS Table 2-6).

Note these exceptions to evaluate soil exposure pathway HWQ (see HRS Table 5-2):

* The divisor for the area (square feet) of a landfill is 34,000.
* The divisor for the area (square feet) of a pile is 34.
* Wet surface impoundments and tanks and non-drum container are the only sources for which volume measurements are evaluated for the soil exposure pathway.

SI TABLE 2: HWQ SCORES FOR SITES

Site WQ Total	HWQ Score
0	0
1[a] to 100	**1[b]**
>100 to 10,000	100
>10,000 to 1 million	10,000
>1 million	1,000,000

[a] If the WQ total is between 0 and 1, round it to 1.
[b] **If the hazardous constituent quantity data are not complete, assign the score of 10**

GGROUNDD WATER PATHWAY

GROUND WATER USE DESCRIPTION

Describe Ground Water Use Within 4 miles of the Site::

Describe generalized stratigraphy, aquifers, municipal and private wells

This site is situated on the Winter Haven Ridge of the Polk Upland geomorphologic feature of the Central Zone Geomorphologic Province of Florida. This area contains numerous closed basin karst terrain features including cover-collapse sinkholes and sinkhole lakes. A post-Oligocene age fault, associated with the Ocala Platform, is interpreted to exist northeast of the site area. This fault trends northwest-southeast and is located within 4.2 miles of the site. There are 3 hydrostratigraphic units in Polk County. These units are the surficial aquifer, intermediate aquifer /confining unit and Floridan aquifer systems [1,17,18,19,20,21,24,38] (Figure 1).

The surficial aquifer system is principally composed of unconsolidated to poorly indurated sediments of Pleistocene to Holocene age. These sediments are between 45 to 70 feet thick in the Winter Haven area. The surficial aquifer system exists under unconfined conditions and is found between 4.5 to 5.5 feet bls at the site. The aquifer is recharged primarily by rainfall. Water levels fluctuate in the surficial aquifer system as a result of recharge by rainfall, and discharge by natural gravity flow downgradient to lakes and streams, evapotranspiration, downward loss into underlying aquifers and pumping from wells[16,17,18,22,27].The surficial aquifer system is not a major source of water and is limited to domestic supply, lawn irrigation and to a limited extent, small agricultural irrigation along the central ridge areas. The average yield from wells tapping the aquifer is between 20 to 30 gallons per minute (gpm) [16,17,18,22,27].

The intermediate aquifer system/confining unit, which is present over much of western Polk County (south of Polk City), consists of discontinuous sand, gravel, shell, limestone and dolostone beds within the Hawthorn Group. The intermediate aquifer system/confining unit includes the Peace River and Arcadia Formations[16,17,18,22,27]. The top of the Hawthorn Group is found approximately 60 feet bls and is between 50 to 100 feet thick in the Winter Haven area. The lower confining layer for the surficial aquifer system consists of clayey sediments of the Peace River Formation (Bone Valley member) of the Hawthorn Group. The top of this unit appears to be approximately 55 feet bls at the site. The lower confining unit of the intermediate aquifer system consists of low permeability units in the Arcadia Formation[1,16,17,18,22,27,28,39]. Water from the intermediate aquifer system is primarily used for domestic supply in Polk County. Other uses include stock watering, irrigation and small public supplies [1,16,17,18,22,27,28,39].

The Floridan aquifer system—the principal source of potable ground water in the county— consists of carbonate (limestones and dolomites) units ranging from Eocene to Oligocene age. The units comprising the Floridan aquifer system include, in ascending order, the Avon Park Formation, Ocala Limestone and the Suwannee Limestone. The top of the Floridan aquifer system (Suwannee Limestone) is found approximately 140 feet bls in the site area and the aquifer is approximately 1,000 feet thick in this section of Polk County[1,17,18,19,20,21,22,24,25,27,38].. The Suwannee Limestone is underlain by the late Eocene age Ocala Limestone[1,17,18,19,20,21,22,24,25,27,38]. The Ocala Limestone consists of white to light gray, light orange, fossiliferous, calcarenitic limestone. The limestone has poor to good induration and contains benthic foraminifera. The Avon Park Formation of middle Eocene age underlies the Ocala Limestone is composed of limestone interbedded with dolostone. The Avon Park Formation is highly fractured[1,17,18,19,20,21,22,24,25,27,38].

Many of the lakes, depressions and sinkholes located in this area of Polk County may provide conduits for recharge to the aquifer. Consequently, the Green Swamp, which is located approximately 7 miles north of Winter Haven, is a major recharge area for the Floridan aquifer system. Similarly, Winter Haven is located in an area of high recharge to the Floridan aquifer system[1,17,18,19,20,21,22,24,25,27,38].

Show Calculations of Ground Water Drinking Water Populations for each Aquifer:

Provide apportionment calculations for blended supply systems.

County average number of persons per household: Reference:

Numerous potable wells, including supply wells associated with several municipal drinking water systems, exist within 4 miles of the site[1]. The City of Winter Haven operates the largest of the municipal drinking water systems, which includes the Fairfax, Inwood, Third Street, and Ridge Vo-Tech wellfields and their concomitant water treatment plants (WTP's). Each supply well draws drinking water from the Floridan aquifer system[16,32].

Approximately 78% of the Winter Haven municipal water supply is provided by 6 wells that operate at the Fairfax WTP. Approximately 11% of the municipal water supply is provided by 2 wells at the Inwood WTP. Another 9% of the municipal water supply is provided by 4 wells at the Third Avenue WTP. One Ridge Vo Tech well provides the balance of the municipal supply. All of the water drawn by the 13 municipal supply wells is ultimately blended and distributed to a service population of 49,815[12,13,16,30-32].

The City of Winter Haven recently purchased 5 additional wellfields and appurtenant distribution/ treatment facilities from the Garden Grove Water Company[1,12,13, 16,32]. The 5 componant wellfields bear the names of their associated water treatment plants—the Roosavelt, Winterset, Garden Grove East, Eloise Woods, and Callen WTP's. The recently acquired Garden Grove system's 12 wells collectively supply a basic service population of 20,386, as well as a joint service population of 800 at the Orange Manors East & West mobile home parks[16,32].

Three wells at the Winterset WTP wellfield provide 32% of the potable water supplied to the Garden Grove distribution system. Two supply wells at the Roosavelt WTP wellfield provide 1% of the Garden Grove system's water supply. Two wells at the Garden Grove East WTP provide 5% of the water produced by the Garden Grove system. Three wells at the Callen WTP produce 3% of the water produced by the Garden Grove system. Two wells at the Eloise Woods WTP produce 26% of the water delivered by the Garden Grove system[16,31,32]. Water produced by different WTPs in the Garden Grove system is not intentionally blended; however incidental blending of water within distribution lines assuredly occurs[42].

The nearest potable well, relative to the site, is the #1 supply well of the City of Winter Haven's Fairfax WTP wellfield. The well is located approximately 3,200 feet southeast of the site and has a depth of 590 feet[1,16,32]. All 6 of the Fairfax WTP supply wells are located within 3/4-1 mile of the site[1,16].

The 2 Inwood supply wells (City of Winter Haven system), the 4 Third Avenue supply wells (City of Winter Haven system) and 3 Callen WTP supply wells (Garden Grove system) are located within the 2-3 mile distance interval. A Nations Bank well, providing a drinking water supply to an estimated population of 250, also operates within 2-3 miles of the site[1,16].

Wells associated with the 2 Garden Grove East WTP supply wells (Garden Grove system), the 2 Eloise Woods WTP supply wells(Garden Grove system), the Orchid Springs WTP supply well (population: 752), the Four Lakes Golf Club supply well (population: 1,344), the Gordenville Jan Phyl Main WTP supply well (population: 818), Polk County Utilities Mariana Acres WTP (population: 1,641) and both City of Lake Alfred supply wells (population: 4,176) are located within the 3-4 mile distance interval[1,16, 30-32,40,42-44]. The Ridge Vo Tech well is located more than 4 miles northeast of the site[1,16,30-32,].

SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

Site Name: Tender Touch Dry Cleaners **References:** 4

Source: Contaminated Soil

1. 4. 7.
2. 5. 8.
3. 6. 9.

SOURCE	HAZARDOUS SUBSTANCE	TOXICITY	GROUND WATER PATHWAY		SURFACE WATER PATHWAY										
					OVERLAND/FLOOD MIGRATION							GROUND WATER TO SURFACE WATER			
			GW Mobility (HRS Table 3-8)	Tox/ Mobility Value (HRS Table 3-9)	Per (HRS Tables 4-10 & 4-11)	Tox/Per Value (HRS Table 4-12)	Bioac Pot. (HRS Table 4-15)	Tox/Per/Bio ac Value (HRS Table 4-16)	Ecotox (HRS Table 4-19)	Ecotox/ Pers (HRS Table 4-20)	Ecotox/ Pers/ Bioacc Value (HRS Table 4-21)	Tox/ Mob/ Pers/ Value (HRS Table 4-26)	Tox/ Mob/ Pers/ Bioacc Value (HRS Table 4-28)	Ecotox /Mob/ Pers Value (HRS Table 4-29)	Ecotox /Mob/ Pers/ Bioacc Value (HRS Table 4-30)
1	PCE	100	1	100											

F: **Water Type - Fresh,** **K: Karst,** L: **Water Body - Lake,** O: Observed Release, **Q: Deposit as Liquid** R: Water Body - River S: Water Type - Salt

SI TABLE 6 (FROM HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI TABLE 6A: OTHER THAN KARST AQUIFERS

DISTANCE FROM SITE	POP.	NEAREST WELL (CHOOSE HIGHEST)	POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORY												POP. VALUE
			1 TO 10	11 TO 30	31 TO 100	101 TO 300	301 TO 1000	1001 TO 3000	3001 TO 10,000	10,001 TO 30,000	30,001 TO 100,000	100,001 TO 300,000	300,001 TO 1,000,000	1,000,000 TO 3,000,000	
0 TO 1/4 MILE		20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	
>1/4 TO 1/2 MILE		18	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	
>1/2 TO 1 MILE		9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385	
>1 TO 2 MILES		5	.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842	
>2 TO 3 MILES		3	.5	2	7	21	68	212	678	2,122	6,778	21,222	67,777	212,219	
>3 TO 4 MILES		2	.3	1	4	13	42	131	417	1,306	4,171	13,060	41,709	130,596	
														SUM=	

SI TABLE 6B: KARST AQUIFERS

DISTANCE FROM SITE	POP.	NEAREST WELL (CHOOSE HIGHEST)	POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORY												POP. VALUE
			1 TO 10	11 TO 30	31 TO 100	101 TO 300	301 TO 1000	1001 TO 3000	3001 TO 10,000	10,001 TO 30,000	30,001 TO 100,000	100,001 TO 300,000	300,001 TO 1,000,000	1,000,000 TO 3,000,000	
0 TO 1/4 MILE		20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	
>1/4 TO 1/2 MILE		20	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	
>1/2 TO 1 MILE		**20**	2	9	26	82	261	817	2,607	8,163	**26,068**	81,623	260,680	816,227	**26,068**
>1 TO 2 MILES		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	
>2 TO 3 MILES		20	2	9	26	82	261	817	2,607	**8,163**	26,068	81,623	260,680	816,227	**8,163**
>3 TO 4 MILES		20	2	9	26	82	261	817	2,607	**8,163**	26,068	81,623	260,680	816,227	**8,163**
		20												SUM=	**42,394**

REFERENCE: **1,16,30-32,40,42-44**

GROUND WATER PATHWAY WORKSHEET

LIKELIHOOD OF RELEASE	Score	Data Type	Reference
1. **OBSERVED RELEASE:** If sampling data or direct observation support a release to the aquifer, assign a score of **550**. Record observed release substance on SI Table 4.			
2. **PETONTIAL TO RELEASE:** Depth to aquifer : **<20** feet. If sampling data do not support a release to the aquifer, and the site is in **karst terrain or the depth to aquifer is 70 feet or less**, assign a score of **500**; otherwise, assign a score of **340**.	**500**	H	1,4,18-21,23-27
OPTIONAL: evaluate potential to release according to **HRS Section 3.**			
LR	**500**		

TARGETS

Are any wells part of a blended system? **Yes** No If yes, attach a page to show apportionment calculations. 3. **ACTUAL CONTAMINATION TARGETS:** If analytical evidence indicates that any target drinking water well for the aquifer has been exposed to a hazardous substance from the site, evaluate the factor score for the number of people served (SI Table 5). Level I: People * 10 = Level I: People * 10 = **TOTAL =**	N/A		
4. **POTENTIAL CONTAMINATION TARGETS :** Determine the number of people served by drinking water wells for the aquifer or overlying aquifers that are not exposed to a hazardous substance from the site; record the population for each distance category in SI Table 6A or 6B. Sum the population values and multiply by 0.1.	**42,414 ⇒ 4,241**	H	1,12,13,16,30-32
5. **NEAREST WELL:** Assign a score of 50 for any Level I Actual Contamination Targets for the aquifer or overlying aquifer. Assign a score of 45 if there are Level II targets but no Level I Targets. If no Actual Contamination Targets exist, assign the Nearest Well score from SI Table 6A or 6B. If no drinking water wells exist within 4 miles, assign 0.	**20**	H	1,16,32
6. **WELLHEAD PROTECTION AREA (WHPA) :** If any source lies within or above a WHPA for the aquifer, or if a ground water observed release has occured within a WHPA, assig a score of 20; assign 5 if neither condition applies but a WHPA is within 4 miles; otherwise assign 0.	**0**		
7. **RESOURCES :** Assign a score of 5 if one or more ground water resource applies; assign 0 if none applies. • Irrigation (5 acre minimum) of commercial food crops or commercial forage crops • Watering of commercial livestock • Ingredient in commercial foos preparation • Supply for commercial aquaculture • Supply for a major or designated water recreation area, excluding drinking water use	**5**	H	16
SUM OF TARGET T	**4,266**		

GROUND WATER MIGRATION PATHWAY SCORESHEET

Likelihood of Release to an Aquifer	Maximum Value	Value Assigned	References
1. **Observed Release**	550		
2. **Potential to Release**			
2a. **Containment** (Table 3-2)	10		
2b. **Net Precipitation** (Figure 3-2)	10		
2c. **Depth to Aquifer** (Table3-5)	5		
2d. **Travel Time** (Table 3-6, Table 3-7)	35		
2e. **Potential to Release** : 2a * (2b + 2c + 2d)	**500**	**500**	1,4,18-21,23-27
Likelihood of Release score (Higher Value of 1 and 2e)	550	**500**	

GROUND WATER PATHWAY WORKSHEET (CONCLUDED)

WASTE CHARACTERISTICS	Score	Data Type
8. If any Actual Contamination Targets exist for the aquiffer or overlying aquifers, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if no Actual Contamination Targets exist, assign the hazardous waste quantity score calculated for sources available to migrate to ground water.	10	H
9. Assign the highest ground water toxicity/mobility value from SI Table 3 or 4.	100	H
10. Multiply the ground water toxicity/mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below : (from HRS Table 2-7)	6	

Product			WC Score
0			0
>0	to	<10	1
10	to	<100	2
100	to	<1,000	3
1,000	to	10,000	6
10,000	to	<1 E + 05	10
1 E + 05	to	<1 E + 06	18
1 E + 06	to	<1 E + 07	32
1 E + 07	to	<1 E + 08	56
1 E + 08	to	<1 E + 09	100
1 E + 09	to	<1 E + 10	180
1 E + 10	to	<1 E + 11	320
1 E + 11	to	<1 E + 12	560
1 E + 12	or	Greater	1,000

WC = 6

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the ground water pathway score for each aquifer. Select the highestaquifer score. If the pathway score is greater than 100, assign 100.

GROUND WATER PATHWAY SCORE :

LR * T * WC / 82,500 = 155.13 ⇒ 100 **(Maximum of 100)**

500 x 4,266 x 6/82,500 = 155.13

SITE SCORE CALCULATION	S	S^2
GROUND WATER PATHWAY SCORE (S_{GW})	100	10^4
SURFACE WATER PATHWAY SCORE (S_{SW})		
SOIL EXPOSURE (S_S)		
AIR PATHWAY SCORE (S_A)		
SITE SCORE $\sqrt{\frac{S_{GW}^2+S_{SW}^2+S_S^2+S_A^2}{4}} = \sqrt{\frac{10^4}{4}} =$		50

COMMENTS

APPENDIX C

SITE INSPECTION WORKSHEETS

This appendix consist of worksheets that can be used to generate an SI site score.
Completion of these worksheets is not required, but the SI investigator must evaluate an SI score, either by these worksheets, PREscore, or other Regional scoring tools.

The worksheets consist of instructions and data tables to be filled in with scores from HRS reference tables. The data table may also call for Data Type and References.

DATA TYPE: The Data Type columns should by filled in with an **H**, **Q**, or + if the data are HRS quality and well documented. The Data type column should be filled in with an **E**, **X**, or - if the data represent estimates, approximations, or are not fully documented. This type identifies data gaps for the expanded SI to investigate.

REFERENCES: The Reference columns should be filled in with coded reference numbers. The numbered reference list should bt attached ot the numbering should be cross-referenced to the SI Narrative Report.

The SI investigator will need the current Superfund Chemical Data Matrix(SCDM) OSWER Directive 9345.1-13 (revised semi-annually) to complete these worksheets

U.S. EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: 1074019 Site ID: FLD982136384

Site Name: Tender Touch Dry Cleaners

Nature of Material:

Map:	☒	Computer Disks:	☐
Photos:	☐	CD-ROM:	☐
Blueprints:	☐	Oversized Report:	☐
Slides:	☐	Log Book:	☐

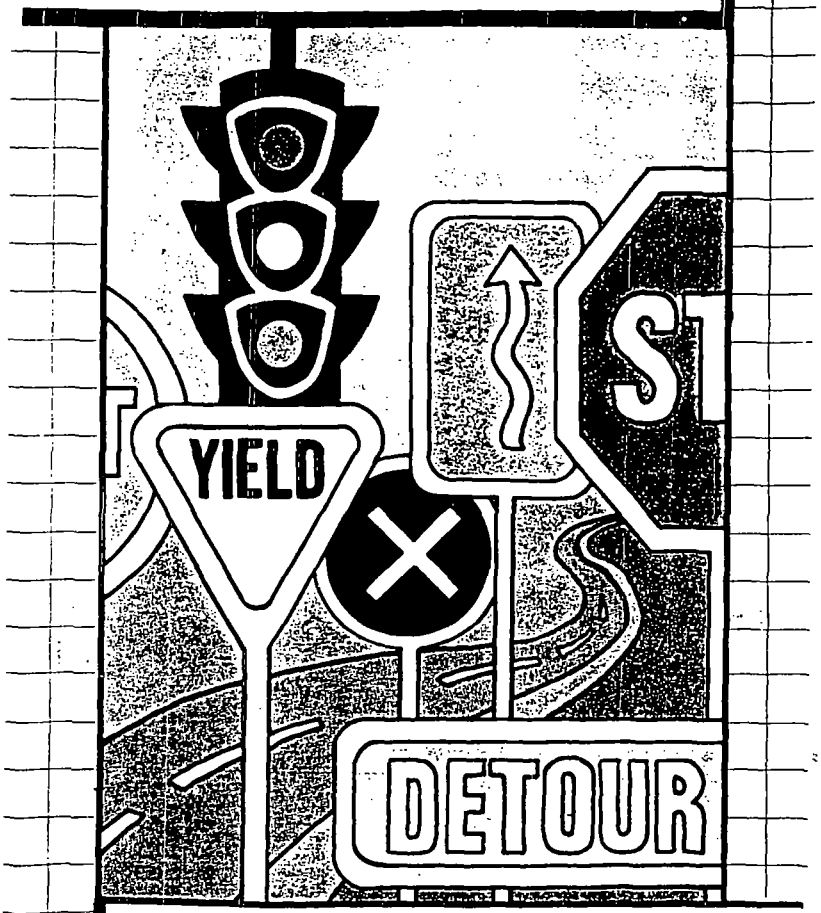
Other (describe): Business Map (Ref. 1)

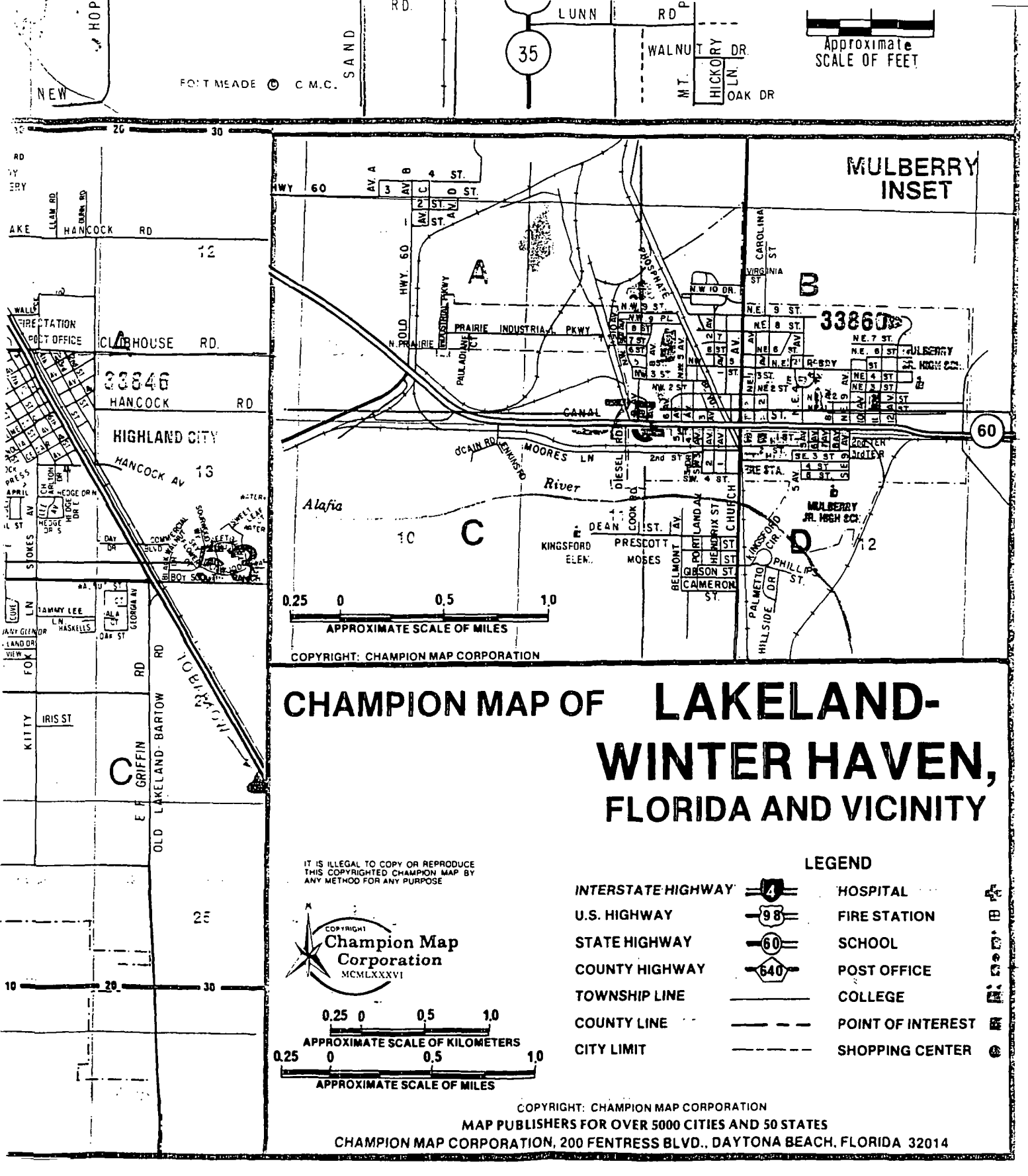
Amount of material:

* Please contact the appropriate Records Center to view the material *

Champion® Map Of
POLK COUNTY

Including Lakeland, Winter Haven, Auburndale, Lake Wales and Bartow





CHAMPION MAP OF LAKELAND-WINTER HAVEN, FLORIDA AND VICINITY

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Champion Map Corporation
MCMLXXXVI

0.25 0 0.5 1.0
APPROXIMATE SCALE OF KILOMETERS

0.25 0 0.5 1.0
APPROXIMATE SCALE OF MILES

LEGEND

INTERSTATE HIGHWAY	4	HOSPITAL	
U.S. HIGHWAY	98	FIRE STATION	
STATE HIGHWAY	60	SCHOOL	
COUNTY HIGHWAY	640	POST OFFICE	
TOWNSHIP LINE		COLLEGE	
COUNTY LINE		POINT OF INTEREST	
CITY LIMIT		SHOPPING CENTER	

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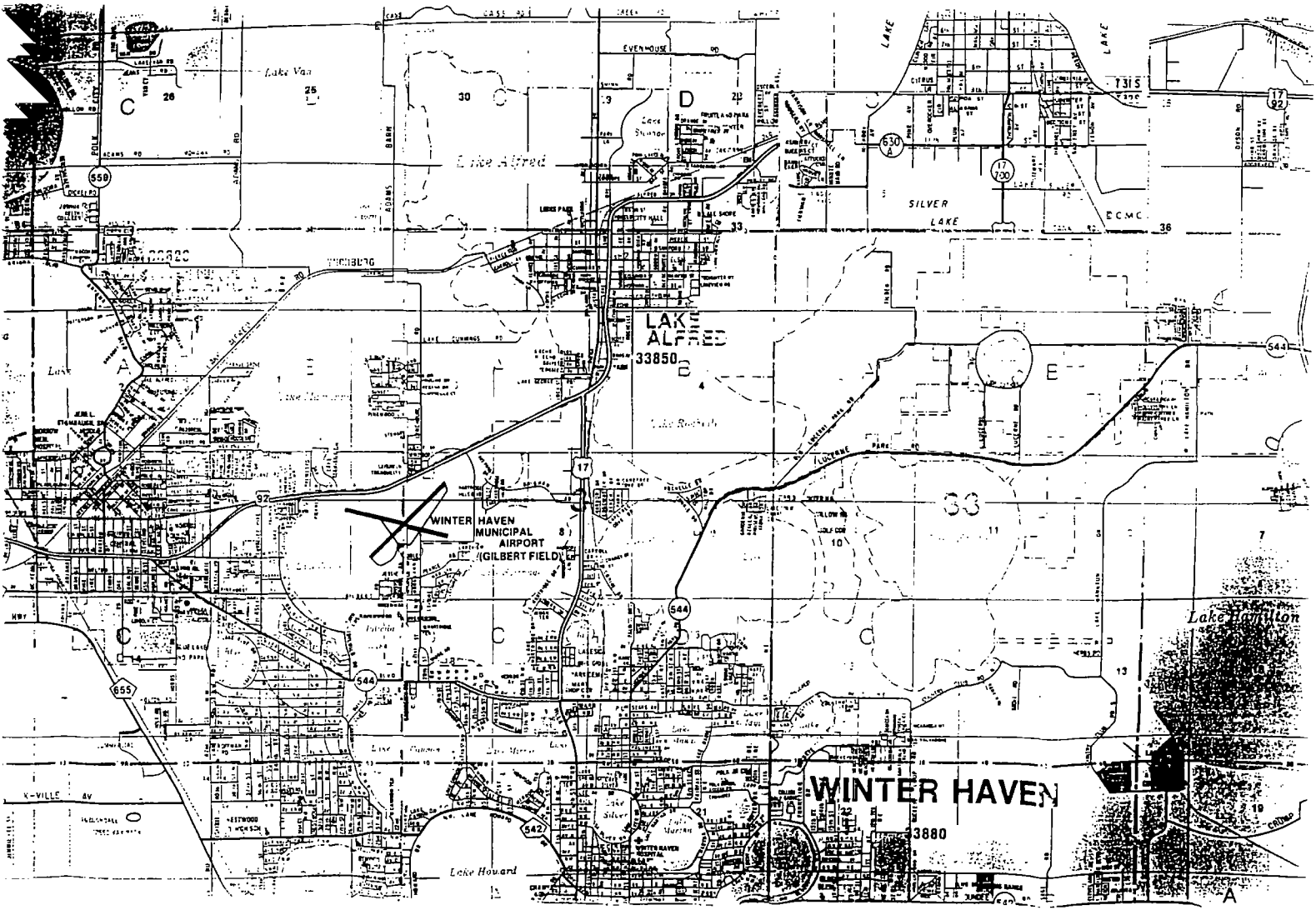
MC GREGOR 38A
MC INTOSH 38A
MC JUNKIN RD 40A
MC KAY AV. 27D
MC KAY CT. 27D
MC KINNEY ST 65B
MC LEOD RD 28D
MC LEOD ST. 65D
MC MULLEN RD 50B
MEADOW 40A
MEADOW AV 28D
MEADOW GLEN CT 13D
MEADOW GLEN RD 13D
MEADOW LAKES DR 39D
MEADOW LN 50D
MEADOW BEND CT 38D
MEADOWBROOK 26C
MEADOWBROOK AV 39B
NICHOLS DR. E 52B
NICHOLS DR. S 52B
NICHOLS DR. W. 52B
NIMBLEWOOD PL 50C
NOBLE AV 26D
NOBLE RD 50B
NOEL DR N 37B
NOEL DR S 37B
NOKOMIS AV 38A
NOMAN 26B
NOMAN DR 26B
NORETTA LN 38C
NORFOLK CIR 29C
NORMANDY ST. 27A
NORTH BROOK LN. 50A
NORTH DR 27A
NORTH EL CAMINO 39C
REAL
PALMETTO AV. 53A
PALMETTO LN. 28B
PALMETTO RD 29D
PALMETTO ST. 27D
27C
66C
PALMORE CT 39C
PALO ALTO CIR. 39C
PALO ALTO CT 39C
PALO ALTO S 39C
PALO ALTO W 39C
PALOMA ST 39A
PALOMINO 26D
PALOMINO DR 50D
PAR PL 50C
PARADISE DR 50B
PARHAM CIR 65B
PARISH 65D
PRESTON ST. 51A
PRIDGON CT 51A
PRIMROSE CT. 50B
PRINCE 39D
PRINCESS CT 39C
PRINCESS PL 39C
PRINCETON PL 39B
PRITCHARD 26C
PRIVATE RD. 39B
PROSPECT ST 27C
PROSPERITY 50B
PROVIDENCE 14D
PROVIDENCE DR 26B
PUBLIX RD 13D
PURITAN LN 14D
PYRAMID PKWY 27A
SAN ANTONIO DR. 51A
SAN RAULO CT. 51B
SANCHEZ AV. 40A
SAND GULLY RD 38B
SAND MOUNTAIN RD 29C
SAND RD 39A
SANDLEWOOD CT. 51C
SANDLEWOOD LN 51B
SANDPIPER LN. 51B
51A
SANDPOINT DR. 50C
SANDRA AV. 15C
SANDS RD 51B
SANDY HOOK 25B
SANDY LN 40C
SANFORD 50B
SANFORD RD 26D
SANTA FE RANCH RD 25B
SPRING LAKE DR 49B
SPRINGWAY DR. 30C
SPRUCE 38B
STABELPAD 38B
STANDISH DR 14D
STANFORD ST. 66C
SAND RD 65D
SANDLEWOOD CT. 39A
STANHOPE AV. 51C
STANLEY ST. 39D
STARLING DR 65D
STATE PARK RD 50C
STATE ST 29A
STATES ST 29C
STAUNTON ST 40D
STELLA AV 40A
STELLA CT. 27C
STELLA ST 51B
STEPHANIE LN. 27B
STEPHENS AV 51B
STERLING 25D
TENOROC MINE RD 16D
TERI ST. 30C
TEROI LN. 51D
TERRACE GARDEN N. 27C
TERRACE WY 39C
TERRY AV. 38B
TERRY BALLENTINE 51A
TERRY LN 51B
TERRY RD. 25A
TEXAS AV 27C
THARP ST. 65D
THAU 51A
THE FENWAY 50C
THELMA DR 25C
THOMAS RD 66A
THOMAS ST 27A
THOMPSON 26D
THOMPSON RD 29B
WATERS DR. 50B
WATERS EDGE DR 40B
WATERVIEW BLVD E. 51D
WATERVIEW BLVD W 40B
WATERVIEW POINT 40B
WATERWOOD DR 53A
WATERWOOD TR. 53A
WATERWOOD WY. 53A
WATSON 50B
WAVERLY PL 39A
WAYMAN 26D
WAYNESVILLE AV 40A
WE DO WEE CT. 25D
WEATHERFORE TR 38B
WEBER PL 15D
WEBER ST 28C
WEBSTER 39A
WEBSTER AV 25C



LAKE ALFRED
33850
WINTER HAVEN MUNICIPAL AIRPORT (GILBERT FIELD)
WINTER HAVEN
33880
Lake Hamilton
Lake Howard
SILVER LAKE
Lake Alfred
Lake Van
EVENHOUSE RD
LUCERNE PARK RD
K-VILLE AV

544
BLVD
542
540
655
17
WINTER - LAKE RD.
RECKER HWY.
N.W. LAKE HOWARD DR.
S.W. LAKE HOWARD DR.
SW LAKE HOWARD
LAKE SHIPP
BOSTON RED SOX BASEBALL FIELD
CHAIN-OF-LAKES PARK
CITRUS SHOWCASE
SNIVELY AV.
SHELL RD
W. LAKE ELOISE DR.
HOOVER RD
CAMERON RD.
CAMELLIA DR
FRUITLAND PARK CIR
OLD NINE-FOOT RD.
JOHN KING RD
SUNSHINE WY
HIGH POINT AV
TERA DR
SANDALWOOD CIR
CRYSTAL BEACH RD
Grassy Lake
Eagle Lake
EAGLE LAKE 33839
Lake McLeod
EAGLE LAKE LOOP RD.
SADDLE OAKS DR.
WATER OAKS DR.
CYPRESS COVE
HOWARD ST
GRAY RD
STARLING
THOMAS RD
GALLOWAY
WILLIAMS RD
LINE RD
SURF DR.
HOLTON RD
HOBBS
BRIARWOOD CIR
KOFFEMAN RD
CHERRY LAUREL LN
MANSEAU DR
DEER LAKE DR.
FOXRIDGE RUN
THOMPSON TER
MIRROR TER
POLK JR. COL. ACCESS RD (PRIVATE)
TANGERINE
SEARS AV
LAKE MAUDE
LAKE MARTHA DR
CENTRAL
30
31
28
1
8

Site Screening Report Form

Please Print or Type (See Site Screening Guidance Manual for instructions)
COMPLETE ENTIRE FORM

DEP Form: 62-781.200(3)
Form Title: Site Screening Report Form
Effective Date: March 13, 1996
DEP Application No.:
(FDEP Use Only)

Instructions and definitions that are necessary for completing this form can be obtained from the Site Screening Report Guidance Manual. Information provided on this form shall be in accordance with the directions and provisions of the Site Screening Guidance Manual.

Bureau of Waste Cleanup
JUN 24 1997
Hazardous Waste Cleanup Section

1. **Facility Identification**

   a. Facility Name: LONDON TOUCH CLEANERS

   b. Facility Address: 1515 NW 1ST. ST
   WINTER HAVEN, FL 33881

   c. Facility Identification Number (if assigned): 53-9501361

2. **Fire or Explosion Hazard:**
   If a fire or explosion hazard existed at the site, then provide the date that the hazard was reported to the State Warning Point and the local fire department:

   ___/___/___

   NOTE: DO NOT USE THIS SITE SCREENING REPORT FORM TO REPORT A FIRE OR EXPLOSION HAZARD TO THE DEPARTMENT. If the fire or explosion hazard has not been reported to the State Warning Point at 1-904-413-9911 and the local fire department, then immediately notify these authorities.

3. **Documentation of Contamination:**

   a. Laboratory used to analyze sample:
   PROGRESS ENVIRONMENTAL CompQAP No. 900306 G

   b. Methodology used: EPA Method 8010

   c. Sample Media: ☑ Soil ☐ Groundwater

d. Sample Analysis Results (report highest concentration only):

Sample location	Depth of sample (feet below land surface)	Drycleaning Solvent or breakdown product detected	Concentration (units):
EAST & WEST SIDES OF D/C MACHINE	1'	TETRACHLOROETHENE	241 ug/Kg

4. Site Location:

Indicate the latitude and longitude coordinates of the site (accurate to 0.005 minutes):

28 -- 02.266 N
81 -- 43.620 W

Method used for determination: ☑ Quad Map ☐ Differential GPS

5. Well Survey Information:

Provide the following information concerning a drinking water well located within 1 mile of the site, as specified in the site screening guidance manual:

If no drinking water wells exist within 1 mile of the site, check here: _____

a. Name, address, permit number and lat/long of the drinking water well:

City of Winter Haven
530 7th Street S.W.

Permit Number: 334659.01

28 -- 01.500 N
81 -- 44.075 W

b. Indicate if the well is contaminated:

☐ YES ☑ NO

c. Indicate the proximity of the well to the site. (select only one):

☐ Within 500 feet ☐ Within 1/2 mile
☐ Within 1/4 mile ☑ Within 1 mile

d. Indicate the type of drinking water well (select only one):

☐ Private Drinking Water Well
If Private Drinking Water Well, then indicate the date the well was constructed, if known: ___/___/___

☑ Public Water Supply Well

e. Indicate the permitted capacity of the well (select only one):

- [ ] Less than 100,000 gallons per day
- [x] More than 100,000 gallons per day but less than 1 million gallons per day
- [ ] More than 1 million gallons per day

f. Indicate the completed interval of the well, if available:

G19.0 - 92

g. Indicate the aquifer in which the well is completed:

- [ ] Biscayne
- [x] Floridan
- [ ] Other _____
- [ ] Intermediate (non-Floridan)
- [ ] Sand and gravel
- [ ] Surficial

6. **Contaminant Characteristics**

Based on analytical data meeting the requirements in Section 3 of the Site Screening Report Guidance Manual:

a. Has contamination from chlorinated drycleaning solvents been detected at the site during this screening or previous assessment activities?

- [x] YES
- [ ] NO

b. If YES, indicate the sample matrix and the highest concentration of chlorinated solvents detected (attach supporting documentation).

Matrix	Concentration	
[x] Soil	0.2211	milligrams/kilogram
[ ] Groundwater		micrograms/liter

7. **Environmental Setting**

Indicate if the following features are located within the given proximity of the site.

a. A surface water body, used as a public water supply system, is located within 1/2 mile of the site?

- [ ] YES
- [x] NO

If YES, then indicate the name and location of the surface water body supply system:

b. Is there a surface water body that has been designated as an Outstanding Florida Water Body located within 1/2 mile of the site?

[ ] YES [✓] NO

If YES, then indicate the name and location of the water body:

_____

_____

c. Is an area of Critical State Concern located within 1/2 mile of the site?

[ ] YES [✓] NO

If YES, then indicate the area of Critical State Concern:

[ ] Big Cypress Swamp [ ] Green Swamp

[ ] Florida Keys

d. Is a surface water body located within 1/4 mile of the site?

[✓] YES [ ] NO

If YES, then indicate the name and location of the closest water body within 1/4 mile of the site:

LAKE SILVER

_____

_____

8. **Probable Source of Contamination:**

Check all that apply:

a. Leak or spill from:

[✓] Solvent or waste solvent storage container

[✓] Machines or stills

b. Discharge or spill to:

[ ] Septic tank

[ ] Sewage line

[ ] Dry well

[✓] Directly to ground

[✓] Directly to other surface that has not been rendered impervious to drycleaning solvents

c. [✓] Spill during solvent transfer

d. [ ] Other (explain)

_____

9. **Professional Certification (Professional Geologist or Professional Engineer registered in the State of Florida)**
I hereby certify that the data and findings of this screening report were conducted in accordance with the Site Screening Report Guidance Manual, are accurate and true to the best of my knowledge and were prepared by me or under my direct supervision.

(Seal)

Christopher G. Stuart
Signature

6/18/97
Date

ENVIRONMENTAL SAFETY CONSULTANTS
Company

9200286
CompQAP Number

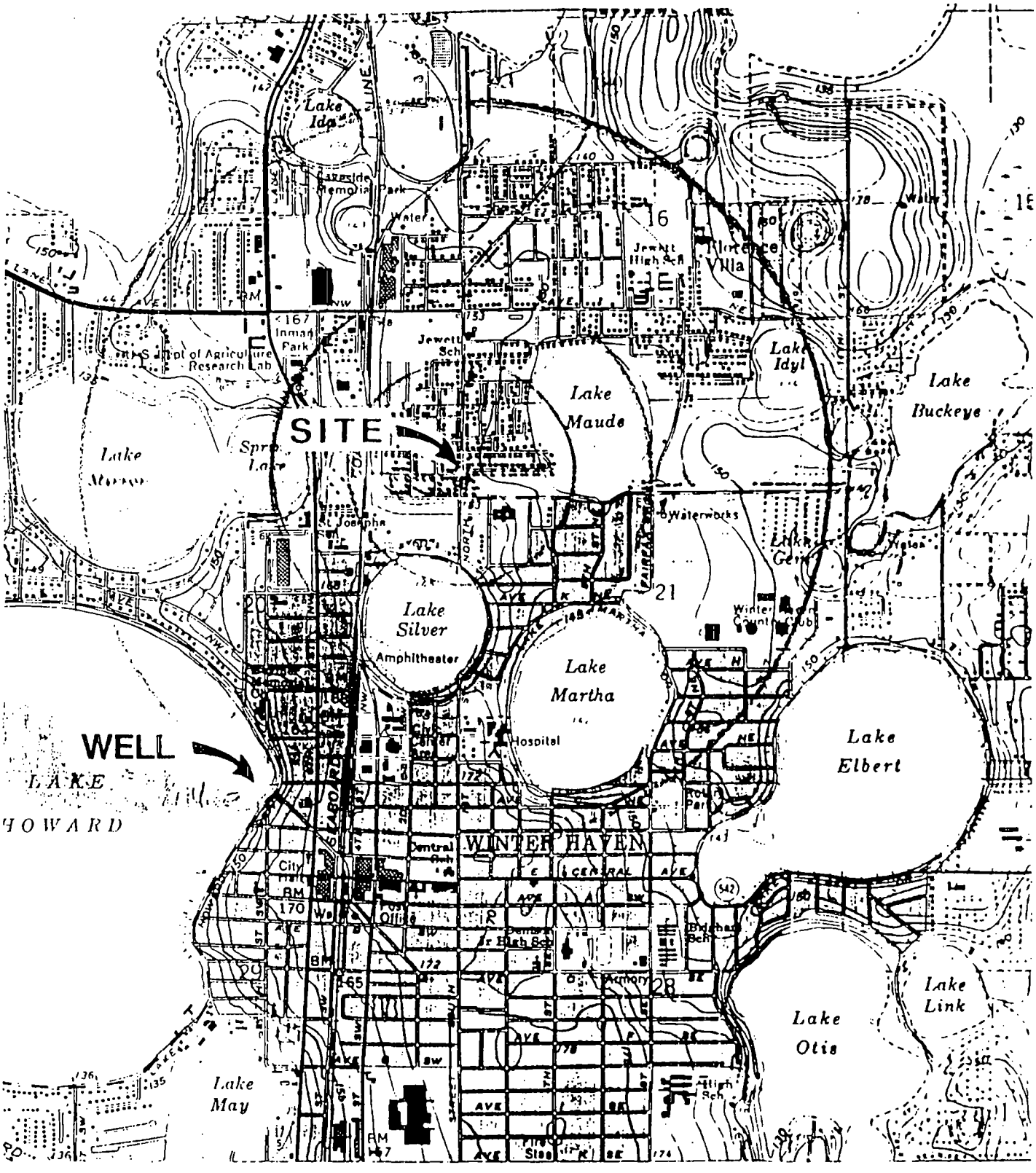
10. **Attachments to the Site Screening Report Form:**

a. ☑ Area map

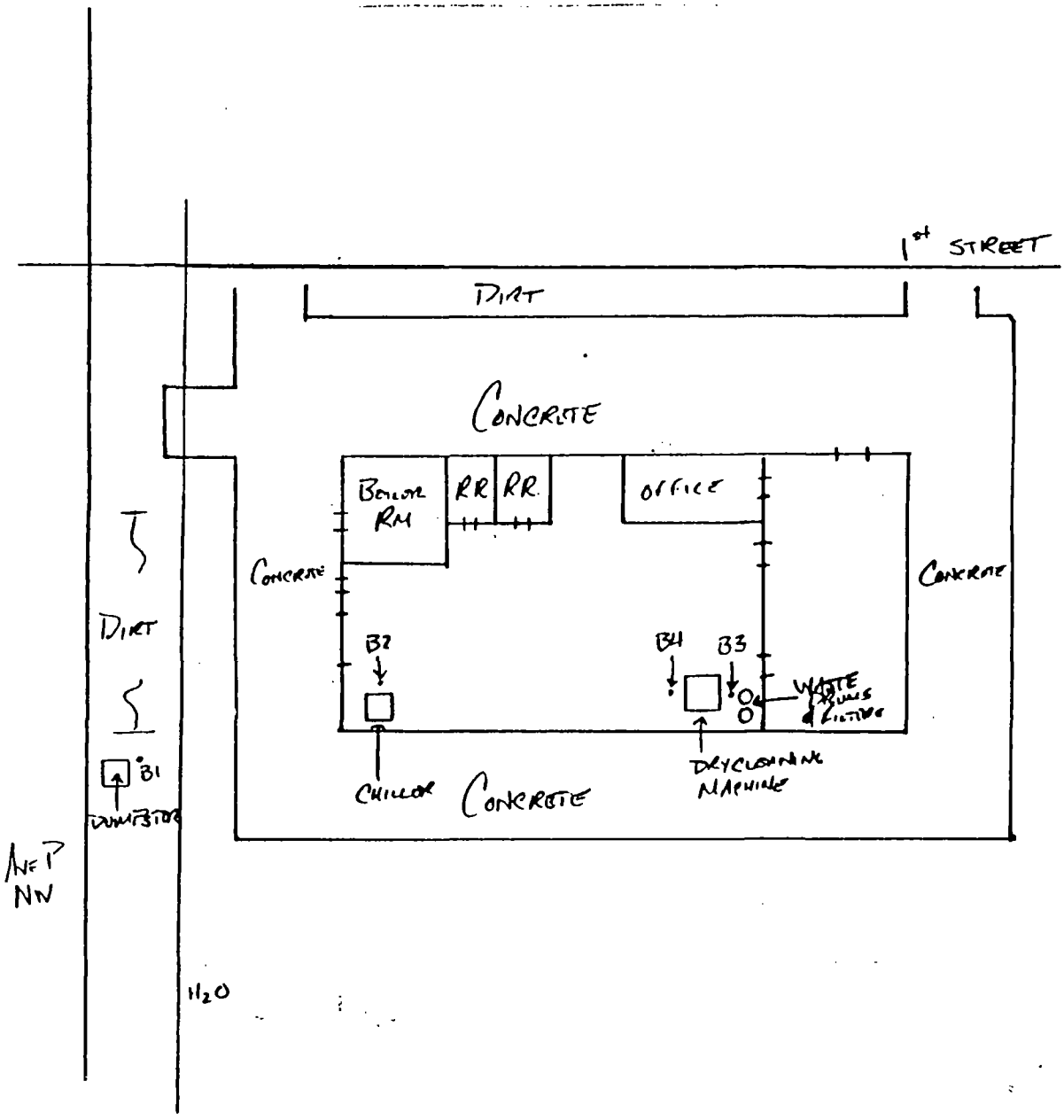
b. ☑ Site map

c. ☑ Supporting analytical soil and/or groundwater data

Note: The Site Screening Report Form is one component of the Application Package. In order for the Application Package to be deemed complete, the Site Screening Report Form must accompany a complete Application Form and any Notice Letter for Joint Application Form(s), if applicable.



ATTACHMENT 10a - AREA MAP	SITE NAME: TENDOKTINOI DRY CLEANERS	SITE CENTERED ON MAP
NOTE 1, 1/2, AND 1/4 MILE RADII	ADDRESS: 1515 NW 1ST ST	LATITUDE 28-02.266 N
SCALE: 1" = 2400 FT.	CITY: WINTER HAVEN	LONGITUDE 81-43.620 W
	COUNTY: POLK	USGS 7.5 TOPO QUAD NAME:



ATTACHMENT 10b - SITE MAP	SITE NAME: Tendre Touch Dry Cleaners	SITE CENTERED ON MAP
N	ADDRESS: 1515 NW 1st Street	LATITUDE 28-02.266 N
SCALE: 1" = 18 FT.	CITY: Winter Haven	LONGITUDE 81-43.620 W
	COUNTY: Polk	MAP IS NOT FOR SURVEY PURPOSES

ENVIRONMENTAL SAFETY CONSULTANTS, INC.

June 17, 1997

Mr. Don Chamberlain
President
TENDER TOUCH DRY CLEANERS & LAUNDRY, INC.
1515 Northwest 1st Street
Winter Haven, Florida 33881

Re: Site Screening, Report of Results & Screening Form

Dear Mr. Chamberlain:

Environmental Safety Consultants, Inc. (ESC) is pleased to submit this Report of Results and the enclosed Site Screening Report Form for the Tender Touch Dry Cleaners & Laundry, Inc.'s facility located at the address above. The work was completed in accordance with our Professional Services Agreement of May 6, 1997. ESC completed all work in accordance with its Comprehensive Quality Assurance Plan (CompQAP) No. 920028G approved by the Florida Department of Environmental Protection (FDEP). Further, the work was completed in accordance with the FDEP's Site Screening Report Guidance Manual. Finally, the soil sample was analyzed in Progress Environmental Laboratories' facility, which holds State Certification No. E84207 and CompQAP No. 900306G approved by the FDEP. A copy of this report, the screening form, and your application form have been submitted to the Drycleaning Solvent Cleanup Program at the FDEP, via copy of this letter.

Thank you for the opportunity to complete this work for you. Please advise how we may assist you in the future.

Sincerely,

ENVIRONMENTAL SAFETY CONSULTANTS, INC.

Christopher G. Stirrat, P.E.
Florida Registration Number 46003

Bureau of Waste Cleanup
JUN 24 1997
Hazardous Waste
Cleanup Section

Enclosure

cc: Drycleaning Solvent Cleanup Program, Florida Department of Environmental Protection

Project No. 0423-0001

f:\wp51\data\reports\results.ttd

6400 Manatee Avenue West • Suite C • Bradenton, Florida 34209-2357 • Telephone: 941·795-2399 • 800·226-1735 • Fax: 941·792-1735

Progress Environmental Laboratories

4420 Pendola Point Road
Tampa, Florida 33619
(813) 247-2805
FAX: (813) 248-1537

- CERTIFICATE OF ANALYSIS -
(HRS #E84207 and FDER CompQap #900306G)

To: Environmental Safety Cons.
6400 Manatee Ave. West
Suite C
Bradenton, FL 34209

Attn: Matt Coe

Report Date: 5/28/97

PEL Lab # : 9705-00252-1
Client ID : 42311
Project ID : 0423-0001
Location :
Matrix : Solid

Collection Information:
Sample Date: 5/21/97
Sample Time: 14:24
Sampled By : Client
Sample Quality:

ND = Less than MDL

Parameter	Method	Results	Units	MDL
GC Volatiles	EPA 8010			
Dichlorodifluoromethane	EPA 8010	ND	ug/kg	2.4
cis-1,2-Dichloroethene	EPA 8010	ND	ug/kg	0.98
Chloromethane	EPA 8010	ND	ug/kg	3.6
Vinyl Chloride	EPA 8010	ND	ug/kg	1.2
Bromomethane	EPA 8010	ND	ug/kg	2.5
Chloroethane	EPA 8010	ND	ug/kg	1.4
Trichlorofluoromethane	EPA 8010	ND	ug/kg	1.8
1,1-Dichloroethene	EPA 8010	ND	ug/kg	1.7
Methylene Chloride	EPA 8010	ND	ug/kg	4.9
Trans-1,2-dichloroethene	EPA 8010	ND	ug/kg	2.1
1,1-Dichloroethane	EPA 8010	ND	ug/kg	1.4
Chloroform	EPA 8010	ND	ug/kg	4.9
1,1,1-Trichloroethane	EPA 8010	ND	ug/kg	1.5
Carbontetrachloride	EPA 8010	ND	ug/kg	1.7
1,2-Dichloroethane	EPA 8010	ND	ug/kg	2.1
Trichloroethene	EPA 8010	ND	ug/kg	1.8
1,2-Dichloropropane	EPA 8010	ND	ug/kg	1.9
Bromodichloromethane	EPA 8010	ND	ug/kg	2.0
2-Chloroethylvinyl ether	EPA 8010	ND	ug/kg	6.37
Cis-1,3-Dichloropropene	EPA 8010	ND	ug/kg	1.9
Trans-1,3-Dichloropropene	EPA 8010	ND	ug/kg	2.1
1,1,2-Trichloroethane	EPA 8010	ND	ug/kg	2.5
Tetrachloroethene	EPA 8010	241	ug/kg	1.8
Dibromochloromethane	EPA 8010	ND	ug/kg	2.4
Bromoform	EPA 8010	ND	ug/kg	3.9
1,1,2,2-Tetrachloroethane	EPA 8010	ND	ug/kg	4.0
Analysis date	EPA 8010	5-24-97		

- CONTINUED ON NEXT PAGE -

Progress Environmental Laboratories

- CERTIFICATE OF ANALYSIS -
(HRS #E84207 and FDER CompQap #900306G)

To: Environmental Safety Cons.
6400 Manatee Ave. West
Suite C
Bradenton, FL 34209

Attn: Matt Coe

Report Date: 5/28/97

PEL Lab # : 9705-00252-1 (Continued ...)
Client ID : 42311

ND = Less than MDL

Parameter	Method	Results	Units	MDL
*1,4Dichlorobutane(10-150%)	EPA 8010	100	%R	
*4-BFB (10-150%)	EPA 8010	73	%R	

Respectfully submitted,
Charles R. Ingram, Quality Assurance Officer.

Progress Environmental Laboratories

№ 16479

4420 Pendola Point Road
Tampa, Florida 33619
(813) 247-2805
FAX: (813) 248-1537

P.M. Matt Coe 567

Client: ESC	Due Date(TAT): Normal T.A.
Project Mgr: M. Coe	Fax Reports to: (941) 722-1735
Project : Site Screen	Bill to: ESC
Project #: 0423-0001	
PO #:	Sampler's Initials: M.C.

820 9705-252

Station ID	Date	Time	PEL Lab #	# of Bttls	Pres								Remarks
42311	5/21/97	1424		—	—	X							

Relinquished By:	Received By:	Date	Time	Project Notes
		4/8/97	1538	
Relinquished By:	Received By:	Date	Time	
		5/22/97	1551	5.29
Relinquished By:	Received By:	Date	Time	
Relinquished By:	Received By:	Date	Time	

Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

January 16, 1998

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Don Chamberlain
1515 Northwest 1st Street
Winter Haven, Florida 33881

Subject: Tender Touch Drycleaners
1515 Northwest 1st Street
Winter Haven, Florida 33881
DEP FAC ID# 539501361

Dear Mr. Chamberlain:

The Department has completed its review of the application package submitted in accordance with Chapter 62-781, Florida Administrative Code (F.A.C). The Department has determined that the referenced site is not eligible to participate in the Drycleaning Solvent Cleanup Program for the following reason:

All taxes due, pursuant to Section (376.70, 376.75, F.S.), have not been remitted to the Department of Revenue.

Persons whose substantial interests are affected by this Order of Ineligibility have a right, pursuant to Sections 120.569 and 120.57, Florida Statutes (F.S.), to petition for an administrative determination (hearing). The Petition must conform to the requirements of Chapters 62-103 and 28-5, F.A.C., and must be filed (received) with the Department's Office of General Counsel, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, within twenty-one (21) calendar days of receipt of this Notice. Failure to file a petition within the twenty-one (21) calendar days constitutes a waiver of any right such persons have to an administrative determination (hearing) pursuant to Sections 120.569 and 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department's Facility Identification Number and county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests

The DEP Facility Number for this site is referenced in the subject line of this letter. Please use this identification on all future correspondence with the Department.

The questions you may have on the technical aspects of this Order of Ineligibility should be directed to Mr. William Burns at 850/488-0190. Contact with Mr. Burns does not constitute a petition for administrative determination.

Sincerely,

John M. Ruddell

John M. Ruddell, Director
Division of Waste Management

JMR/wbr

cc: Shira Thomas, Office of General Counsel
Andrew Barron, Southwest District
Arthur Lieberman, Polk County
Christopher G. Stirrat, P.E.

Z 333 635 035

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Don Chamberlain	
Street & Number 1515 NW 1st St.	
Post Office, State, & ZIP Code Winter Haven, FL	
Postage	$ 33881
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
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PS Form **3800**, April 1995

Florida Department of Environmental Regulation

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

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

04-02-90

DON CHAMBERLAIN
TENDER TOUCH CLEANERS
1515 NW 1ST ST
WINTER HAVEN FL 33881

The Hazardous Waste Management Program has reviewed your application for a hazardous waste DER/EPA I.D. Number.

Based on the information received you have been issued the following identification number for the facility at 1515 NW 1ST ST , WINTER HAVEN

Facility ID # FLD982136384
Your facility status is the following:

Small quantity generator.

Florida Administrative code rule 17-30 requires all generators of hazardous waste and all hazardous waste treatment, storage, or disposal facilities to file an annual report of their hazardous waste activities with DER. You must comply with this rule concerning the filing of an annual report by March 1 for the preceding calendar year. Hazardous waste generators and facilities that are not subject to the annual report requirement but maintain an EPA/DER identification number are required to verify their status annually using the annual report form. The forms will be sent to the contact person. Businesses that generate less than 1000 kilograms of hazardous waste per month (small quantity generators) are not subject to these reporting or verification requirements.

If any of the information on the Hazardous Waste Activity form changes, please notify us in writing at the letterhead address. For further assistance, please call 904/488-0300.

Sincerely,

Michael X. Redig

Michael X. Redig
Environmental Supervisor II
Hazardous Waste Management Section

cc: Ann Cole - EPA/Region IV
DER/Tampa
GMS-ID # 4053P01219

4053P31217

Please print or type with ELITE type *(12 characters per inch)* in the unshaded areas only

Form Approved. OMB No. 2050-0028 Expires 9-30-88
GSA No. 0246-EPA-OT

United States Environmental Protection Agency
Washington, DC 20460

EPA Notification of Hazardous Waste Activity

MLR 3/1/90

Please refer to the *Instructions for Filing Notification* before completing this form. The information requested here is required by law *(Section 3010 of the Resource Conservation and Recovery Act)*.

For Official Use Only

Comments

C C

Installation's EPA ID Number	Approved	Date Received (yr. mo. day)
C F FLD982136384 T/A C 1		MAR 17 1990

P01/4 105 SW

I. Name of Installation

TENDER Touch CLEANERS HAZARDOUS WASTE PERMITTING

II. Installation Mailing Address

Street or P.O. Box

C 3 1515 NW 1st STREET

City or Town	State	ZIP Code
C 4 WINTER HAVEN	FL	33881

III. Location of Installation

Street or Route Number

C 5 1515 NW 1st STREET

City or Town	State	ZIP Code
C 6 WINTER HAVEN	FL	33881

IV. Installation Contact

Name and Title *(last, first, and job title)*	Phone Number *(area code and number)*
C 2 CHAMBERLAIN DON	813 299 6191

V. Ownership

A. Name of Installation's Legal Owner	B. Type of Ownership *(enter code)*
C R CHAMBERLAIN DON	INCORPORATED P

VI. Type of Regulated Waste Activity *(Mark 'X' in the appropriate boxes. Refer to instructions.)*

A. Hazardous Waste Activity	B. Used Oil Fuel Activities
☒ 1a. Generator ☒ 1b. Less than 1,000 kg/mo.	☐ 6. Off-Specification Used Oil Fuel *(enter 'X' and mark appropriate boxes below)*
☐ 2. Transporter	☐ a. Generator Marketing to Burner
☐ 3. Treater/Storer/Disposer	☐ b. Other Marketer
☐ 4. Underground Injection	☐ c. Burner
☐ 5. Market or Burn Hazardous Waste Fuel *(enter 'X' and mark appropriate boxes below)*	☐ 7. Specification Used Oil Fuel Marketer *(or On site Burner)* Who First Claims the Oil Meets the Specification
☐ a. Generator Marketing to Burner	
☐ b. Other Marketer	
☐ c. Burner	

VII. Waste Fuel Burning: Type of Combustion Device *(enter 'X' in all appropriate boxes to indicate type of combustion device(s) in which hazardous waste fuel or off-specification used oil fuel is burned. See instructions for definitions of combustion devices.)*

☐ A. Utility Boiler ☐ B. Industrial Boiler ☐ C. Industrial Furnace

VIII. Mode of Transportation *(transporters only — enter 'X' in the appropriate box(es)*

☐ A. Air ☐ B. Rail ☐ C. Highway ☐ D. Water ☐ E. Other *(specify)*

IX. First or Subsequent Notification

Mark 'X' in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA ID Number in the space provided below.

	C. Installation's EPA ID Number
☒ A. First Notification ☐ B. Subsequent Notification *(complete item C)*	

ID — For Official Use Only																
C															T/A	C
W																1

Description of Hazardous Wastes *(continued from front)*

Hazardous Wastes from Nonspecific Sources. Enter the four-digit number from 40 *CFR* Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F002					
7	**8**	**9**	**10**	**11**	**12**

Hazardous Wastes from Specific Sources. Enter the four-digit number from 40 *CFR* Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

Commercial Chemical Product Hazardous Wastes. Enter the four-digit number from 40 *CFR* Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	**38**	**39**	**40**	**41**	**42**
43	**44**	**45**	**46**	**47**	**48**

Listed Infectious Wastes. Enter the four-digit number from 40 *CFR* Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

Characteristics of Nonlisted Hazardous Wastes. Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles. *(See 40* CFR *Parts 261.21 — 261.24)*

☐ 1. Ignitable *(D001)* ☐ 2. Corrosive *(D002)* ☐ 3. Reactive *(D003)* ☐ 4. Toxic *(D000)*

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature	Name and Official Title *(type or print)*	Date Signed
Donas Chamberlain	DON CHAMBERLAIN	3/1/90

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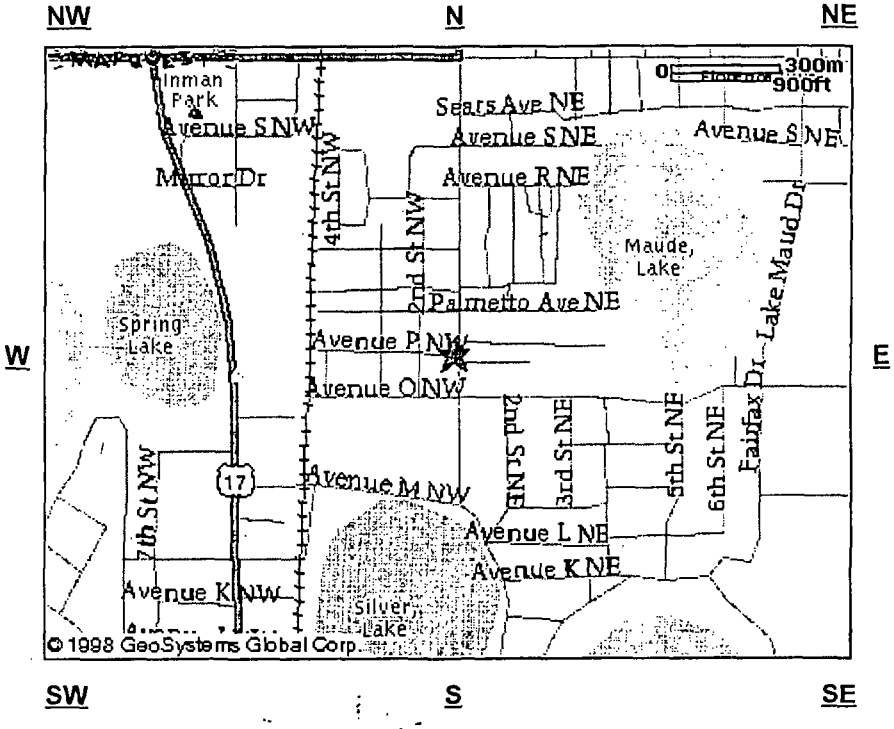
ROADMAPS

1515 NW 1ST STREET WINTER HAVEN FL 33881



ZOOM LEVEL

NATIONAL
REGIONAL
CITY
STREET

CLICK MAP TO:

- (•) Center
- ( ) Zoom In
- ( ) Zoom Out

▸ Driving Directions ▸ Drive To ▸ Drive From ▸ Print Map ▸ Email Map

FAQ and Help

Find a new location:

Address/Intersection: 1515 NW 1ST STREET
City: WINTER HAVEN
State: FL
* ZIP code: 33881 * Zip Code only available within the United States
Country: USA Reset Go Get It®
(or, select country from list)

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Interoffice Memorandum

To: Tender Touch Dry Cleaners file

Subject:, Tender Touch Dry Cleaners, Winter Haven, Polk County, Florida

Reported by: Craig Feeny, FDEP

Date of Record: 7/22/98

I asked Doug Fitton (FDEP Dry Cleaning Solvent Cleanup Program) for an update on the status of the Tender Touch Dry Cleaners application that was rejected by the Department. Upon checking the files, he determined that the facility had not appealed the judgement within the time period alotted by the Department. Having missed that deadline, the judgement is considered final.

Also, Hank Cheng checked the COMET database for final Consent Orders (Attached) and found none listed for Tender Touch Dry Cleaners (or anything like it) in Winter Haven.

AIR LIQUIDE AMERICA CORPORATION	53
AMERICOAT CORPORATION	53
AMERICOAT CORPORATION	53
AMETEK U S GAUGE DIV	53
APACHE PRODUCTS COMPANY	53
ARISTECH CHEMICAL CORP	53
BALIMOY MANUFACTURING	53
BALIMOY MANUFACTURING CO.	53
BALIMOY METAL FINISHERS INC	53
BATTLE RIDGE COMPANIES OF FLORIDA	53
BATTLE RIDGE COMPANIES OF FLORIDA	53
BATTLE RIDGE COMPANIES OF FLORIDA	53
BATTLE RIDGE COMPANIES OF FLORIDA	53
BIG "E" TRAILERS, INC.	53
BIO MEDICAL SERVICE CORP	53
BONE VALLEY SERVICE CO., INC	53
BORDON, INC.	53
BRADSHAW IND COATINGS INC	53
BREED TECHNOLOGIES INC	53
BREED TECHNOLOGIES INC	53
BUCK'S BAYOU	53
CAMP MACK INC.(TUA #53000041T)	53
CARGILL FERTILIZER, INC.	53
CARGILL FERTILIZER, INC.	53
CARGILL FERTILIZER, INC./FT. MEADE MINE	53
CENTRAL FLORIDA HOT-MIX, INC.	53
CENTRAL FLORIDA HOT-MIX, INC.	53
CF INDUSTRIES, INC. - BARTOW CHEMICAL COMPLEX	53
CITY OF LAKELAND -MCINTOSH POWER STATION	53
CITY OF WINTER HAVEN AIRPORT	53
COMBEE ELEMENTARY WWTP	53
CONSOLIDATED STAINLESS INC	53
COUNTRY ENTERPRISES, INC.	53
CSX TRANSPORTATION - WINSTON YARD	53
CUTLER MFG CORP	53
DOUGLASS SCREEN PRINTERS INC	53
ECHOL CHEMICAL / INDIGO LAND	53
ELIM MHP	53
ENNIS DRUM SERVICE INC	53
ENNIS DRUM SERVICE, INC.	53
ENNIS DRUM SERVICE, INC.	53
ENNIS DRUM SERVICE, INC.	53
ENNIS DRUM SERVICE, INC.	53
ERO INDUSTRIES INC	53
ESTECH	53
ESTECH - SILVER CITY MINE	53
ESTECH, INC. / WATSON MINE	53
EWELL INDUSTRIES-1630 CABOOSE	53
EWELL INDUSTRIES-CABOOSE ROAD	53
EWELL INDUSTRIES-LEM CARNES ROAD	53
EWELL INDUSTRIES-MCCUE ROAD	53

FARMLAND HYDRO, L.P.	53
FLORIDA DISTILLERS	53
FLORIDA JUICE, INC.	53
FLORIDA ROCK INDUSTRIES, INC.	53
FLORIDA TILE	53
FLORIDA TILE	53
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FLORIDA TILE INDUSTRIES, INC.	53
FLORIDA TILE INDUSTRIES, INC. OCG CASES #88-0303 & #91-1956	53
FMC CORPORATION	53
FREEHOLD CARTAGE INC	53
FREUND, TOM	53
GENERAL ENGINES CO INC	53
GENERAL PLASTICS DIVISION OF PMC, INC.	53
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GENERAL PLASTICS DIVISION OF PMC, INC.	53
GEOLOGIC RECOVERY SYSTEMS	53
GOSS, JAMES	53

GREENBRIAR MHP WWTP	53
GRIMSLEY OIL COMPANY, INC.	53
GRISWOLD PUMP CO	53
GROWERS FERTILIZER CORP	53
GROWERS FERTILIZER CORPORATION	53
HARLEY BOAT CO	53
HECKER MARINE CONSTRUCTION	53
HIGH PERFORMANCE SYSTEMS INC	53
HWY 37 / BLAIR CLARK	53
IMC-AGRICO COMPANY	53
IMC-AGRICO COMPANY	53
IMC-AGRICO COMPANY (NICHOLS PLANT)	53
IMC-AGRICO COMPANY (NORALYN MINE)	53
IMC-AGRICO COMPANY (NORALYN MINE)	53
IMC-AGRICO COMPANY (NORALYN MINE)	53
IMC-AGRICO COMPANY, NICHOLS (CONSERV)	53
IMC-AGRICO COMPANY, P-21 GYPSUM STACK	53
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INDUSTRIAL PLASTIC SYSTEMS INC	53
J.A. MILES OIL COMPANY, INC.	53
JERRY MILLER	53
JOSEPH AND CELIA STONE	53
LAGO VISTA GOLF ESTATES PH IIA COLLECTION SYSTEM	53
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LAIDLAW ENVIRO SERVICES OF BARTOW	53
LAIDLAW ENVIRO SERVICES OF BARTOW	53
LAIDLAW ENVIRONMENTAL SERVICES OF BARTOW	53
LAKE ALFRED CITY OF	53
LAKE JULIANA LANDINGS	53
LAKELAND DRUM	53
LAKELAND DRUM	53
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LAKELAND REGIONAL MEDICAL CENTER	53
LAKELAND REGIONAL MEDICAL CENTER	53
LAKELAND REGIONAL MEDICAL CENTER	53
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MACLAN CORPORATION	53
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METALCOAT INC OF FLORIDA	53
MID FLORIDA FREEZER WAREHOUSES, LTD.	53
MOBIL MINING	53
MOBIL MINING & MINERALS COMPANY	53
MULBERRY PHOSPHATES, INC.	53
MULBERRY PHOSPHATES, INC.	53
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NATIONAL SOUTHEAST ALUMINUM	53
NATIONAL TIRE RECYCLING CORP	53
NATIONAL TIRE RECYCLING CORP	53
NEW FEDERAL BUILDING	53
NOSS, JEAN (ENF)	53
O C TANKS CORP	53
OWENS-BROCKWAY GLASS CONTAINER INC.	53
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OWENS-BROCKWAY GLASS CONTAINERS	53
P M CRAFTSMAN	53
P.E. LAMOREAUX & ASSOCIATES '94CEI	53
PAVEX CORPORATION	53
PINE LAKE MHP	53
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PORTERS GROVE METAL RECOVERY SE	53
PORTERS GROVE METAL RECOVERY SE	53
PUBLIX SUPER MARKETS	53
PUBLIX SUPERMARKETS INC	53
PUBLIX SUPERMARKETS INC	53
RECO TRICOTE	53
RESOURCE RECOVERY OF AMERICA INC	53
RESOURCE RECOVERY OF AMERICA INC	53
RIDGEWOOD PROPERTIES	53
ROTO-ROOTER SEWER DRAIN SERVICE	53
RROA	53
S S DESIGNS, INC.	53
SCHREIBER, MARK AND DEREK AVIS	53
SHELL CHEMICAL COMPANY '93 CEI	53
SHELL CHEMICAL/SCHERING BERLIN POLYMERS/AZS	53
SHOPPER PUBLISHING GROUP	53
SPURLIN, JOHN/ JAMES NOLES	53
STOLL MANOR MHP	53
SUNBELT FOREST PRODUCTS CORPORATION	53
SUNDANCE MHP	53
TASTEMAKER	53
TELTRONICS INC	53
TERRA FIRST INC - '91 CEI	53
TRANSFER AMERICA C&D DEBRIS LANDFILL	53
TRIANGLE PACIFIC CORP	53
TRIANGLE PACIFIC CORP	53
TRIANGLE PACIFIC CORP	53
U S AGRI-CHEMICALS CORP.	53
U S AGRI-CHEMICALS CORP.	53
U.S. AGRI-CHEMICALS CORPORATION	53
U.S. FOOD SERVICE (FORMERLY: WHITE SWAN)	53
UNION CAMP CORP	53
VIGIRON (A JOINT VIGORO/KEMIRON VENTURE)	53
VIGORO	53
VIGORO INDUSTRIES, INC.	53
VILLAGE WATER LTD	53
WATTS BROTHERS, INC.	53

WL96-0023AS53SWD	53
WL96-0026AS53SWD	53
WL96-0026AS53SWD/SEE PROJ #103045	53
WN94-0025AS53SWD	53
WOOD MULCH PRODUCTS, INC.	53
WORLD'S GREATEST AIRCRAFT COLLECTION, INC.	53
WORTHEN, ALPHONSE AND CATHY	53
XERXES CORP	53

Florence Villa, Florida, United States
Photographed on **05 Mar 1994**

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- Inside TerraServer
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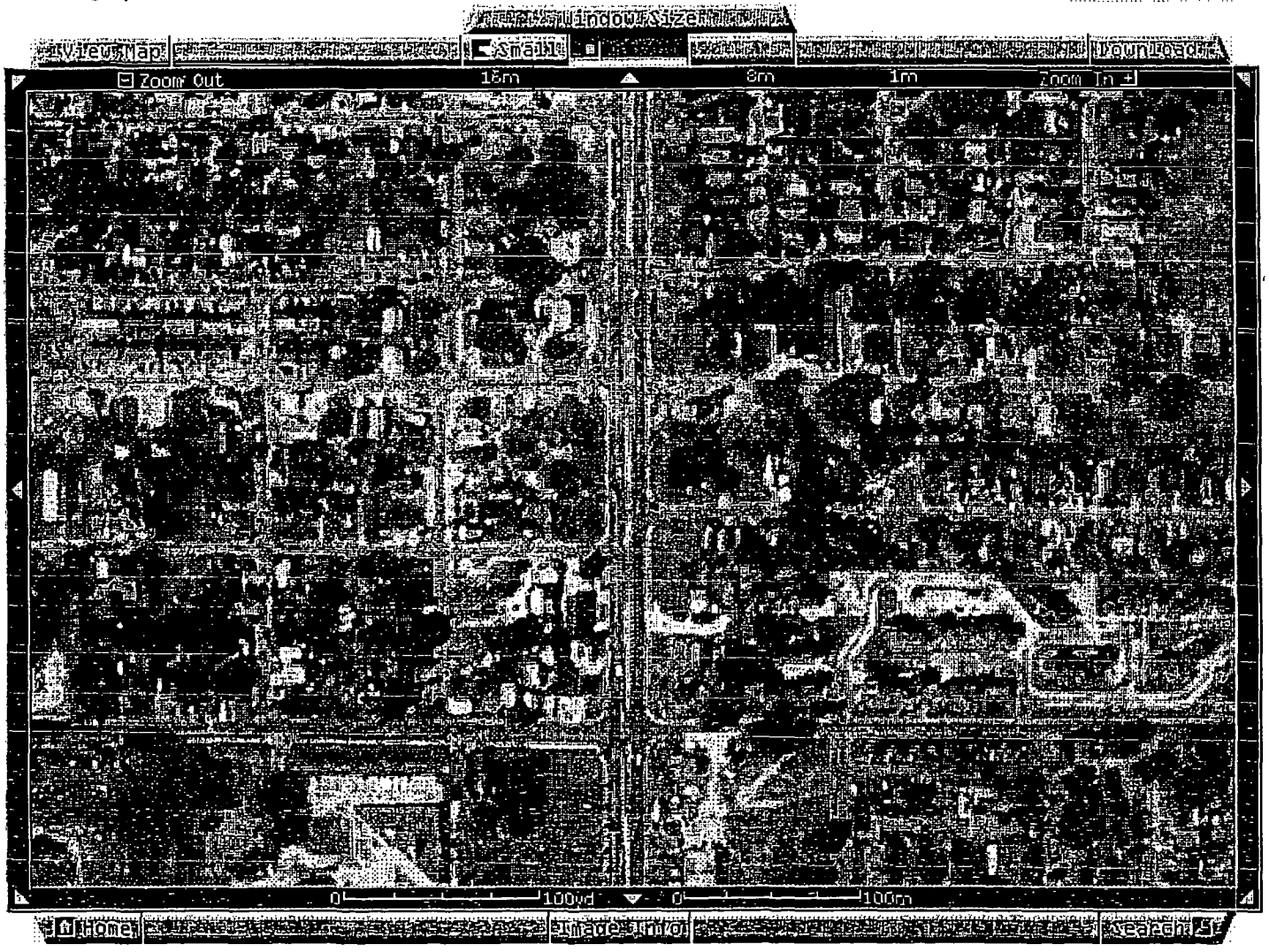
- Technology Behind This Site
- Q&A for IT Managers
- Find a Spot on Earth
- How to Use This Site
- Famous Places
- Feedback



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(EL 128)

10

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

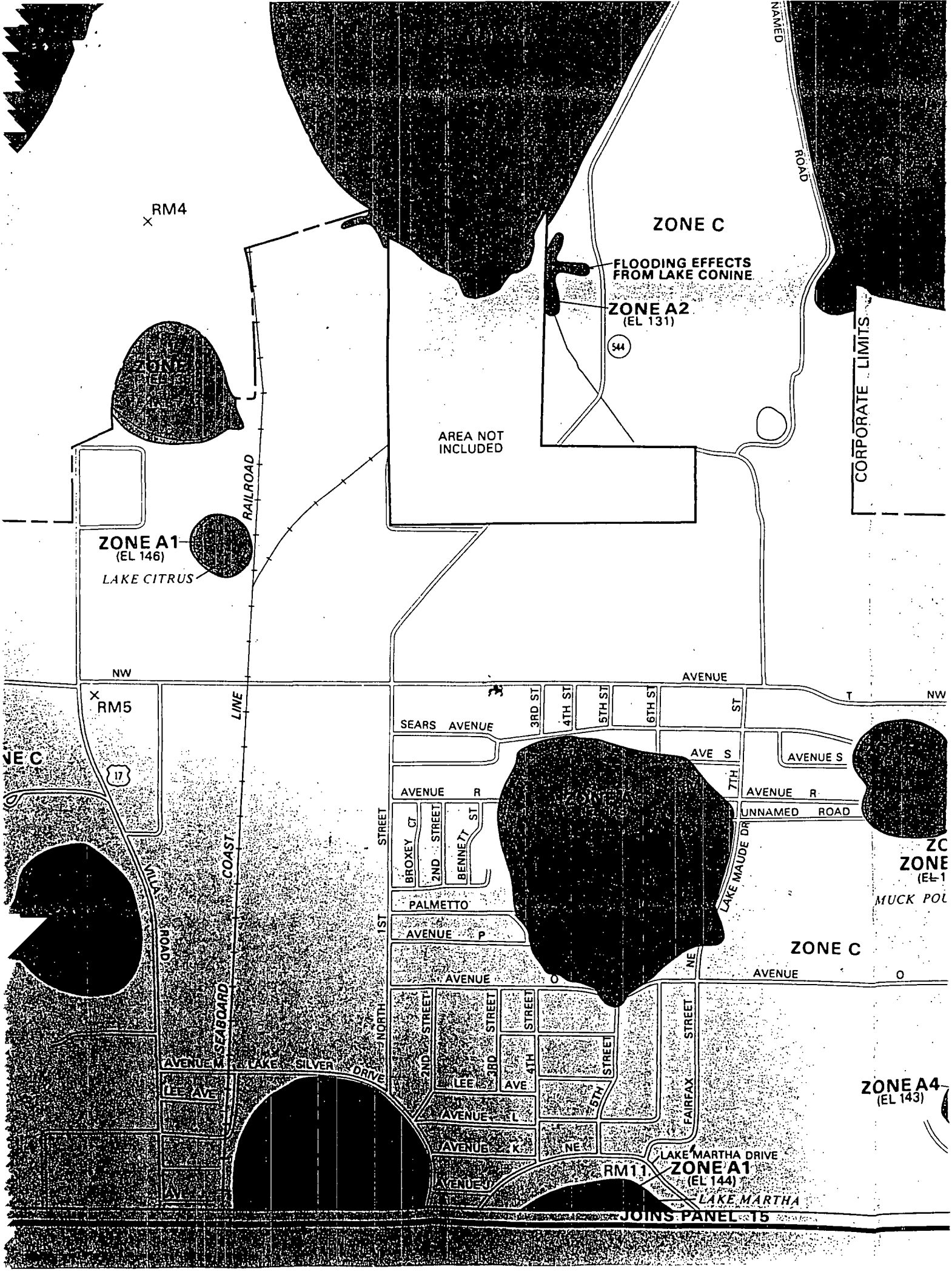
CITY OF
WINTER HAVEN,
FLORIDA
POLK COUNTY

PANEL 5 OF 15

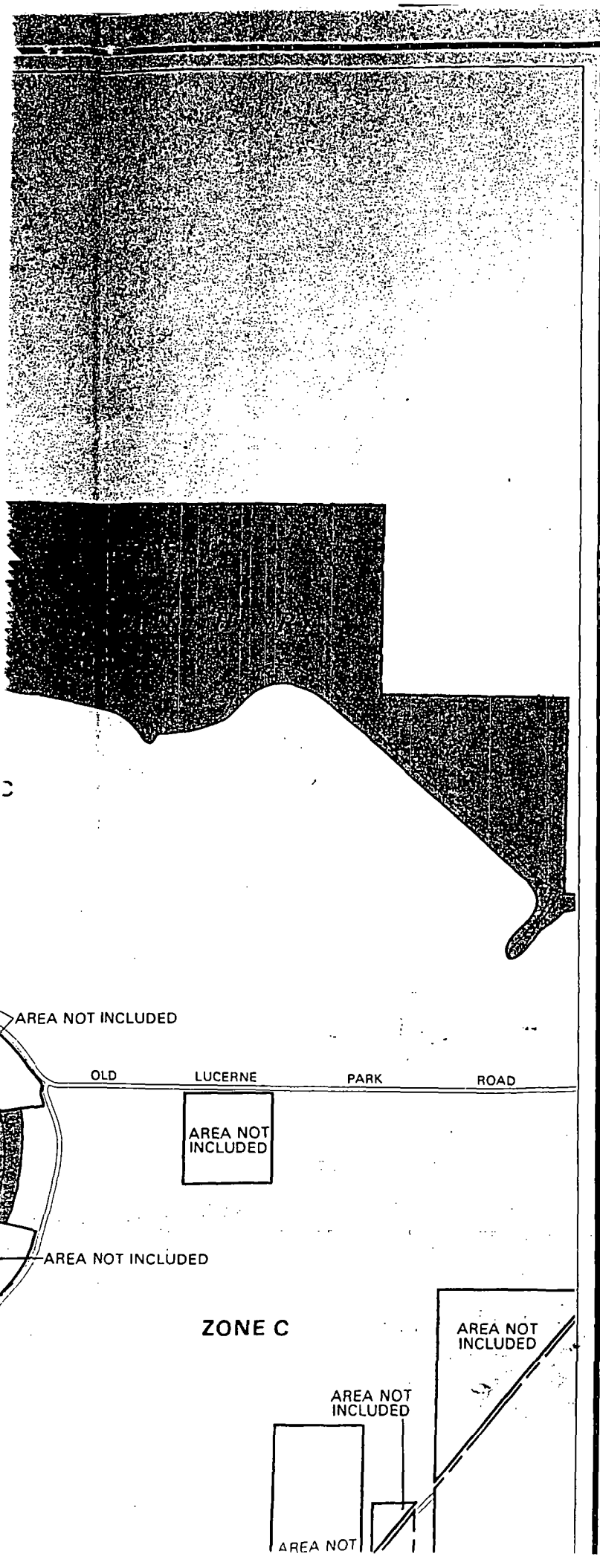
COMMUNITY-PANEL NUMBER
120271 0005 B

EFFECTIVE DATE:
SEPTEMBER 30, 1981

federal emergency management agency
federal insurance administration



RM4
ZONE C
FLOODING EFFECTS FROM LAKE CONINE
ZONE A2
(EL 131)
544
AREA NOT INCLUDED
CORPORATE LIMITS
ZONE A1
(EL 146)
LAKE CITRUS
RAILROAD
LINE
NW
AVENUE
T
NW
RM5
SEARS AVENUE
3RD ST
4TH ST
5TH ST
6TH ST
ST
AVE S
AVENUE S
7TH
AVENUE R
AVENUE R
UNNAMED ROAD
LAKE MAUDE DR
BROXEY CT
2ND STREET
BENNETT ST
PALMETTO
AVENUE P
AVENUE O
AVENUE O
ZONE C
NE
NORTH 1ST STREET
2ND STREET
3RD STREET
4TH STREET
5TH STREET
FAIRFAX STREET
LEE AVE
AVENUE L
AVENUE K
NE
AVENUE J
LAKE MARTHA DRIVE
RM11
ZONE A1
(EL 144)
LAKE MARTHA
JOINS PANEL 15
ZONE A4
(EL 143)
VILLA ROAD
SEABOARD COAST
17
AVENUE M
LAKE SILVER DRIVE
LEE AVE



KEY TO MAP

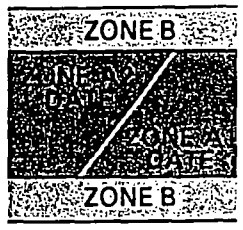
500-Year Flood Boundary

100-Year Flood Boundary

Zone Designations* With Date of Identification e.g., 12/2/74

100-Year Flood Boundary

500-Year Flood Boundary



Base Flood Elevation Line With Elevation In Feet** — 513

Base Flood Elevation In Feet Where Uniform Within Zone** (EL 987)

Elevation Reference Mark RM7 ×

River Mile • M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

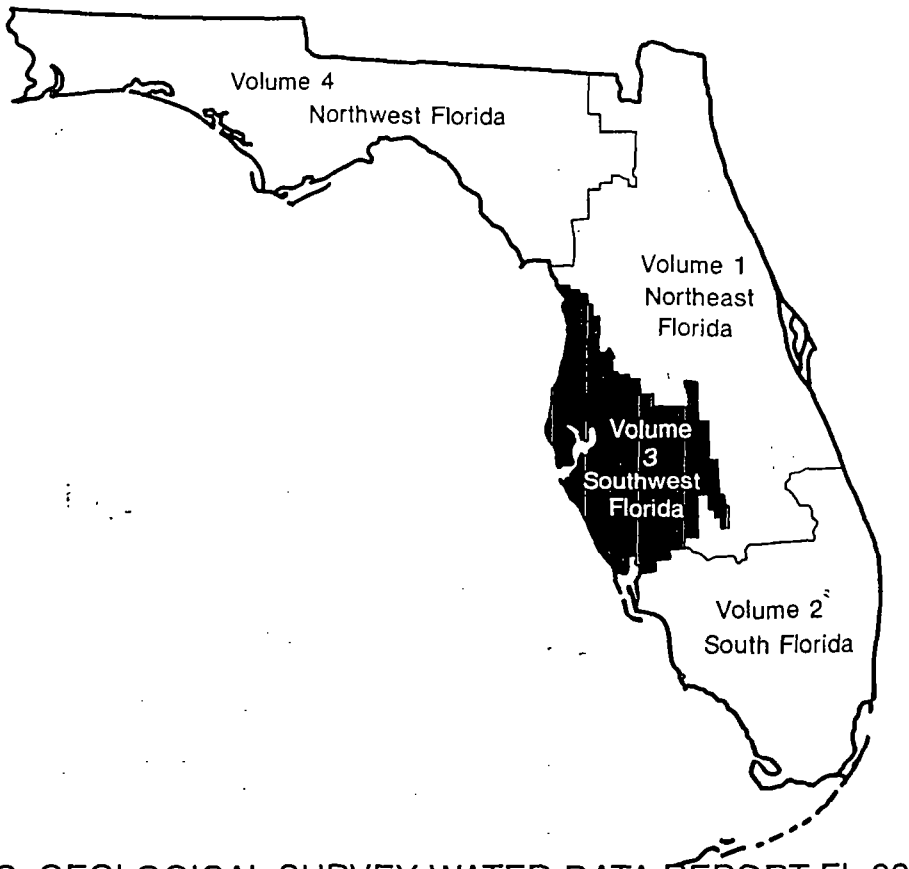
INITIAL IDENTIFICATION:
AUGUST 16, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
OCTOBER 31, 1975

Water Resources Data Florida Water Year 1992

Volume 3A. Southwest Florida Surface Water

by J.E. Coffin and W.L. Fletcher



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT FL-92-3A
Prepared in cooperation with the State of Florida
and with other agencies

PEACE RIVER BASIN

02294036 LAKE HOWARD AT WINTER HAVEN, FL

LOCATION.--Lat 28°00'58", long 81°44'22", in SW¼ sec.29, T.28 S., R.26 E., Polk County, Hydrologic Unit 03100101, on southeast shore of lake, on private dock at Winter Haven.

SURFACE AREA.--634 acres (0.99 mi²).

DRAINAGE AREA.--12.8 mi².

ELEVATION RECORDS

PERIOD OF RECORD.--April 1945 to February 1946 (fragmentary); March 1946 to current year (incomplete). Records of elevations prior to October 1960 are available in files of the Geological Survey.

REVISED RECORDS.--WRD FL 1964: Surface area.

GAGE.--Water-stage recorder. Datum of gage is 120.00 ft above National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations above NGVD. Prior to Feb. 14, 1946, nonrecording gage at datum 7.85 ft higher; Feb. 14, 1946, to May 7, 1971, water-stage recorder at same datum; May 7, 1971, to July 25, 1972, nonrecording gage at same datum. Prior to July 25, 1972, at site 2,200 ft north of present site.

REMARKS.--Lake is in the Winter Haven chain of lakes which is controlled by a concrete dam with removable boards at the outlet of Lake Lulu.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 133.19 ft, Sept. 11, 1960 (affected by wind); minimum, 128.28 ft, May 14, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 132.53 ft, Aug. 13, 14; minimum, 130.51 ft, June 2.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131.78	131.77	131.44	131.17	---	---	130.80	131.03	130.56	131.56	131.67	132.19
2	131.80	131.76	131.43	131.17	---	---	130.79	131.02	130.54	131.56	131.65	132.16
3	131.82	131.76	131.44	131.16	---	---	130.76	131.01	130.57	131.55	131.68	132.15
4	131.84	131.72	131.46	131.14	---	---	130.74	130.99	130.71	131.54	131.78	132.14
5	131.87	131.69	131.42	131.12	---	---	130.71	130.98	130.68	131.54	131.87	132.13
6	131.91	131.68	131.42	131.12	---	---	130.69	130.97	130.77	131.53	131.95	132.10
7	131.89	131.67	131.41	131.11	---	---	130.69	130.95	130.92	131.52	131.93	132.07
8	131.86	131.66	131.41	131.10	---	---	130.70	130.91	130.90	131.53	131.94	132.05
9	131.84	131.64	131.40	131.09	---	---	130.69	130.90	130.89	131.52	132.01	132.02
10	131.84	131.61	131.40	131.09	---	---	130.69	130.88	130.87	131.53	132.14	131.99
11	131.84	131.60	131.39	131.07	---	---	130.71	130.87	130.84	131.62	132.20	131.96
12	131.83	131.59	131.38	131.06	---	---	131.05	130.85	130.81	131.61	132.34	131.93
13	131.82	131.57	131.38	131.05	---	---	131.09	130.83	130.82	131.63	132.39	131.93
14	131.82	131.56	131.38	131.12	---	---	131.06	130.83	131.00	131.71	132.51	131.94
15	131.85	131.56	131.36	131.11	---	---	131.04	130.82	130.98	131.71	132.49	131.92
16	131.92	131.55	131.32	131.08	---	---	131.04	130.85	131.01	131.71	132.44	131.91
17	131.90	131.55	131.30	131.06	---	---	131.03	130.84	131.07	131.72	132.40	131.91
18	131.89	131.54	131.29	131.06	---	---	131.01	130.83	131.06	131.72	132.35	131.90
19	131.87	131.54	131.27	131.07	---	130.95	131.02	130.80	131.05	131.75	132.29	131.90
20	131.86	131.54	131.25	131.08	---	130.93	131.04	130.78	131.05	131.74	132.25	131.89
21	131.86	131.53	131.24	131.06	---	130.90	131.10	130.76	131.04	131.72	132.22	131.89
22	131.85	131.53	131.24	131.06	---	130.91	131.17	130.75	131.02	131.71	132.19	131.89
23	131.85	131.52	131.23	131.07	---	130.93	131.18	130.72	131.02	131.70	132.17	131.90
24	131.85	131.51	131.23	131.07	---	130.92	131.19	130.70	131.08	131.69	132.15	131.89
25	131.84	131.48	131.22	131.04	---	130.91	131.19	130.68	131.12	131.69	132.14	131.89
26	131.84	131.46	131.22	131.04	---	130.90	131.17	130.66	131.22	131.68	132.11	131.89
27	131.84	131.44	131.21	131.03	---	130.87	131.13	130.64	131.28	131.66	132.07	131.89
28	131.83	131.43	131.21	131.03	---	130.86	131.09	130.63	131.46	131.64	132.08	131.90
29	131.82	131.43	131.20	131.03	---	130.85	131.05	130.61	131.54	131.62	132.14	131.94
30	131.81	131.43	131.19	131.03	---	130.83	131.05	130.60	131.55	131.60	132.17	131.93
31	131.78	---	131.18	---	---	130.82	---	130.59	---	131.63	132.19	---
MEAN	131.85	131.58	131.32	---	---	---	130.96	130.82	130.98	131.63	132.13	131.97
MAX	131.92	131.77	131.46	---	---	---	131.19	131.03	131.55	131.75	132.51	132.19
MIN	131.78	131.43	131.18	---	---	---	130.69	130.59	130.54	131.52	131.65	131.89

CAL YR 1991 MEAN 131.24 MAX 132.21 MIN 130.45

02293987 PEACE CREEK DRAINAGE CANAL NEAR WAHNETA, FL--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	e33	13	8.5	6.7	23	6.4	20	9.8	162	43	e398
2	32	e31	13	8.4	6.9	20	6.2	16	8.0	147	40	e387
3	37	e30	12	8.4	6.6	19	5.8	14	7.9	137	51	389
4	38	e28	13	8.1	8.8	16	5.8	12	10	130	90	387
5	39	e26	14	8.1	12	16	5.5	11	10	115	118	384
6	47	e24	13	7.8	16	17	5.2	8.9	12	101	137	379
7	69	e22	14	7.8	16	14	5.3	9.6	13	e93	134	371
8	66	e22	14	6.5	15	12	6.0	8.9	14	e83	127	362
9	57	e21	13	6.5	13	11	7.4	8.5	17	e73	133	354
10	49	e20	13	6.6	14	12	6.6	8.4	20	e67	245	345
11	48	e19	14	7.0	12	13	5.6	7.7	20	e58	323	335
12	46	e17	15	6.7	11	13	13	7.1	18	e52	e378	323
13	41	e17	13	6.9	12	12	19	7.4	14	e54	e404	330
14	37	e18	12	11	11	11	26	7.4	13	e51	412	e394
15	39	18	11	12	11	9.3	24	8.1	15	e49	453	451
16	70	17	11	9.7	10	8.7	19	28	17	43	463	443
17	67	16	10	8.8	9.9	8.4	16	25	15	36	474	414
18	61	16	9.9	11	9.4	7.9	15	18	15	35	467	387
19	53	16	9.6	12	8.6	7.8	14	14	14	79	455	359
20	47	16	9.5	10	6.9	6.9	16	12	14	83	445	335
21	43	15	9.2	8.6	6.9	6.1	21	11	15	78	434	318
22	41	16	9.0	8.3	8.6	5.6	40	11	13	73	421	298
23	38	16	8.5	8.6	9.3	6.5	40	7.5	12	66	411	271
24	38	16	8.9	7.8	9.5	7.4	58	6.4	15	64	e412	232
25	38	15	8.8	7.9	24	9.5	56	6.1	25	62	e409	196
26	37	14	8.7	7.2	38	9.2	51	5.6	50	57	e405	169
27	37	14	8.5	6.5	38	8.3	42	5.1	91	52	e403	153
28	35	14	8.2	6.1	33	7.5	34	4.7	177	47	396	140
29	e38	14	8.3	6.5	27	6.9	28	4.3	175	44	e398	138
30	e36	14	8.1	6.6	---	6.9	24	4.8	164	40	e405	130
31	e35	---	8.1	6.2	---	6.5	---	10	---	38	412	---
TOTAL	1384	575	341.3	252.1	411.1	338.4	621.8	328.5	1013.7	2269	9898	9572
MEAN	44.6	19.2	11.0	8.13	14.2	10.9	20.7	10.6	33.8	73.2	319	319
MAX	70	33	15	12	38	23	58	28	177	162	474	451
MIN	25	14	8.1	6.1	6.6	5.6	5.2	4.3	7.9	35	40	130
AC-FT	2750	1140	677	500	815	671	1230	652	2010	4500	19630	18990
CFSM	.28	.12	.07	.05	.09	.07	.13	.07	.21	.45	1.97	1.97
IN.	.32	.13	.08	.06	.09	.08	.14	.08	.23	.52	2.27	2.20

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1992, BY WATER YEAR (WY)

MEAN	44.6	19.2	11.0	8.13	14.2	9.45	13.5	8.36	22.6	93.7	221	193
MAX	44.6	19.2	11.0	8.13	14.2	10.9	20.7	10.6	33.8	114	319	319
(WY)	1992	1992	1992	1992	1992	1992	1992	1992	1992	1991	1992	1992
MIN	44.6	19.2	11.0	8.13	14.2	7.98	6.25	6.13	11.5	73.2	122	66.5
(WY)	1992	1992	1992	1992	1992	1991	1991	1991	1991	1992	1991	1991

SUMMARY STATISTICS	FOR 1992 WATER YEAR		WATER YEARS 1991 - 1992	
ANNUAL TOTAL	27004.9			
ANNUAL MEAN	73.8		73.8	
HIGHEST ANNUAL MEAN			73.8	1992
LOWEST ANNUAL MEAN			73.8	1992
HIGHEST DAILY MEAN	474	Aug 17	474	Aug 17 1992
LOWEST DAILY MEAN	4.3	May 29	1.8	Mar 1 1991
ANNUAL SEVEN-DAY MINIMUM	5.3	May 24	2.7	May 16 1991
INSTANTANEOUS PEAK FLOW	475	Aug 16	475	Aug 16 1992
INSTANTANEOUS PEAK STAGE	43.08	Aug 16	43.08	Aug 16 1992
ANNUAL RUNOFF (AC-FT)	53560		53450	
ANNUAL RUNOFF (CFSM)	.46		.46	
ANNUAL RUNOFF (INCHES)	6.20		6.19	
10 PERCENT EXCEEDS	338		185	
50 PERCENT EXCEEDS	16		16	
90 PERCENT EXCEEDS	6.9		5.5	

02293987 PEACE CREEK DRAINAGE CANAL NEAR WAHNETA, FL

LOCATION.--Lat 27°55'28", long 81°43'37", in SE¼ sec.29, T.29 S., R.26 E., Polk County, Hydrologic Unit 03100101, on left bank, downstream side of bridge on SR 665, 0.6 mi north of US 60, 1.9 mi south of Wahneta, 3.5 mi north of Alturas, and 113 mi upstream from mouth of Peace River at Charlotte Harbour.

DRAINAGE AREA.--162 mi².

PERIOD OF RECORD.--March 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 62.00 ft above National Geodetic Vertical Datum of 1929 (SRD bench mark).

REMARKS.--Records good except those for estimated discharge, which are fair.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD MARCH TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e1.8	e11	7.5	19	59	179	257
2	---	---	---	---	---	e2.0	e10	6.1	18	68	192	220
3	---	---	---	---	---	e1.9	9.2	5.6	16	70	191	183
4	---	---	---	---	---	e4.5	9.0	5.2	14	80	184	136
5	---	---	---	---	---	e3.6	8.3	4.8	13	82	175	112
6	---	---	---	---	---	e3.6	7.5	4.6	12	86	156	96
7	---	---	---	---	---	e4.2	6.9	5.8	12	83	125	83
8	---	---	---	---	---	e3.6	6.5	6.0	11	82	99	73
9	---	---	---	---	---	e3.6	6.1	5.1	11	76	80	67
10	---	---	---	---	---	e4.4	5.3	4.9	11	68	80	65
11	---	---	---	---	---	e3.6	5.4	4.4	11	60	69	62
12	---	---	---	---	---	e3.6	5.5	4.1	10	78	58	59
13	---	---	---	---	---	e3.6	5.2	4.0	9.1	173	67	55
14	---	---	---	---	---	e3.5	4.8	4.0	7.9	187	56	51
15	---	---	---	---	---	e3.5	4.4	3.2	6.9	188	52	47
16	---	---	---	---	---	e3.2	4.6	3.1	6.0	185	53	43
17	---	---	---	---	---	e3.1	5.2	3.0	5.6	180	55	39
18	---	---	---	---	---	e10	5.0	2.7	5.8	182	53	35
19	---	---	---	---	---	e8.0	4.8	2.4	5.4	156	50	33
20	---	---	---	---	---	e16	4.0	2.2	6.4	145	40	31
21	---	---	---	---	---	e17	3.3	2.2	6.4	144	32	29
22	---	---	---	---	---	e18	2.9	3.0	11	126	38	27
23	---	---	---	---	---	e17	3.1	4.6	12	112	53	28
24	---	---	---	---	---	e16	3.6	5.9	10	104	76	27
25	---	---	---	---	---	e15	4.3	7.0	8.8	103	111	24
26	---	---	---	---	---	e14	7.2	8.5	8.8	102	143	24
27	---	---	---	---	---	e13	8.3	11	10	94	178	25
28	---	---	---	---	---	e12	8.7	12	11	87	230	23
29	---	---	---	---	---	e11	8.9	14	15	93	319	20
30	---	---	---	---	---	e10	8.4	15	40	121	309	20
31	---	---	---	---	---	e13	---	18	---	164	289	---
TOTAL	---	---	---	---	---	247.3	187.4	189.9	344.1	3538	3792	1994
MEAN	---	---	---	---	---	7.98	6.25	6.13	11.5	114	122	66.5
MAX	---	---	---	---	---	18	11	18	40	188	319	257
MIN	---	---	---	---	---	1.8	2.9	2.2	5.4	59	32	20
AC-FT	---	---	---	---	---	491	372	377	683	7020	7520	3960
CFSM	---	---	---	---	---	.05	.04	.04	.07	.70	.76	.41
IN.	---	---	---	---	---	.06	.04	.04	.08	.81	.87	.46

WTR YR 1991 TOTAL 10292.7 MEAN 48.1 MAX 319 MIN 1.8 AC-FT 20420 CFSM .30 IN. 2.36

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PUBLIC WATER SUPPLIES OF SELECTED MUNICIPALITIES IN FLORIDA, 1975

By Henry G. Healy

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS 77-53

Prepared in cooperation with

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ST JOHNS RIVER WATER MANAGEMENT DISTRICT
SUWANNEE RIVER WATER MANAGEMENT DISTRICT
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
AND OTHER STATE, LOCAL, AND FEDERAL AGENCIES

July 1977

AUBURNDALE

County: Polk
River basin: Peace River (10 01 01)
Population served: 12,000

Ownership of supply or system: Municipal
Source of water: Ground water, Floridan aquifer; 5 wells, two on standby, 155 to 633 feet deep; yield of one well 1,140 gal/min

Rated plant capacity: 5.0 Mgal/d
Pumpage: Year— 474.25 Mgal
Highest month: April, 60.7 Mgal
Average daily— 1.30[a/] Mgal
Lowest month: December, 26.2 Mgal

Per capita use: 108 gal/d
Finished-water storage: 0.46 Mgal
Treatment: Aeration, chlorination

Type/Frequency of analysis: Bacteriological/monthly; chemical/annually

Sewage discharge: 0.51 Mgal/d
Sewage treatment: Trickling filter, coagulation

Waste discharged to: Lake Hancock

Remarks: Average daily pumpage increased from 0.75 Mgal/d in 1956 to 1.30 Mgal/d in 1975. Supplies water to areas adjacent to the city. Robertson (1971, 1973).
a/ Includes 0.14 Mgal/d industrial use.

CHEMICAL ANALYSIS (milligrams per liter except as indicated)

ANALYSIS BY: U.S. Geological Survey **COLLECTION DATE:** 7-24-75
SAMPLING POINT: 280346081473700, composite 2 wells

Silica (SiO_2)	13	Dissolved solids (residue at 180°C)	142
Calcium (Ca)	30	Total hardness (as $CaCO_3$)	100
Magnesium (Mg)	6	Noncarbonate hardness (as $CaCO_3$)	.0
Sodium (Na)	5.9	Alkalinity (as $CaCO_3$)	100
Potassium (K)	1	pH (units)	8
Strontium (Sr)	.04	Specific conductance (μmhos/cm at 25°C)	235
Bicarbonate (HCO_3)	122	Color (Pt-Co units)	5
Sulfate (SO_4)	2.9	Temperature (°C)	--
Chloride (Cl)	8.4	Turbidity (JTU)	2
Fluoride (F)	.2	Carbon, organic, total (C)	--
Nitrate (NO_3-N)	.00	Orthophosphate total (PO_4-P)	.04
Nitrite (NO_2-N)	.00		
Nitrogen, organic (N)	.2		
Nitrogen (ammonia, total (NH_4-N))	.16		
Iron (Fe)	.06		
Phosphorus, total (P)	.04		

WINTER HAVEN

County: Polk
Population served: 45,000
River basin: Peace River (10 01 01)

Ownership of supply or system: Municipal
Source of water: Ground water, Floridan aquifer; 12 wells, 593 to 743 feet deep; yield 350 to 1,500 gal/min

Rated plant capacity: 9.6 Mgal/d
Pumpage: Year— 1,981.46 Mgal
Average daily— 5.43[a/] Mgal
Highest month: April, 234.85 Mgal
Lowest month: September, 130.55 Mgal

Per capita use: 121 gal/d
Finished-water storage: 2.5 Mgal
Treatment: Aeration and chlorination

Type/Frequency of analysis: Bacteriological/monthly; chemical/intermittently

Sewage discharge: 3.5 Mgal/d
Sewage treatment: Secondary, trickling filter, activated sludge

Waste discharged to: Lake Lulu

Remarks: Average daily pumpage increased from 3.00 Mgal/d in 1956 to 5.43 Mgal/d in 1975. Robertson (1971, 1973), Robertson and Mills (1974).
a/ Includes 0.35 Mgal/d commercial use.

CHEMICAL ANALYSIS (milligrams per liter except as indicated)

ANALYSIS BY: U.S. Geological Survey **COLLECTION DATE:** 7-24-75
SAMPLING POINT: 280209081430600, Fairfax Plant - composite

Silica (SiO_2)	14	Dissolved solids (residue at 180°C)	160
Calcium (Ca)	37	Total hardness (as $CaCO_3$)	120
Magnesium (Mg)	7.8	Noncarbonate hardness (as $CaCO_3$)	.00
Sodium (Na)	6.7	Alkalinity (as $CaCO_3$)	120
Potassium (K)	1.3	pH (units)	8.4
Strontium (Sr)	.07	Specific conductance (μmhos/cm at 25°C)	280
Bicarbonate (HCO_3)	139	Color (Pt-Co units)	5
Sulfate (SO_4)	9.9	Temperature (°C)	--
Chloride (Cl)	8.2	Turbidity (JTU)	1
Fluoride (F)	.2	Carbon, organic, total (C)	--
Nitrate (NO_3-N)	.02	Orthophosphate total (PO_4-P)	.04
Nitrite (NO_2-N)	.00		
Nitrogen, organic (N)	.14		
Nitrogen (ammonia, total (NH_4-N))	.23		
Iron (Fe)	.02		
Phosphorus, total (P)	.04		

Public-Supply Water Use in Florida, 1987

By Richard L. Marella

U.S. GEOLOGICAL SURVEY

Open-File Report 90-596

Prepared in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
SUWANNEE RIVER WATER MANAGEMENT DISTRICT

Tallahassee, Florida
1990

Table 56.--Pinellas County public-supply water use by utility, 1987

[Mgal/d, million gallons per day; Per capita, in gallons per day; F, Floridan aquifer system; SWFWMD, Southwest Florida Water Management District; PCWS, Pinellas County Water System]

Utility/Owner	Water source	Public-supply water use Mgal/d	Population	Per capita	Water management district	Remarks
Belleair, town of	F	0.91	4,008	226	SWFWMD	
Clearwater, city of	PCWS and F	15.53	102,000	152	SWFWMD	Purchased 9.52 Mgal/d from PCWS.
Dunedin, city of	PCWS and F	4.60	36,400	126	SWFWMD	Purchased 0.20 Mgal/d from PCWS.
Other Utilities[1]	PCWS and F	54.57	372,106	147	SWFWMD	Purchased 52.74 Mgal/d from PCWS.
St. Petersburg, city of	F	39.12	315,000	124	SWFWMD	Withdrawn in Hillsborough and Pasco County[2].
Tarpon Springs, city of	PCWS and F	3.61	16,834	214	SWFWMD	Purchased 3.26 Mgal/d from PCWS.
Totals		118.33	846,348	140		

PCWS supplies water to the following utilities or areas: Largo, Seminole Park, Oldsman, Safety Harbor, and unincorporated Pinellas County.

[1]Includes utilities or areas: Largo, Seminole, Pinellas Park, Oldsmar, Safety Harbor and unincorporated Pinellas County.
[2]Wellfields are located in Hillsborough and Pasco counties, withdrawals are as follows; 17.44 Mgal/d from Hillsborough County, and 21.68 Mgal/d from Pasco County.

Table 57.--Polk County public-supply water use by utility, 1987

[Mgal/d, million gallons per day; Per capita, in gallons per day; F, Floridan aquifer system; SWFWMD, Southwest Florida Wat Management District; RV, recreational vehicle; MHP, mobile home park; N/A, data not available; SFWMD, South Florida Water Management District; SJRWMD, St. Johns River Water Management District; S/D, subdivision; BoCC, Board of County Commissioners; W/A, Water Association]

Utility/Owner	Water source	Public-supply water use Mgal/d	Population	Per capita	Water management district	Remarks
Alturas Water Works	F	0.03	182	165	SWFWMD	
Aurburndale, city of	F	2.16	18,316	118	SWFWMD	
Bartow, city of	F	3.64	18,973	192	SWFWMD	
Bartow-Airbase	F	.64	3,412	186	SWFWMD	
Carefree RV Country Village	F	.11	600	177	SWFWMD	
Century Reality Incorporated	F	.42	1,140	368	SWFWMD	
Continental Development	F	.12	544	211	SWFWMD	Ridge Utilities.
Crooked Lake Water	F	.14	1,642	83	SWFWMD	
Davenport, city of	F	.53	2,203	241	SWFWMD	
Dundee, town of	F	.58	2,441	237	SWFWMD	
Eagle Lake, city of	F	.32	2,500	126	SWFWMD	
Fort Meade, city of	F	1.08	5,884	183	SWFWMD	
Frostproof, city of	F	1.47	3,189	461	SWFWMD	
Garden Grove Water Company	F	3.08	15,452	199	SWFWMD	
Grenelefe Corporation	F	.77	5,000	153	SWFWMD	
Haines City, city of	F	2.36	14,801	159	SWFWMD	
Lake Alfred, city of	F	.62	3,500	176	SWFWMD	
Lake Hamilton, town of	F	.34	2,000	171	SWFWMD	
Lake Region MHP	F	.17	N/A	N/A	SWFWMD	
Lake Wales, city of	F	3.75	20,411	184	SWFWMD	
Lake Wales Utilities	F	.14	2,163	64	SFWMD	
Lakeland, city of	F	23.72	118,465	200	SWFWMD	Sold 0.57 Mgal/d to Polk County Utilities.
Lakeland, city of	F	.23	1,567	147	SWFWMD	
Lakeside Ranch	F	.03	362	83	SWFWMD	
Mountian Lake Corporation	F	.76	220	3,455	SWFWMD	
Mulberry, city of	F	.67	4,000	168	SWFWMD	
Oak Harbor S/D	F	.04	400	100	SJRWMD	
Orchid Springs Development	F	.13	790	159	SWFWMD	
Poinciana Village	F	.22	400	550	SFWMD	
Polk County Utilities (BoCC)	F	4.19	20,168	208	SWFWMD	Purchased 0.57 Mgal/d from the city of Lakeland.
Polk County Utilities (BoCC)	F	.08	400	200	SJRWMD	
River Utilities	F	.13	2,000	64	SFWMD	
Rollar Resort	F	.02	326	46	SWFWMD	
Saddlebag Lake W/A	F	.21	1,580	134	SWFWMD	
Southern States Utility	F	.24	2,485	96	SWFWMD	
Sun Acres Water Company	F	.02	N/A	N/A	SWFWMD	
Sunco/Hidden Cove	F	.03	244	105	SWFWMD	
Towerwood MHP	F	.07	220	314	SWFWMD	
Winter Haven, city of	F	6.97	34,900	200	SWFWMD	
Totals		60.17	312,880	192		

ISSN 0071-6030

Number of households and average household size in Florida: 1970, 1980 and 1990

by
Stanley K. Smith
Director
and
Scott Cody
Research Demographer

Bureau of Economic and Business Research
College of Business Administration
University of Florida

This publication shows the number of households and average household size for Florida and each of its counties for 1970, 1980 and 1990. Households are defined as housing units occupied by permanent residents. They should not be confused with total housing units, which include vacant and seasonally occupied units as well as units occupied by permanent residents. According to the U.S. Bureau of the Census, a person is classified as a permanent resident of "...his usual place of residence, which is generally construed to mean the place where he lives and sleeps most of the time. This place is not necessarily the same as his legal residence, voting residence or domicile." The numbers shown in this bulletin thus refer only to occupied households and average household size for permanent residents of Florida.

All the data shown here were taken from census counts produced by the U.S. Bureau of the Census. They reflect the resident population as of April 1 of each year. The numbers for 1990 are subject to possible adjustment for census undercount or overcount. The U.S. Department of Commerce is currently considering whether to make such adjustments, and will announce its decision and publish the adjusted counts (if any) by July 15, 1991.

Number of households

There were 5,134,869 households in Florida on April 1, 1990, an increase of 1,390,615 since 1980. This increase was slightly smaller than the increase of 1,459,468 that occurred between 1970 and 1980. The percentage increase in number of households between 1980 and 1990 (37.1 percent) was much smaller than the percentage increase between 1970 and 1980 (63.9 percent); the percentage increase was smaller during the 1980s than the 1970s primarily because it was based on a much larger beginning-of-decade household number.

(Continued on back page)

Population Studies
Population Program - Bureau of Economic and Business Research - University of Florida
April, 1991 Volume 24, Number 1 Bulletin No. 95

Number of households and average household s

STATE County	Census April 1, 1990 Households	Census April 1, 1990 Average household size	Census April 1, 1980 Households	Census April 1, 1980 Average household size	Census April 1, 1970 Households	Census April 1, 1970 Average household siz
FLORIDA	5,134,869	2.46	3,744,254	2.55	2,284,786	2.90
Alachua	71,258	2.40	54,607	2.60	31,115	3.06
Baker	5,554	3.00	4,243	3.22	2,229	3.62
Bay	48,938	2.54	34,754	2.76	23,403	3.18
Bradford	7,193	2.68	6,297	2.87	4,058	3.26
Brevard	161,365	2.43	101,783	2.64	68,560	3.30
Broward	528,442	2.35	417,517	2.42	222,563	2.76
Calhoun	3,793	2.64	3,221	2.84	2,393	3.18
Charlotte	48,433	2.23	25,922	2.25	11,668	2.35
Citrus	40,573	2.27	22,985	2.36	7,358	2.59
Clay	36,663	2.86	21,646	3.06	9,396	3.35
Collier	61,703	2.41	33,966	2.49	13,012	2.88
Columbia	15,611	2.67	12,183	2.87	7,669	3.24
Dade	692,355	2.75	609,830	2.63	428,026	2.91
DeSoto	8,222	2.62	6,256	2.76	3,761	3.03
Dixie	3,916	2.56	2,663	2.76	1,708	3.19
Duval	257,245	2.54	208,351	2.69	161,666	3.14
Escambia	98,608	2.57	81,067	2.79	60,387	3.25
Flagler	11,880	2.40	4,359	2.49	1,488	2.96
Franklin	3,628	2.42	2,765	2.73	2,429	2.91
Gadsden	13,405	2.90	12,092	3.24	9,066	3.73
Gilchrist	3,284	2.65	2,006	2.82	1,146	3.10
Glades	2,885	2.57	2,224	2.69	1,115	3.24
Gulf	4,324	2.56	3,683	2.89	3,001	3.36
Hamilton	3,488	2.81	2,904	2.99	2,353	3.26
Hardee	6,391	2.95	6,253	3.05	4,368	3.36
Hendry	8,402	2.99	5,959	3.06	3,617	3.26
Hernando	42,300	2.37	17,735	2.48	6,084	2.77
Highlands	29,544	2.28	18,960	2.43	10,468	2.78
Hillsborough	324,872	2.51	237,943	2.66	158,750	3.02
Holmes	5,800	2.56	5,244	2.79	3,550	3.00
Indian River	38,057	2.33	23,331	2.49	12,325	2.90
Jackson	14,465	2.56	13,332	2.76	10,295	3.10
Jefferson	3,982	2.79	3,486	3.04	2,481	3.50
Lafayette	1,721	2.74	1,413	2.86	955	3.03
Lake	63,616	2.35	41,650	2.47	24,621	2.77
Lee	140,124	2.35	82,509	2.46	37,313	2.77
Leon	74,828	2.43	54,103	2.57	31,022	3.03
Levy	10,079	2.52	7,267	2.70	4,175	3.04
Liberty	1,706	2.69	1,485	2.82	1,064	3.17
Madison	5,522	2.75	4,977	2.98	4,000	3.29
Manatee	91,060	2.29	61,998	2.36	38,488	2.50
Marion	78,177	2.44	45,458	2.64	22,317	3.03
Martin	43,022	2.28	25,863	2.40	10,122	2.72
Monroe	33,583	2.24	26,340	2.34	16,827	2.89
Nassau	16,192	2.68	10,976	2.98	6,018	3.42
Okaloosa	53,313	2.60	37,538	2.84	24,915	3.38
Okeechobee	10,214	2.75	6,981	2.85	3,178	3.34
Orange	254,852	2.56	170,754	2.67	108,645	3.07
Osceola	39,150	2.68	18,615	2.60	9,092	2.74
Palm Beach	365,558	2.32	234,339	2.42	123,347	2.78
Pasco	121,674	2.26	81,346	2.34	30,361	2.46
Pinellas	380,635	2.18	319,527	2.25	211,301	2.43
Polk	155,969	2.53	114,394	2.70	73,024	3.05
Putnam	25,070	2.55	18,397	2.72	11,494	3.12
St. Johns	33,426	2.44	18,623	2.65	10,004	2.93
St. Lucie	58,174	2.54	32,506	2.65	16,847	2.98
Santa Rosa	29,900	2.68	18,595	2.94	10,846	3.34
Sarasota	125,493	2.18	88,739	2.25	48,634	2.44
Seminole	107,657	2.64	63,247	2.82	25,757	3.23
Sumter	12,119	2.46	8,582	2.68	4,627	3.05
Suwannee	10,034	2.61	7,739	2.84	4,855	3.16
Taylor	6,401	2.67	5,826	2.83	4,227	3.22
Union	2,658	2.91	2,119	2.95	1,639	3.25
Volusia	153,416	2.33	105,773	2.39	62,747	2.62
Wakulla	5,210	2.70	3,730	2.89	1,926	3.26
Walton	11,294	2.44	8,043	2.64	5,270	3.05
Washington	6,443	2.55	5,235	2.75	3,620	3.14

SYMBOL SPECIES

PLANTS (301–350)

301 Eastern hemlock
302 Spleenwort (S)
303 Spider lily (S)
304 Pond cusn (S)
305 Watermilfoil (S)
306 Hooded pitcher plant (S)
307 Tree
308 Prickly pear cactus (S)
309 Trailing arbutus (S)
310 Eastern bumelia
311 Pitcher plant
312 Baldcypress
313 Redbay
314 Seaside alder
315 Box huckleberry
316 Purple fringeless orchid
317 Pink lady's slipper
318 Ebony spleenwort (S)
319 Orchids (S)
320 Golden club (S)
321 Florida beargrass
322 East-coast coontie
323 Fall-flowering ixia
324 Jackson-vine
325 Spoon-flower
326 Curtiss milkweed
327 Sea lavender
328 Hand fern
329 Needle palm
330 Yellow squirrel-banana
331 Beach creeper
332 Florida coontie
333 Four-petal pawpaw
334 Bird's nest spleenwort
335 Burrowing four-o'clock
336 Prickly pear
337 Fern palm
338 Flaming bow orchid
339 Tillandsia
340 Rush pigeonwort
341 Elliottia pyroflora
342 Buttonbush
343 Slender spleenwort
344 Pinelands acquemontia
345 Mahogany mistletoe
346 Florida shaton
347 Pawpaw or plant
348 Hairy indigobush
349 Hemp's dicrae

INVERTEBRATES (351–400)

351 Viceroy butterfly
352 Zebra butterfly

BIRDS (401–670)

SHOREBIRDS (401–415)

401 Shorebirds
402 Terns
403 Gulls
404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstone
414 Plovers
415 Piping plover
416 American oystercatcher (S)

WADING BIRDS (431–460)

431 Wading birds
432 Herons
433 Egrets
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigatebird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461–500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese

1:250 000-scale map of
Atlantic Coast Ecological Inventory

Produced by
U. S. FISH AND WILDLIFE SERVICE
1980

AQUATIC ORGANISMS

SYMBOL SPECIES

INVERTEBRATES

441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461-500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese
473 Snow goose
474 Gadwall
475 Black duck

RAPTORS (501-530)

501 Raptors
502 Owls
503 Kites
504 Hawks
505 Bald eagle (F)
506 Osprey (S)
507 Peregrine falcon (F)
508 Copper's hawk (S)
509 Swallow-tailed kite
510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

SEABIRDS (531-550)

531 Seabirds
532 Petrels, shearwaters, and albatroses
533 Pelican and allies
534 Alcids
535 Brown pelican (F)
536 Black guillemot
537 Leach's petrel
538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet
542 Wilson's petrel
543 Northern phalarope
544 Audubon's shearwater
545 Greater shearwater
546 Shearwaters
547 Petrels
548 Jaegers
549 White pelican

SONGBIRDS AND OTHERS (551-600)

551 Songbirds and others
552 Red-cockaded woodpecker (F)
553 Chachalaca
554 Bachman's warbler (F)
555 Wild turkey
556 American woodcock
557 Pileated woodpecker
558 Swainson's warbler
559 Ruffed grouse
560 Bobwhite
561 Mourning dove
562 Warblers
563 Ring-necked pheasant
564 Bank swallow
565 Dusky seaside sparrow (F)
566 White-crowned pigeon (S)

REPTILES AND AMPHIBIANS (601-700)

601 Eastern narrow-mouthed toad (S)
602 Eastern indigo snake (F)
603 American alligator (F)
604 Northern diamondback terrapin
605 Amphibians
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S)
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink
612 Map turtle
613 Plymouth red-bellied turtle (F)
614 Eastern diamondback rattlesnake
615 Carolina gopher frog
616 Florida gopher frog (S)
617 Atlantic salt marsh watersnake (F)
618 American crocodile (F)
619 Florida Keys mole skink (S)
620 Florida black-headed snake (S)
621 Pine barrens tree frog (S)
622 Northern pine snake (S)
623 Corn snake (S)
624 Timber rattlesnake (S)
625 Southern gray tree frog (S)

MAMMALS (701-800)

701 Beaver
702 Whitetail deer
703 European fallow deer
704 Blackbeard Island deer
705 Opossum
706 [illegible]

SYMBOL SPECIES

PLANTS (1-50)

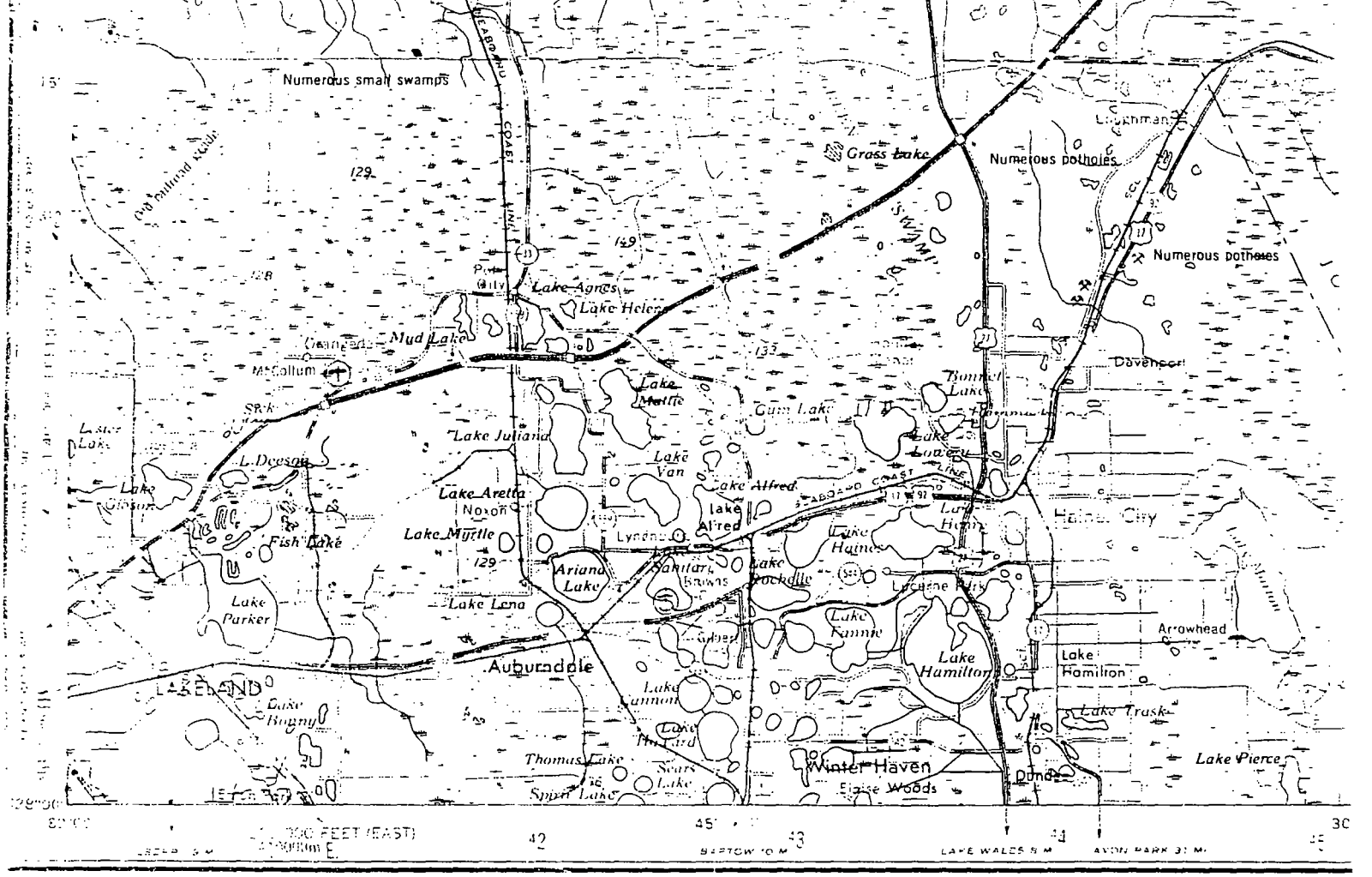
1 [illegible]
2 [illegible]

INVERTEBRATES (51-100)

51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab
60 Eastern oyster
61 European oyster
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm
70 Sandworm
71 White shrimp
72 Brown shrimp
73 Northern shrimp
74 Rock crab
75 Jonah crab
76 Whelk
77 Ocean quahog
78 Pink shrimp
79 Stone crab
80 Spiny lobster

FISH (101-300)

101 Sharks, skates, rays
102 Herring
103 Salmon and trout
104 Catfish
105 Cod
106 Sunfish and bass
107 Drum
108 Flatfish
109 Longnose gar
110 Shortnose sturgeon
111 Atlantic sturgeon (S)
112 Amer tan eel
113 Blueback herring
114 Hickory shad
115 Alewife
116 Amer tan shad (S)
117 Atlantic menhaden
118 Atlantic herring
119 Gizzard shad
120 Tarpon
121 Atlantic salmon
122 White catfish
123 Channel catfish
124 Yellow bullhead
125 Brown bullhead
126 Flat bullhead
127 Sea catfish
128 White perch
129 Striped bass
130 Black sea bass
131 Redbreast sunfish
132 Warmouth
133 Bluegill
134 Largemouth bass
135 Black crappie
136 Sheepshead
137 Spotted seatrout
138 Weakfish
139 Spot
140 Atlantic croaker
141 Southern kingfish
142 Northern kingfish
143 Gulf kingfish
144 Red ugin
145 Star drum
146 Black drum
147 Summer flounder
148 Southern flounder
149 Winter flounder
150 Rainbow smelt
151 Atlantic tomcod
152 Threadfin shad
153 Carp
154 Atlantic mackerel
155 Chain pickerel
156 White bass
157 Northern puffer
158 Silver perch
159 Florida pompano
160 Bluefish
161 Spanish mackerel
162 Cobia
163 Mullet
164 White crappie
165 Redear sunfish
166 Smallmouth bass
167 Yellow perch
168 Pumpkinseed
169 Atlantic halibut
170 Atlantic cod
171 Pollock
172 Haddock
173 Hake
174 Bluefish tuna
175 [illegible]



INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1980

roduced by U. S. Fish and Wildlife Service

ase map prepared by U. S. Geological Survey 1972

tlantic coast ecological inventory compiled in 1980 by Fish an ildlife Service from data furnished by Federal agencies, State gencies, and other sources. Map scale limitation precludes the ortrayal of all available information on species occurrence and stribution. A detailed text—Atlantic Coast Ecological ventory—is available from Superintendent of Documents, U. S. overnment Printing Office, Washington, D. C. 20402

LEGEND

POPULATED PLACES
Over 500,000
100,000 to 500,000
25,000 to 100,000
5,000 to 25,000
1,000 to 5,000
Less than 1,000

BOSTON
RICHMOND
EVANSTON

RAILROADS — Single track — Double or Multiple
Standard gauge
Narrow gauge

BOUNDARIES
International
State
County
Park or reservation

Spot elevation in feet

ROADS
Primary, a
Secondar
Light-duty
Fair or dr
Trail
Interchan
Route ma

Landplane airport
Landing area
Seaplane airport
Power line
Mine
Orchard
Woods-brushwood

PWS014 280217 814331 **01 mile** _ DRINKING WATER PROGRAM 07/16/98
LATITUDE/LONGITUDE RANGE LOOK UP 10:45:09

TYPE DISPLAYED: PLANT, SOURCE AND WELL

LATITUDE	LONGITUDE	PWS-ID	PLT	SRC	WELL	MAILING NAME	ST/TP
28:02:33	81:44:07	6531992	03	001	0003	WINTER HAVEN WATER DEPT.	A C D
28:03:05	81:43:50	6532388	01	001	0001	WESTSIDE ASSEMBLY OF GOD	A N D
28:03:05	81:43:50	6532388	01	001		WESTSIDE ASSEMBLY OF GOD	A N D
28:02:00	81:43:01	6531992	01	001	0004	WINTER HAVEN WATER DEPT.	A C D
28:02:03	81:43:01	6531992	01	001	0003	WINTER HAVEN WATER DEPT.	A C D
28:02:06	81:43:06	6531992	01	001	0005	WINTER HAVEN WATER DEPT.	A C D
28:02:06	81:43:06	6531992	01	001	0004	WINTER HAVEN WATER DEPT.	A C D
28:02:06	81:43:06	6531992	01	001	0003	WINTER HAVEN WATER DEPT.	A C D
28:02:06	81:43:06	6531992	01	001	0002	WINTER HAVEN WATER DEPT.	A C D
28:02:06	81:43:06	6531992	01	001		WINTER HAVEN WATER DEPT.	A C D
28:02:07	81:43:04	6531992	01	001	0001	WINTER HAVEN WATER DEPT.	A C D
28:02:07	81:43:04	6531992	01	001	0007	WINTER HAVEN WATER DEPT.	A C D
28:02:07	81:43:04	6531992	01	001	0006	WINTER HAVEN WATER DEPT.	A C D
28:02:07	81:43:04	6531992	01	001		WINTER HAVEN WATER DEPT.	A C D
28:02:07	81:43:05	6531992	01	001	0001	WINTER HAVEN WATER DEPT.	A C D
28:02:11	81:42:57	6531992	01	001	0005	WINTER HAVEN WATER DEPT.	A C D
28:02:11	81:43:01	6531992	01	001	0002	WINTER HAVEN WATER DEPT.	A C D
28:02:11	81:43:05	6531992	01			WINTER HAVEN WATER DEPT.	A C D

PWS014 280217 814331 **02 miles** _ DRINKING WATER PROGRAM 07/16/98
LATITUDE/LONGITUDE RANGE LOOK UP 10:46:34

TYPE DISPLAYED: PLANT, SOURCE AND WELL

LATITUDE	LONGITUDE	PWS-ID	PLT	SRC	WELL	MAILING NAME	ST/TP
28:00:38	81:41:40	6532533	05	001	0001	GARDEN GROVE WATER CO.	A C D
28:00:38	81:41:40	6532533	05	001		GARDEN GROVE WATER CO.	A C D
28:00:38	81:41:40	6532533	05			GARDEN GROVE WATER CO.	A C D
28:00:38	81:41:40	6532533	01	002		GARDEN GROVE WATER CO.	A C D
28:00:38	81:43:43	6531992	02	001	0003	WINTER HAVEN WATER DEPT.	A C D
28:00:38	81:43:43	6531992	02	001	0002	WINTER HAVEN WATER DEPT.	A C D
28:00:38	81:43:43	6531992	02	001	0001	WINTER HAVEN WATER DEPT.	A C D
28:00:38	81:43:43	6531992	02	001		WINTER HAVEN WATER DEPT.	A C D
28:00:38	81:43:43	6531992	02			WINTER HAVEN WATER DEPT.	A C D
28:01:15	81:41:50	6535320	01	001	0001	KRISTON,W.M. & SONS, INC.	A P D
28:01:15	81:41:50	6535320	01	001		KRISTON,W.M. & SONS, INC.	A P D
28:01:15	81:41:50	6535320	01			KRISTON,W.M. & SONS, INC.	A P D
28:01:20	81:43:10	6534764	01	001	0001	NATIONSBANK OF FLORIDA	A N D
28:01:20	81:43:10	6534764	01	001		NATIONSBANK OF FLORIDA	A N D
28:01:30	81:41:45	6530881	01	001	0001	LEMON TREE APTS	A N D
28:01:30	81:41:45	6530881	01	001		LEMON TREE APTS	A N D
28:01:30	81:41:45	6530881	01			LEMON TREE APTS	A N D
28:02:07	81:43:04	6531992	01	001		WINTER HAVEN WATER DEPT.	A C D
28:03:10	81:44:55	6532333	01	001	0002	S.& S M H P	A N D
28:03:10	81:44:55	6532333	01	001	0001	S & S M H P	A N D
28:03:10	81:44:55	6532333	01	001		S & S M H P	A N D
28:03:10	81:44:55	6532333	01			S & S M H P	A N D
28:03:20	81:42:30	6533041	01	001	0001	MINUTE MART 2	A N D
28:03:20	81:42:30	6533041	01	001		MINUTE MART 2	A N D
28:03:20	81:42:30	6533041	01			MINUTE MART 2	A N D
28:03:42	81:44:55	6531496	01	001		REISING APARTMENTS	A O D
28:03:42	81:44:55	6531496	01			REISING APARTMENTS	A O D
28:03:50	81:45:30	6532375	01	001		LYCHEE DRIVE ASSOCIATION	A O D
28:03:50	81:45:30	6532375	01			LYCHEE DRIVE ASSOCIATION	A O D
28:03:54	81:45:13	6531143	01	001	0001	LAKE MARIANNA MOTEL	A N D
28:03:54	81:45:13	6531143	01			LAKE MARIANNA MOTEL	A N D
28:03:54	81:45:13	6531143	01	001		LAKE MARIANNA MOTEL	A N D
28:03:54	81:45:15	6531035	01	001	0001	LAKMAR MOTEL	A N D
28:03:54	81:45:15	6531035	01	001		LAKMAR MOTEL	A N D
28:03:54	81:45:15	6531035	01			LAKMAR MOTEL	A N D
28:04:01	81:45:03	6530927	01	001		MARIANA PLAZA	A N D

PWS014 280217 814331 **03 miles** _ DRINKING WATER PROGRAM 07/16/98
LATITUDE/LONGITUDE RANGE LOOK UP 10:48:29

TYPE DISPLAYED: PLANT, SOURCE AND WELL

LATITUDE	LONGITUDE	PWS-ID	PLT	SRC	WELL	MAILING NAME	ST/TP
27:59:48	81:41:15	6532533	01	001		GARDEN GROVE WATER CO.	A C D
27:59:48	81:41:15	6532533	01			GARDEN GROVE WATER CO.	A C D
28:00:03	81:40:33	6535441	01			ORANGE MANOR WEST	A C D
28:00:03	81:40:33	6535419	01			ORANGE MANOR MOBILE PARK EAST	A C D
28:00:03	81:40:33	6532533	02	001	0002	GARDEN GROVE WATER CO.	A C D
28:00:03	81:40:33	6532533	02	001	0001	GARDEN GROVE WATER CO.	A C D
28:00:03	81:40:33	6532533	02	001		GARDEN GROVE WATER CO.	A C D
28:00:03	81:40:33	6532533	02			GARDEN GROVE WATER CO.	A C D
28:00:05	81:45:55	6535166	01	001	0001	ST. SOPHIA GREEK ORTHODOX CH.	A N D
28:00:05	81:45:55	6535166	01	001		ST. SOPHIA GREEK ORTHODOX CH.	A N D
28:00:05	81:45:55	6535166	01			ST. SOPHIA GREEK ORTHODOX CH.	A N D
28:00:06	81:43:53	6531992	02	001	0003	WINTER HAVEN WATER DEPT.	A C D
28:00:10	81:43:40	6531992	02	002		WINTER HAVEN WATER DEPT.	A C D
28:00:10	81:45:25	6534245	01	001	0001	NEW HORIZON SHARE HOME	A P D
28:00:10	81:45:25	6534245	01			NEW HORIZON SHARE HOME	A P D
28:00:10	81:45:30	6532485	01	001	0001	FAITH BAPTIST CHURCH	A N D
28:00:10	81:45:30	6532485	01	001		FAITH BAPTIST CHURCH	A N D
28:00:10	81:45:30	6532485	01			FAITH BAPTIST CHURCH	A N D
28:00:10	81:46:00	6535078	01	001	0001	TRINITY CONGREGATIONAL CHURCH	A N D
28:00:10	81:46:00	6535002	01	001	0001	ST. MARY'S ANGLICAN CHURCH	A N D
28:00:10	81:46:00	6535002	01	001		ST. MARY'S ANGLICAN CHURCH	A N D
28:00:10	81:46:00	6535078	01	001		TRINITY CONGREGATIONAL CHURCH	A N D
28:00:10	81:46:00	6535078	01			TRINITY CONGREGATIONAL CHURCH	A N D
28:00:10	81:46:00	6535002	01			ST. MARY'S ANGLICAN CHURCH	A N D
28:00:11	81:42:54	6534764	01	001	0001	NATIONSBANK OF FLORIDA	A N D
28:00:12	81:42:55	6534764	01			NATIONSBANK OF FLORIDA	A N D
28:00:12	81:45:58	6534245	01			NEW HORIZON SHARE HOME	A P D
28:00:12	81:45:58	6534245	01	001	0001	NEW HORIZON SHARE HOME	A P D
28:00:17	81:43:50	6531992	02	001	0004	WINTER HAVEN WATER DEPT.	A C D
28:00:18	81:43:52	6531992	02	001	0002	WINTER HAVEN WATER DEPT.	A C D
28:00:20	81:43:52	6531992	02	001	0001	WINTER HAVEN WATER DEPT.	A C D
28:00:20	81:45:40	6535179	01	001		TAYLOR GROUP HOME	A O D
28:00:20	81:45:40	6535179	01			TAYLOR GROUP HOME	A O D
28:00:38	81:41:40	6532533	05	001		GARDEN GROVE WATER CO.	A C D
28:00:42	81:46:31	6534609	03	002		GORDONVILLE WATER SYSTEM	A C D
28:00:45	81:40:45	6531313	01	002	0001	ORCHID SPRINGS	A C D
28:00:45	81:40:45	6531313	01	001	0001	ORCHID SPRINGS	A C D
28:00:45	81:40:45	6531313	02			ORCHID SPRINGS	A C D
28:00:45	81:40:45	6531313	01	001		ORCHID SPRINGS	A C D
28:00:45	81:40:45	6531313	01			ORCHID SPRINGS	A C D
28:00:45	81:40:46	6531313	02	001	0001	ORCHID SPRINGS	A C D
28:00:45	81:40:46	6531313	02	001		ORCHID SPRINGS	A C D
28:00:55	81:40:44	6531713	01	001	0001	ST. MATTHEWS CATHOLIC CHURCH	A N D
28:00:56	81:40:43	6531713	01			ST. MATTHEWS CATHOLIC CHURCH	A N D
28:01:00	81:46:30	6534609	03			GORDONVILLE WATER SYSTEM	A C D
28:01:05	81:40:42	6531713	01	001	0001	ST. MATTHEWS CATHOLIC CHURCH	A N D
28:01:05	81:40:42	6531713	01	001		ST. MATTHEWS CATHOLIC CHURCH	A N D
28:01:05	81:45:45	6534631	01			WINTER HAVEN KENNELS	A O D
28:01:05	81:45:45	6534631	01	001		WINTER HAVEN KENNELS	A O D
28:01:10	81:46:00	6534031	01			RECKER HIGHWAY WAREHOUSE	A O D
28:01:10	81:46:00	6534031	01	001		RECKER HIGHWAY WAREHOUSE	A O D
28:01:10	81:46:00	6535046	01	001		OSBORN ORNAMENTAL IRON WORKS	A O D
28:01:10	81:46:00	6535046	01			OSBORN ORNAMENTAL IRON WORKS	A O D
28:01:10	81:46:00	6534094	01	001		ORKIN EXTERMINATING CO	A N D
28:01:10	81:46:00	6534094	01			ORKIN EXTERMINATING CO	A N D
28:01:10	81:46:20	6535082	01	001	0001	LIVING COVENANT FAMILY CHURCH	A O D
28:01:10	81:46:20	6535082	01	001		LIVING COVENANT FAMILY CHURCH	A O D
28:01:10	81:46:20	6535082	01			LIVING COVENANT FAMILY CHURCH	A O D
28:01:15	81:40:45	6534237	01	001		FLORIDA EASTERN EXPRESS	A O D
28:01:15	81:40:45	6534237	01			FLORIDA EASTERN EXPRESS	A O D
28:01:15	81:40:48	6534822	01	001		VINELAND DEVELOP	A O D
28:01:15	81:40:48	6534822	01			VINELAND DEVELOP	A O D
28:01:15	81:40:50	6534088	01			BRADLEY HOGG TRUST	A O D
28:01:15	81:40:50	6534088	01	001		BRADLEY HOGG TRUST	A O D
28:01:15	81:46:29	6534609	03			GORDONVILLE WATER SYSTEM	A C D
28:01:15	81:46:29	6534609	03	001		GORDONVILLE WATER SYSTEM	A C D
28:01:20	81:40:80	6534655	01	001		BARAGONA RENTALS #3	A O D

28:01:20 81:40:80 6534655 01 BARAGONA RENTALS #3 A O D
28:01:20 81:40:80 6534653 01 001 BARAGONA RENTAL #1 A O D
28:01:20 81:40:80 6534653 01 BARAGONA RENTAL #1 A O D
28:01:20 81:46:10 6535006 01 001 HAMPTON BROTHERS AUTO REPAIR A O D
28:01:20 81:46:10 6535006 01 HAMPTON BROTHERS AUTO REPAIR A O D
28:01:25 81:46:10 6535120 01 001 0001 WINTER HAVEN'S PREMIER CENTER A N D
28:01:25 81:46:10 6535120 01 WINTER HAVEN'S PREMIER CENTER A N D
28:01:25 81:46:10 6535120 01 001 WINTER HAVEN'S PREMIER CENTER A N D
28:01:25 81:46:25 6534007 01 VINELAND DEVELOPMENT INC. A O D
28:01:25 81:46:25 6534007 01 001 VINELAND DEVELOPMENT INC. A O D
28:01:30 81:41:20 6530064 01 001 0001 AMERICAN VULKAN CORP A N D
28:01:30 81:41:20 6530064 01 001 AMERICAN VULKAN CORP A N D
28:01:30 81:41:20 6530064 01 AMERICAN VULKAN CORP A N D
28:01:30 81:46:25 6535007 01 001 0001 CODY ARMORY A N D
28:01:30 81:46:25 6535007 01 CODY ARMORY A N D
28:01:30 81:46:25 6535007 01 001 CODY ARMORY A N D
28:01:30 81:46:28 6534323 01 001 0001 MAYSE,CECIL A N D
28:01:30 81:46:28 6534323 01 MAYSE,CECIL A N D
28:01:30 81:46:28 6534323 01 001 MAYSE,CECIL A N D
28:02:05 81:41:20 6534654 01 001 BARAGONA RENTALS #2 A O D
28:02:05 81:41:20 6534654 01 BARAGONA RENTALS #2 A O D
28:02:06 81:43:06 6531992 01 001 0002 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:00 6531992 03 001 0002 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:00 6531992 03 001 0001 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:00 6531992 03 001 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:03 6531992 03 001 0002 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:07 6531992 03 001 0001 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:07 6531992 03 WINTER HAVEN WATER DEPT. A C D
28:02:40 81:46:09 6531992 01 002 WINTER HAVEN WATER DEPT. A C D
28:02:42 81:46:09 6531992 03 001 0003 WINTER HAVEN WATER DEPT. A C D
28:02:57 81:46:25 6530089 01 001 0001 DUFFY'S 42ND ST. PUB A N D
28:02:57 81:46:25 6530089 01 DUFFY'S 42ND ST. PUB A N D
28:02:57 81:46:25 6530089 01 001 DUFFY'S 42ND ST. PUB A N D
28:03:40 81:46:15 6530168 01 001 . WINTER HAVEN WATER DEPT. A C D
28:03:42 81:45:42 6531496 01 002 REISING APARTMENTS A O D
28:03:45 81:45:46 6530979 01 001 0001 LAKE HAVEN TP/A. BELFORTTI A P D
28:03:45 81:45:46 6530979 01 LAKE HAVEN TP/A. BELFORTTI A P D
28:03:45 81:45:46 6530979 01 001 LAKE HAVEN TP/A. BELFORTTI A P D
28:03:50 81:45:38 6534210 01 001 BROERS COTTAGES & BAR A O D
28:03:50 81:45:38 6534210 01 BROERS COTTAGES & BAR A O D
28:03:50 81:45:45 6534688 01 001 ALL IN ONE HAIRSTYLING A O D
28:03:50 81:45:45 6534688 01 ALL IN ONE HAIRSTYLING A O D
28:03:54 81:45:13 6531143 01 001 LAKE MARIANNA MOTEL A N D
28:03:56 81:45:52 6531837 01 001 0001 TOWER MANOR ESTATES A C D
28:03:56 81:45:52 6531837 01 TOWER MANOR ESTATES A C D
28:04:00 81:45:35 6534211 01 001 0001 MIDWAY BAR A N D
28:04:00 81:45:35 6534211 01 MIDWAY BAR A N D
28:04:00 81:45:35 6534211 01 001 MIDWAY BAR A N D
28:04:00 81:45:40 6530498 01 001 0001 EAST TEMPLE BAPTIST CHURCH A N D
28:04:00 81:45:40 6530498 01 EAST TEMPLE BAPTIST CHURCH A N D
28:04:00 81:45:40 6530498 01 001 EAST TEMPLE BAPTIST CHURCH A N D
28:04:00 81:45:50 6531584 01 001 0001 SANDY BEACH TRAILER COURT A C D
28:04:00 81:45:50 6531584 01 001 SANDY BEACH TRAILER COURT A C D
28:04:00 81:45:50 6531584 01 SANDY BEACH TRAILER COURT A C D
28:04:10 81:45:45 6534276 01 001 WRIGHT'S COTTAGES A O D
28:04:10 81:45:45 6534276 01 WRIGHT'S COTTAGES A O D
28:04:30 81:44:30 6531916 01 001 0001 WAGON WHEEL CT. A N D
28:04:30 81:44:30 6531916 01 WAGON WHEEL CT. A N D
28:04:30 81:44:30 6531916 01 001 WAGON WHEEL CT. A N D
28:04:30 81:45:15 6530985 01 001 MARIANA ACRES WATER SYSTEM A C D
28:04:40 81:42:31 6531107 01 001 0001 LUCERNE PARK MOBILE HOME PARK A C D
28:04:40 81:42:31 6531107 01 LUCERNE PARK MOBILE HOME PARK A C D
28:04:40 81:42:31 6531107 01 001 LUCERNE PARK MOBILE HOME PARK A C D
28:04:40 81:45:30 6530583 01 001 WINTER HAVEN WATER DEPT. A C D
28:04:47 81:45:18 6530985 01 002 MARIANA ACRES WATER SYSTEM A C D
28:04:48 81:41:44 6535360 01 001 0001 FOUR LAKES GOLF CLUB A C D
28:04:48 81:41:44 6535360 01 001 FOUR LAKES GOLF CLUB A C D
28:04:48 81:41:44 6535360 01 FOUR LAKES GOLF CLUB A C D
28:04:48 81:45:18 6530985 01 001 MARIANA ACRES WATER SYSTEM A C D
28:04:48 81:45:18 6530985 01 001 0001 MARIANA ACRES WATER SYSTEM A C D
28:04:48 81:45:18 6530985 01 MARIANA ACRES WATER SYSTEM A C D

28:04:50 81:40:40 6532715 01 002 0001 SWISS VILLAGE MHP TENNIS &GOLF A C D
28:04:50 81:40:40 6532715 01 001 0001 SWISS VILLAGE MHP TENNIS &GOLF A C D
28:04:50 81:40:40 6532715 01 001 SWISS VILLAGE MHP TENNIS &GOLF A C D
28:04:50 81:40:40 6532715 01 002 SWISS VILLAGE MHP TENNIS &GOLF A C D
28:04:50 81:40:40 6532715 01 SWISS VILLAGE MHP TENNIS &GOLF A C D

PWS014 280217 814331 **04 miles** _ DRINKING WATER PROGRAM 07/16/98
LATITUDE/LONGITUDE RANGE LOOK UP 10:58:07

TYPE DISPLAYED: PLANT, SOURCE AND WELL
LATITUDE LONGITUDE PWS-ID PLT SRC WELL MAILING NAME ST/TP

27:58:53 81:46:33 6530020 01 001 0001 A-OK CAMPGROUND A N D
27:58:53 81:46:33 6530020 01 001 A-OK CAMPGROUND A N D
27:58:53 81:46:33 6530020 01 A-OK CAMPGROUND A N D
27:59:07 81:44:42 6532406 01 001 0001 GROVE PARK LANE TP A N D
27:59:07 81:44:42 6532406 01 GROVE PARK LANE TP A N D
27:59:09 81:44:49 6535425 01 001 BILL EZELL WAREHOUSES A O D
27:59:09 81:44:49 6535425 01 BILL EZELL WAREHOUSES A O D
27:59:10 81:44:45 6532406 01 002 0001 GROVE PARK LANE TP A N D
27:59:10 81:44:45 6532406 01 001 GROVE PARK LANE TP A N D
27:59:10 81:44:45 6532406 01 002 GROVE PARK LANE TP A N D
27:59:30 81:39:50 6530718 01 001 0001 HAMMONDELL CAMPSITES A C D
27:59:30 81:39:50 6530718 01 HAMMONDELL CAMPSITES A C D
27:59:30 81:39:50 6530718 01 001 HAMMONDELL CAMPSITES A C D
27:59:40 81:45:10 6534462 01 001 0001 SWEAT TRAILER PK #2 A N D
27:59:40 81:45:10 6532448 01 001 0001 SWEAT TRAILER PK #1 A N D
27:59:40 81:45:10 6532448 01 SWEAT TRAILER PK #1 A N D
27:59:40 81:45:10 6532448 01 001 SWEAT TRAILER PK #1 A N D
27:59:40 81:45:10 6534462 01 002 SWEAT TRAILER PK #2 A N D
27:59:40 81:45:10 6534462 01 001 SWEAT TRAILER PK #2 A N D
27:59:40 81:45:10 6532448 01 002 SWEAT TRAILER PK #1 A N D
27:59:40 81:45:10 6534462 01 SWEAT TRAILER PK #2 A N D
27:59:40 81:47:05 6534041 01 001 DINNER LAKE APTS A O D
27:59:40 81:47:05 6534041 01 DINNER LAKE APTS A O D
27:59:41 81:39:35 6530698 01 002 0001 GROVE SHORES MOB HC A C D
27:59:41 81:39:35 6530698 01 001 0001 GROVE SHORES MOB HC A C D
27:59:41 81:39:35 6530698 01 001 GROVE SHORES MOB HC A C D
27:59:41 81:39:35 6530698 01 002 GROVE SHORES MOB HC A C D
27:59:41 81:39:35 6530698 01 GROVE SHORES MOB HC A C D
27:59:45 81:40:02 6531308 01 002 GARDEN GROVE WATER CO. A C D
27:59:45 81:46:45 6532533 01 004 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 06 002 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 06 010 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 06 001 0001 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 06 001 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 06 GARDEN GROVE WATER CO. A C D
27:59:50 81:39:45 6532533 01 003 GARDEN GROVE WATER CO. A C D
27:59:55 81:46:58 6530720 01 001 0001 CIRCLE K # 7487 -DISTRICT 1410 A N D
27:59:55 81:46:58 6530720 01 CIRCLE K # 7487 -DISTRICT 1410 A N D
27:59:55 81:46:58 6530720 01 001 CIRCLE K # 7487 -DISTRICT 1410 A N D
28:00:04 81:47:08 6530459 01 001 GORDONVILLE WATER SYSTEM A C D
28:00:04 81:47:08 6534609 02 001 0001 GORDONVILLE WATER SYSTEM A C D
28:00:04 81:47:08 6534609 02 GORDONVILLE WATER SYSTEM A C D
28:00:05 81:39:40 6532533 07 001 0001 GARDEN GROVE WATER CO. A C D
28:00:05 81:39:40 6532533 08 001 GARDEN GROVE WATER CO. A C D
28:00:05 81:39:40 6532533 07 001 GARDEN GROVE WATER CO. A C D
28:00:05 81:39:40 6532533 07 GARDEN GROVE WATER CO. A C D
28:00:05 81:39:40 6532533 02 002 GARDEN GROVE WATER CO. A C D
28:00:15 81:46:35 6531691 01 001 0001 SPIVEY ENTERPRISES A N D
28:00:15 81:46:35 6531691 01 SPIVEY ENTERPRISES A N D
28:00:15 81:46:35 6531691 01 001 SPIVEY ENTERPRISES A N D
28:00:38 81:41:40 6532533 05 GARDEN GROVE WATER CO. A C D
28:01:07 81:40:01 6534828 01 001 CENTRAL DOOR COMPANY INC A O D
28:01:07 81:40:01 6534828 01 CENTRAL DOOR COMPANY INC A O D
28:01:07 81:40:25 6535343 01 001 CENSTATE CONTRACTORS A O D
28:01:07 81:40:25 6535343 01 CENSTATE CONTRACTORS A O D
28:01:07 81:40:28 6534838 01 001 VINELAND DEVELOPMENT A O D
28:01:10 81:40:30 6534246 01 001 0001 INDIAN RIVER TRANSPORT A P D
28:01:10 81:40:30 6534246 01 001 INDIAN RIVER TRANSPORT A P D
28:01:10 81:40:30 6534246 01 INDIAN RIVER TRANSPORT A P D

28:01:10 81:46:35 6534609 02 001 GORDONVILLE WATER SYSTEM A C D
28:01:10 81:46:40 6534881 01 REID GROUP HOME A O D
28:01:10 81:46:40 6534881 01 001 REID GROUP HOME A O D
28:01:15 81:40:20 6535155 01 001 KONGER WAREHOUSES A O D
28:01:15 81:40:20 6535155 01 KONGER WAREHOUSES A O D
28:01:15 81:46:45 6532533 07 001 GARDEN GROVE WATER CO. A C D
28:01:15 81:46:45 6532533 01 GARDEN GROVE WATER CO. A C D
28:01:16 81:40:15 6535090 01 001 0001 BURNS INDUSTRIAL PARK A O D
28:01:16 81:40:15 6535090 01 BURNS INDUSTRIAL PARK A O D
28:01:16 81:40:15 6535090 01 001 BURNS INDUSTRIAL PARK A O D
28:01:19 81:40:30 6534403 01 001 0001 GARDEN GROVE & EXECUTIVE RD. A P D
28:01:19 81:40:30 6534403 01 GARDEN GROVE & EXECUTIVE RD. A P D
28:01:19 81:40:30 6534403 01 001 GARDEN GROVE & EXECUTIVE RD. A P D
28:01:20 81:46:38 6530223 01 001 0001 CALVARY ASSEMBLY OF GOD A N D
28:01:20 81:46:38 6530223 01 CALVARY ASSEMBLY OF GOD A N D
28:01:20 81:46:38 6530223 01 001 CALVARY ASSEMBLY OF GOD A N D
28:01:25 81:46:35 6534609 04 GORDONVILLE WATER SYSTEM A C D
28:01:25 81:46:40 6534017 01 001 BOHANNON WAREHOUSE A O D
28:01:25 81:46:40 6534017 01 BOHANNON WAREHOUSE A O D
28:01:31 81:46:33 6532783 01 001 0001 HOP & SAVE AMOCO #95 A N D
28:01:33 81:46:37 6532783 01 001 0001 HOP & SAVE AMOCO #95 A N D
28:01:33 81:46:37 6532783 01 001 HOP & SAVE AMOCO #95 A N D
28:01:33 81:46:37 6532783 01 HOP & SAVE AMOCO #95 A N D
28:01:34 81:46:32 6532583 01 001 0001 FIRST UNION NATIONAL BANK A N D
28:01:34 81:46:33 6532583 01 FIRST UNION NATIONAL BANK A N D
28:01:35 81:46:35 6532583 01 001 FIRST UNION NATIONAL BANK A N D
28:01:40 81:46:58 6530100 01 001 BAGLEYS BAIT CO A O D
28:01:40 81:46:58 6530100 01 BAGLEYS BAIT CO A O D
28:01:50 81:40:18 6530500 01 001 0001 EASTSIDE ASSEMBLY OF GOD A N D
28:01:50 81:40:18 6530500 01 EASTSIDE ASSEMBLY OF GOD A N D
28:01:50 81:40:18 6530500 01 001 EASTSIDE ASSEMBLY OF GOD A N D
28:01:55 81:47:30 6532719 01 001 0001 P A C E PROGRAM/W H HOSPITAL A N D
28:01:55 81:47:30 6532719 01 001 P A C E PROGRAM/W H HOSPITAL A N D
28:01:55 81:47:30 6532719 01 P A C E PROGRAM/W H HOSPITAL A N D
28:02:00 81:40:05 6535285 01 001 MOM'S WAIST AWAY A O D
28:02:00 81:40:05 6535285 01 MOM'S WAIST AWAY A O D
28:02:06 81:43:06 6531992 01 001 0004 WINTER HAVEN WATER DEPT. A C D
28:02:10 81:46:45 6534137 01 001 WILSON'S TOOL & DIE A O D
28:02:10 81:46:45 6534137 01 WILSON'S TOOL & DIE A O D
28:02:30 81:47:15 6530181 01 001 0001 J AND J MHP A P D
28:02:30 81:47:15 6530181 01 J AND J MHP A P D
28:02:30 81:47:15 6530181 01 001 J AND J MHP A P D
28:02:30 81:47:30 6535359 01 STARR RENTALS A O D
28:02:30 81:47:30 6535359 01 001 STARR RENTALS A O D
28:02:42 81:46:09 6531992 03 001 0003 WINTER HAVEN WATER DEPT. A C D
28:02:57 81:46:25 6530089 01 001 0001 DUFFY'S 42ND ST. PUB A N D
28:03:00 81:46:45 6530969 01 001 0001 LAKE BLUE MOBILE HOME PARK A C D
28:03:00 81:46:45 6530969 01 LAKE BLUE MOBILE HOME PARK A C D
28:03:00 81:46:45 6530969 01 LAKE BLUE MOBILE HOME PARK A C D
28:03:20 81:47:20 6530090 01 002 0001 AUBURNDALE, CITY OF A C D
28:03:20 81:47:20 6530090 01 002 AUBURNDALE, CITY OF A C D
28:03:25 81:47:00 6535307 01 001 SPENCER WATER SYSTEM A O D
28:03:25 81:47:00 6535307 01 SPENCER WATER SYSTEM A O D
28:03:54 81:45:13 6531143 01 001 0001 LAKE MARIANNA MOTEL A N D
28:04:00 81:40:00 6534903 01 001 POUNDS MOTOR COMPANY,INC. A O D
28:04:00 81:40:00 6534903 01 POUNDS MOTOR COMPANY,INC. A O D
28:04:17 81:39:49 6531992 04 001 0001 WINTER HAVEN WATER DEPT. A C D
28:04:17 81:39:49 6531992 04 001 WINTER HAVEN WATER DEPT. A C D
28:04:50 81:39:50 6532585 01 001 0001 LAKE & GOLF ESTATES A C D
28:04:50 81:39:50 6532585 01 LAKE & GOLF ESTATES A C D
28:04:50 81:39:50 6532585 01 001 LAKE & GOLF ESTATES A C D
28:04:50 81:40:40 6532715 01 002 0001 SWISS VILLAGE MHP TENNIS &GOLF A C D
28:04:57 81:39:35 6532352 01 001 0002 FAIRVIEW VILLAGE A C D
28:04:57 81:39:35 6532352 01 001 0001 FAIRVIEW VILLAGE A C D
28:04:57 81:39:35 6532352 01 001 FAIRVIEW VILLAGE A C D
28:04:57 81:39:35 6532352 01 FAIRVIEW VILLAGE A C D
28:05:05 81:42:00 6530712 01 001 0001 HAINES HAVEN MHP A P D
28:05:05 81:42:00 6530712 01 HAINES HAVEN MHP A P D
28:05:05 81:42:00 6530712 01 001 HAINES HAVEN MHP A P D
28:05:10 81:42:55 6534893 01 001 CYPRESS GARDENS WINTER MINISTR A O D
28:05:10 81:42:55 6534893 01 CYPRESS GARDENS WINTER MINISTR A O D

28:05:16 81:45:29 6535384 01 001 MAULTSBY RENTALS A O D
28:05:16 81:45:29 6535384 01 MAULTSBY RENTALS A O D
28:05:20 81:41:25 6535064 01 002 SWISS GOLF & TENNIS CLUB A C D
28:05:20 81:45:25 6535064 01 001 0002 SWISS GOLF & TENNIS CLUB A C D
28:05:22 81:41:35 6535064 01 SWISS GOLF & TENNIS CLUB A C D
28:05:22 81:41:35 6535064 01 001 SWISS GOLF & TENNIS CLUB A C D
28:05:22 81:45:35 6535064 01 001 0001 SWISS GOLF & TENNIS CLUB A C D
28:05:30 81:44:30 6530321 01 001 0002 LAKE ALFRED, CITY OF A C D
28:05:30 81:44:30 6530321 01 001 0001 LAKE ALFRED, CITY OF A C D
28:05:30 81:44:30 6530321 01 001 LAKE ALFRED, CITY OF A C D
28:05:30 81:44:30 6530321 01 LAKE ALFRED, CITY OF A C D
28:05:35 81:44:30 6530321 01 002 0001 LAKE ALFRED, CITY OF A C D
28:05:35 81:44:30 6530321 02 001 0001 LAKE ALFRED, CITY OF A C D
28:05:35 81:44:30 6530321 02 001 LAKE ALFRED, CITY OF A C D
28:05:35 81:44:30 6530321 02 LAKE ALFRED, CITY OF A C D
28:05:35 81:44:30 6530321 01 002 LAKE ALFRED, CITY OF A C D

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PWS001 6530020          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           12:25:58
                              LAST UPDATED: 02/16/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: N = NONCOMMUNITY  CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: A-OK_CAMPGROUND_____________ GENERAL MAIL: Y (Y OR N)
   ADDRESS: 6925_THORNHILL_ROAD_____________ PHONE: ( 941 ) 294 - 9091
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: JIM_&_MARY_ELLIS_____________ GENERAL MAIL: Y (Y OR N)
   ADDRESS: 6959_THORNHILL_RD._____________ PHONE: ( 941 ) 294 - 9091
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                        INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 12/ 98 CLASS: 01 PRIOR VISIT: 05/ 30/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JIM_&_MARY_ELLIS_____________ TITLE: OWNERS_____________
CONTACT PHONE: ( 941 ) 294 - 9091    SANITARY SURVEY: 01/ 12/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                  SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530020          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           12:26:19
                              LAST UPDATED: 02/16/98
MAILING NAME: A-OK CAMPGROUND              ACTIVE    NONCOMMUNITY
                    BACT NON COMPLIER: _
 RET POP SERVED: _____70          BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____102,400 (GPD)  RADS SAMPLES REQ'D: __1
   MAXIMUM DAY: _____102,000 (GPD)  RADS SAMPLES FREQY: __48 (MONTHS)
  % DESIGN CAP:  99.6          TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:      1,800 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____5,100 (G)   SERVICE CONNECTIONS: _____34
TOT STORAGE CAP: _____350 (G)      NUMBER METERED: _____
    METER CAP: _____              TYPE OF METER: ELAPSE_METER-BROKEN_
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK          TOTAL # OF PLANTS:   1
2SERVAREA: RV = RV PARK                   TOTAL # OF SOURCES:  1

  PRIMARY PLANT:  1 LATITUDE: 27:58:53  LONGITUDE: 81:46:33
  PRIMARY SOURCE:  1 LATITUDE: 27:58:53  LONGITUDE: 81:46:33
CREDIT (Y/N)  VOC: N  PEST: N          DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6530020 01 001      DRINKING WATER PROGRAM              07/16/98
                  SOURCE INFORMATION              12:26:40
                              LAST UPDATED: 02/23/93

MAILING NAME: A-OK CAMPGROUND              ACTIVE    NONCOMMUNITY
 PLANT NAME: A-OK WATER PLANT              ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: A-OK_CAMPGROUND/NI_WELL#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE   **** LAT LONG ****************
LATITUDE: 27:58:53.000  LONGITUDE: 81: 46:33.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____1,800 (GPD)      % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

 ___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6530064 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:27:00
LAST UPDATED: 06/05/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: AMERICAN_VULKAN_CORP_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2525_DUNDEE_ROAD_____ PHONE: (941) 324 - 2424
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: AMERICAN_VULKAN_CORP._____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_DRAWER_673_____ PHONE: (941) 324 - 2424
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 02/ 17/ 98 CLASS: 03 PRIOR VISIT: 02/ 10/ 98 PRIOR CLASS: SS
PERSON CONTACTED: BUD_HILDEBRAND_____ TITLE: PRODUCTION_MGR._____
CONTACT PHONE: (941) 324 - 2424 SANITARY SURVEY: 02/ 10/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530064 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:27:21
LAST UPDATED: 06/05/98
MAILING NAME: AMERICAN VULKAN CORP ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____35 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____115,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____115,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____1,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: IN = INDUSTRIAL TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:30 LONGITUDE: 81:41:20
PRIMARY SOURCE: 1 LATITUDE: 28:01:30 LONGITUDE: 81:41:20
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530064 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION- 12:27:43
LAST UPDATED: 02/20/95

MAILING NAME: AMERICAN VULKAN CORP ACTIVE NONCOMMUNITY
PLANT NAME: AMERICAN VULCAN PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: AMERICAN_VULKAN_CO_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:30.000 LONGITUDE: 81: 41:20.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530089 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:28:02
LAST UPDATED: 02/16/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: DUFFY'S_42ND_ST._PUB_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1442__42ND_STREET_N.W._____ PHONE: (941) 967 - 8796
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: BRYAN_HAYNES_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 1442_42ND_ST.,_N.W:_____ PHONE: (941) 967 - 8796
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 06/ 98 CLASS: 01 PRIOR VISIT: 10/ 22/ 97 PRIOR CLASS: 01
PERSON CONTACTED: BRYAN_HAYNES_____ TITLE: OWNER_____
CONTACT PHONE: (941) 967 - 8796 SANITARY SURVEY: 08/ 22/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530089 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:28:24
LAST UPDATED: 02/16/98
MAILING NAME: DUFFY'S 42ND ST. PUB ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____40 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,800 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,800 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,200 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: BR = BAR OR LOUNGE TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:02:57 LONGITUDE: 81:46:25
PRIMARY SOURCE: 1 LATITUDE: 28:02:57 LONGITUDE: 81:46:25
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530089 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:28:45
LAST UPDATED: 12/22/92

MAILING NAME: DUFFY'S 42ND ST. PUB ACTIVE NONCOMMUNITY
PLANT NAME: DUFFYS WATER TREATMENT PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: DUFFYS_BAR/_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:02:57.000 LONGITUDE: 81: 46:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530090 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:29:05
LAST UPDATED: 11/21/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 4C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: AUBURNDALE,_CITY_OF_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_186_____ PHONE: (941) 965 - 5533
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: AUBURNDALE,_CITY_OF_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_186_____ PHONE: (941) 965 - 5533
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: M = MUNICIPALITY
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 11/ 17/ 97 CLASS: 01 PRIOR VISIT: 01/ 13/ 97 PRIOR CLASS: SS
PERSON CONTACTED: BOBBY_TILLMAN_DON_WILSON_____ TITLE: UTIL_DIRECTOR_____
CONTACT PHONE: (941) 965 - 5549 SANITARY SURVEY: 01/ 13/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530090 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:29:26
LAST UPDATED: 11/21/97
MAILING NAME: AUBURNDALE, CITY OF ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ___20,014 BACT SAMPLES REQ'D: _20 RULE MIN: 20
DESIGN CAP: ____5,415,200 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: ____3,699,000 (GPD) RADS SAMPLES FREQY: __36 (MONTHS)
% DESIGN CAP: 68.3 TTHM SAMPLES REQ'D: __2
AVG PRODUCTION: 1,150,000 (GPD) TTHM SAMPLES FREQY: ____3 (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ____7,698
TOT STORAGE CAP: _____550,000 (G) NUMBER METERED: ____6,116
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/92 12/92 POP GRP:C *)
(*M/R STATUS:I SAMPLES REQ'D: 60 RULE MIN: 60 CONSOLIDATED: N Y/N *)
1SERVAREA: MC = MUNICIPAL/CITY TOTAL # OF PLANTS: 2
2SERVAREA: __ = ... TOTAL # OF SOURCES: 3

PRIMARY PLANT: 1 LATITUDE: 28:03:40 LONGITUDE: 81:47:40
PRIMARY SOURCE: 1 LATITUDE: 28:03:40 LONGITUDE: 81:47:40
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530090 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:29:47
LAST UPDATED: 01/30/97

MAILING NAME: AUBURNDALE, CITY OF ACTIVE COMMUNITY
PLANT NAME: ATLANTIC ST ACTIVE PLANT NUMBER: 1
SOURCE NAME: ATLANTIC_AVE_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:40.000 LONGITUDE: 81: 47:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ____1,050,000 (GPD) % OF SYSTEM PRODUCTION: 91

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6530090 01 002 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 13:44:41
LAST UPDATED:

MAILING NAME: AUBURNDALE, CITY OF ACTIVE COMMUNITY
PLANT NAME: ATLANTIC ST ACTIVE PLANT NUMBER: 1
SOURCE NAME: TAMPA_STREET_____
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:20.000 LONGITUDE: 81: 47:20.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6530090 01 003 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 13:45:13
LAST UPDATED:

MAILING NAME: AUBURNDALE, CITY OF ACTIVE COMMUNITY
PLANT NAME: ATLANTIC ST ACTIVE PLANT NUMBER: 1
SOURCE NAME: W_____
SOURCE NUMBR: 003 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: __:__:__.000 LONGITUDE: __: __:__.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: _ = ...
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6530090 02 001 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 13:43:26
LAST UPDATED: 01/30/97

MAILING NAME: AUBURNDALE, CITY OF ACTIVE COMMUNITY
PLANT NAME: WINONA PARK WTP ACTIVE PLANT NUMBER: 2
SOURCE NAME: WINONA_PARK_WTP_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:30.000 LONGITUDE: 81: 47:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____100,000 (GPD) % OF SYSTEM PRODUCTION: 8

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6530100 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:30:07
LAST UPDATED: 03/10/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 01/ 01/ 98
BEGIN DT: 02/ 78 INACT DT: 04/ 14/ 89 INACT REASON: S = SYSTEM DISCONTINUED
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BAGLEYS_BAIT_CO_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_110_____ PHONE: (813) 294 - 4271
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: BAGLEY_BAIT_CO_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: RECKER_HWY_&_SPIRIT_LAKE_ROAD_ PHONE: (813) 294 - 4271
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: ___
DATE OF VISIT: 01/ 10/ 89 CLASS: 02 PRIOR VISIT: 09/ 13/ 88 PRIOR CLASS: 03
PERSON CONTACTED: _____ TITLE: _____
CONTACT PHONE: (813) 294 - 4271 SANITARY SURVEY: 08/ 21/ 86
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530100 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:30:28
LAST UPDATED: 03/10/98
MAILING NAME: BAGLEYS BAIT CO ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____10 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____34,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____ (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____8
TOT STORAGE CAP: _____ (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:40 LONGITUDE: 81:46:58
PRIMARY SOURCE: 1 LATITUDE: 28:01:40 LONGITUDE: 81:46:58
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530100 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION - 12:30:50
LAST UPDATED: 03/10/98

MAILING NAME: BAGLEYS BAIT CO ACTIVE OTHER PUBLIC
PLANT NAME: WINTER HAVEN ACTIVE PLANT NUMBER: 1
SOURCE NAME: BAGLEYS_BAIT_CO___ELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:40.000 LONGITUDE: 81: 46:58.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530168 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:31:10
LAST UPDATED: 07/30/93

STATUS: I = INACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: 11/ 13/ 92 INACT REASON: M = SYSTEM MERGED/CONSOLIDAT
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: HERITAGE_ESTATES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 200_BASS_CIRCLE,_NORTHWEST____ PHONE: (813) 956 - 1502
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: HERITAGE_ESTATES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: US_92_EAST_OF_AUBURNDALE_____ PHONE: (813) 956 - 1502
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: ___
DATE OF VISIT: 03/ 20/ 92 CLASS: 02 PRIOR VISIT: 06/ 20/ 91 PRIOR CLASS: SS
PERSON CONTACTED: FRED_DARNELL_____ TITLE: MANAGER_____
CONTACT PHONE: (813) 956 - 1502 SANITARY SURVEY: 06/ 20/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530168 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:31:31
LAST UPDATED: 07/30/93
MAILING NAME: HERITAGE ESTATES INACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____250 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____129,000 (GPD) RADS SAMPLES REQ'D: __1
MAXIMUM DAY: _____92,000 (GPD) RADS SAMPLES FREQY: __48 (MONTHS)
% DESIGN CAP: 71.3 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____123
TOT STORAGE CAP: _____500 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 3 = BACTERIA MONITORING
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS:
2SERVAREA: __ = ... TOTAL # OF SOURCES:

PRIMARY PLANT: 1 LATITUDE: 28:03:40 LONGITUDE: 81:46:15
PRIMARY SOURCE: 1 LATITUDE: 28:03:40 LONGITUDE: 81:46:15
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530168 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:31:52
LAST UPDATED: 01/06/93

MAILING NAME: HERITAGE ESTATES INACTIVE COMMUNITY
PLANT NAME: HERITAGE ESTATES WATER PLANT INACTIVE PLANT NUMBER: 1
SOURCE NAME: HERITAGE_ESTATES_WELLS_____
SOURCE NUMBR: 001 SOURCE STATUS: I = INACTIVE **** LAT LONG **********
LATITUDE: 28:03:40.000 LONGITUDE: 81: 46:15.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: P = PURCHASED SURFACE
GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

100 PURCHASED GROUND, PWS ID: 6531992 _ NAME: WINTER HAVEN WATER DEPT.

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6530168 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:09:06
LAST UPDATED: 06/24/91

MAILING NAME: HERITAGE ESTATES INACTIVE COMMUNITY
PLANT NAME: HERITAGE ESTATES WATER PLANT INACTIVE PLANT NUMBER: 1
SOURCE NAME: WELL#2_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:03:40.000 LONGITUDE: 81: 46:15.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530181 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:32:12
LAST UPDATED: 06/11/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: J_AND_J_MHP_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 340_RECKER_HWY_____ PHONE: (941) 967 - 8173
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: JOE_CREEKBAUM_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 905_CHARLES_AVENUE_____ PHONE: (941) 967 - 8173
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 06/ 08/ 98 CLASS: 03 PRIOR VISIT: 06/ 04/ 98 PRIOR CLASS: 01
PERSON CONTACTED: JOE_CREEKBAUM_____ TITLE: OWNER_____
CONTACT PHONE: (941) 967 - 8173 SANITARY SURVEY: 12/ 27/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530181 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:32:34
LAST UPDATED: 06/11/98
MAILING NAME: J AND J MHP ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: _____29 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____19
TOT STORAGE CAP: _____340 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:02:30 LONGITUDE: 81:47:15
PRIMARY SOURCE: 1 LATITUDE: 28:02:30 LONGITUDE: 81:47:15
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530181 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION- 12:41:02
LAST UPDATED: 02/23/93

MAILING NAME: J AND J MHP ACTIVE NONTRANS NONC
PLANT NAME: J & J MHP WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: J_&_J_MOBILE_HOME_PARK/WELL_#1
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:02:30.000 LONGITUDE: 81: 47:15.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6530223 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:42:52
LAST UPDATED: 05/05/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CALVARY_ASSEMBLY_OF_GOD_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3800_RECKER_HWY_____ PHONE: (941) 294 - 5710
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: CALVARY_ASSEMBLY_OF_GOD_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3800_RECKER_HWY_____ PHONE: (941) 294 - 5710
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: O = OTHER
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 02/ 26/ 98 CLASS: 03 PRIOR VISIT: 02/ 24/ 98 PRIOR CLASS: 01
PERSON CONTACTED: BETH_A._BREWER_____ TITLE: _____
CONTACT PHONE: (941) 294 - 5710 SANITARY SURVEY: 12/ 11/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530223 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:43:13
LAST UPDATED: 05/05/98
MAILING NAME: CALVARY ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____250 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____250 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:20 LONGITUDE: 81:46:38
PRIMARY SOURCE: 1 LATITUDE: 28:01:20 LONGITUDE: 81:46:38
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530223 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:43:35
LAST UPDATED: 02/23/93

MAILING NAME: CALVARY ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
PLANT NAME: CALVARY ASSEMBLY WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: CALVARY_ASSEMBLY__WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:20.000 LONGITUDE: 81: 46:38.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6530321          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1 o          12:43:55
                              LAST UPDATED: 12/05/97

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: C = COMMUNITY    CATG./CLASS: 4C
NC SEASON BEG: __/__ END: __/__    NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: LAKE_ALFRED,_CITY_OF_____    GENERAL MAIL: N (Y OR N)
   ADDRESS: US._17-92_____    PHONE: ( 941 ) 291 - 5274
    CITY: LAKE_ALFRED_____ STATE: FL  ZIP CODE: 33850 - ____

 OWNER NAME: LAKE_ALFRED,_CITY_OF_____    GENERAL MAIL: Y (Y OR N)
   ADDRESS: 120_E._POMELO_ST._____    PHONE: ( 941 ) 291 - 5274
    CITY: LAKE_ALFRED_____ STATE: FL  ZIP CODE: 33850 - ____
 OWNER TYPE: M = MUNICIPALITY
                        INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 27/ 97 CLASS: SS PRIOR VISIT: 07/ 23/ 96 PRIOR CLASS: 01
PERSON CONTACTED: MIKE_STRIPLING_____    TITLE: CHIEF_OPERATOR_____
CONTACT PHONE: ( 941 ) 291 - 5274    SANITARY SURVEY: 01/ 27/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
                    SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530321          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2          12:44:16
                              LAST UPDATED: 12/05/97
MAILING NAME: LAKE ALFRED, CITY OF          ACTIVE    COMMUNITY
                      BACT NON COMPLIER: _
 RET POP SERVED: ____4,176          BACT SAMPLES REQ'D: __6  RULE MIN:  5
   DESIGN CAP: ____3,816,000 (GPD)   RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: ____3,816,000 (GPD)   RADS SAMPLES FREQY: __36 (MONTHS)
  % DESIGN CAP: 100.0            TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:    650,000 (GPD)   TTHM SAMPLES FREQY: _____ (MONTHS)
   MAXIMUM/HOUR: _____ (G)    SERVICE CONNECTIONS: ____1,622
TOT STORAGE CAP: _____565,000 (G)       NUMBER METERED: ____1,622
    METER CAP: _____          TYPE OF METER: CHART_RECORDER_____
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/92  12/92  POP GRP:D  *)
(*M/R STATUS:T  SAMPLES REQ'D:_20  RULE MIN: 20 CONSOLIDATED: N Y/N *)
1SERVAREA: MC = MUNICIPAL/CITY          TOTAL # OF PLANTS:   2
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   2

   PRIMARY PLANT:  1  LATITUDE: 28:05:30  LONGITUDE: 81:44:30
   PRIMARY SOURCE:  1  LATITUDE: 28:05:30  LONGITUDE: 81:44:30
CREDIT (Y/N)  VOC: Y  PEST: N        DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6530321 01 001      DRINKING WATER PROGRAM              07/16/98
                  SOURCE INFORMATION          12:47:33
                              LAST UPDATED: 02/26/97

MAILING NAME: LAKE ALFRED, CITY OF          ACTIVE    COMMUNITY
 PLANT NAME: LAKE ALFRED WATER PLANT       ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: LAKE_ALFRED,_CITY__WELL_#2_&#4
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********
LATITUDE: 28:05:30.000  LONGITUDE: 81: 44:30.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____550,000 (GPD)      % OF SYSTEM PRODUCTION:  84

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __2

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 MORE DATA ON FILE
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PWS004 6530321 01 002 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 13:22:49
LAST UPDATED: 08/15/86

MAILING NAME: LAKE ALFRED, CITY OF ACTIVE COMMUNITY
PLANT NAME: LAKE ALFRED WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WELL_#1_____
SOURCE NUMBR: 002 SOURCE STATUS: **D = DELETED** **** LAT LONG **********
LATITUDE: 28:05:35.000 LONGITUDE: 81: 44:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6530321 02 001 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 13:21:45
LAST UPDATED: 02/26/97

MAILING NAME: LAKE ALFRED, CITY OF ACTIVE COMMUNITY
PLANT NAME: LAKE ALFRED CITY BARN ACTIVE PLANT NUMBER: 2
SOURCE NAME: WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:35.000 LONGITUDE: 81: 44:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____100,000 (GPD) % OF SYSTEM PRODUCTION: 15

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6530459 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:45:18
LAST UPDATED: 10/20/88

STATUS: I = INACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: 10/ 18/ 88 INACT REASON: M = SYSTEM MERGED/CONSOLIDAT
PWS TYPE: C = COMMUNITY CATG./CLASS: 4D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: DINNER_LAKE-JAN_PHYL_SYSTEM___ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_1509_____ PHONE: (813) 533 - 6534
CITY: BARTOW_____ STATE: FL ZIP CODE: 33830 - ____

OWNER NAME: DINNER_LAKE_C/O_POLK_CO.UTILIT GENERAL MAIL: N (Y OR N)
ADDRESS: SPIRIT_LAKE_ROAD_____ PHONE: (813) 533 - 4049
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: N = COUNTY
INSPECTOR'S INITIALS: ___
DATE OF VISIT: 09/ 14/ 88 CLASS: 02 PRIOR VISIT: 04/ 28/ 88 PRIOR CLASS: 01
PERSON CONTACTED: MIKE_HODGE-POLK_CO._UTILITIES_ TITLE: CHIEF_OPERATOR_____
CONTACT PHONE: (813) 533 - 4049 SANITARY SURVEY: 04/ 28/ 88
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION PWS TRANSMIT HERE ==> _

PWS002 6530459 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:56:11
LAST UPDATED: 10/20/88
MAILING NAME: DINNER LAKE-JAN PHYL SYSTEM INACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____7,400 BACT SAMPLES REQ'D: __8 RULE MIN: 8
DESIGN CAP: ____2,448,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: ____1,550,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 63.3 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 420,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ____2,125
TOT STORAGE CAP: _____53,500 (G) NUMBER METERED: ____2,125
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 3 = BACTERIA MONITORING
(*DEFAULT COMP PERIOD 07/92 12/92 POP GRP:D *)
(*M/R STATUS:I SAMPLES REQ'D:_40 RULE MIN: 40 CONSOLIDATED: N Y/N *)
1SERVAREA: CW = COUNTY WIDE TOTAL # OF PLANTS:
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:00:04 LONGITUDE: 81:47:08
PRIMARY SOURCE: 1 LATITUDE: 28:00:04 LONGITUDE: 81:47:08
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530459 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:56:30
LAST UPDATED: 03/13/98

MAILING NAME: DINNER LAKE-JAN PHYL SYSTEM INACTIVE COMMUNITY
PLANT NAME: WINTER HAVEN INACTIVE PLANT NUMBER: 1
SOURCE NAME: DINNER_LAKE_EST/PO_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:04.000 LONGITUDE: 81: 47:08.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____120,000 (GPD) % OF SYSTEM PRODUCTION: 28

ANN % SOURCE TYPE: P = PURCHASED SURFACE
GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

100 PURCHASED GROUND, PWS ID: 6534609 _ NAME: GORDONVILLE WATER SYSTEM

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6530459 01 002 .DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:12:13
LAST UPDATED:

MAILING NAME: DINNER LAKE-JAN PHYL SYSTEM INACTIVE COMMUNITY
PLANT NAME: WINTER HAVEN INACTIVE PLANT NUMBER: 1
SOURCE NAME: JAN-PHYL_SYS_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:01:20.000 LONGITUDE: 81: 43:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530492 DRINKING WATER PROGRAM 07/28/98
SYSTEM INVENTORY INFORMATION PART 1 13:43:30
LAST UPDATED: 06/11/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 4C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: EAGLE_LAKE,_CITY_OF_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 75_7TH_STREET_EAST_____ PHONE: (941) 293 - 4141
CITY: EAGLE_LAKE_____ STATE: FL ZIP CODE: 33839 - ____

OWNER NAME: EAGLE_LAKE,_CITY_OF_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_129_____ PHONE: (941) 293 - 4141
CITY: EAGLE_LAKE_____ STATE: FL ZIP CODE: 33839 - ____
OWNER TYPE: M = MUNICIPALITY
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 06/ 09/ 98 CLASS: 03 PRIOR VISIT: 12/ 11/ 97 PRIOR CLASS: 01
PERSON CONTACTED: STEVE_WARDEN_____ TITLE: _____
CONTACT PHONE: (941) 293 - 4141 SANITARY SURVEY: 09/ 26/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530492 DRINKING WATER PROGRAM 07/28/98
SYSTEM INVENTORY INFORMATION PART 2 13:44:30
LAST UPDATED: 06/11/98
MAILING NAME: EAGLE LAKE, CITY OF ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____1,945 BACT SAMPLES REQ'D: __4 RULE MIN: 2
DESIGN CAP: ____2,016,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____432,000 (GPD) RADS SAMPLES FREQY: __36 (MONTHS)
% DESIGN CAP: 21.4 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 227,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____947
TOT STORAGE CAP: _____200,000 (G) NUMBER METERED: _____947
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:T SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MC = MUNICIPAL/CITY TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:53:40 LONGITUDE: 81:45:30
PRIMARY SOURCE: 1 LATITUDE: 27:53:40 LONGITUDE: 81:45:30
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530492 01 001 DRINKING WATER PROGRAM 07/28/98
SOURCE INFORMATION 13:44:55
LAST UPDATED: 11/12/96

MAILING NAME: EAGLE LAKE, CITY OF ACTIVE COMMUNITY
PLANT NAME: EAGLE LAKE WTP ACTIVE PLANT NUMBER: 1
SOURCE NAME: 2_WELLS_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:53:40.000 LONGITUDE: 81: 45:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____227,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530498 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:51:21
LAST UPDATED: 11/24/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: EAST_TEMPLE_BAPTIST_CHURCH____ GENERAL MAIL: N (Y OR N)
ADDRESS: US_92_WEST_____ PHONE: (941) 956 - 3234
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: EAST_TEMPLE_BAPTIST_CHURCH____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1306_____ PHONE: (941) 956 - 3234
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 03/ 18/ 97 CLASS: 01 PRIOR VISIT: 02/ 28/ 97 PRIOR CLASS: 01
PERSON CONTACTED: BOB_VAN_DUSER/P._HAMILTON_____ TITLE: PASTOR_____
CONTACT PHONE: (941) 688 - 7721 SANITARY SURVEY: 01/ 25/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? _

PWS002 6530498 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:52:30
LAST UPDATED: 11/24/97
MAILING NAME: EAST TEMPLE BAPTIST CHURCH ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____30 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,800 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,800 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,200 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____80 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSE_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:40
PRIMARY SOURCE: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:40
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530498 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 12:52:50
LAST UPDATED: 05/02/83

MAILING NAME: EAST TEMPLE BAPTIST CHURCH ACTIVE NONCOMMUNITY
PLANT NAME: EAST TEMPLE BAPTIST PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: EAST_TEMPLE_BAPTIS_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:00.000 LONGITUDE: 81: 45:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6530500 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 12:58:27
LAST UPDATED: 05/29/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 4D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: EASTSIDE_ASSEMBLY_OF_GOD_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 115_WOODLAND_DRIVE_____ PHONE: (941) 299 - 2850
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: EASTSIDE_ASSEMBLY_OF_GOD_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_2213_____ PHONE: (941) 299 - 2850
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 05/ 04/ 98 CLASS: 01 PRIOR VISIT: 10/ 24/ 97 PRIOR CLASS: 03
PERSON CONTACTED: REV._JOEL_JOHNSON_____ TITLE: PASTOR_____
CONTACT PHONE: (941) 665 - 0104 SANITARY SURVEY: 03/ 01/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530500 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 12:58:49
LAST UPDATED: 05/29/98
MAILING NAME: EASTSIDE ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____100 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,200 (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:50 LONGITUDE: 81:40:18
PRIMARY SOURCE: 1 LATITUDE: 28:01:50 LONGITUDE: 81:40:18
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530500 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION- 12:59:10
LAST UPDATED: 03/03/93

MAILING NAME: EASTSIDE ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
PLANT NAME: EASTSIDE ASSEMBLY PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: EASTSIDE_ASSEMBLY__WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:50.000 LONGITUDE: 81: 40:18.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530712 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:12:05
LAST UPDATED: 06/12/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: HAINES_HAVEN_MHP_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 6201_HWY_92_WEST_BOX_176_LOT11 PHONE: (941) 956 - 3682
CITY: HAINES_CITY_____ STATE: FL ZIP CODE: 33844 - ____

OWNER NAME: HAINES_HAVEN_MHP_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 6201_HIGHWAY_92_WEST_____ PHONE: (941) 956 - 3682
CITY: HAINES_CITY_____ STATE: FL ZIP CODE: 33844 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 04/ 23/ 98 CLASS: 01 PRIOR VISIT: 04/ 24/ 97 PRIOR CLASS: 03
PERSON CONTACTED: STEVE_ROZSAS_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 3682 SANITARY SURVEY: 02/ 26/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530712 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:12:26
LAST UPDATED: 06/12/98
MAILING NAME: HAINES HAVEN MHP ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: _____76 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____576,000 (GPD) RADS SAMPLES REQ'D: __1
MAXIMUM DAY: _____576,000 (GPD) RADS SAMPLES FREQY: __48 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____2,400 (G) SERVICE CONNECTIONS: _____49
TOT STORAGE CAP: _____630 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELECTRIC_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: RV = RV PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:05:05 LONGITUDE: 81:42:00
PRIMARY SOURCE: 1 LATITUDE: 28:05:05 LONGITUDE: 81:42:00
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530712 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:12:48
LAST UPDATED: 03/20/90

MAILING NAME: HAINES HAVEN MHP ACTIVE NONTRANS NONC
PLANT NAME: HAINES HAVEN MHP WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: HAINES_HAVEN_MHP/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:05.000 LONGITUDE: 81: 42:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530718 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:13:07
LAST UPDATED: 12/02/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: HAMMONDELL_CAMPSITES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5601_CYPRESS_GARDENS_ROAD_____ PHONE: (941) 324 - 5775
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: HAMMONDELL_CAMPSITES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5601_CYPRESS_GARDENS_ROAD_____ PHONE: (941) 324 - 5775
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 11/ 25/ 97 CLASS: 01 PRIOR VISIT: 11/ 05/ 97 PRIOR CLASS: 01
PERSON CONTACTED: BOB_DAVIS_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 324 - 5775 SANITARY SURVEY: 09/ 18/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530718 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:13:29
LAST UPDATED: 12/02/97
MAILING NAME: HAMMONDELL CAMPSITES ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____250 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____144,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____144,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 27,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____125
TOT STORAGE CAP: _____750 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: MASTERMETER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: RV = RV PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:30 LONGITUDE: 81:39:50
PRIMARY SOURCE: 1 LATITUDE: 27:59:30 LONGITUDE: 81:39:50
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530718 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:13:50
LAST UPDATED: 10/21/96

MAILING NAME: HAMMONDELL CAMPSITES ACTIVE COMMUNITY
PLANT NAME: HAMMONDELL CAMPSITES ACTIVE PLANT NUMBER: 1
SOURCE NAME: HAMMONDELL_CAMPSIT_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:30.000 LONGITUDE: 81: 39:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____27,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530720 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:14:10
LAST UPDATED: 02/16/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CIRCLE_K_#_7487_-DISTRICT_1410 GENERAL MAIL: Y (Y OR N)
ADDRESS: 4980_SPIRIT_LAKE_ROAD_____ PHONE: (941) 294 - 5044
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: CIRCLE_K_#_7487_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 5805_BRECKINRIDGE_PKWY_SUITE_D PHONE: (813) 623 - 1555
CITY: TAMPA_____ STATE: FL ZIP CODE: 33610 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 03/ 98 CLASS: 01 PRIOR VISIT: 03/ 31/ 97 PRIOR CLASS: 01
PERSON CONTACTED: A._WOODRUFF_____ TITLE: _____
CONTACT PHONE: (941) 294 - 5044 SANITARY SURVEY: 09/ 17/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530720 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:14:31
LAST UPDATED: 02/16/98
MAILING NAME: CIRCLE K # 7487 -DISTRICT 1410 ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____50 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____43,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____(MONTHS)
MAXIMUM/HOUR: _____1,800 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____1
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:55 LONGITUDE: 81:46:58
PRIMARY SOURCE: 1 LATITUDE: 27:58:40 LONGITUDE: 81:47:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530720 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION. 13:14:52
LAST UPDATED: 01/16/98

MAILING NAME: CIRCLE K # 7487 -DISTRICT 1410 ACTIVE NONCOMMUNITY
PLANT NAME: CIRCLE K #7487 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: CIRCLE_K/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:58:40.981 LONGITUDE: 81: 47:00.988 * COLLECTION DATE: 12/30/97 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530881 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:15:12
LAST UPDATED: 02/27/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 10/ 01 END: 06/ 30 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LEMON_TREE__APTS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: FL._AVE._OFF_DUNDEE_RD._____ PHONE: (___) ___ - ____
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: JAMES_KOCH_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2201_AVE._B_SW._____ PHONE: (941) 299 - 5705
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 02/ 13/ 98 CLASS: SS PRIOR VISIT: 10/ 17/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JIM_KOCH_____ TITLE: OWNER_____
CONTACT PHONE: (941) 299 - 5705 SANITARY SURVEY: 02/ 13/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530881 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:15:34
LAST UPDATED: 02/27/98
MAILING NAME: LEMON TREE APTS ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____20 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____10
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:R SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: LC = LABOR CAMP TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:30 LONGITUDE: 81:41:45
PRIMARY SOURCE: 1 LATITUDE: 28:01:30 LONGITUDE: 81:41:45
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530881 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:15:55
LAST UPDATED: 03/03/93

MAILING NAME: LEMON TREE APTS ACTIVE NONCOMMUNITY
PLANT NAME: KOCH APARTMENTS PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: KOCH_APARTMENTS/JA_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:30.000 LONGITUDE: 81: 41:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530927 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:16:15
LAST UPDATED: 06/12/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MARIANA_PLAZA_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3009_HWY.92,_UNIT_#6_____ PHONE: (___) ___ - ____
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: MARIANA_PLAZA(RANDY_RITNER)___ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3009_HWY.92_WEST,SUITE_6_____ PHONE: (___) ___ - ____
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 05/ 21/ 98 CLASS: 03 PRIOR VISIT: 04/ 27/ 98 PRIOR CLASS: 01
PERSON CONTACTED: TIM_BOOTH_____ TITLE: _____
CONTACT PHONE: (941) 956 - 2917 SANITARY SURVEY: 02/ 26/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530927 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:16:36
LAST UPDATED: 06/12/98
MAILING NAME: MARIANA PLAZA ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____20 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____7,680 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____1,515 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 19.7 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 10,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____6
TOT STORAGE CAP: _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR(1447.3)
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RS = RESTAURANT TOTAL # OF PLANTS: 1
2SERVAREA: XX = OTHER TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:17 LONGITUDE: 81:51:11
PRIMARY SOURCE: 1 LATITUDE: 28:04:17 LONGITUDE: 81:51:11
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530927 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:16:57
LAST UPDATED: 05/04/98

MAILING NAME: MARIANA PLAZA ACTIVE NONCOMMUNITY
PLANT NAME: MARIANA PLAZA W. T. P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: MARIANA_PLAZA__WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:17.015 LONGITUDE: 81: 51:11.043 * COLLECTION DATE: 03/26/98 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____10,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6530969 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:17:17
LAST UPDATED: 02/12/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LAKE_BLUE_MOBILE_HOME_PARK____ GENERAL MAIL: N (Y OR N)
ADDRESS: 713_ROSE_ST._S._LOT_#1_____ PHONE: (941) 967 - 0402
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: LAKE_BLUE_MOBILE_HOME_PARK____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 30_BONISEE_CIRCLE_____ PHONE: (941) 967 - 0402
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33801 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 05/ 01/ 97 CLASS: SS PRIOR VISIT: 11/ 10/ 94 PRIOR CLASS: 02
PERSON CONTACTED: GLENN_BERNOR_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 665 - 0279 SANITARY SURVEY: 05/ 01/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530969 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:17:39
LAST UPDATED: 02/12/98
MAILING NAME: LAKE BLUE MOBILE HOME PARK ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____161 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____86,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____86,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 13,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____105
TOT STORAGE CAP: _____2,000 (G) NUMBER METERED: _____2
METER CAP: _____ TYPE OF METER: ELAPSE_HOUR_METER___
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:00 LONGITUDE: 81:46:45
PRIMARY SOURCE: 1 LATITUDE: 28:03:00 LONGITUDE: 81:46:45
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6530979 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:19:25
LAST UPDATED: 11/27/96

MAILING NAME: LAKE HAVEN TP/A BELFORTTI ACTIVE NONTRANS NONC
PLANT NAME: LAKE HAVEN T.P. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: LAKE_HAVEN_T.P._WELL_#_1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:45.000 LONGITUDE: 81: 45:46.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

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PWS001 6530979          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           13:20:43
                              LAST UPDATED: 06/10/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: LAKE_HAVEN_TP/A_BELFORTTI____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2500_US_92_WEST_____________  PHONE: ( 941 ) 956 - 9003
     CITY: AUBURNDALE_____  STATE: FL  ZIP CODE: 33823 - ____

 OWNER NAME: LAKE_HAVEN_TP/A_BELFORTTI____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2500_US_92_WEST_____________  PHONE: ( 941 ) 956 - 9003
     CITY: WINTER_HAVEN_____  STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                          INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 05/ 07/ 98 CLASS: 01 PRIOR VISIT: 06/ 27/ 97 PRIOR CLASS: 01
PERSON CONTACTED: HOWARD_ANNTONY_____  TITLE: OWNER_____
CONTACT PHONE: ( 941 ) 956 - 9003   SANITARY SURVEY: 09/ 17/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                  SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530979          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           13:21:05
                              LAST UPDATED: 06/10/98
MAILING NAME: LAKE HAVEN TP/A. BELFORTTI      ACTIVE    NONTRANS NONC
                    BACT NON COMPLIER: _
 RET POP SERVED: _____52        BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____28,000 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____11,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP: 39.2          TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:    3,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
   MAXIMUM/HOUR: _____(G)  SERVICE CONNECTIONS: _____26
TOT STORAGE CAP: _____525 (G)     NUMBER METERED: _____
    METER CAP: _____  TYPE OF METER: ELAPSE_HOUR_METER___
(*LEAD AND COPPER*)          CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G *)
(*M/R STATUS:T  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK        TOTAL # OF PLANTS:   1
2SERVAREA: AP = APARTMENT           TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1 LATITUDE: 28:03:45  LONGITUDE: 81:45:46
  PRIMARY SOURCE:  1 LATITUDE: 28:03:45  LONGITUDE: 81:45:46
CREDIT (Y/N)  VOC: Y  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6530979 01 001     DRINKING WATER PROGRAM            07/16/98
                SOURCE INFORMATION.             13:21:25
                              LAST UPDATED: 11/27/96

MAILING NAME: LAKE HAVEN TP/A. BELFORTTI     ACTIVE    NONTRANS NONC
 PLANT NAME: LAKE HAVEN T.P. WATER PLANT     ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: LAKE_HAVEN_T.P._WELL_#_1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********_
LATITUDE: 28:03:45.000  LONGITUDE: 81: 45:46.000 *  COLLECTION DATE: __/__/__ *
                      * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____3,000 (GPD)     % OF SYSTEM PRODUCTION: 100

:ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6530985 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:21:45
LAST UPDATED: 12/26/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MARIANA_ACRES_WATER_SYSTEM____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2502_MARY_WAY_____ PHONE: (941) 956 - 4093
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: LAKE_MARIANA_ACRES/CO_POLK_UTL GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_2019_____ PHONE: (941) 534 - 7351
CITY: BARTOW_____ STATE: FL ZIP CODE: 33830 - ____
OWNER TYPE: N = COUNTY
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 03/ 05/ 96 CLASS: SS PRIOR VISIT: 03/ 10/ 93 PRIOR CLASS: SS
PERSON CONTACTED: LAVERNE_COWLES_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 533 - 4049 SANITARY SURVEY: 03/ 05/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6530985 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:22:53
LAST UPDATED: 12/26/97
MAILING NAME: MARIANA ACRES WATER SYSTEM ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____1,641 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____734,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____432,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 58.8 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 115,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____469
TOT STORAGE CAP: _____60,000 (G) NUMBER METERED: _____1
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:T SAMPLES REQ'D:_20 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: SD = SUBDIVISION TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:04:48 LONGITUDE: 81:45:18
PRIMARY SOURCE: 1 LATITUDE: 28:04:48 LONGITUDE: 81:45:18
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)

PWS004 6530985 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:23:27
LAST UPDATED: 02/11/98

MAILING NAME: MARIANA ACRES WATER SYSTEM ACTIVE COMMUNITY
PLANT NAME: MARIANA ACRES W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: LAKE_MARIANNA_ACRE_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:48.000 LONGITUDE: 81: 45:18.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____53,000 (GPD) % OF SYSTEM PRODUCTION: 46

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6530985 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:13:39
LAST UPDATED: 02/11/98

MAILING NAME: MARIANA ACRES WATER SYSTEM ACTIVE COMMUNITY
PLANT NAME: MARIANA ACRES W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: MARIANA_ACRES_#2_____
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:47.000 LONGITUDE: 81: 45:18.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____62,000 (GPD) % OF SYSTEM PRODUCTION: 53

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6531035          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 1             13:24:24
                              LAST UPDATED: 03/24/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: N = NONCOMMUNITY  CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: LAKMAR_MOTEL_____________________ GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2520_US_92_WEST_____________ PHONE: ( 941 ) 956 - 1867
    CITY: AUBURNDALE_____ STATE: FL  ZIP CODE: 33823 - ____

 OWNER NAME: LAKMAR_MOTEL_____________________ GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2520_US_92_WEST_____________ PHONE: ( 941 ) 956 - 1867
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                        INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 02/ 27/ 98 CLASS: SS PRIOR VISIT: 01/ 16/ 98 PRIOR CLASS: 01
PERSON CONTACTED: PAUL_SHREKENGOST_____ TITLE: OWNER_____
CONTACT PHONE: ( 941 ) 956 - 1867    SANITARY SURVEY: 02/ 27/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                    SCREEN ACTION ___  TRANSMIT HERE ==> _

PWS002 6531035          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 2             13:24:45
                              LAST UPDATED: 03/24/98
MAILING NAME: LAKMAR MOTEL                 ACTIVE    NONCOMMUNITY
                      BACT NON COMPLIER: _
 RET POP SERVED: _____25          BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____36,000 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____5,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP:  13.8             TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:      1,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____1,500 (G)    SERVICE CONNECTIONS: _____6
TOT STORAGE CAP: _____164 (G)      NUMBER METERED: _____
    METER CAP: _____              TYPE OF METER: NONE_____
(*LEAD AND COPPER*)               CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93  06/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: ML = MOTEL              TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

   PRIMARY PLANT:  1  LATITUDE: 28:03:54  LONGITUDE: 81:45:15
  PRIMARY SOURCE:  1  LATITUDE: 28:03:54  LONGITUDE: 81:45:15
CREDIT (Y/N)  VOC: N  PEST: N        DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6531035 01 001     DRINKING WATER PROGRAM              07/16/98
                SOURCE INFORMATION          13:25:07
                              LAST UPDATED: 02/07/92

MAILING NAME: LAKMAR MOTEL                 ACTIVE    NONCOMMUNITY
 PLANT NAME: LAKMAR MOTEL W. T. P.         ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: LAKMAR_MOTEL/PAUL__WELL#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG ****************
LATITUDE: 28:03:54.000  LONGITUDE: 81: 45:15.000 *  COLLECTION DATE: __/__/__ *
                      * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____1,000 (GPD)     % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6531107 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:25:26
LAST UPDATED: 01/13/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LUCERNE_PARK_MOBILE_HOME_PARK_ GENERAL MAIL: N (Y OR N)
ADDRESS: S.R._544_EAST_125_IXORA_DRIVE_ PHONE: (941) 294 - 1509
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: LUCERNE_PARK_MOBILE_HOME_PARK_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 120_WEST_GRANDE_AVENUE_____ PHONE: (619) 746 - 2411
CITY: ESCONDIDO_____ STATE: CA ZIP CODE: 92025 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 13/ 98 CLASS: 01 PRIOR VISIT: 06/ 02/ 97 PRIOR CLASS: SS
PERSON CONTACTED: JIM_PEPPERMAN/ANN_BRODICK_____ TITLE: MAINTENANCE_____
CONTACT PHONE: (941) 294 - 1509 SANITARY SURVEY: 06/ 02/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531107 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:25:48
LAST UPDATED: 01/13/98
MAILING NAME: LUCERNE PARK MOBILE HOME PARK ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____270 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____60,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____30,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 50.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 21,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____137
TOT STORAGE CAP: _____3,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:40 LONGITUDE: 81:42:31
PRIMARY SOURCE: 1 LATITUDE: 28:04:40 LONGITUDE: 81:42:31
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531107 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:26:08
LAST UPDATED: 09/29/97

MAILING NAME: LUCERNE PARK MOBILE HOME PARK ACTIVE COMMUNITY
PLANT NAME: LUCERNE LAKESIDE PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: LUCERNE_PARK_MHP/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:40.000 LONGITUDE: 81: 42:31.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____21,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531143 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:26:29
LAST UPDATED: 04/29/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LAKE_MARIANNA_MOTEL_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2508_US_92_WEST_____ PHONE: (941) 956 - 1864
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: LK_MARIANNA_MOTEL/MYOSOON_KIM_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 547_BRIDGERS_AVENUE_____ PHONE: (941) 967 - 4014
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 16/ 98 CLASS: 01 PRIOR VISIT: 08/ 22/ 97 PRIOR CLASS: 01
PERSON CONTACTED: IVAN_KIM_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 967 - 4014 SANITARY SURVEY: 01/ 10/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531143 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:26:58
LAST UPDATED: 04/29/98
MAILING NAME: LAKE MARIANNA MOTEL ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____30 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____15
TOT STORAGE CAP: _____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: ML = MOTEL TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:54 LONGITUDE: 81:45:13
PRIMARY SOURCE: 1 LATITUDE: 28:03:54 LONGITUDE: 81:45:13
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)

PWS004 6531143 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:27:57
LAST UPDATED: 04/29/98

MAILING NAME: LAKE MARIANNA MOTEL ACTIVE NONCOMMUNITY
PLANT NAME: LK.MARIANA MOTEL WTP ACTIVE PLANT NUMBER: 1
SOURCE NAME: LK_MARIANA_MOTEL/_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:54.000 LONGITUDE: 81: 45:13.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6531308 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:35:24
LAST UPDATED: 06/18/96

STATUS: I = INACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: 06/ 18/ 96 INACT REASON: S = SYSTEM DISCONTINUED
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ORANGE_MANOR_WEST(GARDEN_GROVE GENERAL MAIL: Y (Y OR N)
ADDRESS: 3601_CYPRESS_GARDEN_ROAD_____ PHONE: (813) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: ORANGE_MANOR_MHP_____ GENERAL MAIL: N (Y OR N)
ADDRESS: SR_540_A_AT_LAKE_GRASSY_____ PHONE: (813) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 10/ 04/ 94 CLASS: SS PRIOR VISIT: 08/ 27/ 91 PRIOR CLASS: SS
PERSON CONTACTED: MARK_KLUYTENAAR,GARDEN_GROVE__ TITLE: SUPERVISOR_____
CONTACT PHONE: (813) 324 - 4319 SANITARY SURVEY: 10/ 04/ 94
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531308 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:34:16
LAST UPDATED: 06/18/96
MAILING NAME: ORANGE MANOR WEST(GARDEN GROVE INACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____500 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____252,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____252,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1 (GPD). TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: __ _____ (G) SERVICE CONNECTIONS: _____459
TOT STORAGE CAP: _____15,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:R SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS:
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:58:14 LONGITUDE: 81:41:30
PRIMARY SOURCE: 1 LATITUDE: 27:58:14 LONGITUDE: 81:41:30
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531308 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION- 13:35:50
LAST UPDATED: 06/18/96

MAILING NAME: ORANGE MANOR WEST(GARDEN GROVE INACTIVE COMMUNITY
PLANT NAME: WINTER HAVEN INACTIVE PLANT NUMBER: 1
SOURCE NAME: ORANGE_MANOR_MHP_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: I = INACTIVE **** LAT LONG **********
LATITUDE: 27:58:14.000 LONGITUDE: 81: 41:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6531308 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:19:47
LAST UPDATED: 10/11/88

MAILING NAME: ORANGE MANOR WEST(GARDEN GROVE INACTIVE COMMUNITY
PLANT NAME: WINTER HAVEN INACTIVE PLANT NUMBER: 1
SOURCE NAME: GARDEN_GROVE_CYPRESS_POINT___
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:45.000 LONGITUDE: 81: 40:02.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____1 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: P = PURCHASED SURFACE
GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

100 PURCHASED GROUND, PWS ID: 6532533 _ NAME: GARDEN GROVE WATER CO.

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531313 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:37:28
LAST UPDATED: 05/29/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ORCHID_SPRINGS_____ GENERAL MAIL: N (Y OR N)
ADDRESS: ORHID_SPRINGS_DR._OFF_SR_550_E PHONE: (941) 324 - 3698
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: ORCHID_SPRINGS_CORPORATION____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 710_OVERLOOK_DRIVE_____ PHONE: (941) 324 - 3698
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 05/ 19/ 98 CLASS: 03 PRIOR VISIT: 12/ 10/ 97 PRIOR CLASS: 01
PERSON CONTACTED: RALPH_TURNER_____ TITLE: OWNER/OPERATOR_____
CONTACT PHONE: (941) 324 - 3698 SANITARY SURVEY: 02/ 27/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531313 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:37:50
LAST UPDATED: 05/29/98
MAILING NAME: ORCHID SPRINGS ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____752 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____864,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____864,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 88,500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____501
TOT STORAGE CAP: _____15,000 (G) NUMBER METERED: _____216
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:T SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: SD = SUBDIVISION TOTAL # OF PLANTS: 2
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:00:45 LONGITUDE: 81:40:45
PRIMARY SOURCE: 1 LATITUDE: 28:00:45 LONGITUDE: 81:40:45
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531313 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:38:12
LAST UPDATED: 02/16/93

MAILING NAME: ORCHID SPRINGS ACTIVE COMMUNITY
PLANT NAME: ORCHID SPRINGS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: ORCHID_SPRINGS_COR_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:45.000 LONGITUDE: 81: 40:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____86,000 (GPD) % OF SYSTEM PRODUCTION: 97

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6531313 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:22:31
LAST UPDATED: 08/15/86

MAILING NAME: ORCHID SPRINGS ACTIVE COMMUNITY
PLANT NAME: ORCHID SPRINGS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: WELL_#2_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 30:42:51.000 LONGITUDE: 85: 55:58.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: _1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531496 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:38:31
LAST UPDATED: 02/07/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: REISING_APARTMENTS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2450_HWY_92_W_____ PHONE: (941) 956 - 4044
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: REISING_APARTMENTS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: US_92_E_____ PHONE: (941) 956 - 4044
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: _____ - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 02/ 06/ 97 CLASS: 01 PRIOR VISIT: 01/ 24/ 95 PRIOR CLASS: 01
PERSON CONTACTED: JANET_REISING_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 4044 SANITARY SURVEY: 10/ 16/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531496 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:38:52
LAST UPDATED: 02/07/97
MAILING NAME: REISING APARTMENTS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____23 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____57,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____17
TOT STORAGE CAP: _____525 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: AP = APARTMENT TOTAL # OF PLANTS: 1
2SERVAREA: ML = MOTEL TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:03:42 LONGITUDE: 81:44:55
PRIMARY SOURCE: 1 LATITUDE: 28:03:42 LONGITUDE: 81:44:55
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531496 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:39:14
LAST UPDATED: 10/17/91

MAILING NAME: REISING APARTMENTS ACTIVE OTHER PUBLIC
PLANT NAME: REISING APARTMENTS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: REISING_APARTMENTS_WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:03:42.000 LONGITUDE: 81: 44:55.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6531496 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:24:15
LAST UPDATED:

MAILING NAME: REISING APARTMENTS ACTIVE OTHER PUBLIC
PLANT NAME: REISING APARTMENTS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: REISING_APARTMENTS_WELL_#I___
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:42.000 LONGITUDE: 81: 45:42.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ *PURCHASED GROUND, PWS ID:* _____ _ *NAME:* .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531584 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:39:34
LAST UPDATED: 06/12/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SANDY_BEACH_TRAILER_COURT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2250_US_HWY_92_EAST_____ PHONE: (941) 956 - 3632
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: WALTER_J._AND_LONNA_STRAMKA___ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2350_US_HWY_92_WEST_____ PHONE: (941) 956 - 3632
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 05/ 07/ 98 CLASS: 03 PRIOR VISIT: 04/ 27/ 98 PRIOR CLASS: 01
PERSON CONTACTED: WALTER_STRAMKA_____ TITLE: _____
CONTACT PHONE: (941) 956 - 3632 SANITARY SURVEY: 11/ 03/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531584 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:39:55
LAST UPDATED: 06/12/98
MAILING NAME: SANDY BEACH TRAILER COURT ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____93 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____86,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____86,000 (GPD) RADS SAMPLES FREQY: __3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: ____ (MONTHS)
MAXIMUM/HOUR: _____(G) SERVICE CONNECTIONS: _____50
TOT STORAGE CAP: __*____1,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: FLOW_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:R SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:50
PRIMARY SOURCE: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:50
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531584 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:40:16
LAST UPDATED: 10/11/88

MAILING NAME: SANDY BEACH TRAILER COURT ACTIVE COMMUNITY
PLANT NAME: SANDY BEACH TRAILER COURT PLAN ACTIVE PLANT NUMBER: 1
SOURCE NAME: SANDY_BEACH_T_CT/T_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:00.000 LONGITUDE: 81: 45:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531691 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:40:36
LAST UPDATED: 06/08/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SPIVEY_ENTERPRISES_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 4205_RECKER_HWY_____ PHONE: (941) 293 - 1393
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: C._R._SPIVEY_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1201_LAKE_MIRROR_TERRACE_____ PHONE: (941) 293 - 0333
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 06/ 04/ 98 CLASS: 01 PRIOR VISIT: 04/ 11/ 97 PRIOR CLASS: 01
PERSON CONTACTED: STEVE_PARKER_____ TITLE: _____
CONTACT PHONE: (941) 294 - 1393 SANITARY SURVEY: 09/ 17/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531691 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:40:57
LAST UPDATED: 06/08/98
MAILING NAME: SPIVEY ENTERPRISES ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____80 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____57,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____7
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:15 LONGITUDE: 81:46:35
PRIMARY SOURCE: 1 LATITUDE: 28:00:15 LONGITUDE: 81:46:35
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531691 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:41:18
LAST UPDATED: 03/22/82

MAILING NAME: SPIVEY ENTERPRISES ACTIVE NONCOMMUNITY
PLANT NAME: SPIVEYS AUTO SALVAGE PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: SPIVEY_AUTO_PARTS/_WELL#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:15.000 LONGITUDE: 81: 46:35.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531713 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:41:38
LAST UPDATED: 02/27/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ST._MATTHEWS_CATHOLIC_CHURCH__ GENERAL MAIL: Y (Y OR N)
ADDRESS: 651_CARL_FLOYD_ROAD_____ PHONE: (941) 324 - 3040
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: ST._MATTHEWS_CATHOLIC_CHURCH__ GENERAL MAIL: Y (Y OR N)
ADDRESS: 651_CARL_FLOYD_ROAD_____ PHONE: (941) 324 - 3040
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: C = CITY
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 19/ 98 CLASS: 03 PRIOR VISIT: 02/ 13/ 98 PRIOR CLASS: 01
PERSON CONTACTED: EDDIE_HENSLEY_____ TITLE: MAINTENANCE_____
CONTACT PHONE: (941) 324 - 3040 SANITARY SURVEY: 06/ 03/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? F
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531713 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:41:59
LAST UPDATED: 02/27/98
MAILING NAME: ST. MATTHEWS CATHOLIC CHURCH ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____800 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____43,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _ _____ (G) SERVICE CONNECTIONS: _____3
TOT STORAGE CAP: _____ (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:E *)
(*M/R STATUS:I SAMPLES REQ'D:_20 RULE MIN: 20 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:56 LONGITUDE: 81:40:43
PRIMARY SOURCE: 1 LATITUDE: 28:00:55 LONGITUDE: 81:40:44
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531713 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:42:21
LAST UPDATED: 02/23/98

MAILING NAME: ST. MATTHEWS CATHOLIC CHURCH ACTIVE NONCOMMUNITY
PLANT NAME: ST. MATTHEWS CATH. CH. PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: ST._MATTHEWS_CATHO_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:55.970 LONGITUDE: 81: 40:44.092 * COLLECTION DATE: 02/19/98 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531837 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:42:40
LAST UPDATED: 05/28/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/ __/ __
BEGIN DT: 02/ 78 INACT DT: __/ __/ __ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/ __ END: __/ __ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: TOWER_MANOR_ESTATES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: SADDLE_CREEK_RD._____ PHONE: (941) 752 - 6102
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: HORZION_REALTY_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 4400_WEST_92_____-_____ PHONE: (___) ___ - ____
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 04/ 13/ 98 CLASS: SS PRIOR VISIT: 03/ 26/ 98 PRIOR CLASS: 01
PERSON CONTACTED: HAROLD_FRYE_____ TITLE: OWNER_____
CONTACT PHONE: (941) 752 - 6102 SANITARY SURVEY: 04/ 13/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531837 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:43:02
LAST UPDATED: 05/28/98
MAILING NAME: TOWER MANOR ESTATES ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____165 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____48,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____20,468 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 42.6 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 12,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____124
TOT STORAGE CAP: _____2,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: KENT_FLOW_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:_10 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: MH = MOBILE HOME PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:56 LONGITUDE: 81:45:52
PRIMARY SOURCE: 1 LATITUDE: 28:03:56 LONGITUDE: 81:45:52
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531837 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:43:23
LAST UPDATED: 05/04/98

MAILING NAME: TOWER MANOR ESTATES ACTIVE COMMUNITY
PLANT NAME: TOWER MANOR ESTATES PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: TOWER_MANOR_EST/CE_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:03:56.485 LONGITUDE: 81: 45:52.151 * COLLECTION DATE: 03/26/98 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____12,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531916 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:43:43
LAST UPDATED: 06/11/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WAGON_WHEEL_CT._____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2350_US_92_WEST_____ PHONE: (941) 956 - 3632
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: JIM_STRAMKA_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2350_US_92_WEST_____ PHONE: (941) 956 - 3632
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 06/ 07/ 98 CLASS: 01 PRIOR VISIT: 09/ 11/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JIM_STRAMKA_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 3632 SANITARY SURVEY: 02/ 19/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6531916 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:44:06
LAST UPDATED: 06/11/98
MAILING NAME: WAGON WHEEL CT. ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____87 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____72,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____72,000 (GPD) RADS SAMPLES FREQY: __48 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 9,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____3,000 (G) SERVICE CONNECTIONS: _____59
TOT STORAGE CAP: _____535 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: MH = MOBILE HOME PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:30 LONGITUDE: 81:44:30
PRIMARY SOURCE: 1 LATITUDE: 28:04:30 LONGITUDE: 81:44:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531916 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:44:06
LAST UPDATED: 06/11/98
MAILING NAME: WAGON WHEEL CT. ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____87 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____72,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____72,000 (GPD) RADS SAMPLES FREQY: __48 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 9,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____3,000 (G) SERVICE CONNECTIONS: _____59
TOT STORAGE CAP: _____535 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: MH = MOBILE HOME PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:30 LONGITUDE: 81:44:30
PRIMARY SOURCE: 1 LATITUDE: 28:04:30 LONGITUDE: 81:44:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS001 6531992 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:44:26
LAST UPDATED: 07/18/83

MAILING NAME: WAGON WHEEL CT. ACTIVE NONCOMMUNITY
PLANT NAME: WAGON WHEEL COURT PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WAGON_WHEEL_CT./JI_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:30.000 LONGITUDE: 81: 44:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____9,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6531992 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:47:16
LAST UPDATED: 02/06/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 4B
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WINTER_HAVEN_WATER_DEPT._____ GENERAL MAIL: N (Y OR N)
ADDRESS: 1334_FAIRFAX_ST._NE._____ PHONE: (941) 294 - 1589
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: WINTER_HAVEN,_CITY_OF_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_2277_____ PHONE: (941) 291 - 5767
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: M = MUNICIPALITY
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 30/ 97 CLASS: SS PRIOR VISIT: 06/ 06/ 94 PRIOR CLASS: SS
PERSON CONTACTED: WAYNE_LAYNE/BOB_CONNOR_____ TITLE: CHIEF_OP./UTIL.DIR._
CONTACT PHONE: (941) 291 - 5767 SANITARY SURVEY: 01/ 30/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I

PWS002 6531992 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:45:25
LAST UPDATED: 02/06/98
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ___49,815 BACT SAMPLES REQ'D: _50 RULE MIN: 50
DESIGN CAP: ___19,470,000 (GPD) RADS SAMPLES REQ'D: __1
MAXIMUM DAY: ___10,000,000 (GPD) RADS SAMPLES FREQY: __36 (MONTHS)
% DESIGN CAP: 51.3 TTHM SAMPLES REQ'D: __1
AVG PRODUCTION: 10,107,000 (GPD) TTHM SAMPLES FREQY: ____3 (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ___15,514
TOT STORAGE CAP: __ _3,300,000 (G) NUMBER METERED: ___15,514
METER CAP: _____ TYPE OF METER: EACH_WELL_&_PLANT___
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/92 12/92 POP GRP:C *)
(*M/R STATUS:T SAMPLES REQ'D:_60 RULE MIN: 30 CONSOLIDATED: N Y/N *)
1SERVAREA: MC = MUNICIPAL/CITY TOTAL # OF PLANTS: 4
2SERVAREA: __ = ... TOTAL # OF SOURCES: 4

PRIMARY PLANT: 1 LATITUDE: 28:02:11 LONGITUDE: 81:43:05
PRIMARY SOURCE: 1 LATITUDE: 28:02:06 LONGITUDE: 81:43:06
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6531992 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:47:41
LAST UPDATED: 03/31/97

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: FAIRFAX_W.T.P._WELLS_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:02:06.000 LONGITUDE: 81: 43:06.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ____7,890,000 (GPD) % OF SYSTEM PRODUCTION: 78

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __7

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6531992 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 15:08:23
LAST UPDATED:

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: INWOOD_PLANT_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:02:40.000 LONGITUDE: 81: 46:09.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6531992 01 003 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 15:08:35
LAST UPDATED:

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: 3R_____
SOURCE NUMBR: 003 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: __:__:__.000 LONGITUDE: __: __:__.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: _ = ...
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6531992 02 001 DRINKING WATER PROGRAM 07/20/98
SOURCE INFORMATION 14:57:41
LAST UPDATED: 03/31/97

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: 3RD STREET WATER PLANT ACTIVE PLANT NUMBER: 2
SOURCE NAME: 3RD_STREET_W.T.P._WELLS_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:38.000 LONGITUDE: 81: 43:43.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ____1,000,000 (GPD) % OF SYSTEM PRODUCTION: 9

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __4

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6531992 02 002 DRINKING WATER PROGRAM 07/20/98
SOURCE INFORMATION 14:58:36
LAST UPDATED: 08/31/88

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: 3RD STREET WATER PLANT ACTIVE PLANT NUMBER: 2
SOURCE NAME: WELL_NO._3-OLD_WASTEWATER_SITE
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:00:10.000 LONGITUDE: 81: 43:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6531992 03 001 DRINKING WATER PROGRAM 07/20/98
SOURCE INFORMATION 14:59:12
LAST UPDATED: 03/31/97

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: INWOOD WATER PLANT ACTIVE PLANT NUMBER: 3
SOURCE NAME: INWOOD_WATER_TREATMENT_PLANT__
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:02:40.000 LONGITUDE: 81: 46:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ____1,180,000 (GPD) % OF SYSTEM PRODUCTION: 11

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __3

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6531992 04 001 DRINKING WATER PROGRAM 07/20/98
SOURCE INFORMATION 16:49:43
LAST UPDATED: 03/31/97

MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: RIDGE VO TECH W.T.P. ACTIVE PLANT NUMBER: 4
SOURCE NAME: RIDGE_VO_TECH_W.T.P._WELLS___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:17.000 LONGITUDE: 81: 39:49.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____37,000 (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS060 6531992 01 001 0001 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:31:08
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 1 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:07.000 LONGITUDE: 81:43:05.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1994 GROUTED: Y (Y/N)
DEPTH DRILLED: MAX: __495 MIN: _____ (Ft) WELL PROTECTED–APRON: Y (Y/N)
DRILLING METHOD: R = ROTARY DRILL WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: _____ MIN: _____ (Ft) STATIC WATER DEPTH: ____29 (Ft)
NORMAL YIELD: _____ (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: B = BLACKSTEEL MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: 12 MIN: __ (Inches) DIAMETER: MAX: 18 MIN: __ (Inches)
LENGTH: MAX: __185 MIN: _____ (Ft) LENGTH: MAX: ___84 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0002 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:29:47
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 2 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:11.000 LONGITUDE: 81:43:01.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1954 GROUTED: _ (Y/N)
DEPTH DRILLED: MAX: __816 MIN: _____ (Ft) WELL PROTECTED–APRON: Y (Y/N)
DRILLING METHOD: _ = ... WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: ___34 MIN: _____ (Ft) STATIC WATER DEPTH: ____25 (Ft)
NORMAL YIELD: _____900 (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: _ = ... MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: __ MIN: __ (Inches) DIAMETER: MAX: 12 MIN: __ (Inches)
LENGTH: MAX: _____ MIN: _____ (Ft) LENGTH: MAX: __141 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0003 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:29:28
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 3 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:03.000 LONGITUDE: 81:43:01.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1954 GROUTED: _ (Y/N)
DEPTH DRILLED: MAX: __642 MIN: _____ (Ft) WELL PROTECTED–APRON: Y (Y/N)
DRILLING METHOD: _ = ... WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: ___27 MIN: _____ (Ft) STATIC WATER DEPTH: ____25 (Ft)
NORMAL YIELD: _____900 (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: _ = ... MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: __ MIN: __ (Inches) DIAMETER: MAX: 12 MIN: __ (Inches)
LENGTH: MAX: _____ MIN: _____ (Ft) LENGTH: MAX: __175 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0004 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:29:10
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 4 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:00.000 LONGITUDE: 81:43:01.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1954 GROUTED: _ (Y/N)
DEPTH DRILLED: MAX: __645 MIN: _____ (Ft) WELL PROTECTED--APRON: Y (Y/N)
DRILLING METHOD: _ = ... WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: ___31 MIN: _____ (Ft) STATIC WATER DEPTH: ____27 (Ft)
NORMAL YIELD: _____900 (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: _ = ... MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: __ MIN: __ (Inches) DIAMETER: MAX: 12 MIN: __ (Inches)
LENGTH: MAX: _____ MIN: _____ (Ft) LENGTH: MAX: __139 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0005 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:28:49
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 5 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:11.000 LONGITUDE: 81:42:57.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1977 GROUTED: _ (Y/N)
DEPTH DRILLED: MAX: __619 MIN: _____ (Ft) WELL PROTECTED--APRON: Y (Y/N)
DRILLING METHOD: _ = ... WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: ___35 MIN: _____ (Ft) STATIC WATER DEPTH: ____33 (Ft)
NORMAL YIELD: _____2,300 (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: _ = ... MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: __ MIN: __ (Inches) DIAMETER: MAX: 12 MIN: __ (Inches)
LENGTH: MAX: _____ MIN: _____ (Ft) LENGTH: MAX: ___92 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0006 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:20:02
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 6 FLORIDA WELL ID: _____
WELL LATITUDE: 28:02:07.000 LONGITUDE: 81:43:04.000 COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1994 GROUTED: Y (Y/N)
DEPTH DRILLED: MAX: __495 MIN: _____ (Ft) WELL PROTECTED--APRON: Y (Y/N)
DRILLING METHOD: R = ROTARY DRILL WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: _____ MIN: _____ (Ft) STATIC WATER DEPTH: ____29 (Ft)
NORMAL YIELD: _____ (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: B = BLACKSTEEL MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: 12 MIN: __ (Inches) DIAMETER: MAX: 18 MIN: __ (Inches)
LENGTH: MAX: __185 MIN: _____ (Ft) LENGTH: MAX: ___84 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: _____

PWS060 6531992 01 001 0007 1 DRINKING WATER PROGRAM 07/28/98
WELL DESCRIPTION 14:18:04
SAN SURVEY DATE: 01/30/97 LAST UPDATED:
MAILING NAME: WINTER HAVEN WATER DEPT. ACTIVE COMMUNITY
PLANT NAME: FAIRFAX W.T.P. ACTIVE
SOURCE NAME: FAIRFAX W.T.P. WELLS ACTIVE # OF WELLS: 7
WELL NUMBER: 7 FLORIDA WELL ID: _____
WELL **LATITUDE: 28:02:07.000 LONGITUDE: 81:43:04.000** COLLECTION METHOD: U
HEIGHT ABOVE ELIPSOID(+/- METERS): _____
YEAR DRILLED: 1994 GROUTED: Y (Y/N)
DEPTH DRILLED: MAX: __485 MIN: _____ (Ft) WELL PROTECTED--APRON: Y (Y/N)
DRILLING METHOD: R = ROTARY DRILL WELL EVER CONTAMINATED: N (Y/N)
INTAKE DEPTH: MAX: _____ MIN: _____ (Ft) STATIC WATER DEPTH: ____29 (Ft)
NORMAL YIELD: _____ (GPM) ZONE OF INFLUENCE RADIUS: _____ (Ft)

*** INNER CASING CHARACTERISTICS *** *** OUTER CASING CHARACTERISTICS ***
MATERIAL: B = BLACKSTEEL MATERIAL: B = BLACKSTEEL
DIAMETER: MAX: 18 MIN: __ (Inches) DIAMETER: MAX: 12 MIN: __ (Inches)
LENGTH: MAX: ___84 MIN: _____ (Ft) LENGTH: MAX: __185 MIN: _____ (Ft)
DEPTH: MAX: _____ MIN: _____ (Ft) DEPTH: MAX: _____ MIN: _____ (Ft)

COMMENTS: FAIRFAX_W.T.P._NEW_WELL#6_

PWS001 6532333 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 13:48:36
LAST UPDATED: 01/21/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: S_&_S_M_H_P_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1070-M_HWY_92_WEST_____ PHONE: (941) 665 - 0627
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: S_&_S_M_H_P_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1070_M_US_92_W_____ PHONE: (941) 665 - 0627
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 14/ 98 CLASS: 01 PRIOR VISIT: 01/ 08/ 97 PRIOR CLASS: 01
PERSON CONTACTED: MR._JENKINS_____ TITLE: OWNER_____
CONTACT PHONE: (941) 665 - 0627 SANITARY SURVEY: 03/ 06/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532333 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 13:48:57
LAST UPDATED: 01/21/98
MAILING NAME: S & S M H P ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____45 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____21,600 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____21,600 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 4,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____19
TOT STORAGE CAP: _____435 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: RV = RV PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:10 LONGITUDE: 81:44:55
PRIMARY SOURCE: 1 LATITUDE: 28:03:10 LONGITUDE: 81:44:55
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532333 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 13:49:19
LAST UPDATED: 11/20/95

MAILING NAME: S & S M H P ACTIVE NONCOMMUNITY
PLANT NAME: S & S MHP WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: S_&_S_M_H_P/SHIRLE_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:10.000 LONGITUDE: 81: 44:55.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____4,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6532352          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           13:49:38
                              LAST UPDATED: 06/08/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: C = COMMUNITY   CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: FAIRVIEW_VILLAGE_____________   GENERAL MAIL: Y (Y OR N)
   ADDRESS: SR_544_EAST_____________________  PHONE: ( 941 ) 422 - 8353
     CITY: HAINES_CITY_____ STATE: FL  ZIP CODE: 33844 - ____

 OWNER NAME: FAIRVIEW_VILLAGE_____________   GENERAL MAIL: Y (Y OR N)
   ADDRESS: 7025_FAIRVIEW_VILLAGE_CIRCLE__  PHONE: ( 941 ) 422 - 8353
     CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                          INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 05/ 22/ 98 CLASS: 03 PRIOR VISIT: 03/ 10/ 98 PRIOR CLASS: SS
PERSON CONTACTED: BOB_WITT_____________________ TITLE: MANAGER_____________
CONTACT PHONE: ( 941 ) 422 - 3385    SANITARY SURVEY: 03/ 10/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                    SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532352          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           13:49:59
                              LAST UPDATED: 06/08/98
MAILING NAME: FAIRVIEW VILLAGE              ACTIVE    COMMUNITY
                      BACT NON COMPLIER: _
 RET POP SERVED: _____230          BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____122,400 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____122,400 (GPD)  RADS SAMPLES FREQY: ___3  (MONTHS)
  % DESIGN CAP: 100.0              TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:     15,005 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____5,100 (G)   SERVICE CONNECTIONS: _____97
TOT STORAGE CAP: _____1,500 (G)      NUMBER METERED: _____
    METER CAP: _____________________  TYPE OF METER: MASTER_METER_____
(*LEAD AND COPPER*)                 CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:F  *)
(*M/R STATUS:T  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK          TOTAL # OF PLANTS:   1
2SERVAREA: SD = SUBDIVISION               TOTAL # OF SOURCES:  2

  PRIMARY PLANT:  1  LATITUDE: 28:04:57  LONGITUDE: 81:39:35
  PRIMARY SOURCE:  1  LATITUDE: 28:04:57  LONGITUDE: 81:39:35
CREDIT (Y/N)  VOC: Y  PEST: N          DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6532352 01 001      DRINKING WATER PROGRAM              07/16/98
                  SOURCE INFORMATION                          13:50:21
                              LAST UPDATED: 03/25/98

MAILING NAME: FAIRVIEW VILLAGE              ACTIVE    COMMUNITY
 PLANT NAME: FAIRVIEW WATER PLANT           ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: FAIRVIEW_VILLAGE___WELL#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE   **** LAT LONG ****************-
LATITUDE: 28:04:57.000  LONGITUDE: 81: 39:35.000 *  COLLECTION DATE: __/__/__ *
                          * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____15,000 (GPD)      % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __2

   SURFACE,  IDENTIFY SOURCE: _____________________________

 ___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 MORE DATA ON FILE          SCREEN ACTION: ___ TRANSMIT HERE ==> _
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PWS004 6532352 01 002 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 14:35:20
LAST UPDATED: 09/25/92

MAILING NAME: FAIRVIEW VILLAGE ACTIVE COMMUNITY
PLANT NAME: FAIRVIEW WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WELL_#2_____
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:59.000 LONGITUDE: 81: 39:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____5 (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532375 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:04:09
LAST UPDATED: 10/10/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LYCHEE_DRIVE_ASSOCIATION_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 106_WINTERDALE_DRIVE_SOUTH____ PHONE: (941) 956 - 8101
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: LYCHEE_DRIVE_OWNER_ASSOCIATION GENERAL MAIL: N (Y OR N)
ADDRESS: 2532_US_92_WEST_____ PHONE: (941) 956 - 5250
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 10/ 08/ 97 CLASS: 03 PRIOR VISIT: 03/ 24/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JOE_WADE_OR_KEVIN_MURRAY_____ TITLE: CARE_TAKER_____
CONTACT PHONE: (941) 956 - 3404 SANITARY SURVEY: 10/ 10/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532375 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:04:30
LAST UPDATED: 10/10/97
MAILING NAME: LYCHEE DRIVE ASSOCIATION ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____24 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____43,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____13
TOT STORAGE CAP: _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: AP = APARTMENT TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:30
PRIMARY SOURCE: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532375 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:04:52
LAST UPDATED: 02/21/83

MAILING NAME: LYCHEE DRIVE ASSOCIATION ACTIVE OTHER PUBLIC
PLANT NAME: LYCHEE DRIVE WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: LYCHEE_DRIVE_OWNER_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:50.000 LONGITUDE: 81: 45:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532388 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:05:12
LAST UPDATED: 12/22/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WESTSIDE_ASSEMBLY_OF_GOD_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2760_OLD_DIXIE_HIGHWAY_____ PHONE: (941) 665 - 2529
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: WESTSIDE_ASSEMBLY_OF_GOD_INC._ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2760_DIXIE_DRIVE_____ PHONE: (941) 665 - 2529
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: T = TRUST/COOPERATIVE
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 08/ 15/ 97 CLASS: SS PRIOR VISIT: 10/ 04/ 94 PRIOR CLASS: SS
PERSON CONTACTED: LARRY_SCOTT_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 665 - 2529 SANITARY SURVEY: 08/ 15/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532388 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:05:33
LAST UPDATED: 12/22/97
MAILING NAME: WESTSIDE ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____60 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____14,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____14,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: ___150 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:52 LONGITUDE: 81:51:01
PRIMARY SOURCE: 1 LATITUDE: 28:03:52 LONGITUDE: 81:51:01
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532388 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION_ 15:05:54
LAST UPDATED: 02/05/98

MAILING NAME: WESTSIDE ASSEMBLY OF GOD ACTIVE NONCOMMUNITY
PLANT NAME: WESTSIDE ASSEMBLY WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WESTSIDE_ASSEMBLY__WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:52.000 LONGITUDE: 81: 51:01.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532406 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:06:14
LAST UPDATED: 01/20/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: GROVE_PARK_LANE_TP_____ GENERAL MAIL: N (Y OR N)
ADDRESS: GROVE_PARK_LANE_____ PHONE: (941) 299 - 3863
CITY: EAGLE_LAKE_____ STATE: FL ZIP CODE: 33839 - ____

OWNER NAME: GROVE_PARK_LANE_TP_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 244_OAK_STREET_____ PHONE: (941) 299 - 3863
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 01/ 15/ 98 CLASS: 01 PRIOR VISIT: 08/ 25/ 97 PRIOR CLASS: 01
PERSON CONTACTED: ISABELLE_VILLARREAL_____ TITLE: OWNER_____
CONTACT PHONE: (941) 293 - 8793 SANITARY SURVEY: 10/ 11/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532406 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:06:35
LAST UPDATED: 01/20/98
MAILING NAME: GROVE PARK LANE TP ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____40 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____(G) SERVICE CONNECTIONS: _____6
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSE_HOUR_METER___
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: LC = LABOR CAMP TOTAL # OF PLANTS: 1
2SERVAREA: MH = MOBILE HOME PARK TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:07 LONGITUDE: 81:44:42
PRIMARY SOURCE: 1 LATITUDE: 27:59:07 LONGITUDE: 81:44:42
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532406 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:06:56
LAST UPDATED: 05/04/98

MAILING NAME: GROVE PARK LANE TP ACTIVE NONCOMMUNITY
PLANT NAME: EAGLE LAKE T.P. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: EAGLE_LAKE_TRAILER_WELL#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:07.966 LONGITUDE: 81: 44:42.982 * COLLECTION DATE: 04/15/98 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6532406 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 12:35:34
LAST UPDATED: 08/15/86

MAILING NAME: GROVE PARK LANE TP ACTIVE NONCOMMUNITY
PLANT NAME: EAGLE LAKE T.P. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WELL#2_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 27:59:10.000 LONGITUDE: 81: 44:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: 1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532448 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:07:16
LAST UPDATED: 05/15/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SWEAT_TRAILER_PK_#1_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 1521_COOLEY_ROAD_____ PHONE: (941) 294 - 0033
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: MARY_LEE_MOORMAN_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5012_PALOMA_DRIVE_____ PHONE: (813) 264 - 6605
CITY: TAMPA_____ STATE: FL ZIP CODE: 33624 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 02/ 19/ 98 CLASS: 03 PRIOR VISIT: 05/ 01/ 97 PRIOR CLASS: 03
PERSON CONTACTED: KAY_DUNAVENT_____ TITLE: _____
CONTACT PHONE: (941) 872 - 1453 SANITARY SURVEY: 03/ 21/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532448 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:07:38
LAST UPDATED: 05/15/98
MAILING NAME: SWEAT TRAILER PK #1 ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____25 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____50,400 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____3,013 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 5.9 TTHM SAMPLES REQ'D: __
AVG PRODUCTION: 1,873 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____2,100 (G) SERVICE CONNECTIONS: _____10
TOT STORAGE CAP: __ _____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:40 LONGITUDE: 81:45:10
PRIMARY SOURCE: 1 LATITUDE: 27:59:40 LONGITUDE: 81:45:10
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532448 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:07:59
LAST UPDATED: 03/27/96

MAILING NAME: SWEAT TRAILER PK #1 ACTIVE NONCOMMUNITY
PLANT NAME: SWEAT TLR PARK 1 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWEAT_TRAILER_PK/L_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:40.000 LONGITUDE: 81: 45:10.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,873 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6532448 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 12:37:35
LAST UPDATED:

MAILING NAME: SWEAT TRAILER PK #1 ACTIVE NONCOMMUNITY
PLANT NAME: SWEAT TLR PARK 1 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWEAT_TRAILER_PK/L_WELL_#2____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 27:59:40.000 LONGITUDE: 81: 45:10.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532485 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:08:19
LAST UPDATED: 03/04/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: FAITH_BAPTIST_CHURCH_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2140_CRYSTAL_BEACH_ROAD_____ PHONE: (941) 293 - 0689
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: FAITH_BAPTIST_CHURCH_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2140_CRYSTAL_BEACH_ROAD_____ PHONE: (941) 293 - 0689
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 03/ 02/ 98 CLASS: 01 PRIOR VISIT: 02/ 24/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JERRY_SMITH_____ TITLE: ASSOC_PASTOR_____
CONTACT PHONE: (941) 293 - 0689 SANITARY SURVEY: 03/ 13/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532485 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:08:40
LAST UPDATED: 03/04/98
MAILING NAME: FAITH BAPTIST CHURCH ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____350 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____57,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 4,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____2,000 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: ___ _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:10 LONGITUDE: 81:45:30
PRIMARY SOURCE: 1 LATITUDE: 28:00:10 LONGITUDE: 81:45:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532485 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:09:02
LAST UPDATED: 08/22/90

MAILING NAME: FAITH BAPTIST CHURCH ACTIVE NONCOMMUNITY
PLANT NAME: FAITH BAPT. CHURCH PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: FAITH_BAPTIST_CHUR_WELL#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:10.000 LONGITUDE: 81: 45:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____4,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532533 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:09:21
LAST UPDATED: 03/24/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: GARDEN_GROVE_WATER_CO._____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3601_CYPRESS_GARDENS_ROAD____ PHONE: (941) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: GARDEN_GROVE_WATER_CO._____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3601_CYPRESS_GARDENS_ROAD____ PHONE: (941) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 03/ 21/ 97 CLASS: 03 PRIOR VISIT: 10/ 28/ 96 PRIOR CLASS: SS
PERSON CONTACTED: MARK_KLUYTENAAR_____ TITLE: UTILITIES_DIRECTOR__
CONTACT PHONE: (941) 324 - 4319 SANITARY SURVEY: 10/ 28/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532533 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:09:43
LAST UPDATED: 03/24/97
MAILING NAME: GARDEN GROVE WATER CO. ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ___20,386 BACT SAMPLES REQ'D: _20 RULE MIN: 20
DESIGN CAP: ____7,445,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: ____4,140,000 (GPD) RADS SAMPLES FREQY: __36 (MONTHS)
% DESIGN CAP: 55.6 TTHM SAMPLES REQ'D: __1
AVG PRODUCTION: 3,737,000 (GPD) TTHM SAMPLES FREQY: ____3 (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ____5,996
TOT STORAGE CAP: ____488,000 (G) NUMBER METERED: ____5,996
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/92 12/92 POP GRP:C *)
(*M/R STATUS:R SAMPLES REQ'D: 30 RULE MIN: 30 CONSOLIDATED: N Y/N *)
1SERVAREA: UN = UNINCORPORATED AREA TOTAL # OF PLANTS: 7
2SERVAREA: __ = ... TOTAL # OF SOURCES: 10

PRIMARY PLANT: 1 LATITUDE: 27:59:48 LONGITUDE: 81:41:15
PRIMARY SOURCE: 1 LATITUDE: 27:59:48 LONGITUDE: 81:41:15
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532533 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:10:03
LAST UPDATED: 02/10/98

MAILING NAME: GARDEN GROVE WATER CO. ACTIVE COMMUNITY
PLANT NAME: ELOISE WOODS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: ELOISE_WOODS_WELLS_#1+#2_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:48.000 LONGITUDE: 81: 41:15.000 * COLLECTION DATE: __/__/__ * -
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ____1,000,000 (GPD) % OF SYSTEM PRODUCTION: 26

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6532533 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 14:53:58
LAST UPDATED:

MAILING NAME: GARDEN GROVE WATER CO. ACTIVE COMMUNITY
PLANT NAME: ELOISE WOODS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: CALLEN_WELL_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:00:38.000 LONGITUDE: 81: 41:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: N__ TRANSMIT HERE ==> _

PWS004 6532533 01 003 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 15:04:49
LAST UPDATED: 09/08/88

MAILING NAME: GARDEN GROVE WATER CO. ACTIVE COMMUNITY
PLANT NAME: ELOISE WOODS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: ROOSEVELT_WELL_____
SOURCE NUMBR: 003 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 27:59:50.000 LONGITUDE: 81: 39:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6532533 01 004 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 15:05:03
LAST UPDATED: 09/08/88

MAILING NAME: GARDEN GROVE WATER CO. ACTIVE COMMUNITY
PLANT NAME: ELOISE WOODS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: CYPRESS_POINT_____
SOURCE NUMBR: 004 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 27:59:45.000 LONGITUDE: 81: 46:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6532533 02 001 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:42:56
LAST UPDATED: 09/08/88

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: GARDEN GROVE EAST W.T.P. ACTIVE PLANT NUMBER: 2
SOURCE NAME: GARDEN_GROVE_EAST_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:03.000 LONGITUDE: 81: 40:33.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____205,000 (GPD) % OF SYSTEM PRODUCTION: 5

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6532533 02 002 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:43:24
LAST UPDATED: 09/08/88

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: GARDEN GROVE EAST W.T.P. ACTIVE PLANT NUMBER: 2
SOURCE NAME: SUMMER_HAVEN_SHORES_____
SOURCE NUMBR: 002 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:00:05.000 LONGITUDE: 81: 39:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6532533 04 001 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:48:24
LAST UPDATED: 12/19/95

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: WINTERSET W.T.P. ACTIVE PLANT NUMBER: 4
SOURCE NAME: WINTERSET_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:58:30.000 LONGITUDE: 81: 38:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: ___1,200,000 (GPD) % OF SYSTEM PRODUCTION: 32

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __3

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6532533 05 001 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:48:53
LAST UPDATED: 01/21/97

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: CALLEN W.T.P. ACTIVE PLANT NUMBER: 5
SOURCE NAME: CALLEN_WELL_#_1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:38.000 LONGITUDE: 81: 41:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____115,000 (GPD) % OF SYSTEM PRODUCTION: 3

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __3

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6532533 06 001 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:49:27
LAST UPDATED: 05/06/91

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: ROOSEVELT W.T.P. DELETED PLANT NUMBER: 6
SOURCE NAME: ROOSEVELT_WELL_#_1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:50.000 LONGITUDE: 81: 39:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____44,000 (GPD) % OF SYSTEM PRODUCTION: 1

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....
___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6532533 06 002 DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:50:11
LAST UPDATED: 01/21/97

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: ROOSEVELT W.T.P. DELETED PLANT NUMBER: 6
SOURCE NAME: _____
SOURCE NUMBR: 002 SOURCE STATUS: I = INACTIVE **** LAT LONG **********
LATITUDE: 27:59:50.000 LONGITUDE: 81: 39:45.000 * COLLECTION DATE: 10/28/96 *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: I = INTERIM
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6532533 06 01_ DRINKING WATER PROGRAM 07/22/98
SOURCE INFORMATION 14:50:25
LAST UPDATED: 01/21/97

MAILING NAME: WINTER HAVEN/GARDEN GROVE SYS ACTIVE COMMUNITY
PLANT NAME: ROOSEVELT W.T.P. DELETED PLANT NUMBER: 6
SOURCE NAME: _____
SOURCE NUMBR: 010 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:50.000 LONGITUDE: 81: 39:45.000 * COLLECTION DATE: 10/28/96 *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____44,000 (GPD) % OF SYSTEM PRODUCTION: 1

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

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PWS001 6532583          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 1             15:10:23
                              LAST UPDATED: 04/30/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: N = NONCOMMUNITY  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: FIRST_UNION_NATIONAL_BANK_____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 3899_RECKER_HWY_____________  PHONE: ( 941 ) 291 - 6520
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: FIRST_UNION_NATIONAL_BANK_____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 3899_RECKER_HWY_____________  PHONE: ( 941 ) 291 - 6520
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                        INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 04/ 21/ 98 CLASS: 01 PRIOR VISIT: 12/ 15/ 97 PRIOR CLASS: 01
PERSON CONTACTED: ARSENIO_MESTRE_____ TITLE: _____
CONTACT PHONE: ( 941 ) 291 - 6520   SANITARY SURVEY: 09/ 17/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                  SCREEN ACTION ___  TRANSMIT HERE ==> _

PWS002 6532583          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 2             15:10:45
                              LAST UPDATED: 04/30/98
MAILING NAME: FIRST UNION NATIONAL BANK       ACTIVE    NONCOMMUNITY
                    BACT NON COMPLIER: _
 RET POP SERVED: _____100        BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____43,000 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____43,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP: 100.0          TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:      1,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G)     NUMBER METERED: _____
    METER CAP: _____          TYPE OF METER: _____
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93  06/93  POP GRP:G  *)
(*M/R STATUS:1  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH      TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1  LATITUDE: 28:01:34  LONGITUDE: 81:46:33
  PRIMARY SOURCE:  1  LATITUDE: 28:01:34  LONGITUDE: 81:46:32
CREDIT (Y/N)  VOC: N  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6532583 01 001     DRINKING WATER PROGRAM              07/16/98
                SOURCE INFORMATION              15:11:06
                              LAST UPDATED: 01/16/98

MAILING NAME: FIRST UNION NATIONAL BANK      ACTIVE    NONCOMMUNITY
 PLANT NAME: 1ST UNION BANK RECKER HWY     ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: FIRST_UNION_NATIONAL/WELL_#1__
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG ****************
LATITUDE: 28:01:34.154  LONGITUDE: 81: 46:32.643 *  COLLECTION DATE: 12/30/97 *
                        * COLLECTION METHOD: G GPS ACC*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____1,000 (GPD)     % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

 ___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6532585 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:11:26
LAST UPDATED: 05/05/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LAKE_&_GOLF_ESTATES_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 5959_HWY_544_NORTH_____ PHONE: (___) ___ - ____
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: ROBERT_W._ARNOLD_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 534_SOMERSET_DRIVE_____ PHONE: (941) 965 - 9549
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 04/ 21/ 98 CLASS: 03 PRIOR VISIT: 03/ 10/ 98 PRIOR CLASS: 03
PERSON CONTACTED: BOB_&_SHERRY_ARNOLD_____ TITLE: OWNERS_____
CONTACT PHONE: (941) 294 - 4444 SANITARY SURVEY: 04/ 19/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532585 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:11:47
LAST UPDATED: 05/05/98
MAILING NAME: LAKE & GOLF ESTATES ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____400 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____720,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____720,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 39,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____198
TOT STORAGE CAP: ___5,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: INLINE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:50 LONGITUDE: 81:39:50
PRIMARY SOURCE: 1 LATITUDE: 28:04:50 LONGITUDE: 81:39:50
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532585 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:12:08
LAST UPDATED: 05/07/96

MAILING NAME: LAKE & GOLF ESTATES ACTIVE COMMUNITY
PLANT NAME: LAKE & GOLF EST. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: LAKE_&_GOLF_EST/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:04:50.000 LONGITUDE: 81: 39:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____39,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532715 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:12:28
LAST UPDATED: 12/11/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 07/ 80 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SWISS_VILLAGE_MHP_TENNIS_&GOLF GENERAL MAIL: N (Y OR N)
ADDRESS: 365_BERN_DRIVE_____ PHONE: (941) 647 - 1581
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: A&M_PROPERTIES_,INC._____ GENERAL MAIL: N (Y OR N)
ADDRESS: 494_CENTURY_DRIVE_____ PHONE: (941) 647 - 1581
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 08/ 19/ 97 CLASS: 03 PRIOR VISIT: 06/ 02/ 97 PRIOR CLASS: SS
PERSON CONTACTED: BOB_BYRD_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 299 - 9705 SANITARY SURVEY: 06/ 02/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532715 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:12:49
LAST UPDATED: 12/11/97
MAILING NAME: SWISS VILLAGE MHP TENNIS &GOLF ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____1,416 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____309,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____309,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 17,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____708
TOT STORAGE CAP: _____20,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:T SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:04:50 LONGITUDE: 81:40:40
PRIMARY SOURCE: 1 LATITUDE: 28:04:50 LONGITUDE: 81:40:40
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532715 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:13:11
LAST UPDATED: 10/06/94

MAILING NAME: SWISS VILLAGE MHP TENNIS &GOLF ACTIVE COMMUNITY
PLANT NAME: SWISS VILLAGE W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWISS_VILLAGE_MHP/_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:50.000 LONGITUDE: 81: 40:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____16,000 (GPD) % OF SYSTEM PRODUCTION: 94

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6532715 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 13:36:58
LAST UPDATED: 11/08/91

MAILING NAME: SWISS VILLAGE MHP TENNIS &GOLF ACTIVE COMMUNITY
PLANT NAME: SWISS VILLAGE W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWISS_VILLAGE_WELL_#2_____
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:50.000 LONGITUDE: 81: 40:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 5

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: N__ TRANSMIT HERE ==> _

PWS001 6532719 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:13:31
LAST UPDATED: 12/10/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 78 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: P_A_C_E_PROGRAM/W_H_HOSPITAL__ GENERAL MAIL: N (Y OR N)
ADDRESS: 5918_HWY_542_W._____ PHONE: (941) 967 - 7596
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____

OWNER NAME: WINTER_HAVEN_HOSPITAL_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 200_AVENUE_F_NE._____ PHONE: (941) 293 - 1121
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 11/ 19/ 97 CLASS: 01 PRIOR VISIT: 02/ 03/ 97 PRIOR CLASS: 03
PERSON CONTACTED: JEFF_WARE_____ TITLE: SUPERVISOR_____
CONTACT PHONE: (941) 967 - 7596 SANITARY SURVEY: 01/ 31/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532719 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:13:52
LAST UPDATED: 12/10/97
MAILING NAME: P A C E PROGRAM/W H HOSPITAL ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____35 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: ____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:55 LONGITUDE: 81:47:30
PRIMARY SOURCE: 1 LATITUDE: 28:01:55 LONGITUDE: 81:47:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532719 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:14:13
LAST UPDATED: 02/26/97

MAILING NAME: P A C E PROGRAM/W H HOSPITAL ACTIVE NONCOMMUNITY
PLANT NAME: PACE PROGRAM WELL #1 ACTIVE PLANT NUMBER: 1
SOURCE NAME: PACE_PROGRAM_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:55.000 LONGITUDE: 81: 47:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6532783 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:14:33
LAST UPDATED: 04/30/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 10/ 80 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: HOP_&_SAVE_AMOCO_#95_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 3895_SPIRIT_LAKE_RD._____ PHONE: (941) 299 - 5984
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: QUALITY_PETROLEUM_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1647_GEORGE_JENKINS_ROAD_____ PHONE: (941) 294 - 9652
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33020 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 04/ 27/ 98 CLASS: 01 PRIOR VISIT: 12/ 15/ 97 PRIOR CLASS: 01
PERSON CONTACTED: THERESA_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 294 - 9652 SANITARY SURVEY: 02/ 14/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6532783 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:14:54
LAST UPDATED: 04/30/98
MAILING NAME: HOP & SAVE AMOCO #95 ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____100 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: ___._____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: SS = SERVICE STATION TOTAL # OF PLANTS: 1
2SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:33 LONGITUDE: 81:46:37
PRIMARY SOURCE: 1 LATITUDE: 28:01:33 LONGITUDE: 81:46:37
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6532783 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:15:16
LAST UPDATED: 01/29/93

MAILING NAME: HOP & SAVE AMOCO #95 ACTIVE NONCOMMUNITY
PLANT NAME: AMOCO FOOD SERVICE PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: AMOCO-SELF_SERVE/L_WELL#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:33.000 LONGITUDE: 81: 46:37.000 * COLLECTION DATE: __/__/__ * -
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, *IDENTIFY SOURCE:* _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6533041 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:15:35
LAST UPDATED: 06/12/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 06/ 02/ 97
BEGIN DT: 04/ 81 INACT DT: 01/ 16/ 96 INACT REASON: A = SYSTEM ABANDONED
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MINUTE_MART_2_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5900_LUCERNE_PARK_ROAD_____ PHONE: (941) 299 - 4165
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: AKBAR_ALI_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5900_LUCERNE_PARK_ROAD_____ PHONE: (941) 425 - 0447
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 05/ 22/ 98 CLASS: 03 PRIOR VISIT: 03/ 09/ 98 PRIOR CLASS: SS
PERSON CONTACTED: ALI_ALEBAR_____ TITLE: _____
CONTACT PHONE: (941) 299 - 6296 SANITARY SURVEY: 03/ 09/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6533041 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:15:56
LAST UPDATED: 06/12/98
MAILING NAME: MINUTE MART 2 ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____100 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____7,680 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____ (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF PLANTS:
2SERVAREA: __ = ... TOTAL # OF SOURCES:

PRIMARY PLANT: 1 LATITUDE: 28:03:20 LONGITUDE: 81:42:30
PRIMARY SOURCE: 1 LATITUDE: 28:03:20 LONGITUDE: 81:42:30
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6533041 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:16:18
LAST UPDATED: 01/16/96

MAILING NAME: MINUTE MART 2 ACTIVE NONCOMMUNITY
PLANT NAME: QUIK N EASY PLANT INACTIVE PLANT NUMBER: 1
SOURCE NAME: QUICK_'N_EASY_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: I = INACTIVE **** LAT LONG **********
LATITUDE: 28:03:20.000 LONGITUDE: 81: 42:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6534007          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 1             15:16:37
                              LAST UPDATED: 04/28/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: O = OTHER PUBLIC  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: VINELAND_DEVELOPMENT_INC._____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 5250_DUNDEE_ROAD_____________  PHONE: ( 941 ) 294 - 2668
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: ACTION_VILLAGE_TIRE_CENTER____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 3597_RECKER_HWY_____________  PHONE: ( 941 ) 294 - 2668
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                          INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 28/ 98 CLASS: 01 PRIOR VISIT: 03/ 03/ 97 PRIOR CLASS: 01
PERSON CONTACTED: ANDY_MAJOR_____________  TITLE: _____
CONTACT PHONE: ( 813 ) 294 - 2668   SANITARY SURVEY: 08/ 21/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
                    SCREEN ACTION ___  TRANSMIT HERE ==> _

PWS002 6534007          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 2             15:16:59
                              LAST UPDATED: 04/28/98
MAILING NAME: VINELAND DEVELOPMENT INC.       ACTIVE    OTHER PUBLIC
                      BACT NON  COMPLIER: _
 RET POP SERVED: _____3        BACT SAMPLES REQ'D: __1  RULE MIN:  2
   DESIGN CAP: _____28,000 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____28,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP: 100.0          TTHM SAMPLES REQ'D: __
 AVG PRODUCTION:      500 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: _____4
TOT STORAGE CAP: _____75 (G)      NUMBER METERED: _____
    METER CAP: _____          TYPE OF METER: _____
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH      TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1 LATITUDE: 28:01:25  LONGITUDE: 81:46:25
  PRIMARY SOURCE:  1 LATITUDE: 28:01:25  LONGITUDE: 81:46:25
CREDIT (Y/N)  VOC: N  PEST: N        DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6534007 01 001     DRINKING WATER PROGRAM          07/16/98
                  SOURCE INFORMATION              15:17:20
                              LAST UPDATED: 12/01/89

MAILING NAME: VINELAND DEVELOPMENT INC.     ACTIVE   OTHER PUBLIC
 PLANT NAME: ACTION VILLAGE WATER          ACTIVE   PLANT NUMBER:  1
 SOURCE NAME: ACTION_VILLAGE_TIR_WELL#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********_
LATITUDE: 28:01:25.000  LONGITUDE: 81: 46:25.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____500 (GPD)     % OF SYSTEM PRODUCTION: 100

.ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

 ___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6534017 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:17:40
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BOHANNON_WAREHOUSE_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_2843_____ PHONE: (941) 293 - 5491
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33883 - ____

OWNER NAME: BOHANNON_WAREHOUSE_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 120_SPIRIT_LAKE_ROAD_____ PHONE: (941) 293 - 5491
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 03/ 16/ 98 CLASS: 01 PRIOR VISIT: 03/ 06/ 97 PRIOR CLASS: 01
PERSON CONTACTED: L_BOHANNON_____ TITLE: _____
CONTACT PHONE: (941) 293 - 5491 SANITARY SURVEY: 09/ 10/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534017 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:18:01
LAST UPDATED: 04/17/98
MAILING NAME: BOHANNON WAREHOUSE ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____28 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____43,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____3
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:25 LONGITUDE: 81:46:40
PRIMARY SOURCE: 1 LATITUDE: 28:01:25 LONGITUDE: 81:46:40
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534017 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:18:23
LAST UPDATED: 03/21/83

MAILING NAME: BOHANNON WAREHOUSE ACTIVE OTHER PUBLIC
PLANT NAME: BOHANNON WHSES W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: BOHANNON_WAREHOUSE_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:25.000 LONGITUDE: 81: 46:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534031 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:18:43
LAST UPDATED: 04/28/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 12/ 02/ 91
BEGIN DT: 06/ 77 INACT DT: 05/ 20/ 91 INACT REASON: N = DON'T USE!! NOT NOW M/R
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: RECKER_HIGHWAY_WAREHOUSE_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2500_DUNDEE_RD._____ PHONE: (813) 293 - 1363
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: JOHN_ADAMS_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 3418_RECKER_HWY._(LOCATION)___ PHONE: (813) 324 - 4576
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 28/ 98 CLASS: 01 PRIOR VISIT: 01/ 27/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JOHN_ADAMS_____ TITLE: OWNER_____
CONTACT PHONE: (813) 293 - 1363 SANITARY SURVEY: 12/ 02/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534031 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:19:03
LAST UPDATED: 04/28/98
MAILING NAME: RECKER HIGHWAY WAREHOUSE ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____2 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____14,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____14,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 150 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _ _____75 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF PLANTS: 1
2SERVAREA: XX = OTHER TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534031 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:19:25
LAST UPDATED: 12/03/91

MAILING NAME: RECKER HIGHWAY WAREHOUSE ACTIVE OTHER PUBLIC
PLANT NAME: ADAM'S WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: ADAM'S_WHSE_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____150 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534041 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:19:45
LAST UPDATED: 06/15/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: DINNER_LAKE_APTS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3131_SPIRIT_LAKE_ROAD_____ PHONE: (941) 294 - 8683
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: JRALD-_COPPER_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3131_SPIRIT_LAKE_ROAD_____ PHONE: (941) 293 - 7523
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: NOE
DATE OF VISIT: 06/ 15/ 98 CLASS: 01 PRIOR VISIT: 03/ 06/ 97 PRIOR CLASS: 01
PERSON CONTACTED: LAURIE_WALTZ,_MRGR'S_WIFE_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 293 - 7523 SANITARY SURVEY: 01/ 22/ 93
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534041 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:20:06
LAST UPDATED: 06/15/98
MAILING NAME: DINNER LAKE APTS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____24 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____5,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____5,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____9
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: AP = APARTMENT TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:40 LONGITUDE: 81:47:05
PRIMARY SOURCE: 1 LATITUDE: 27:59:40 LONGITUDE: 81:47:05
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534041 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:20:27
LAST UPDATED: 08/08/91

MAILING NAME: DINNER LAKE APTS ACTIVE OTHER PUBLIC
PLANT NAME: DINNER LAKE APTS. W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: DINNER_LAKE_APTS/G_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:40.000 LONGITUDE: 81: 47:05.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534088 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:20:47
LAST UPDATED: 03/21/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BRADLEY_HOGG_TRUST_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_2671_____ PHONE: (941) 324 - 4526
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33883 - ____

OWNER NAME: ESTATE_OF_BRADLEY_HOGG_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 5500_DUNDEE_ROAD_____ PHONE: (941) 324 - 4526
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 03/ 21/ 97 CLASS: 01 PRIOR VISIT: 12/ 21/ 93 PRIOR CLASS: 01
PERSON CONTACTED: MRS_BRADLEY_HOGG_____ TITLE: _____
CONTACT PHONE: (941) 324 - 4526 SANITARY SURVEY: 01/ 25/ 89
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534088 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:21:08
LAST UPDATED: 03/21/97
MAILING NAME: BRADLEY HOGG TRUST ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____2 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____5,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____5,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:50
PRIMARY SOURCE: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:50
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534088 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:21:30
LAST UPDATED: 11/12/92

MAILING NAME: BRADLEY HOGG TRUST ACTIVE OTHER PUBLIC
PLANT NAME: ESTATE OF BRADLEY HOGG ACTIVE PLANT NUMBER: 1
SOURCE NAME: MINIT_SHOP_OFFICE/_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:15.000 LONGITUDE: 81: 40:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534094 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:21:50
LAST UPDATED: 12/29/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 4D
NC SEASON BEG: 01/01 END: 12/31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ORKIN_EXTERMINATING_CO_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3400_RECKER_HWY_____ PHONE: (941) 294 - 3201
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: ORKIN_EXTERMINATING_CO_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3400_RECKER_HWY_____ PHONE: (941) 294 - 3201
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 12/22/97 CLASS: 01 PRIOR VISIT: 02/24/97 PRIOR CLASS: 01
PERSON CONTACTED: RICH_MORRIS_____ TITLE: BRANCH_MGR_____
CONTACT PHONE: (941) 294 - 3201 SANITARY SURVEY: 12/11/95
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534094 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:22:12
LAST UPDATED: 12/29/97
MAILING NAME: ORKIN EXTERMINATING CO ACTIVE NONCOMMUNITY
BACT NON COMPLIER: Y
RET POP SERVED: _____25 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____43,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____720 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534094 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:22:32
LAST UPDATED: 02/03/93

MAILING NAME: ORKIN EXTERMINATING CO ACTIVE NONCOMMUNITY
PLANT NAME: ORKIN WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: ORKIN_EXTERMINATING_2"_WELL___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534137 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:22:52
LAST UPDATED: 04/28/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WILSON'S_TOOL_&_DIE_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_1331_____ PHONE: (941) 967 - 1013
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: JONATHAN_W._WILSON_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 5575_SR_542_____ PHONE: (941) 293 - 7230
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 28/ 98 CLASS: 01 PRIOR VISIT: 03/ 07/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JOMATHAN_WILSON_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 1013 SANITARY SURVEY: 08/ 01/ 90
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534137 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:23:14
LAST UPDATED: 04/28/98
MAILING NAME: WILSON'S TOOL & DIE ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____3 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 750 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:02:10 LONGITUDE: 81:46:45
PRIMARY SOURCE: 1 LATITUDE: 28:02:10 LONGITUDE: 81:46:45
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534137 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:23:35
LAST UPDATED: 08/02/90

MAILING NAME: WILSON'S TOOL & DIE ACTIVE OTHER PUBLIC
PLANT NAME: WILSON'S TOOL WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WILSON'S_TOOL_&_DI_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:02:10.000 LONGITUDE: 81: 46:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____750 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534210 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:23:54
LAST UPDATED: 04/02/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/01 END: 12/31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BROERS_COTTAGES_&_BAR_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2700_WEST_HWY_92_____ PHONE: (941) 956 - 1848
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: ALMA_BROER_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2700_WEST_HWY_92,_____ PHONE: (941) 956 - 1848
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/02/98 CLASS: 01 PRIOR VISIT: 01/27/97 PRIOR CLASS: 01
PERSON CONTACTED: A_BROER_____ TITLE: OWNER_____
CONTACT PHONE: (813) 967 - 4878 SANITARY SURVEY: 08/09/90
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534210 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:24:16
LAST UPDATED: 04/02/98
MAILING NAME: BROERS COTTAGES & BAR ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____11 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____5,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____5,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____7
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: AP = APARTMENT TOTAL # OF PLANTS: 1
2SERVAREA: BR = BAR OR LOUNGE TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:38
PRIMARY SOURCE: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:38
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534210 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:24:37
LAST UPDATED: 04/18/90

MAILING NAME: BROERS COTTAGES & BAR ACTIVE OTHER PUBLIC
PLANT NAME: BROER'S WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: BROERS_COTTAGES_&__WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:03:50.000 LONGITUDE: 81: 45:38.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534211 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:24:57
LAST UPDATED: 05/15/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MIDWAY_BAR_____ GENERAL MAIL: N (Y OR N)
ADDRESS: HWY_92_&_LYNCHBURG_ROAD_____ PHONE: (941) 956 - 4985
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: MIDWAY_BAR_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1807_____ PHONE: (941) 956 - 4985
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: LHT
DATE OF VISIT: 05/ 14/ 98 CLASS: 03 PRIOR VISIT: 06/ 24/ 97 PRIOR CLASS: 01
PERSON CONTACTED: MORGAN_HOWARD_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 4985 SANITARY SURVEY: 09/ 13/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? F
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534211 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:25:18
LAST UPDATED: 05/15/98
MAILING NAME: MIDWAY BAR ACTIVE NONCOMMUNITY
BACT NON COMPLIER: Y
RET POP SERVED: _____25 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,800 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____5,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 17.3 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____5
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: BR = BAR OR LOUNGE TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:35
PRIMARY SOURCE: 1 LATITUDE: 28:04:00 LONGITUDE: 81:45:35
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534211 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION. 15:25:39
LAST UPDATED: 11/22/96

MAILING NAME: MIDWAY BAR ACTIVE NONCOMMUNITY
PLANT NAME: MIDWAY BAR PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: MIDWAY_BAR/EWELL_L_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:00.000 LONGITUDE: 81: 45:35.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534237 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:25:59
LAST UPDATED: 07/15/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: FLORIDA_EASTERN_EXPRESS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3800_DUNDEE_ROAD_____ PHONE: (941) 324 - 1927
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: VIRGIL_LANE_&_D.L._LIVINGSTON_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3800_DUNDEE_ROAD_____ PHONE: (941) 324 - 1927
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 05/ 29/ 98 CLASS: 01 PRIOR VISIT: 05/ 28/ 98 PRIOR CLASS: 01
PERSON CONTACTED: DIANA_LANE_____ TITLE: _____
CONTACT PHONE: (941) 324 - 1927 SANITARY SURVEY: 10/ 19/ 88
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534237 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:26:20
LAST UPDATED: 07/15/98
MAILING NAME: FLORIDA EASTERN EXPRESS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____6 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____14,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____14,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____3
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:45
PRIMARY SOURCE: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:45
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534237 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:26:41
LAST UPDATED: 07/23/84

MAILING NAME: FLORIDA EASTERN EXPRESS ACTIVE OTHER PUBLIC
PLANT NAME: WINTER HAVEN ACTIVE PLANT NUMBER: 1
SOURCE NAME: CARNES_CONTRACTING_CO._WELL_#1
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:15.000 LONGITUDE: 81: 40:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534245 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:27:02
LAST UPDATED: 05/05/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: NEW_HORIZON_SHARE_HOME_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2100_WEST_SR_540_____ PHONE: (941) 299 - 3651
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: NEW_HORIZON_SHARE_HOME_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2100_SR._540_WEST._____ PHONE: (941) 299 - 3651
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 03/ 04/ 98 CLASS: 03 PRIOR VISIT: 03/ 02/ 98 PRIOR CLASS: 01
PERSON CONTACTED: ANN_MORRISON_____ TITLE: _____
CONTACT PHONE: (941) 299 - 3651 SANITARY SURVEY: 04/ 14/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534245 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:27:23
LAST UPDATED: 05/05/98
MAILING NAME: NEW HORIZON SHARE HOME ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: _____34 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: __1
MAXIMUM DAY: _____57,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____3,000 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:12 LONGITUDE: 81:45:58
PRIMARY SOURCE: 1 LATITUDE: 28:00:12 LONGITUDE: 81:45:58
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534245 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:27:44
LAST UPDATED: 01/16/98

MAILING NAME: NEW HORIZON SHARE HOME ACTIVE NONTRANS NONC
PLANT NAME: NEW HORIZON WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: NEW_HORIZON_SHARE/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:12.217 LONGITUDE: 81: 45:58.408 * COLLECTION DATE: 12/30/97 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534246 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:28:04
LAST UPDATED: 12/05/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: INDIAN_RIVER_TRANSPORT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2580_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 2430
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33883 - 2119

OWNER NAME: INDIAN_RIVER_TRANSPORT_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_2119_____ PHONE: (941) 324 - 2430
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - 2119
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 10/ 22/ 97 CLASS: 03 PRIOR VISIT: 09/ 15/ 97 PRIOR CLASS: 01
PERSON CONTACTED: STEVE_FERGUSON_____ TITLE: SHOP_MANAGER_____
CONTACT PHONE: (941) 324 - 2430 SANITARY SURVEY: 12/ 19/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? C
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534246 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:28:25
LAST UPDATED: 12/05/97
MAILING NAME: INDIAN RIVER TRANSPORT ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: _____119 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____194,400 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____194,400 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____2,100 (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:F *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: IN = INDUSTRIAL TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:40:30
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:40:30
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534246 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION_ 15:28:46
LAST UPDATED: 02/23/93

MAILING NAME: INDIAN RIVER TRANSPORT ACTIVE NONTRANS NONC
PLANT NAME: IRT WELL ACTIVE PLANT NUMBER: 1
SOURCE NAME: INDIAN_RIVER_TRANS_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 40:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6534276          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 1             15:29:06
                              LAST UPDATED: 04/10/97

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: O = OTHER PUBLIC  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: WRIGHT'S_COTTAGES_____________  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 4092_LAKE_MARIANA_DRIVE_______  PHONE: ( 941 ) 956 - 4449
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33881 - ____

 OWNER NAME: CLARENCE_A._WRIGHT____________  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2997_HWY_92_WEST_____________  PHONE: ( 941 ) 956 - 4449
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                        INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 04/ 10/ 97 CLASS: 01 PRIOR VISIT: 07/ 09/ 91 PRIOR CLASS: SS
PERSON CONTACTED: C_A_WRIGHT_____________________ TITLE: _____________________
CONTACT PHONE: ( 941 ) 956 - 4449    SANITARY SURVEY: 07/ 09/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
                    SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534276          DRINKING WATER PROGRAM                07/16/98
              SYSTEM INVENTORY INFORMATION PART 2             15:29:27
                              LAST UPDATED: 04/10/97
MAILING NAME: WRIGHT'S COTTAGES            ACTIVE    OTHER PUBLIC
                      BACT NON COMPLIER: _
 RET POP SERVED: _______16          BACT SAMPLES REQ'D: __1  RULE MIN:  2
   DESIGN CAP: _______28,800 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _______14,400 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP:  50.0            TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:      3,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
   MAXIMUM/HOUR: _______2,500 (G)  SERVICE CONNECTIONS: _______8
TOT STORAGE CAP: _ _______120 (G)      NUMBER METERED: _________
    METER CAP: _____________________  TYPE OF METER: NONE_____________
(*LEAD AND COPPER*)                CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER              TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

   PRIMARY PLANT:  1  LATITUDE: 28:04:10  LONGITUDE: 81:45:45
   PRIMARY SOURCE:  1  LATITUDE: 28:04:10  LONGITUDE: 81:45:45
CREDIT (Y/N)  VOC: N  PEST: N        DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6534276 01 001      DRINKING WATER PROGRAM          07/16/98
                SOURCE INFORMATION              15:29:49
                              LAST UPDATED: 07/10/91

MAILING NAME: WRIGHT'S COTTAGES            ACTIVE    OTHER PUBLIC
 PLANT NAME: WRIGHT'S COTTAGES W.T.P.      ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: WRIGHT'S_COTTAGES/_WELL_#1____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********
LATITUDE: 28:04:10.000  LONGITUDE: 81: 45:45.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _______3,000 (GPD)      % OF SYSTEM PRODUCTION: 100
 ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____________________________

 ___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6534323 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:30:08
LAST UPDATED: 05/05/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MAYSE,CECIL_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3465_RECKER_HWY_____ PHONE: (941) 299 - 1872
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: CECIL_MAYSE_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 6424_CRYSTAL_BEACH_ROAD_____ PHONE: (941) 299 - 1872
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 04/ 21/ 98 CLASS: 01 PRIOR VISIT: 03/ 06/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JILEY_PHIL_____ TITLE: _____
CONTACT PHONE: (941) 299 - 1872 SANITARY SURVEY: 12/ 12/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534323 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:30:29
LAST UPDATED: 05/05/98
MAILING NAME: MAYSE,CECIL ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____100 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____28,800 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____2,880 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 10.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: HOUR_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RS = RESTAURANT TOTAL # OF PLANTS: 1
2SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:30 LONGITUDE: 81:46:28
PRIMARY SOURCE: 1 LATITUDE: 28:01:30 LONGITUDE: 81:46:28
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534323 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:30:51
LAST UPDATED: 02/23/93

MAILING NAME: MAYSE,CECIL ACTIVE NONCOMMUNITY
PLANT NAME: MAYSE ENGINEERS WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: GOODTIME_PIZZA_PUB_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:30.000 LONGITUDE: 81: 46:28.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534403 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:31:11
LAST UPDATED: 04/30/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 4D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: GARDEN_GROVE_&_EXECUTIVE_RD.__ GENERAL MAIL: N (Y OR N)
ADDRESS: 5000_DUNDEE_ROAD_____ PHONE: (941) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: WOODS,_JOHN_G_&_ASSOCIATES,INC GENERAL MAIL: Y (Y OR N)
ADDRESS: 3601_CYPRESS_GARDENS_ROAD_____ PHONE: (941) 324 - 4319
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 02/ 10/ 98 CLASS: 01 PRIOR VISIT: 09/ 15/ 97 PRIOR CLASS: 01
PERSON CONTACTED: MARK_KLUYTENAAR_____ TITLE: _____
CONTACT PHONE: (941) 324 - 4319 SANITARY SURVEY: 09/ 19/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534403 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:31:32
LAST UPDATED: 04/30/98
MAILING NAME: GARDEN GROVE & EXECUTIVE RD. ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: _____94 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____57,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 12,000 (GPD) TTHM SAMPLES FREQY: ____ (MONTHS)
MAXIMUM/HOUR: _____1,000 (G) SERVICE CONNECTIONS: _____18
TOT STORAGE CAP: _____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: FLOW_METER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:T SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:19 LONGITUDE: 81:40:30
PRIMARY SOURCE: 1 LATITUDE: 28:01:19 LONGITUDE: 81:40:30
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534403 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION. 15:31:53
LAST UPDATED: 11/12/96

MAILING NAME: GARDEN GROVE & EXECUTIVE RD. ACTIVE NONTRANS NONC
PLANT NAME: GARDEN GROVE EXEC.RD.SYSTEM ACTIVE PLANT NUMBER: 1
SOURCE NAME: WOODS,_JOHN_G_&_AS_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:19.000 LONGITUDE: 81: 40:30.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____12,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534462 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:32:13
LAST UPDATED: 02/27/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SWEAT_TRAILER_PK_#2_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 1723_COOLEY_ROAD_____ PHONE: (941) 295 - 0033
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: MARY_LEE_MOORMAN_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5012_PALOMA_DRIVE_____ PHONE: (813) 264 - 6605
CITY: TAMPA_____ STATE: FL ZIP CODE: 33624 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 19/ 98 CLASS: 01 PRIOR VISIT: 04/ 25/ 97 PRIOR CLASS: 03
PERSON CONTACTED: KAY_DAVENPORT_____ TITLE: _____
CONTACT PHONE: (941) 299 - 1503 SANITARY SURVEY: 03/ 21/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534462 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:32:34
LAST UPDATED: 02/27/98
MAILING NAME: SWEAT TRAILER PK #2 ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____25 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____36,800 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,800 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____8
TOT STORAGE CAP: _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 27:59:40 LONGITUDE: 81:45:10
PRIMARY SOURCE: 1 LATITUDE: 27:59:40 LONGITUDE: 81:45:10
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534462 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:32:56
LAST UPDATED: 03/27/96

MAILING NAME: SWEAT TRAILER PK #2 ACTIVE NONCOMMUNITY
PLANT NAME: SWEAT TLR PARK 2 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWEAT_TR_PK_#2/LES_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:40.000 LONGITUDE: 81: 45:10.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6534462 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 14:10:20
LAST UPDATED:

MAILING NAME: SWEAT TRAILER PK #2 ACTIVE NONCOMMUNITY
PLANT NAME: SWEAT TLR PARK 2 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWEAT_TR_PK_#2/LES_WELL_#2____
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:40.000 LONGITUDE: 81: 45:10.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: E = EMERGENCY
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: N__ TRANSMIT HERE ==> _

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PWS001 6534609          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 1             15:33:16
                          LAST UPDATED: 12/24/97

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: C = COMMUNITY    CATG./CLASS: 5C
NC SEASON BEG: __/__ END: __/__   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: GORDONVILLE_WATER_SYSTEM_____  GENERAL MAIL: N (Y OR N)
   ADDRESS: 3010_SHEFFIELD_RD._____________  PHONE: ( 941 ) 519 - 3764
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: GORDONVILLE_C/O_POLK_COUNTY___  GENERAL MAIL: Y (Y OR N)
   ADDRESS: P.O._BOX_2019_____,_____________  PHONE: ( 941 ) 534 - 7351
    CITY: BARTOW_____________ STATE: FL  ZIP CODE: 33830 - ____
 OWNER TYPE: N = COUNTY
                        INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 10/ 24/ 97 CLASS: 03 PRIOR VISIT: 02/ 14/ 97 PRIOR CLASS: SS
PERSON CONTACTED: LAVERNE_COWLES_____________  TITLE: SUPERVISOR_____
CONTACT PHONE: ( 941 ) 534 - 7351    SANITARY SURVEY: 02/ 14/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
                  SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534609          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 2             15:33:37
                          LAST UPDATED: 12/24/97
MAILING NAME: GORDONVILLE WATER SYSTEM        ACTIVE    COMMUNITY
                    BACT NON COMPLIER: _
 RET POP SERVED: ___10,227          BACT SAMPLES REQ'D: _10  RULE MIN: 10
   DESIGN CAP: ____3,888,000 (GPD)  RADS SAMPLES REQ'D: __1
   MAXIMUM DAY: ____2,109,000 (GPD)  RADS SAMPLES FREQY: __36 (MONTHS)
  % DESIGN CAP: 54.2            TTHM SAMPLES REQ'D: _ 4
 AVG PRODUCTION:   1,150,000 (GPD)  TTHM SAMPLES FREQY: ____3 (MONTHS)
   MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: ____2,694
TOT STORAGE CAP: _,_____25,000 (G)      NUMBER METERED: ____2,694
    METER CAP: _____                TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 06/94  09/94  POP GRP:D  *)
(*M/R STATUS:T  SAMPLES REQ'D:_20  RULE MIN: 20 CONSOLIDATED: N Y/N *)
1SERVAREA: CW = COUNTY WIDE          TOTAL # OF PLANTS:   2
2SERVAREA: SD = SUBDIVISION          TOTAL # OF SOURCES:  2

  PRIMARY PLANT:  1 LATITUDE: 27:57:38  LONGITUDE: 81:47:48
  PRIMARY SOURCE: ... LATITUDE: ..... LONGITUDE: .....
CREDIT (Y/N)  VOC: Y  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6534609 01 001     DRINKING WATER PROGRAM            07/16/98
                SOURCE INFORMATION              15:33:58
                          LAST UPDATED: 02/11/98

MAILING NAME: GORDONVILLE WATER SYSTEM      ACTIVE   COMMUNITY
 PLANT NAME: GORDONVILLE PLANT          ACTIVE   PLANT NUMBER:  1
 SOURCE NAME: GORDONVILLE/WELL_#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG ****************
LATITUDE: 27:57:38.000  LONGITUDE: 81: 47:48.000 *  COLLECTION DATE: __/__/__ *
                      * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: ____1,060,000 (GPD)     % OF SYSTEM PRODUCTION:  92

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS004 6534609 02 001 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 14:24:43
LAST UPDATED: 05/17/88

MAILING NAME: GORDONVILLE WATER SYSTEM ACTIVE COMMUNITY
PLANT NAME: DINNER LAKE ESTATES INACTIVE PLANT NUMBER: 2
SOURCE NAME: DINNER_LAKE_ESTATES_____
SOURCE NUMBR: 001 SOURCE STATUS: D = DELETED **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:35.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS004 6534609 03 001 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 14:25:25
LAST UPDATED: 02/11/98

MAILING NAME: GORDONVILLE WATER SYSTEM ACTIVE COMMUNITY
PLANT NAME: JAN PHYL MAIN PLANT ACTIVE PLANT NUMBER: 3
SOURCE NAME: JAN_PHYL_WELL_NO._1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:15.000 LONGITUDE: 81: 46:29.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____90,000 (GPD) % OF SYSTEM PRODUCTION: 7

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE

PWS004 6534609 03 002 DRINKING WATER PROGRAM 07/24/98
SOURCE INFORMATION 14:25:43
LAST UPDATED: 02/11/98

MAILING NAME: GORDONVILLE WATER SYSTEM ACTIVE COMMUNITY
PLANT NAME: JAN PHYL MAIN PLANT ACTIVE PLANT NUMBER: 3
SOURCE NAME: JAN_PHYL_WELL_NO._2_____
SOURCE NUMBR: 002 SOURCE STATUS: I = INACTIVE **** LAT LONG **********
LATITUDE: 28:00:42.000 LONGITUDE: 81: 46:31.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____ (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED

PWS001 6534631 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:34:18
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WINTER_HAVEN_KENNELS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3205_RECKER_HWY._____ PHONE: (941) 293 - 5365
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: DORIS_HUGHES_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 3205_RECKER_HWY_____ PHONE: (941) 294 - 7750
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 03/ 16/ 98 CLASS: 01 PRIOR VISIT: 03/ 03/ 97 PRIOR CLASS: 01
PERSON CONTACTED: DORIS_HUGHES_____ TITLE: OWNER_____
CONTACT PHONE: (941) 293 - 5365 SANITARY SURVEY: 03/ 27/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534631 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:34:39
LAST UPDATED: 04/17/98
MAILING NAME: WINTER HAVEN KENNELS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____2 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ ._____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:05 LONGITUDE: 81:45:45
PRIMARY SOURCE: 1 LATITUDE: 28:01:05 LONGITUDE: 81:45:45
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534631 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:35:00
LAST UPDATED: 03/27/91

MAILING NAME: WINTER HAVEN KENNELS ACTIVE OTHER PUBLIC
PLANT NAME: WINTER HAVEN KENNELS H2O PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: WINTER_HAVEN_KENNELS/WELL_#1__
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:05.000 LONGITUDE: 81: 45:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534653 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:35:20
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BARAGONA_RENTAL_#1_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1762_____ PHONE: (407) 323 - 1870
CITY: SANFORD_____ STATE: FL ZIP CODE: 32773 - 1762

OWNER NAME: C.J._BARAGONA_JR._____ GENERAL MAIL: N (Y OR N)
ADDRESS: 3700_DUNDEE_ROAD_____ PHONE: (941) 965 - 1479
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JERRY-BURNS_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 965 - 1479 SANITARY SURVEY: 05/ 09/ 89
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534653 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:35:41
LAST UPDATED: 04/17/98
MAILING NAME: BARAGONA RENTAL #1 ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____12 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____10
TOT STORAGE CAP: _____28 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:20 LONGITUDE: 81:40:80
PRIMARY SOURCE: 1 LATITUDE: 28:01:20 LONGITUDE: 81:40:80
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534653 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:36:03
LAST UPDATED: 07/19/90

MAILING NAME: BARAGONA RENTAL #1 ACTIVE OTHER PUBLIC
PLANT NAME: BARAGONA #1 ACTIVE PLANT NUMBER: 1
SOURCE NAME: BARAGONA_RENTAL_#1/_WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:20.000 LONGITUDE: 81: 40:80.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534654 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:36:23
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BARAGONA_RENTALS_#2_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1762_____ PHONE: (407) 323 - 1870
CITY: SANFORD_____ STATE: FL ZIP CODE: 32773 - 1762

OWNER NAME: C._J._BARAGONA_JR._____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2003_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 1870
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JERRY_BURNS_____ TITLE: MANAGER_____
CONTACT PHONE: (813) 965 - 1479 SANITARY SURVEY: 11/ 01/ 88
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534654 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:36:44
LAST UPDATED: 04/17/98
MAILING NAME: BARAGONA RENTALS #2 ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____8 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____6
TOT STORAGE CAP: _____28 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:02:05 LONGITUDE: 81:41:20
PRIMARY SOURCE: 1 LATITUDE: 28:02:05 LONGITUDE: 81:41:20
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534654 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:37:06
LAST UPDATED: 07/19/90

MAILING NAME: BARAGONA RENTALS #2 ACTIVE OTHER PUBLIC
PLANT NAME: BARAGONA #2 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: BARAGONA_#2_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********-
LATITUDE: 28:02:05.000 LONGITUDE: 81: 41:20.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534655 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:37:25
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BARAGONA_RENTALS_#3_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1762_____ PHONE: (407) 323 - 1870
CITY: SANFORD_____ STATE: FL ZIP CODE: 32773 - 1762

OWNER NAME: C.J._BARAGONA_JR._____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2101_EXECUTIVE_ROAD_____ PHONE: (941) 965 - 1479
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JERRY_BURNS_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 325 - 7687 SANITARY SURVEY: 04/ 14/ 89
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534655 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:37:46
LAST UPDATED: 04/17/98
MAILING NAME: BARAGONA RENTALS #3 ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____8 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____28,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____18
TOT STORAGE CAP: _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:20 LONGITUDE: 81:40:80
PRIMARY SOURCE: 1 LATITUDE: 28:01:20 LONGITUDE: 81:40:80
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534655 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION_ 15:38:08
LAST UPDATED: 07/19/90

MAILING NAME: BARAGONA RENTALS #3 ACTIVE OTHER PUBLIC
PLANT NAME: BARAGONA #3 WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: BARAGONA_RENTALS_#3_WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG ********** -
LATITUDE: 28:01:20.000 LONGITUDE: 81: 40:80.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534688 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:38:27
LAST UPDATED: 04/22/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ALL_IN_ONE_HAIRSTYLING_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2200_WEST_HWY._92_____ PHONE: (941) 956 - 1946
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: ALL_IN_ONE_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2200_HWY_92_WEST_____ PHONE: (941) 956 - 1946
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 22/ 98 CLASS: 01 PRIOR VISIT: 04/ 10/ 97 PRIOR CLASS: 01
PERSON CONTACTED: LORAN_DICKERSON_____ TITLE: _____
CONTACT PHONE: (941) 956 - 1946 SANITARY SURVEY: 01/ 07/ 93
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534688 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:38:49
LAST UPDATED: 04/22/98
MAILING NAME: ALL IN ONE HAIRSTYLING ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____4 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____14,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 50.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____3
TOT STORAGE CAP: _____180 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:45
PRIMARY SOURCE: 1 LATITUDE: 28:03:50 LONGITUDE: 81:45:45
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534688 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:39:10
LAST UPDATED: 12/12/89

MAILING NAME: ALL IN ONE HAIRSTYLING ACTIVE OTHER PUBLIC
PLANT NAME: ALL IN ONE WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: ALL_IN_ONE_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:03:50.000 LONGITUDE: 81: 45:45.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534764 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:39:30
LAST UPDATED: 01/21/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: NATIONSBANK_OF_FLORIDA_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 888_CYPRESS_GARDENS_BLVD_____ PHONE: (941) 293 - 6599
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: NATIONSBANK_OF_FLORIDA_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 888_CYPRESS_GARDENS_BLVD_____ PHONE: (941) 293 - 6599
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 01/ 16/ 98 CLASS: 01 PRIOR VISIT: 04/ 10/ 97 PRIOR CLASS: SS
PERSON CONTACTED: LOUISE_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 293 - 6599 SANITARY SURVEY: 04/ 10/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534764 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:39:51
LAST UPDATED: 01/21/98
MAILING NAME: NATIONSBANK OF FLORIDA ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____250 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____86,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____86,000 (GPD) RADS SAMPLES FREQY: __ __ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ___ ____1
TOT STORAGE CAP: _____500 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:12 LONGITUDE: 81:42:55
PRIMARY SOURCE: 1 LATITUDE: 28:00:11 LONGITUDE: 81:42:54
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534764 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE.INFORMATION. 15:40:13
LAST UPDATED: 02/23/98

MAILING NAME: NATIONSBANK OF FLORIDA ACTIVE NONCOMMUNITY
PLANT NAME: NCNB BANK WELL ACTIVE PLANT NUMBER: 1
SOURCE NAME: NCNB/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********-
LATITUDE: 28:00:11.965 LONGITUDE: 81: 42:54.707 * COLLECTION DATE: 02/19/98 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534822 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:40:32
LAST UPDATED: 04/24/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: VINELAND_DEVELOP_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1771_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 6591
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: VINELAND_DEVELOPMENT_CORP_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 5250_DUNDEE_ROAD_____ PHONE: (941) 324 - 6591
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 24/ 98 CLASS: 01 PRIOR VISIT: 04/ 16/ 97 PRIOR CLASS: 01
PERSON CONTACTED: RBT_E_MILLER_____ TITLE: _____
CONTACT PHONE: (941) 324 - 6591 SANITARY SURVEY: 08/ 21/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534822 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:40:53
LAST UPDATED: 04/24/98
MAILING NAME: VINELAND DEVELOP ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____4 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____28,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____17,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 60.7 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____4
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:48
PRIMARY SOURCE: 1 LATITUDE: 28:01:15 LONGITUDE: 81:40:48
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534822 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:41:15
LAST UPDATED: 01/08/91

MAILING NAME: VINELAND DEVELOP ACTIVE OTHER PUBLIC
PLANT NAME: VIN. DEV. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: VINELAND_DEVELOP/R_WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:15.000 LONGITUDE: 81: 40:48.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534828 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:41:34
LAST UPDATED: 03/06/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CENTRAL_DOOR_COMPANY_INC_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: PO_BOX_1465_____ PHONE: (941) 324 - 3719
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: CENTRAL_DOOR_COMPANY_INC_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2500_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3719
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 03/ 06/ 98 CLASS: 01 PRIOR VISIT: 04/ 21/ 97 PRIOR CLASS: 01
PERSON CONTACTED: SCOTT_GIROUARD_____ TITLE: _____
CONTACT PHONE: (941) 324 - 3719 SANITARY SURVEY: 01/ 04/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534828 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:41:56
LAST UPDATED: 03/06/98
MAILING NAME: CENTRAL DOOR COMPANY INC ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____15 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____57,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____37,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 64.9 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:07 LONGITUDE: 81:40:01
PRIMARY SOURCE: 1 LATITUDE: 28:01:07 LONGITUDE: 81:40:01
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534828 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:42:18
LAST UPDATED: 04/18/90

MAILING NAME: CENTRAL DOOR COMPANY INC ACTIVE OTHER PUBLIC
PLANT NAME: C.D.C. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: CENTRAL_DOOR_CO._WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:07.000 LONGITUDE: 81: 40:01.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534838 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:42:37
LAST UPDATED: 05/29/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 77 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: VINELAND_DEVELOPMENT_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1771_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: VINELAND_DEVELOPMENT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2285_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 05/ 29/ 98 CLASS: 01 PRIOR VISIT: 04/ 21/ 97 PRIOR CLASS: 01
PERSON CONTACTED: B._SCOTT_SHORT_____ TITLE: OWNER_____
CONTACT PHONE: (941) 324 - 6686 SANITARY SURVEY: 06/ 08/ 90
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534838 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:42:59
LAST UPDATED: 05/29/98
MAILING NAME: VINELAND DEVELOPMENT ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____4 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____43,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____23,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 53.4 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 500 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _ _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:07:07 LONGITUDE: 81:40:28
PRIMARY SOURCE: 1 LATITUDE: 28:01:07 LONGITUDE: 81:40:28
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534838 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:43:20
LAST UPDATED: 06/12/90

MAILING NAME: VINELAND DEVELOPMENT ACTIVE OTHER PUBLIC
PLANT NAME: MINI WHSES. H2O PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: MINI_WAREHOUSE_SPA_WELL_#1____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:07.000 LONGITUDE: 81: 40:28.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____500 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534881 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:43:39
LAST UPDATED: 03/02/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 05/ 13/ 93
BEGIN DT: 01/ 84 INACT DT: 01/ 29/ 93 INACT REASON: S = SYSTEM DISCONTINUED
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/ __ END: __/ __ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: REID_GROUP_HOME_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 290_GRADY_POLK_RD_____ PHONE: (941) 297 - 5241
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: REID_GROUP_HOME_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 290_GRADY_POLK_ROAD_____ PHONE: (941) 297 - 5241
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 02/ 06/ 98 CLASS: 01 PRIOR VISIT: 02/ 07/ 97 PRIOR CLASS: 01
PERSON CONTACTED: RUTH_REID_____ TITLE: PROGRAM_DIRECTOR____
CONTACT PHONE: (941) 297 - 5241 SANITARY SURVEY: 05/ 18/ 88
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534881 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:44:01
LAST UPDATED: 03/02/98
MAILING NAME: REID GROUP HOME ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____13 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____57,600 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____57,600 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 2,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: NH = NURSING HOME TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:40
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:40
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534881 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION- 15:44:22
LAST UPDATED: 05/13/93

MAILING NAME: REID GROUP HOME ACTIVE OTHER PUBLIC
PLANT NAME: WINTER HAVEN ACTIVE PLANT NUMBER: 1
SOURCE NAME: REID_GROUP_HOME_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____2,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6534893 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:44:42
LAST UPDATED: 03/02/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 02/ 84 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 10/ 01 END: 06/ 30 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CYPRESS_GARDENS_WINTER_MINISTR GENERAL MAIL: Y (Y OR N)
ADDRESS: 186_LAKESIDE_RANCH_____ PHONE: (941) 422 - 5608
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: CYPRESS_GARDENS_WINTER_MINISTR GENERAL MAIL: N (Y OR N)
ADDRESS: 140_MALLARD_ROAD_____ PHONE: (___) ___ - ____
CITY: LAKE_ALFRED_____ STATE: FL ZIP CODE: 33850 - ____
OWNER TYPE: T = TRUST/COOPERATIVE
INSPECTOR'S INITIALS: TMH
DATE OF VISIT: 02/ 18/ 98 CLASS: 01 PRIOR VISIT: 04/ 10/ 97 PRIOR CLASS: 01
PERSON CONTACTED: DICK_CROSBY_____ TITLE: TREASURER_____
CONTACT PHONE: (941) 422 - 5608 SANITARY SURVEY: 02/ 11/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534893 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:45:03
LAST UPDATED: 03/02/98
MAILING NAME: CYPRESS GARDENS WINTER MINISTR ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____24 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____21,600 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____10,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 46.2 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: ____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____75 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:05:10 LONGITUDE: 81:42:55
PRIMARY SOURCE: 1 LATITUDE: 28:05:10 LONGITUDE: 81:42:55
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6534893 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:45:25
LAST UPDATED: 12/04/89

MAILING NAME: CYPRESS GARDENS WINTER MINISTR ACTIVE OTHER PUBLIC
PLANT NAME: CYP GND WINT MINISTRY WELL ACTIVE PLANT NUMBER: 1
SOURCE NAME: WINTER_MINISTRY_WELL_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:10.000 LONGITUDE: 81: 42:55.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6534903          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 1             15:45:44
                              LAST UPDATED: 07/02/97

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 04/ 84 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: O = OTHER PUBLIC  CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: POUNDS_MOTOR_COMPANY,INC._____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: PO_BOX_770248_____________  PHONE: ( 941 ) 422 - 9555
    CITY: WINTER_GARDEN_____ STATE: FL  ZIP CODE: 34777 - 0248

 OWNER NAME: JAMES_H._POUNDS_____________  GENERAL MAIL: N (Y OR N)
   ADDRESS: 3800_WEST_LAKE_HAMILTON_DRIVE_  PHONE: ( 407 ) 656 - 1352
    CITY: LAKE_HAMILTON_____ STATE: FL  ZIP CODE: 33881 - ____
 OWNER TYPE: I = INVESTOR
                          INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 07/ 02/ 97 CLASS: 01 PRIOR VISIT: 11/ 08/ 89 PRIOR CLASS: 01
PERSON CONTACTED: POUNDS_MOTOR_COMPANY_____ TITLE: _____
CONTACT PHONE: ( ___ ) ___ - ____  SANITARY SURVEY: 11/ 08/ 89
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
                  SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6534903          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 2             15:46:06
                              LAST UPDATED: 07/02/97
MAILING NAME: POUNDS MOTOR COMPANY,INC.       ACTIVE    OTHER PUBLIC
                    BACT NON  COMPLIER: _
 RET POP SERVED: _____2        BACT SAMPLES REQ'D: __1  RULE MIN:  2
   DESIGN CAP: _____57,600 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____17,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP:  29.5          TTHM SAMPLES REQ'D: ___
 AVG PRODUCTION:     2,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ ,_____50 (G)      NUMBER METERED: _____
    METER CAP: 62_____          TYPE OF METER: _____
(*LEAD AND COPPER*)              CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER              TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

   PRIMARY PLANT:  1  LATITUDE: 28:04:00  LONGITUDE: 81:40:00
  PRIMARY SOURCE:  1  LATITUDE: 28:04:00  LONGITUDE: 81:40:00
CREDIT (Y/N)  VOC: N  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6534903 01 001     DRINKING WATER PROGRAM          07/16/98
                  SOURCE INFORMATION          15:46:27
                              LAST UPDATED: 05/22/91

MAILING NAME: POUNDS MOTOR COMPANY,INC.     ACTIVE    OTHER PUBLIC
 PLANT NAME: POUNDS WATER PLANT          ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: POUNDS_MOTOR_COMPANY/WELL_#1__
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG ****************_
LATITUDE: 28:04:00.000  LONGITUDE: 81: 40:00.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____2,000 (GPD)     % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___ TRANSMIT HERE ==> _
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PWS001 6535002          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           15:46:46
                              LAST UPDATED: 12/11/97

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 85 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: N = NONCOMMUNITY  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: ST._MARY'S_ANGLICAN_CHURCH____  GENERAL MAIL: N (Y OR N)
   ADDRESS: 2200_WINTER_LAKE_ROAD_WEST____  PHONE: ( 941 ) 294 - 5959
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: ST._MARY'S_ANGLICAN_CHURCH____  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 2200_WINTER_LAKE_ROAD_WEST____  PHONE: ( 941 ) 294 - 5959
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: C = CITY
                          INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 04/ 25/ 97 CLASS: SS PRIOR VISIT: 10/ 04/ 94 PRIOR CLASS: SS
PERSON CONTACTED: KEN_REEVE_____ TITLE: SENIOR_WARDEN_____
CONTACT PHONE: ( 941 ) 299 - 2515    SANITARY SURVEY: 04/ 25/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
                     SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535002          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           15:47:08
                              LAST UPDATED: 12/11/97
MAILING NAME: ST. MARY'S ANGLICAN CHURCH       ACTIVE    NONCOMMUNITY
                     BACT NON  COMPLIER: _
 RET POP SERVED: _____50        BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____50,400 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____50,400 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP: 100.0          TTHM SAMPLES REQ'D: ___
AVG PRODUCTION:      500 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____82 (G)      NUMBER METERED: _____
    METER CAP: ALL_____          TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*)            CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93  06/93  POP GRP:G  *)
(*M/R STATUS:1  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH              TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1 LATITUDE: 28:00:10  LONGITUDE: 81:46:00
  PRIMARY SOURCE:  1 LATITUDE: 28:00:10  LONGITUDE: 81:46:00
CREDIT (Y/N)  VOC: N  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6535002 01 001     DRINKING WATER PROGRAM            07/16/98
                  SOURCE INFORMATION              15:47:29
                              LAST UPDATED: 06/25/97

MAILING NAME: ST. MARY'S ANGLICAN CHURCH     ACTIVE    NONCOMMUNITY
 PLANT NAME: ST.MARY'S ANG. CH. WATER PLANT  ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: ST._MARY'S_ANGLICAN/WELL_#1___
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE   **** LAT LONG **********
LATITUDE: 28:00:10.000  LONGITUDE: 81: 46:00.000 *  COLLECTION DATE: __/__/__ *
                        * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _____500 (GPD)      % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___ TRANSMIT HERE ==> _
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PWS001 6535006          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           15:47:49
                          LAST UPDATED: 06/22/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: 10/ 01/ 97
BEGIN DT: 06/ 85 INACT DT: 10/ 29/ 93 INACT REASON: S = SYSTEM DISCONTINUED
PWS TYPE: O = OTHER PUBLIC  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: HAMPTON_BROTHERS_AUTO_REPAIR__  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 3611_RECKER_HIGHWAY_____________  PHONE: ( 941 ) 291 - 0702
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____

 OWNER NAME: GREG_HAMPTON_____________________  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 3611_RECKER_HIGH_WAY_____________  PHONE: ( 941 ) 291 - 0702
    CITY: WINTER_HAVEN_____ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                      INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 06/ 22/ 98 CLASS: 01 PRIOR VISIT: 09/ 18/ 97 PRIOR CLASS: 01
PERSON CONTACTED: LLOYD_HAMPTON_____________  TITLE: OWNER_____________
CONTACT PHONE: ( 941 ) 324 - 9414    SANITARY SURVEY: 01/ 14/ 93
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
                  SCREEN ACTION ___  TRANSMIT HERE ==> _

PWS002 6535006          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           15:48:10
                          LAST UPDATED: 06/22/98
MAILING NAME: HAMPTON BROTHERS AUTO REPAIR     ACTIVE    OTHER PUBLIC
                    BACT NON COMPLIER: _
 RET POP SERVED: _____24        BACT SAMPLES REQ'D: __1  RULE MIN:  2
   DESIGN CAP: _____50,400 (GPD)  RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____15,000 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP:  29.7          TTHM SAMPLES REQ'D ___
 AVG PRODUCTION:     1,000 (GPD)  TTHM SAMPLES FREQY: _____ (MONTHS)
   MAXIMUM/HOUR: _____ (G)   SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G)     NUMBER METERED: _____
    METER CAP: _____________     TYPE OF METER: _____________
(*LEAD AND COPPER*)            CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH      TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1  LATITUDE: 28:01:20  LONGITUDE: 81:46:10
  PRIMARY SOURCE:  1  LATITUDE: 28:01:20  LONGITUDE: 81:46:10
CREDIT (Y/N)  VOC: N  PEST: N       DIOXIN WAIVER: Y (Y/N)
                  SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6535006 01 001     DRINKING WATER PROGRAM            07/16/98
                SOURCE INFORMATION              15:48:31
                          LAST UPDATED: 10/01/97

MAILING NAME: HAMPTON BROTHERS AUTO REPAIR   ACTIVE   OTHER PUBLIC
 PLANT NAME: WINTER HAVEN          ACTIVE   PLANT NUMBER:  1
SOURCE NAME: NAAS_AUTO_REPAIR/WELL_#1_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********
LATITUDE: 28:01:20.000  LONGITUDE: 81: 46:10.000 *  COLLECTION DATE: __/__/__ *
                  * COLLECTION METHOD: U UNKNOWN*
 SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD)     % OF SYSTEM PRODUCTION: 100

ANN %        SOURCE TYPE: G = GROUND
100 GROUND,   NUMBER OF WELLS: __1

  SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED        SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6535007 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:48:51
LAST UPDATED: 06/23/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 85 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CODY_ARMORY_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3761_RECKER_HIGHWAY_____ PHONE: (941) 299 - 3063
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: ED_CODY_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3761_RECKER_HIGHWAY_____ PHONE: (941) 299 - 3063
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 04/ 11/ 97 CLASS: 01 PRIOR VISIT: 09/ 05/ 96 PRIOR CLASS: SS
PERSON CONTACTED: ED_CODY_____ TITLE: _____
CONTACT PHONE: (941) 299 - 3063 SANITARY SURVEY: 09/ 05/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535007 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:49:12
LAST UPDATED: 06/23/97
MAILING NAME: CODY ARMORY ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____25 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____50,400 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____50,400 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 100 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,500 (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ _____42 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: RO = RETAIL/GENERAL MERCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:30 LONGITUDE: 81:46:25
PRIMARY SOURCE: 1 LATITUDE: 28:01:30 LONGITUDE: 81:46:25
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535007 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:49:34
LAST UPDATED: 11/27/96

MAILING NAME: CODY ARMORY ACTIVE NONCOMMUNITY
PLANT NAME: CODY ARMORY PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: CODY_ARMORY/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:30.000 LONGITUDE: 81: 46:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____100 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535046 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:49:54
LAST UPDATED: 06/22/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 03/ 86 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: OSBORN_ORNAMENTAL_IRON_WORKS__ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3195_RECKER_HIGHWAY_____ PHONE: (941) 299 - 7333
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: DORSY_OSBORN_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3195_RECKER_HIGHWAY_____ PHONE: (941) 299 - 7333
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 03/ 03/ 97 CLASS: 01 PRIOR VISIT: 07/ 10/ 95 PRIOR CLASS: 01
PERSON CONTACTED: DORSEY_OSBORN_____ TITLE: OWNER_____
CONTACT PHONE: (941) 299 - 4333 SANITARY SURVEY: 01/ 27/ 92
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535046 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:50:15
LAST UPDATED: 06/22/98
MAILING NAME: OSBORN ORNAMENTAL IRON WORKS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____2 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____36,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____36,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 700 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____1,000 (G) SERVICE CONNECTIONS: _____2
TOT STORAGE CAP: _ ._____28 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: IN = INDUSTRIAL TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535046 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:50:36
LAST UPDATED: 04/08/87

MAILING NAME: OSBORN ORNAMENTAL IRON WORKS ACTIVE OTHER PUBLIC
PLANT NAME: OSBORNE 4 INCH WELL/TANK ACTIVE PLANT NUMBER: 1
SOURCE NAME: OSBORN_ORNAMENTAL/WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____700 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535064 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:50:56
LAST UPDATED: 06/10/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 12/ 85 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SWISS_GOLF_&_TENNIS_CLUB_____ GENERAL MAIL: N (Y OR N)
ADDRESS: OLD_LUCERN_PARK_ROAD_____ PHONE: (941) 299 - 9705
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____

OWNER NAME: SWISS_GOLF_&_TENNIS_CLUB_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_5252_____ PHONE: (941) 647 - 1581
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33807 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MF_
DATE OF VISIT: 12/ 19/ 97 CLASS: 01 PRIOR VISIT: 12/ 19/ 96 PRIOR CLASS: 01
PERSON CONTACTED: DAVID_FOLK_____ TITLE: _____
CONTACT PHONE: (941) 299 - 9705 SANITARY SURVEY: 04/ 21/ 95
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535064 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:51:17
LAST UPDATED: 06/10/98
MAILING NAME: SWISS GOLF & TENNIS CLUB ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____1,904 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: ____3,312,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____140,000 (GPD) RADS SAMPLES FREQY: ___3 (MONTHS)
% DESIGN CAP: 4.2 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 6,505 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: ____1,010
TOT STORAGE CAP: _____20,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:T SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 2

PRIMARY PLANT: 1 LATITUDE: 28:05:22 LONGITUDE: 81:41:35
PRIMARY SOURCE: 1 LATITUDE: 28:05:22 LONGITUDE: 81:41:35
CREDIT (Y/N) VOC: Y PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535064 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:51:38
LAST UPDATED: 07/07/92

MAILING NAME: SWISS GOLF & TENNIS CLUB ACTIVE COMMUNITY
PLANT NAME: SWISS GOLF & TENNIS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWISS_GOLF_&_TENNIS/WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:22.000 LONGITUDE: 81: 41:35.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____6,500 (GPD) % OF SYSTEM PRODUCTION: 99

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

MORE DATA ON FILE SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS004 6535064 01 002 DRINKING WATER PROGRAM 07/17/98
SOURCE INFORMATION 14:50:43
LAST UPDATED: 07/07/92

MAILING NAME: SWISS GOLF & TENNIS CLUB ACTIVE COMMUNITY
PLANT NAME: SWISS GOLF & TENNIS W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: SWISS_GOLF_&_TENNIS/WELL_#2___
SOURCE NUMBR: 002 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:20.000 LONGITUDE: 81: 41:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____5 (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535078 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:51:59
LAST UPDATED: 02/16/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 04/ 87 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: TRINITY_CONGREGATIONAL_CHURCH_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1011_SR_540_SW_____ PHONE: (941) 294 - 2047
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: TRINITY_CONGREGATIONAL_CHURCH_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 1011_SR_540_SW_____ PHONE: (941) 294 - 2047
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: C = CITY
INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 02/ 11/ 98 CLASS: 01 PRIOR VISIT: 03/ 06/ 97 PRIOR CLASS: 03
PERSON CONTACTED: ERNIE_TULLIS_____ TITLE: MAINTENANCE_____
CONTACT PHONE: (941) 299 - 1536 SANITARY SURVEY: 03/ 08/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535078 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:52:20
LAST UPDATED: 02/16/98
MAILING NAME: TRINITY CONGREGATIONAL CHURCH ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____150 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____72,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____50,400 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 70.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 10,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ _____315 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: NONE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:10 LONGITUDE: 81:46:00
PRIMARY SOURCE: 1 LATITUDE: 28:00:10 LONGITUDE: 81:46:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535078 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:52:41
LAST UPDATED: 04/09/93

MAILING NAME: TRINITY CONGREGATIONAL CHURCH ACTIVE NONCOMMUNITY
PLANT NAME: TRINITY CONG. CH. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: TRINITY_CONGREGATIONAL/WELL_#1
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:00:10.000 LONGITUDE: 81: 46:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____10,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535082 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:53:01
LAST UPDATED: 07/09/97

STATUS: A = ACTIVE RE-ACTIVATION DT: 01/ 30/ 89
BEGIN DT: 10/ 84 INACT DT: __/ __/ __ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: LIVING_COVENANT_FAMILY_CHURCH_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3460_RECKER_HIGHWAY_____ PHONE: (941) 294 - 5744
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: LIVING_COVENANT_FAMILY_CHURCH_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3460_RECKER_HWY_._____ PHONE: (941) 294 - 5744
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 07/ 09/ 97 CLASS: 01 PRIOR VISIT: 02/ 21/ 91 PRIOR CLASS: 01
PERSON CONTACTED: RANDI_LECHNER_____ TITLE: PRES._____
CONTACT PHONE: (941) 294 - 5744 SANITARY SURVEY: 01/ 30/ 89
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535082 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:53:22
LAST UPDATED: 07/09/97
MAILING NAME: LIVING COVENANT FAMILY CHURCH ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____2 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____13,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____1,300 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 10.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 200 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____(G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____82 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:20
PRIMARY SOURCE: 1 LATITUDE: 28:01:10 LONGITUDE: 81:46:20
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535082 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION_ 15:53:43
LAST UPDATED: 01/31/89

MAILING NAME: LIVING COVENANT FAMILY CHURCH ACTIVE OTHER PUBLIC
PLANT NAME: SHILOH COVENANT 4" WELL ACTIVE PLANT NUMBER: 1
SOURCE NAME: SHILOH_COVENANT_FELLOWSHIP____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:10.000 LONGITUDE: 81: 46:20.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____200 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535090 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:54:04
LAST UPDATED: 04/24/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/87 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/01 END: 12/31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BURNS_INDUSTRIAL_PARK_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 402_BURNS_LANE_____ PHONE: (941) 324 - 7687
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: JERRY_BURNS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 402_BURNS_LANE_____ PHONE: (941) 324 - 7687
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 03/03/97 CLASS: 01 PRIOR VISIT: 01/04/91 PRIOR CLASS: 02
PERSON CONTACTED: JERRY_BURNS_____ TITLE: OWNER_____
CONTACT PHONE: (941) 324 - 1068 SANITARY SURVEY: 06/23/87
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535090 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:54:25
LAST UPDATED: 04/24/98
MAILING NAME: BURNS INDUSTRIAL PARK ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____7 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____115,200 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____1,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 0.8 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 240 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____4
TOT STORAGE CAP: _____510 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:16 LONGITUDE: 81:40:15
PRIMARY SOURCE: 1 LATITUDE: 28:01:16 LONGITUDE: 81:40:15
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535090 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:54:46
LAST UPDATED: 08/31/87

MAILING NAME: BURNS INDUSTRIAL PARK ACTIVE OTHER PUBLIC
PLANT NAME: BURNS IND. PARK WELL ACTIVE PLANT NUMBER: 1
SOURCE NAME: BURNS_INDUSTRIAL_PK/WELL_#1___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:16.000 LONGITUDE: 81: 40:15.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____240 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535120 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:55:06
LAST UPDATED: 02/27/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 02/ 06/ 98
BEGIN DT: 10/ 87 INACT DT: 02/ 13/ 96 INACT REASON: S = SYSTEM DISCONTINUED
PWS TYPE: N = NONCOMMUNITY CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: WINTER_HAVEN'S_PREMIER_CENTER_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 3877_RECKER_HIGHWAY_SUITE_5___ PHONE: (941) 291 - 3877
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: DALE_STAMPER_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 247_SPIRIT_LAKE_ROAD_WEST_____ PHONE: (941) 291 - 3877
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33881 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 02/ 24/ 98 CLASS: 03 PRIOR VISIT: 02/ 12/ 98 PRIOR CLASS: 03
PERSON CONTACTED: SANDY_FRY_____ TITLE: _____
CONTACT PHONE: (941) 291 - 3877 SANITARY SURVEY: 03/ 04/ 94
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535120 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:55:27
LAST UPDATED: 02/27/98
MAILING NAME: WINTER HAVEN'S PREMIER CENTER ACTIVE NONCOMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____140 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____57,600 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____ (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS:
2SERVAREA: XX = OTHER TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:25 LONGITUDE: 81:46:10
PRIMARY SOURCE: 1 LATITUDE: 28:01:25 LONGITUDE: 81:46:10
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535120 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:55:48
LAST UPDATED: 02/06/98

MAILING NAME: WINTER HAVEN'S PREMIER CENTER ACTIVE NONCOMMUNITY
PLANT NAME: GATOR WAREHOUSES INACTIVE PLANT NUMBER: 1
SOURCE NAME: GATOR_WAREHOUSES_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:25.000 LONGITUDE: 81: 46:10.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

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PWS001 6535155          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 1           15:56:09
                              LAST UPDATED: 06/08/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: 11/ 08/ 90
BEGIN DT: 07/ 88 INACT DT: __/ __/ __ INACT REASON: _ = .....
PWS TYPE: O = OTHER PUBLIC  CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: KONGER_WAREHOUSES_____________  GENERAL MAIL: Y (Y OR N)
   ADDRESS: 8_BRIDGEWATER_DRIVE_____________  PHONE: ( 941 ) 324 - 5195
    CITY: WINTER_HAVEN_________ STATE: FL  ZIP CODE: 33884 - 3005

 OWNER NAME: ROBERT_S._KONGER_______________  GENERAL MAIL: N (Y OR N)
   ADDRESS: 3000,_2900_EXECUTIVE_RD._____  PHONE: ( 941 ) 324 - 5195
    CITY: WINTER_HAVEN_________ STATE: FL  ZIP CODE: 33880 - ____
 OWNER TYPE: I = INVESTOR
                          INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 05/ 29/ 98 CLASS: 01 PRIOR VISIT: 03/ 21/ 97 PRIOR CLASS: 01
PERSON CONTACTED: GREG_SAUER_____________________  TITLE: MANAGER_____________
CONTACT PHONE: ( 941 ) 324 - 5195    SANITARY SURVEY: 03/ 28/ 88
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
                    SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535155          DRINKING WATER PROGRAM              07/16/98
              SYSTEM INVENTORY INFORMATION PART 2           15:56:29
                              LAST UPDATED: 06/08/98
MAILING NAME: KONGER WAREHOUSES              ACTIVE    OTHER PUBLIC
                      BACT NON  COMPLIER: _
 RET POP SERVED: _______20          BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _______43,000 (GPD)   RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: ________3,000 (GPD)   RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP:  6.9              TTHM SAMPLES REQ'D: __
AVG PRODUCTION:         500 (GPD)   TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: ________1,500 (G)   SERVICE CONNECTIONS: ________6
TOT STORAGE CAP: _ ,_____32 (G)       NUMBER METERED: ________
    METER CAP: _____________________   TYPE OF METER: _____________________
(*LEAD AND COPPER*)                CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93  12/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS        TOTAL # OF PLANTS:    1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:    1

  PRIMARY PLANT:  1  LATITUDE: 28:01:15  LONGITUDE: 81:40:20
  PRIMARY SOURCE:  1  LATITUDE: 28:01:15  LONGITUDE: 81:40:20
CREDIT (Y/N)  VOC: N  PEST: N          DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6535155 01 001       DRINKING WATER PROGRAM              07/16/98
                    SOURCE INFORMATION              15:56:50
                              LAST UPDATED: 11/08/90

MAILING NAME: KONGER WAREHOUSES              ACTIVE    OTHER PUBLIC
 PLANT NAME: KONGER WATER PLANT              ACTIVE    PLANT NUMBER:  1
 SOURCE NAME: KONGER_WELL_____________
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG ****************
LATITUDE: 28:01:15.000  LONGITUDE: 81: 40:20.000 *  COLLECTION DATE: __/__/__ *
                          * COLLECTION METHOD: U UNKNOWN*
  SOURCE AVAILABILITY: P = PERMANENT
 SOURCE AVG PRODUCTION: _________500 (GPD)      % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
 100 GROUND,   NUMBER OF WELLS: __1

   SURFACE,  IDENTIFY SOURCE: _____________________________

 ___ PURCHASED GROUND,  PWS ID: _______ _ NAME: .....

 ___ PURCHASED SURFACE,  PWS ID: _______ _ NAME: .....

 LAST RECORD DISPLAYED          SCREEN ACTION: ___  TRANSMIT HERE ==> _
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PWS001 6535166          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 1             15:57:11
                          LAST UPDATED: 03/30/98

 STATUS: A = ACTIVE          RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 88 INACT DT: __/__/__ INACT REASON: _ = .....
PWS TYPE: N = NONCOMMUNITY  CATG./CLASS: 5C
NC SEASON BEG: 01/ 01 END: 12/ 31   NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

 SYSTEM NAME: ST._SOPHIA_GREEK_ORTHODOX_CH._  GENERAL MAIL: N (Y OR N)
   ADDRESS: 1030_BRADBURY_ROAD_____________  PHONE: ( 941 ) 299 - 4532
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33883 - 7424

 OWNER NAME: ST._SOPHIA_GREEK_ORTHODOX_CH._  GENERAL MAIL: Y (Y OR N)
   ADDRESS: P.O._BOX_7424_____._____  PHONE: ( 941 ) 299 - 4532
    CITY: WINTER_HAVEN_______ STATE: FL  ZIP CODE: 33883 - 7424
 OWNER TYPE: T = TRUST/COOPERATIVE
                        INSPECTOR'S INITIALS: HT_
DATE OF VISIT: 01/ 22/ 97 CLASS: 03 PRIOR VISIT: 01/ 09/ 97 PRIOR CLASS: SS
PERSON CONTACTED: _____ TITLE: _____
CONTACT PHONE: ( 941 ) 294 - 7494    SANITARY SURVEY: 01/ 09/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? F
                    SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535166          DRINKING WATER PROGRAM              07/16/98
            SYSTEM INVENTORY INFORMATION PART 2             15:57:32
                          LAST UPDATED: 03/30/98
MAILING NAME: ST. SOPHIA GREEK ORTHODOX CH.     ACTIVE    NONCOMMUNITY
                    BACT NON COMPLIER: _
 RET POP SERVED: _____100          BACT SAMPLES REQ'D: __2  RULE MIN:  2
   DESIGN CAP: _____14,400 (GPD)   RADS SAMPLES REQ'D: ___
   MAXIMUM DAY: _____14,400 (GPD)  RADS SAMPLES FREQY: ____ (MONTHS)
  % DESIGN CAP: 100.0              TTHM SAMPLES REQ'D: ___
AVG PRODUCTION:      1,000 (GPD)   TTHM SAMPLES FREQY: _____ (MONTHS)
  MAXIMUM/HOUR: _____ (G)    SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____220 (G)      NUMBER METERED: _____
    METER CAP: _____          TYPE OF METER: ELAPSED_HOUR_____
(*LEAD AND COPPER*)          CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93  06/93  POP GRP:G  *)
(*M/R STATUS:I  SAMPLES REQ'D:__5  RULE MIN:  5 CONSOLIDATED: N Y/N *)
1SERVAREA: CH = CHURCH              TOTAL # OF PLANTS:   1
2SERVAREA: __ = .....  TOTAL # OF SOURCES:   1

  PRIMARY PLANT:  1 LATITUDE: 28:00:05  LONGITUDE: 81:45:55
  PRIMARY SOURCE:  1 LATITUDE: 28:00:05  LONGITUDE: 81:45:55
CREDIT (Y/N)  VOC: N  PEST: N       DIOXIN WAIVER: Y (Y/N)
                    SCREEN ACTION  DOC  TRANSMIT HERE ==> _

PWS004 6535166 01 001     DRINKING WATER PROGRAM            07/16/98
                SOURCE.INFORMATION_          15:57:53
                          LAST UPDATED: 01/30/97

MAILING NAME: ST. SOPHIA GREEK ORTHODOX CH.  ACTIVE   NONCOMMUNITY
 PLANT NAME: ST.SOPHIA CHURCH WELL       ACTIVE   PLANT NUMBER:  1
 SOURCE NAME: ST.SOPHIA_CHURCH_WELL_____
SOURCE NUMBR: 001  SOURCE STATUS: A = ACTIVE  **** LAT LONG **********
LATITUDE: 28:00:05.000  LONGITUDE: 81: 45:55.000 *  COLLECTION DATE: __/__/__ *
                    * COLLECTION METHOD: U UNKNOWN*
 SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD)     % OF SYSTEM PRODUCTION: 100

ANN %          SOURCE TYPE: G = GROUND
100 GROUND,  NUMBER OF WELLS: __1

  SURFACE,  IDENTIFY SOURCE: _____

___ PURCHASED GROUND,  PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE,  PWS ID: _____ _ NAME: .....

 LAST RECORD DISPLAYED        SCREEN ACTION: ___ TRANSMIT HERE ==> _
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PWS001 6535179 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:58:13
LAST UPDATED: 03/07/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 05/ 88 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: TAYLOR_GROUP_HOME_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_1870_____ PHONE: (941) 299 - 1948
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33802 - ____

OWNER NAME: FLA._BAPTIST_FAMILY_MINISTRIES GENERAL MAIL: N (Y OR N)
ADDRESS: 1020_S.R._540_____ PHONE: (941) 688 - 4981
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33800 - ____
OWNER TYPE: T = TRUST/COOPERATIVE
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 03/ 06/ 97 CLASS: 01 PRIOR VISIT: 02/ 05/ 96 PRIOR CLASS: 01
PERSON CONTACTED: _____ TITLE: _____
CONTACT PHONE: (___) ___ - ____ SANITARY SURVEY: 07/ 23/ 86
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535179 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:58:34
LAST UPDATED: 03/07/97
MAILING NAME: TAYLOR GROUP HOME ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____7 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____57,600 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____10,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 17.3 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ _____85 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: XX = OTHER TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:20 LONGITUDE: 81:45:40
PRIMARY SOURCE: 1 LATITUDE: 28:00:20 LONGITUDE: 81:45:40
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535179 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:58:55
LAST UPDATED: 05/26/88

MAILING NAME: TAYLOR GROUP HOME ACTIVE OTHER PUBLIC
PLANT NAME: ACTIVE PLANT NUMBER: 1
SOURCE NAME: _____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********_
LATITUDE: 28:00:20.000 LONGITUDE: 81: 45:40.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535285 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 15:59:15
LAST UPDATED: 03/21/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 09/ 89 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MOM'S_WAIST_AWAY_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_192_____ PHONE: (941) 324 - 0098
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: CLARA_DANTZLER_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 4040_COUNTRY_CLUB_DR._____ PHONE: (941) 293 - 7862
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 03/ 21/ 97 CLASS: 01 PRIOR VISIT: 11/ 04/ 92 PRIOR CLASS: 02
PERSON CONTACTED: MRS._CLARA_DANTZLER_____ TITLE: PRESIDENT_____
CONTACT PHONE: (941) 324 - 0098 SANITARY SURVEY: 11/ 04/ 92
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535285 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 15:59:36
LAST UPDATED: 03/21/97
MAILING NAME: MOM'S WAIST AWAY ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____3 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____50,400 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____2,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 3.9 TTHM SAMPLES REQ'D: __
AVG PRODUCTION: 1,200 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _ _____60 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:1 SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: FO = FOOD PROCESSING TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:02:00 LONGITUDE: 81:40:05
PRIMARY SOURCE: 1 LATITUDE: 28:02:00 LONGITUDE: 81:40:05
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535285 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 15:59:58
LAST UPDATED: 03/07/91

MAILING NAME: MOM'S WAIST AWAY ACTIVE OTHER PUBLIC
PLANT NAME: MOM'S WAIST AWAY WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: MOM'S_4_IN._WELL_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:02:00.000 LONGITUDE: 81: 40:05.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1;200 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535307 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:00:17
LAST UPDATED: 09/11/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 09/ 91 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: SPENCER_WATER_SYSTEM_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 4407_E._SADDLE_CREEK_FARM____ PHONE: (941) 665 - 0056
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33801 - ____

OWNER NAME: ESTATE_OF_MARIE_J._SPENCER___ GENERAL MAIL: N (Y OR N)
ADDRESS: 1600_W._DERBY_AVE._____ PHONE: (941) 967 - 1263
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 02/ 06/ 97 CLASS: 01 PRIOR VISIT: 01/ 04/ 95 PRIOR CLASS: 01
PERSON CONTACTED: FORREST_SPENCER_____ TITLE: OWNER_____
CONTACT PHONE: (941) 967 - 1285 SANITARY SURVEY: 09/ 09/ 91
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535307 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:00:39
LAST UPDATED: 09/11/97
MAILING NAME: SPENCER WATER SYSTEM ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____15 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____7,200 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____3,000 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 41.6 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 3,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____2,500 (G) SERVICE CONNECTIONS: _____5
TOT STORAGE CAP: _____120 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: AP = APARTMENT TOTAL # OF PLANTS: 1
2SERVAREA: CH = CHURCH TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:03:25 LONGITUDE: 81:47:00
PRIMARY SOURCE: 1 LATITUDE: 28:03:25 LONGITUDE: 81:47:00
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535307 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:01:00
LAST UPDATED: 09/12/91

MAILING NAME: SPENCER WATER SYSTEM ACTIVE OTHER PUBLIC
PLANT NAME: SPENCER'S WELLS/TANKS ACTIVE PLANT NUMBER: 1
SOURCE NAME: SPENCER'S_3_INCH_WELLS_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********-
LATITUDE: 28:03:25.000 LONGITUDE: 81: 47:00.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____3,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __2

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535320 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:01:20
LAST UPDATED: 03/09/98

STATUS: A = ACTIVE RE-ACTIVATION DT: 02/ 19/ 93
BEGIN DT: 04/ 92 INACT DT: __/ __/ __ INACT REASON: _ = ...
PWS TYPE: P = NONTRANS NONC CATG./CLASS: 5D
NC SEASON BEG: 01/ 01 END: 12/ 31 NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: KRISTON,W.M. & SONS, INC. GENERAL MAIL: N (Y OR N)
ADDRESS: 1730 DUNDEE ROAD PHONE: (941) 293 - 5379
CITY: WINTER HAVEN, STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: GARY A. KRISTON GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O. BOX 631 PHONE: (941) 293 - 5379
CITY: WINTER HAVEN STATE: FL ZIP CODE: 33882 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: JWJ
DATE OF VISIT: 02/ 09/ 98 CLASS: SS PRIOR VISIT: 06/ 25/ 97 PRIOR CLASS: 01
PERSON CONTACTED: JOE GIOVELLI TITLE: DIRECTOR
CONTACT PHONE: (941) 293 - 5379 SANITARY SURVEY: 02/ 09/ 98
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535320 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:01:41
LAST UPDATED: 03/09/98
MAILING NAME: KRISTON,W.M. & SONS, INC. ACTIVE NONTRANS NONC
BACT NON COMPLIER: _
RET POP SERVED: 160 BACT SAMPLES REQ'D: 2 RULE MIN: 2
DESIGN CAP: 4,000 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: 776 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 19.4 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 5,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: 3
TOT STORAGE CAP: _ 500 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 01/93 06/93 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:01:15 LONGITUDE: 81:41:50
PRIMARY SOURCE: 1 LATITUDE: 28:01:15 LONGITUDE: 81:41:50
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535320 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:02:02
LAST UPDATED: 02/19/93

MAILING NAME: KRISTON,W.M. & SONS, INC. ACTIVE NONTRANS NONC
PLANT NAME: KRISTON WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: KRISTON_4_INCH_WELL
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:15.000 LONGITUDE: 81: 41:50.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: 5,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: 1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535343 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:02:22
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 01/ 84 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CENSTATE_CONTRACTORS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._DRAWER_552_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: B._SCOTT_SHORT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2288_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: DONNA_MCCARTY_____ TITLE: PRESIDENT_____
CONTACT PHONE: (941) 324 - 3882 SANITARY SURVEY: 06/ 01/ 90
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS001 6535343 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:02:22
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 01/ 84 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CENSTATE_CONTRACTORS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._DRAWER_552_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: B._SCOTT_SHORT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2288_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: DONNA_MCCARTY_____ TITLE: PRESIDENT_____
CONTACT PHONE: (941) 324 - 3882 SANITARY SURVEY: 06/ 01/ 90
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS001 6535343 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:02:22
LAST UPDATED: 04/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 01/ 84 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: CENSTATE_CONTRACTORS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._DRAWER_552_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33882 - ____

OWNER NAME: B._SCOTT_SHORT_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2288_EXECUTIVE_ROAD_____ PHONE: (941) 324 - 3882
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 04/ 16/ 98 CLASS: 01 PRIOR VISIT: 02/ 04/ 97 PRIOR CLASS: 01
PERSON CONTACTED: DONNA_MCCARTY_____ TITLE: PRESIDENT_____
CONTACT PHONE: (941) 324 - 3882 SANITARY SURVEY: 06/ 01/ 90
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS004 6535343 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:03:24
LAST UPDATED: 04/19/93

MAILING NAME: CENSTATE CONTRACTORS ACTIVE OTHER PUBLIC
PLANT NAME: GOLDEN BOUGH WELL #1 PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: GOLDEN_BOUGH_OFFICE_WELL_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:01:07.000 LONGITUDE: 81: 40:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____*500 (GPD)* *% OF SYSTEM PRODUCTION: 100*

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

SCREEN ACTION: PWS TRANSMIT HERE ==> 0
** ERROR ** CURSOR POSITION INVALID - RETRANSMIT
PWS001 6535359 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:03:46
LAST UPDATED: 03/20/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 03/ 94 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: STARR_RENTALS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_289_____ PHONE: (813) 422 - 9463
CITY: DAVENPORT_____ STATE: FL ZIP CODE: 33837 - ____

OWNER NAME: EDNA_TULIP_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 2038_MCCLOUD_LN._____ PHONE: (813) 422 - 9463
CITY: DAVENPORT_____ STATE: FL ZIP CODE: 33837 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 03/ 18/ 98 CLASS: 01 PRIOR VISIT: 12/ 09/ 97 PRIOR CLASS: 01
PERSON CONTACTED: CARL_TULIP_____ TITLE: _____
CONTACT PHONE: (___) ___ - ____ SANITARY SURVEY: 10/ 29/ 93
SIGNIFICANTLY IN/OUT COMPLIANCE ? O
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS004 6535359 2_ ___ DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:04:07
LAST UPDATED:

MAILING NAME: STARR RENTALS ACTIVE OTHER PUBLIC
PLANT NAME: PLANT NUMBER: 0
SOURCE NAME:
SOURCE NUMBR: 000 SOURCE STATUS: = **** LAT LONG **********
LATITUDE: : : .000 LONGITUDE: : : .000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: _ *
SOURCE AVAILABILITY: =
SOURCE AVG PRODUCTION: (GPD) % OF SYSTEM PRODUCTION:

ANN % SOURCE TYPE: =
GROUND, NUMBER OF WELLS:

SURFACE, IDENTIFY SOURCE:

PURCHASED GROUND, PWS ID: NAME:

PURCHASED SURFACE, PWS ID: NAME:

SCREEN ACTION: ___ TRANSMIT HERE ==> _

** ERROR ** RECORD NOT FOUND FOR ID ENTERED

PWS001 6535360 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:04:27
LAST UPDATED: 12/23/97

STATUS: A = ACTIVE RE-ACTIVATION DT: 09/ 11/ 95
BEGIN DT: 03/ 94 INACT DT: 04/ 07/ 94 INACT REASON: U = UNQUALIFIED AS A PWS
PWS TYPE: C = COMMUNITY CATG./CLASS: 5A
NC SEASON BEG: __/ __ END: __/ __ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: FOUR_LAKES_GOLF_CLUB_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 3995_OLD_LUCERNE_DR._ROAD_____ PHONE: (941) 299 - 4777
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33811 - ____

OWNER NAME: MR_LARRY_MAXWELL_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_5252_____ PHONE: (941) 647 - 1581
CITY: LAKELAND_____ STATE: FL ZIP CODE: 33802 - 5252
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MT_
DATE OF VISIT: 12/ 19/ 97 CLASS: 01 PRIOR VISIT: 12/ 20/ 96 PRIOR CLASS: 01
PERSON CONTACTED: JERRY_CORUYELL_____ TITLE: OPERATOR_____
CONTACT PHONE: (941) 647 - 1581 SANITARY SURVEY: 03/ 20/ 96
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535360 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:04:48
LAST UPDATED: 12/23/97
MAILING NAME: FOUR LAKES GOLF CLUB ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: ____1,344 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____960,000 (GPD) RADS SAMPLES REQ'D: __1
MAXIMUM DAY: _____140,000 (GPD) RADS SAMPLES FREQY: __48 (MONTHS)
% DESIGN CAP: 14.5 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 140,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____158,000 (G) SERVICE CONNECTIONS: _____672
TOT STORAGE CAP: _ _____15,000 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: IN_LINE_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 12/93 POP GRP:E *)
(*M/R STATUS:R SAMPLES REQ'D:_20 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:04:48 LONGITUDE: 81:41:44
PRIMARY SOURCE: 1 LATITUDE: 28:04:48 LONGITUDE: 81:41:44
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535360 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:05:10
LAST UPDATED: 09/11/95

MAILING NAME: FOUR LAKES GOLF CLUB ACTIVE COMMUNITY
PLANT NAME: FOUR LAKES W.T.P. ACTIVE PLANT NUMBER: 1
SOURCE NAME: 4_LAKES_WELL_#1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:04:48.000 LONGITUDE: 81: 41:44.000 * COLLECTION DATE: 03/10/94 *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____140,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535384 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:05:30
LAST UPDATED: 03/24/97

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 11/95 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: MAULTSBY_RENTALS_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: P.O._BOX_166_____ PHONE: (941) 956 - 1856
CITY: LAKE_ALFRED_____ STATE: FL ZIP CODE: 33850 - ____

OWNER NAME: ALBERTUS_MAULTSBY_____ GENERAL MAIL: N (Y OR N)
ADDRESS: 192_CLARK_RD._____ PHONE: (941) 956 - 1856
CITY: AUBURNDALE_____ STATE: FL ZIP CODE: 33823 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: RR_
DATE OF VISIT: 03/24/97 CLASS: 01 PRIOR VISIT: 09/26/95 PRIOR CLASS: SS
PERSON CONTACTED: ALBERTUS_MAULTSBY_____ TITLE: OWNER_____
CONTACT PHONE: (941) 956 - 1865 SANITARY SURVEY: __/__/__
SIGNIFICANTLY IN/OUT COMPLIANCE ? _
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535384 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:05:50
LAST UPDATED: 03/24/97
MAILING NAME: MAULTSBY RENTALS ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____24 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____1 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____1 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: 100.0 TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 1 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____6
TOT STORAGE CAP: _ _____220 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 06/94 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:05:16 LONGITUDE: 81:45:29
PRIMARY SOURCE: 1 LATITUDE: 28:05:16 LONGITUDE: 81:45:29
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535384 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:06:12
LAST UPDATED: 11/20/95

MAILING NAME: MAULTSBY RENTALS ACTIVE OTHER PUBLIC
PLANT NAME: MAULTSBY RENTALS WTP #1 ACTIVE PLANT NUMBER: 1
SOURCE NAME: MAULTSBY_RENTALS_WELL_#_1_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 28:05:16.000 LONGITUDE: 81: 45:29.000 * COLLECTION DATE: 09/26/95 *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____1 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535419 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:06:32
LAST UPDATED: 06/18/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 03/97 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ORANGE_MANOR_MOBILE_PARK_EAST_ GENERAL MAIL: Y (Y OR N)
ADDRESS: 206_ORANGE_MANOR_DRIVE_____ PHONE: (941) 324 - 2470
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____

OWNER NAME: COLLEGE_HEIGHTS_MANAGEMENT_CO. GENERAL MAIL: Y (Y OR N)
ADDRESS: 206_ORANGE_MANOR_DRIVE_____ PHONE: (941) 324 - 2470
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33884 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: ___
DATE OF VISIT: 10/24/97 CLASS: SS PRIOR VISIT: __/__/__ PRIOR CLASS: __
PERSON CONTACTED: TOM_ROOT_____ TITLE: MANAGER_____
CONTACT PHONE: (941) 324 - 2470 SANITARY SURVEY: 10/24/97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535419 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:06:53
LAST UPDATED: 06/18/98
MAILING NAME: ORANGE MANOR MOBILE PARK EAST ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____400 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____ (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____ (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 12,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____205
TOT STORAGE CAP: _ _____ (G) NUMBER METERED: _____205
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 3 = BACTERIA MONITORING
(*DEFAULT COMP PERIOD 07/93 06/94 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:03 LONGITUDE: 81:40:33
PRIMARY SOURCE: 1 LATITUDE: 27:57:05 LONGITUDE: 81:37:25
CREDIT (Y/N) VOC: Y PEST: Y DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535419 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:07:14
LAST UPDATED: 06/18/98

MAILING NAME: ORANGE MANOR MOBILE PARK EAST ACTIVE COMMUNITY
PLANT NAME: GARDEN GROVE WATER COMPANY ACTIVE PLANT NUMBER: 1
SOURCE NAME: GARDEN_GROVE_WATER_COMPANY____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********.
LATITUDE: 27:57:05.000 LONGITUDE: 81: 37:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____12,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: W = PURCHASED GROUND
GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

100 PURCHASED GROUND, PWS ID: 6532533 _ NAME: GARDEN GROVE WATER CO.

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535425 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:07:34
LAST UPDATED: 06/17/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 09/ 97 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: O = OTHER PUBLIC CATG./CLASS: 6_
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: BILL_EZELL_WAREHOUSES_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 2030_SPIRIT_LAKE_RD._____ PHONE: (941) 294 - 4427
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33880 - ____

OWNER NAME: BILL_EZELL_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: CORNER_HWY._17_S.&_CAMERON_RD. PHONE: (941) 294 - 4427
CITY: EAGLE_LAKE_____ STATE: FL ZIP CODE: 33839 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: MOE
DATE OF VISIT: 06/ 16/ 98 CLASS: SS PRIOR VISIT: 08/ 25/ 97 PRIOR CLASS: SS
PERSON CONTACTED: HARVY_REMES_____ TITLE: IN_CHARGE_____
CONTACT PHONE: (941) 294 - 4427 SANITARY SURVEY: 08/ 25/ 97
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535425 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:07:55
LAST UPDATED: 06/17/98
MAILING NAME: BILL EZELL WAREHOUSES ACTIVE OTHER PUBLIC
BACT NON COMPLIER: _
RET POP SERVED: _____3 BACT SAMPLES REQ'D: __1 RULE MIN: 2
DESIGN CAP: _____20 (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____200 (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 100 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____1
TOT STORAGE CAP: _____28 (G) NUMBER METERED: _____
METER CAP: _____ TYPE OF METER: _____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 06/94 POP GRP:G *)
(*M/R STATUS:I SAMPLES REQ'D:__5 RULE MIN: 5 CONSOLIDATED: N Y/N *)
1SERVAREA: OF = OFFICE FOR BUSINESS TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 27:59:09 LONGITUDE: 81:44:49
PRIMARY SOURCE: 1 LATITUDE: 27:59:09 LONGITUDE: 81:44:49
CREDIT (Y/N) VOC: N PEST: N DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535425 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:08:17
LAST UPDATED: 09/25/97

MAILING NAME: BILL EZELL WAREHOUSES ACTIVE OTHER PUBLIC
PLANT NAME: BILL EZELL WHSE. WATER PLANT ACTIVE PLANT NUMBER: 1
SOURCE NAME: BILL_EZELL_WHSE._WELL_____
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:59:09.000 LONGITUDE: 81: 44:49.000 * COLLECTION DATE: 08/25/97 *
* COLLECTION METHOD: G GPS ACC*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____100 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: G = GROUND
100 GROUND, NUMBER OF WELLS: __1

SURFACE, IDENTIFY SOURCE: _____

___ PURCHASED GROUND, PWS ID: _____ _ NAME: .....

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

PWS001 6535441 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 1 16:08:37
LAST UPDATED: 06/18/98

STATUS: A = ACTIVE RE-ACTIVATION DT: __/__/__
BEGIN DT: 06/ 98 INACT DT: __/__/__ INACT REASON: _ = ...
PWS TYPE: C = COMMUNITY CATG./CLASS: 5D
NC SEASON BEG: __/__ END: __/__ NUCLEAR FACIL: _ (REACTOR, WASTE OR OTHER)

SYSTEM NAME: ORANGE_MANOR_WEST_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 14_KINSMEN_DRIVE_____ PHONE: (941) 324 - 5316
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33844 - ____

OWNER NAME: ORANGE_MANOR_WEST_____ GENERAL MAIL: Y (Y OR N)
ADDRESS: 14_KINSMEN_DRIVE_____ PHONE: (941) 324 - 5316
CITY: WINTER_HAVEN_____ STATE: FL ZIP CODE: 33844 - ____
OWNER TYPE: I = INVESTOR
INSPECTOR'S INITIALS: ___
DATE OF VISIT: __/__/__ CLASS: __ PRIOR VISIT: __/__/__ PRIOR CLASS: __
PERSON CONTACTED: RICHARD_LACRANCE_____ TITLE: _____
CONTACT PHONE: (941) 324 - 5316 SANITARY SURVEY. __/__/__
SIGNIFICANTLY IN/OUT COMPLIANCE ? I
SCREEN ACTION ___ TRANSMIT HERE ==> _

PWS002 6535441 DRINKING WATER PROGRAM 07/16/98
SYSTEM INVENTORY INFORMATION PART 2 16:08:58
LAST UPDATED: 06/18/98
MAILING NAME: ORANGE MANOR WEST ACTIVE COMMUNITY
BACT NON COMPLIER: _
RET POP SERVED: _____400 BACT SAMPLES REQ'D: __2 RULE MIN: 2
DESIGN CAP: _____ (GPD) RADS SAMPLES REQ'D: ___
MAXIMUM DAY: _____ (GPD) RADS SAMPLES FREQY: ____ (MONTHS)
% DESIGN CAP: TTHM SAMPLES REQ'D: ___
AVG PRODUCTION: 12,000 (GPD) TTHM SAMPLES FREQY: _____ (MONTHS)
MAXIMUM/HOUR: _____ (G) SERVICE CONNECTIONS: _____200
TOT STORAGE CAP: _____ (G) NUMBER METERLD: _____
METER CAP: _____ TYPE OF METER: TOTALIZER_____
(*LEAD AND COPPER*) CONSEC INDIC: 0 = NOT CONSECUTIVE
(*DEFAULT COMP PERIOD 07/93 06/94 POP GRP:F *)
(*M/R STATUS:I SAMPLES REQ'D:_10 RULE MIN: 10 CONSOLIDATED: N Y/N *)
1SERVAREA: MH = MOBILE HOME PARK TOTAL # OF PLANTS: 1
2SERVAREA: __ = ... TOTAL # OF SOURCES: 1

PRIMARY PLANT: 1 LATITUDE: 28:00:03 LONGITUDE: 81:40:33
PRIMARY SOURCE: 1 LATITUDE: 27:57:05 LONGITUDE: 81:37:25
CREDIT (Y/N) VOC: Y PEST: Y DIOXIN WAIVER: Y (Y/N)
SCREEN ACTION DOC TRANSMIT HERE ==> _

PWS004 6535441 01 001 DRINKING WATER PROGRAM 07/16/98
SOURCE INFORMATION 16:09:19
LAST UPDATED: 06/18/98

MAILING NAME: ORANGE MANOR WEST ACTIVE COMMUNITY
PLANT NAME: GARDEN GROVE WATER COMPANY ACTIVE PLANT NUMBER: 1
SOURCE NAME: GARDEN_GROVE_WATER_COMPANY___
SOURCE NUMBR: 001 SOURCE STATUS: A = ACTIVE **** LAT LONG **********
LATITUDE: 27:57:05.000 LONGITUDE: 81: 37:25.000 * COLLECTION DATE: __/__/__ *
* COLLECTION METHOD: U UNKNOWN*
SOURCE AVAILABILITY: P = PERMANENT
SOURCE AVG PRODUCTION: _____12,000 (GPD) % OF SYSTEM PRODUCTION: 100

ANN % SOURCE TYPE: W = PURCHASED GROUND
GROUND, NUMBER OF WELLS: ___

SURFACE, IDENTIFY SOURCE: _____

100 PURCHASED GROUND, PWS ID: 6532533 _ NAME: GARDEN GROVE WATER CO.

___ PURCHASED SURFACE, PWS ID: _____ _ NAME: .....

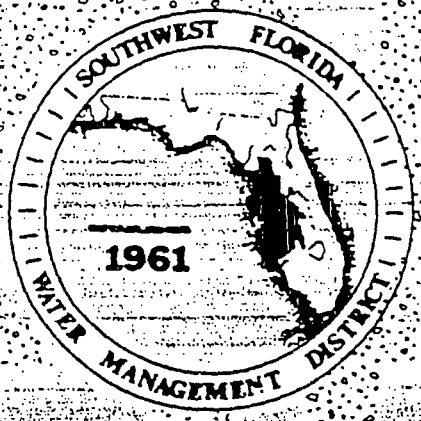
LAST RECORD DISPLAYED SCREEN ACTION: ___ TRANSMIT HERE ==> _

Property of
A. JAMES McCARTHY, JR.

Reference 33

GROUND-WATER RESOURCE AVAILABILITY INVENTORY:

POLK COUNTY, FLORIDA



SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT

MICROFILMED

GROUND-WATER RESOURCE AVAILABILITY INVENTORY: POLK COUNTY, FLORIDA

PREPARED BY: RESOURCE MANAGEMENT AND PLANNING DEPARTMENTS OF THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

MARCH 1988

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

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PRINCIPAL CONTRIBUTORS

DAVID L. MOORE, Manager, Resource Evaluation Section
ANTHONY E. GILBOY, Hydrogeologist, Resource Evaluation Section
G. MICHAEL KELLEY, Hydrologist, Resource Evaluation Section
JOHN D. WATSON, Hydrologist, Resource Evaluation Section
TERRANCE O. BENGTSSON, Hydrologist, Resource Evaluation Section
MARK D. BARCELO, Engineer, Resource Evaluation Section
STEVE C. CAMP, Hydrologist, Resource Evaluation Section
ROBERT CHRISTIANSON, Manager, Planning Department
MIKEL RENNER, Planner, Planning Department

Principal Author Polk County Section Report.

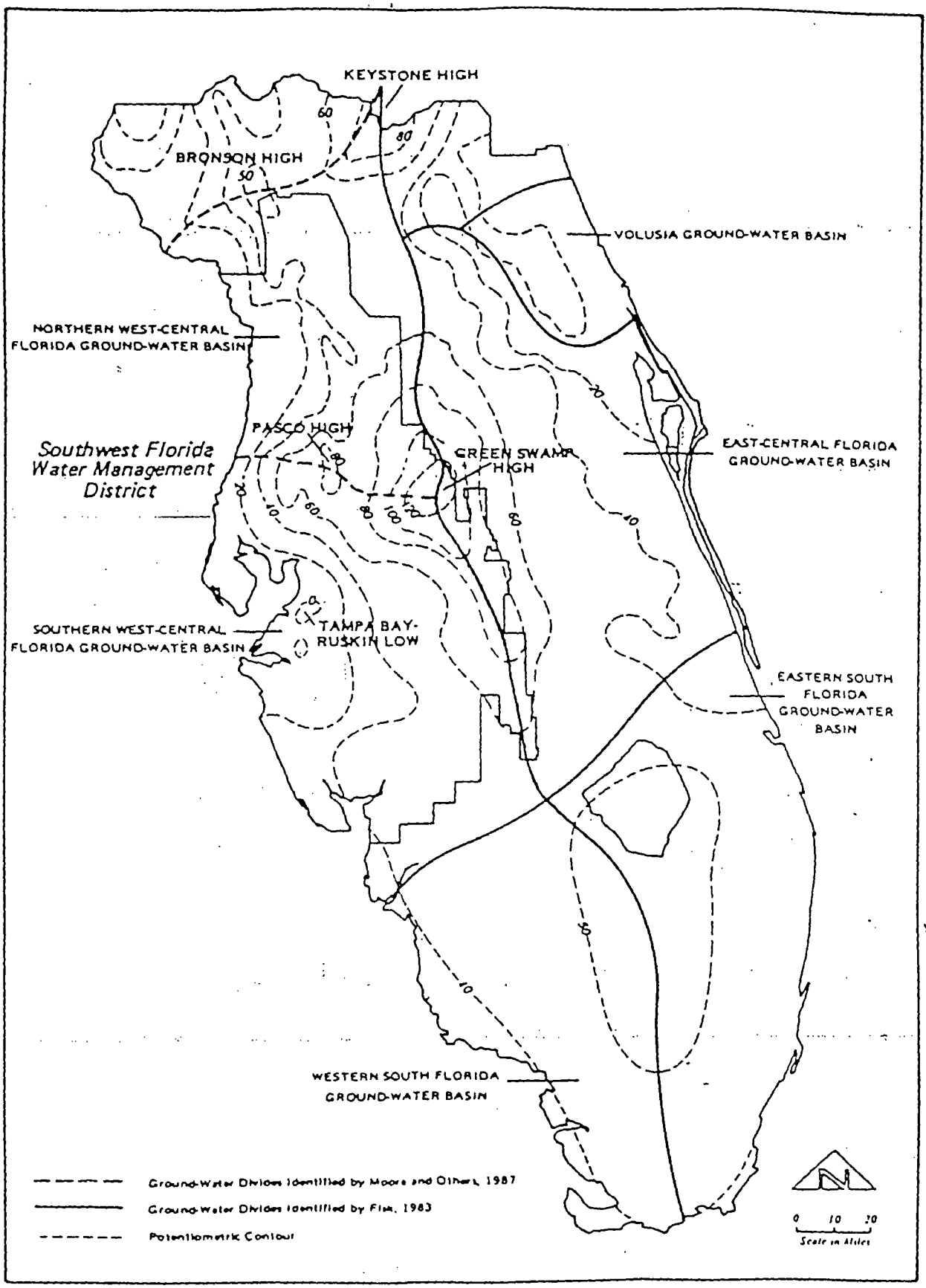

Figure 1. May 1980 potentiometric surface of the Floridan aquifer in peninsular Florida with the major ground-water basins delineated. Modified from Fisk (1983) and Johnston, Healy and Hayes (1981).

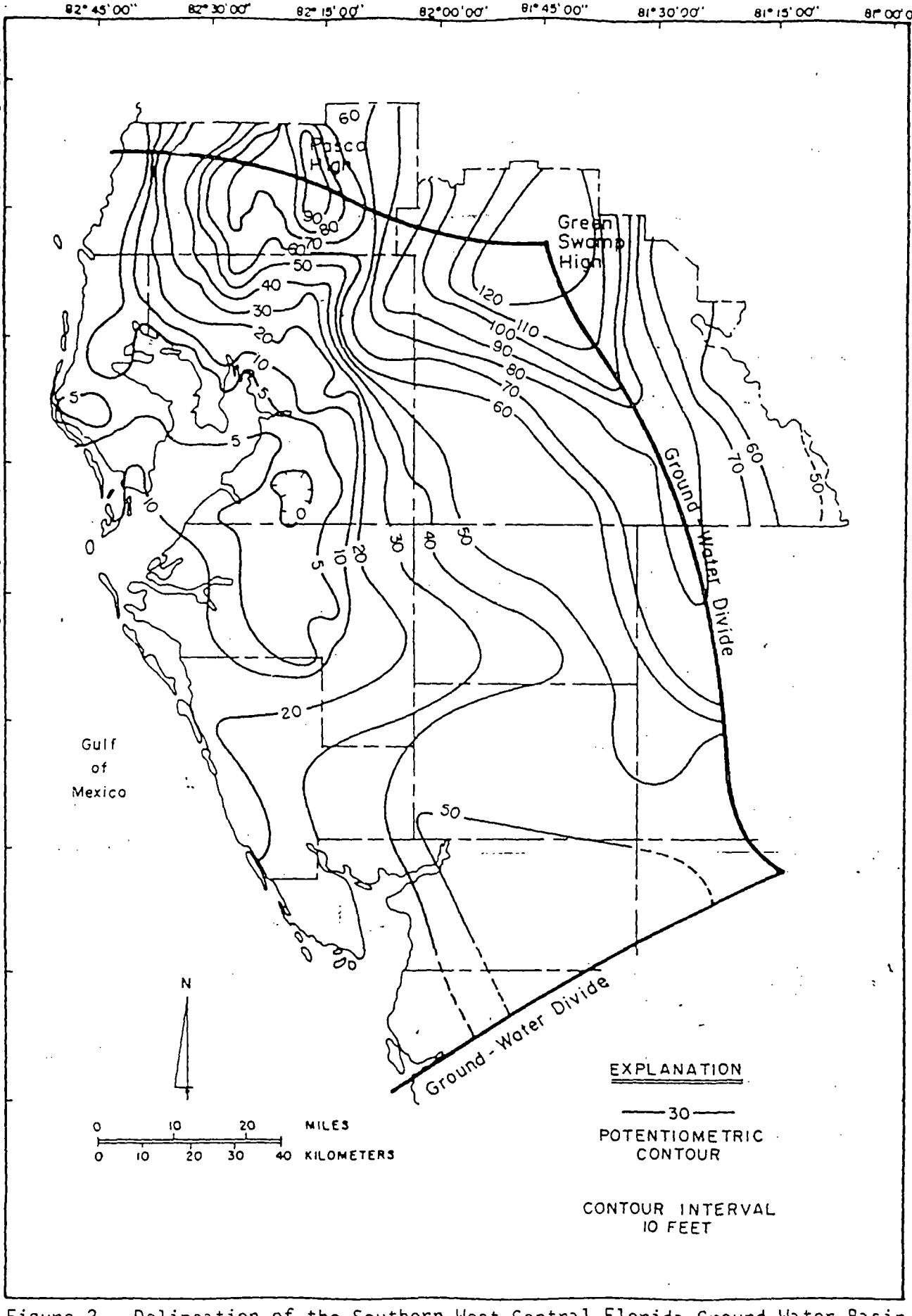

Figure 2. Delineation of the Southern West-Central Florida Ground-Water Basin with the May 1987 potentiometric surface of the Upper Floridan aquifer (modified from Lewelling, 1987).

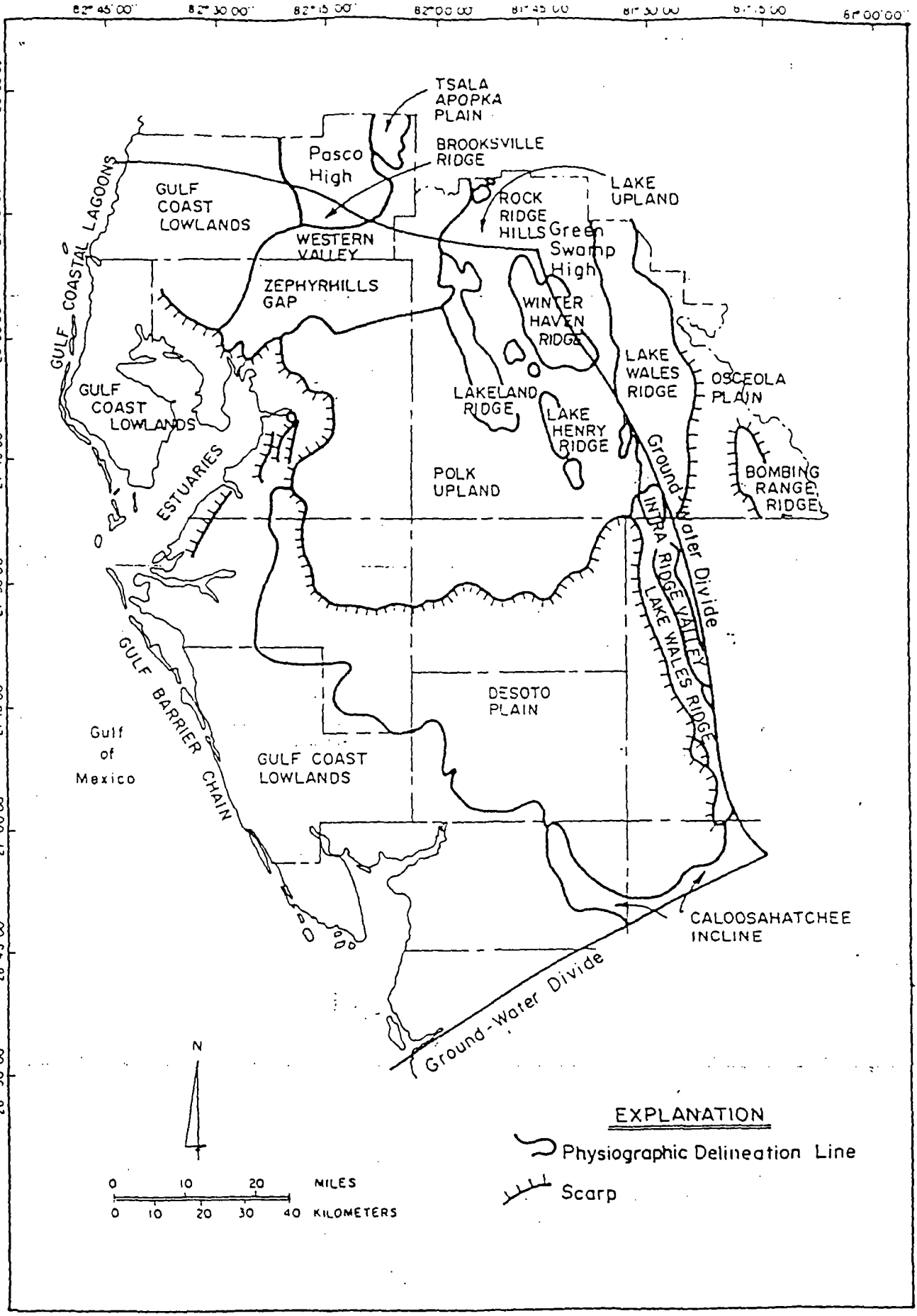

Figure 6. Physiographic map of the Southern West-Central Florida Ground-Water Basin (modified from White, 1970)

System	Series	Stratigraphic unit	General lithology	Major lithologic unit	Hydrogeologic unit
Quaternary	Holocene and Pleistocene	Surficial sand, terrace sand, phosphorite	Predominantly fine sand; interbedded clay, marl, shell, limestone, phosphorite	Sand	Surficial aquifer
Tertiary	Pliocene	Undifferentiated deposits[1]	Clayey and pebbly sand; clay, marl, shell, phosphatic	Clastic	Confining bed
	Miocene	Hawthorn Formation	Dolomite, sand, clay, and limestone; silty, phosphatic	Carbonate and clastic	Aquifer — INTERMEDIATE AQUIFER AND CONFINING BEDS
		Tampa Limestone	Limestone, sandy, phosphatic, fossiliferous; sand and clay in lower part in some areas	Carbonate	Confining bed
	Oligocene	Suwannee Limestone	Limestone, sandy limestone, fossiliferous		FLORIDAN AQUIFER SYSTEM
	Eocene	Ocala Limestone	Limestone, chalky, foraminiferal, dolomitic near bottom		
		Avon Park Limestone[2]	Limestone and hard brown dolomite; intergranular evaporite in lower part in some areas		Upper Floridan aquifer
					Middle confining unit
		Lake City Limestone and Oldsmar Limestone[2]	Dolomite and limestone, with intergranular gypsum in most areas	Carbonate with evaporites	Lower Floridan aquifer
	Paleocene	Cedar Keys Limestone[2]	Dolomite and limestone with beds of anhydrite		Lower confining unit

[1]Includes all or parts of Caloosahatchee Marl, Bone Valley Formation, Alachua Formation, and Tamiami Formation.

[2]Since this report was prepared, the Avon Park, Oldsmar, and Cedar Keys Limestones have been changed to the Avon Park, Oldsmar, and Cedar Keys Formations. The Lake City Limestone has been abandoned, and the rocks are included in the lower part of the Avon Park Formation (Miller, 1984).

Table 1. Hydrogeologic framework of the Southern West-Central Florida Ground-Water Basin (from Ryder, 1985; modified from Wilson and Gerhart, 1982).

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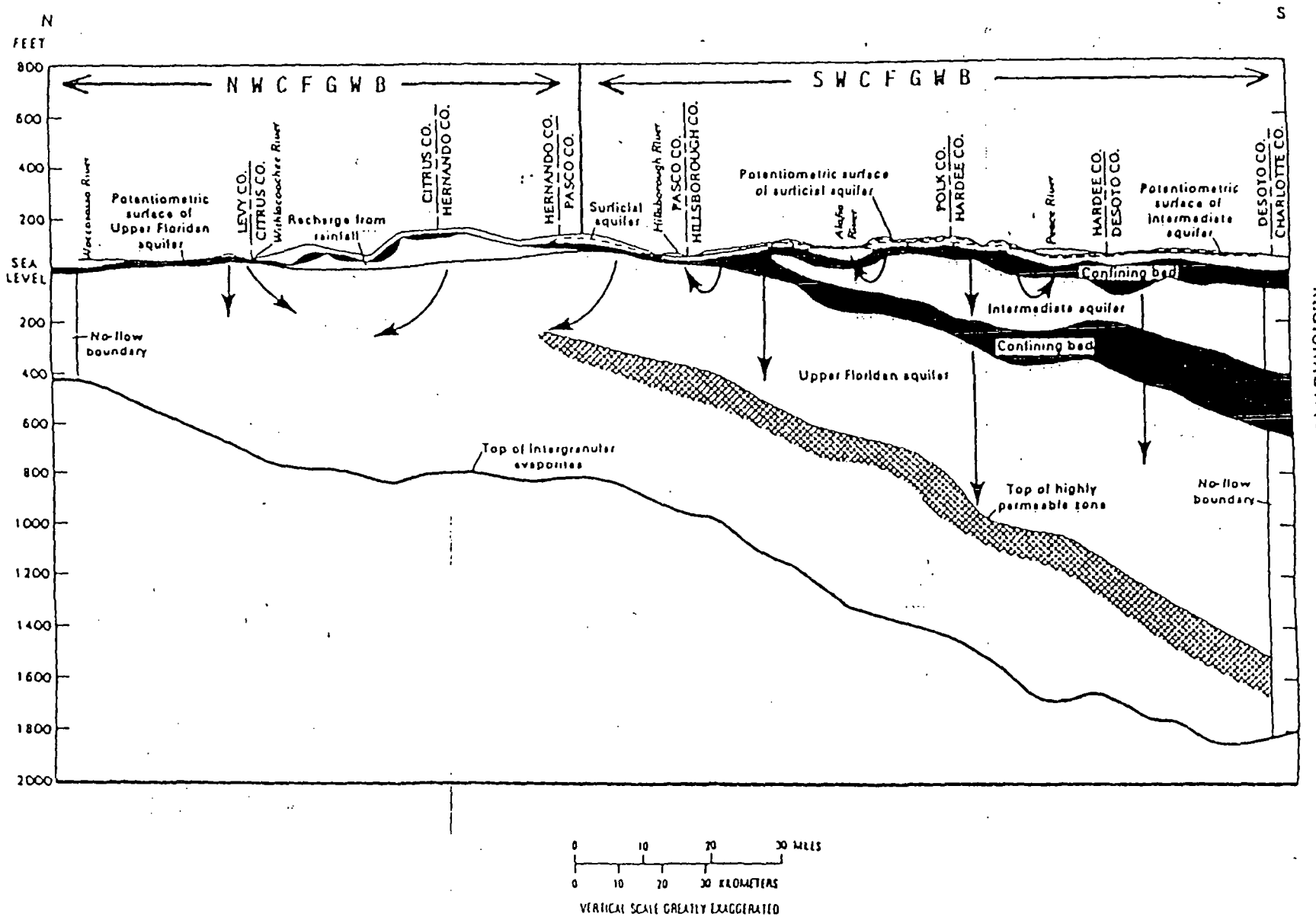

Figure 9. Hydrogeologic cross-section of the Southern and Northern West-Central Florida Ground-Water Basins (from Miller, 1986).

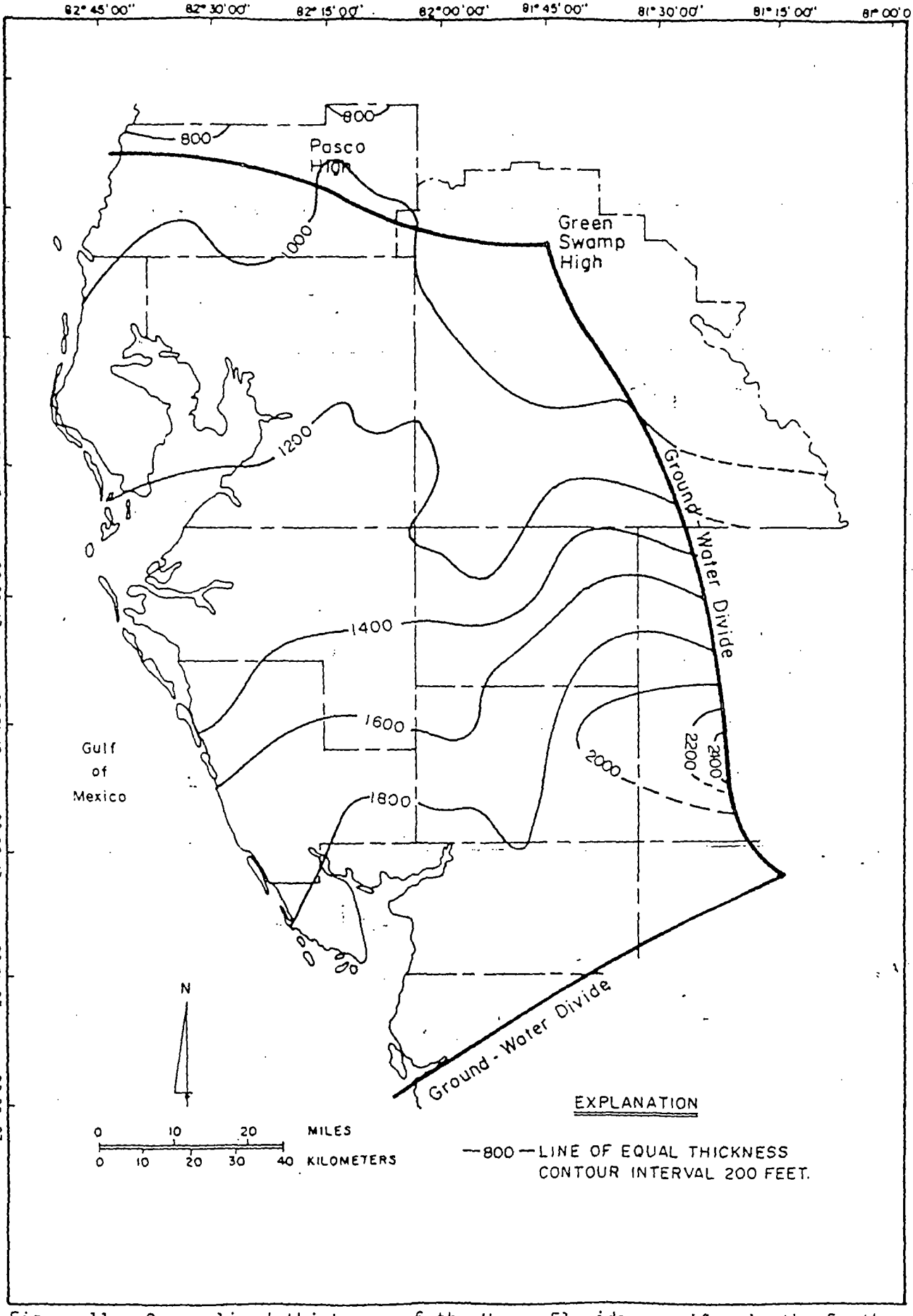

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Figure 11. Generalized thickness of the Upper Floridan aquifer in the Southern West-Central Florida Ground-Water Basin (modified from Wolansky and Garbade, 1981).

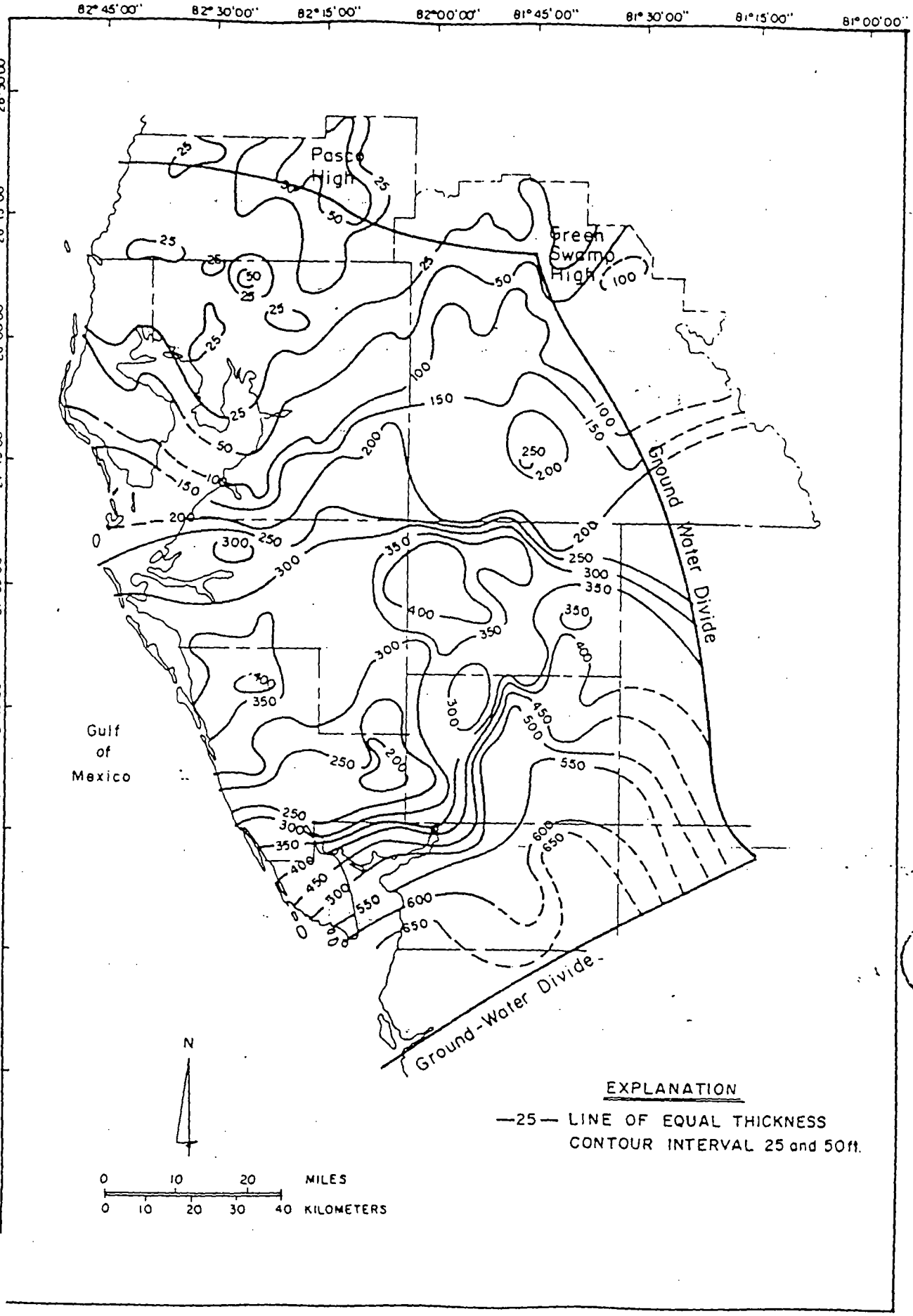

Figure 12. Thickness of the confining beds overlying the Floridan aquifer system in the Southern West-Central Florida

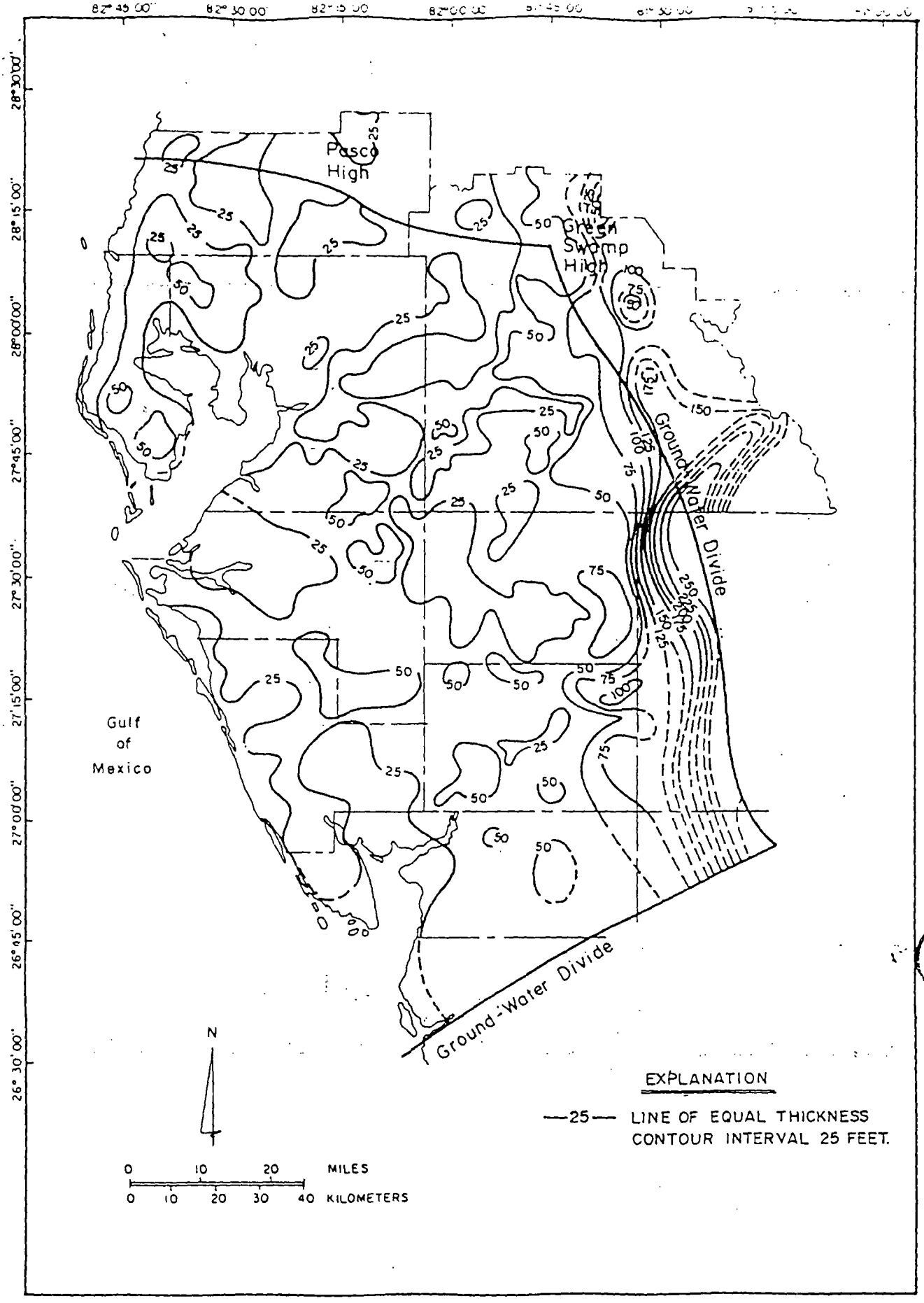

Figure 13. Thickness of the surficial deposits in the southern West-Central Florida Ground-Water Basin (from Wolansky and others, 1979).

STRATIGRAPHY

The stratigraphy of the SWCFGWB are discussed in descending order beginning with the most recent geologic time period. The stratigraphic sequence of these deposits is given in Table 1.

Holocene and Pleistocene Epochs - Sediments deposited within these epochs are sometimes referred to as terrace deposits which consist generally of unconsolidated sand, clay, peat, and marl deposited during interglacial periods when water levels rose due to melting of the polar ice caps. During the high stands of the sea, deposits of well-graded quartz sand accumulated to form terraces. Figure 14 depicts the areal distribution of terraces.

Pliocene - The formations of this epoch consist of three stratigraphic units: the Caloosahatchee Marl, Tamiami Formation, and Bone Valley Formation, progressing from youngest to oldest.

The Bone Valley Formation consists of fine to coarse quartz sand, clay, thin chert sections, phosphate nodules, and vertebrate fossil fragments. It is well represented on structural highs in the Lakeland Ridge area. The Bone Valley Formation extends approximately from Polk and Hillsborough Counties southward into Manatee and Hardee Counties (Figure 16). Its thickness is generally less than 20 feet, but it is 60 feet or more thick in eastern Polk and Hardee Counties (Figure 16).

The Tamiami Formation is composed principally of white to cream-colored, sandy limestone that grades downward into clay, silt, and very fine sand beds of low permeability. The Tamiami contains abundant oyster shells and littoral deposits that attest to a shallow marine environment of deposition. The Tamiami Formation is laterally continuous south of northern Charlotte and Glades Counties, and discontinuous in DeSoto, Hardee, Manatee, and Sarasota Counties (Figure 16). The Caloosahatchee Marl overlies the Tamiami ormation and consists of a thin sequence of interbedded clay, alcareous clay, and sand that locally contain broken shelly aterial (Miller, 1986). The Marl is laterally continuous south of outhern Sarasota and DeSoto Counties and reaches thicknesses of reater than 75 feet in Lee County (Figure 16). The upper part of e Caloosahatchee Marl is of Pleistocene age.

ocene.--Miocene sediments are divided into two stratigraphic its, the Tampa Limestone and the overlying Hawthorn Formation. e Tampa consists of limestone and varying amounts of quartz sand l clay embedded in a carbonate matrix. It may be fossiliferous or be devoid of fossils. The unit is absent in the northern FGWB, but is as much as 300 feet thick in the south (Figure 9). Tampa is differentiated from the overlying Hawthorn Formation ed on a decrease in or absence of phosphorite and an increase in rtz sand within the rock matrix (King and Wright, 1979). The tact between the Hawthorn Formation and Tampa Limestone is a hered, gray, dolomitic limestone. The unit is absent in central County where it grades into a blue-green clay that is devoid of onates.

Hawthorn Formation can generally be differentiated into three nct units in the SWCFGWB. The basal Hawthorn section is

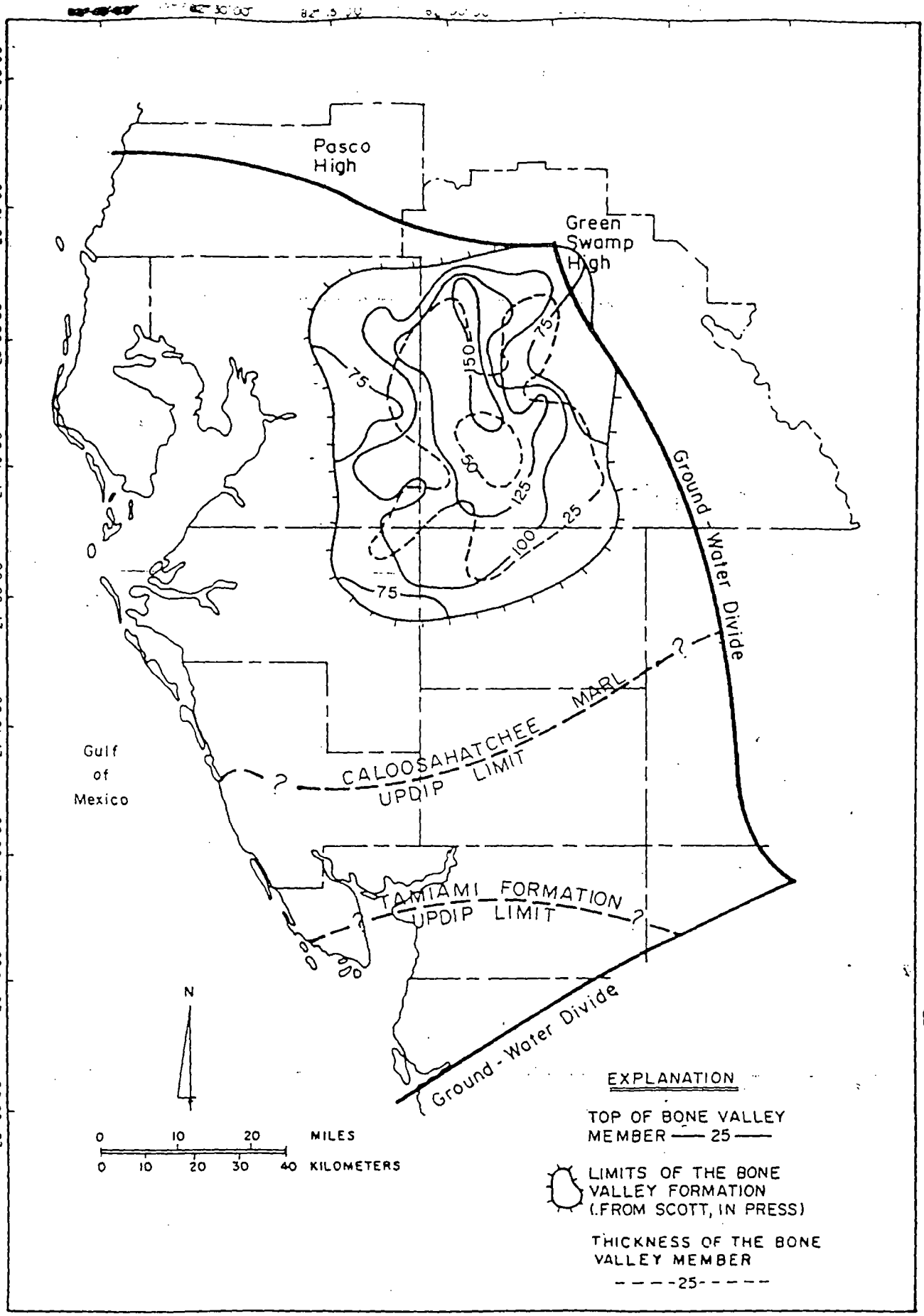

Figure 16. Structural and isopach maps of the Bone Valley Formation and depositional limits of the Caloosahatchee and Tamiami Marls in the Southern West-Central Florida Ground Water Basin (from Vernon, Puri 1964 Map Series 18, USGS; and, from Scott, in press).

composed of carbonate deposits (usually dolomitic) that contain varying amounts of interbedded quartz sand, clay, and phosphate. The middle section consists of interbedded sandy carbonate, clayey sand, and sandy clay. The upper Hawthorn section is predominantly composed of clastic deposits that consist of quartz, phosphate sand and pebbles, and light green to a moderately dark gray clay (Hall, 1983). The trifold subdivision of the Hawthorn Formation is most apparent in the south. Elsewhere, one or two of these units may be absent, or the upper unit may lie directly over the lowermost unit. In the north, the units become less distinctive and merge to a single unit where a sandy phosphatic clay predominates, or the Formation is absent. The thickness of the entire Hawthorn Formation varies from thin to absent in the northern areas of the SWCFGWB to greater than 600 feet in the southern areas.

Oligocene - The only formation of this epoch is the Suwannee Limestone. It is composed of hard, yellow or creamy fossiliferous limestone, which locally has an orange tinge. Interbeds may contain quartz sand, and dolomite is common toward the unit's base from the Tampa Bay area southward. The upper part may contain thin chert lenses and be highly macrofossiliferous. The Suwannee is exposed in parts of Pasco County, and in the northeast corner of Hillsborough County, and pinches out in Polk County. The Suwannee is as much as 300 feet thick in the southern areas of the SWCFGWB.

Eocene Epoch - The Eocene formations within the SWCFGWB consist of the Ocala Limestone, Avon Park Formation, and Oldsmar Formation, in descending order. The Ocala Limestone consists of three units. In descending order these units are the Crystal River, Williston, and Inglis. All three units generally consists of a coquinic foraminiferal limestone, usually cream to white in color. The Inglis Member frequently contains gray to brown dolomite, and chert layers that can be present throughout the entire Ocala Limestone. The Ocala Limestone outcrops in northern Polk and southern Sumter Counties within the Green Swamp area (Pride and others, 1966). The Ocala ranges in thickness from less than 300 feet in the northern areas of the SWCFGWB to greater than 600 feet in thickness in the southern areas.

The Ocala is unconformably underlain; by the middle Eocene Avon Park Formation. Lithologically, the Avon Park is composed of fossiliferous limestone and dolostone. The limestone is moderate brown, dark-yellow brown to rusty-yellow brown, porous and very fine to medium grained and may be crystalline or saccharoidal in texture. The top of the Avon Park may contain peat or carbonaceous layers and the bottom may contain small lenses of evaporite. The Avon Park Formation thickens to greater than 1,000 feet in the SWCFGWB. The Avon Park is the deepest potable water bearing formation in the SWCFGWB, therefore, older geologic formations will not be discussed.

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ST ACTIVITY

Florida's landscape, including the SWCFGWB, is dominated by features of karst topography. Karst topography develops where rainfall drains internally and rocks are susceptible to solution (Ritter,). In these areas, the solution process can create and enlarge cavities within the rocks and allow underground circulation of water which, in turn, promotes further solution. This leads to

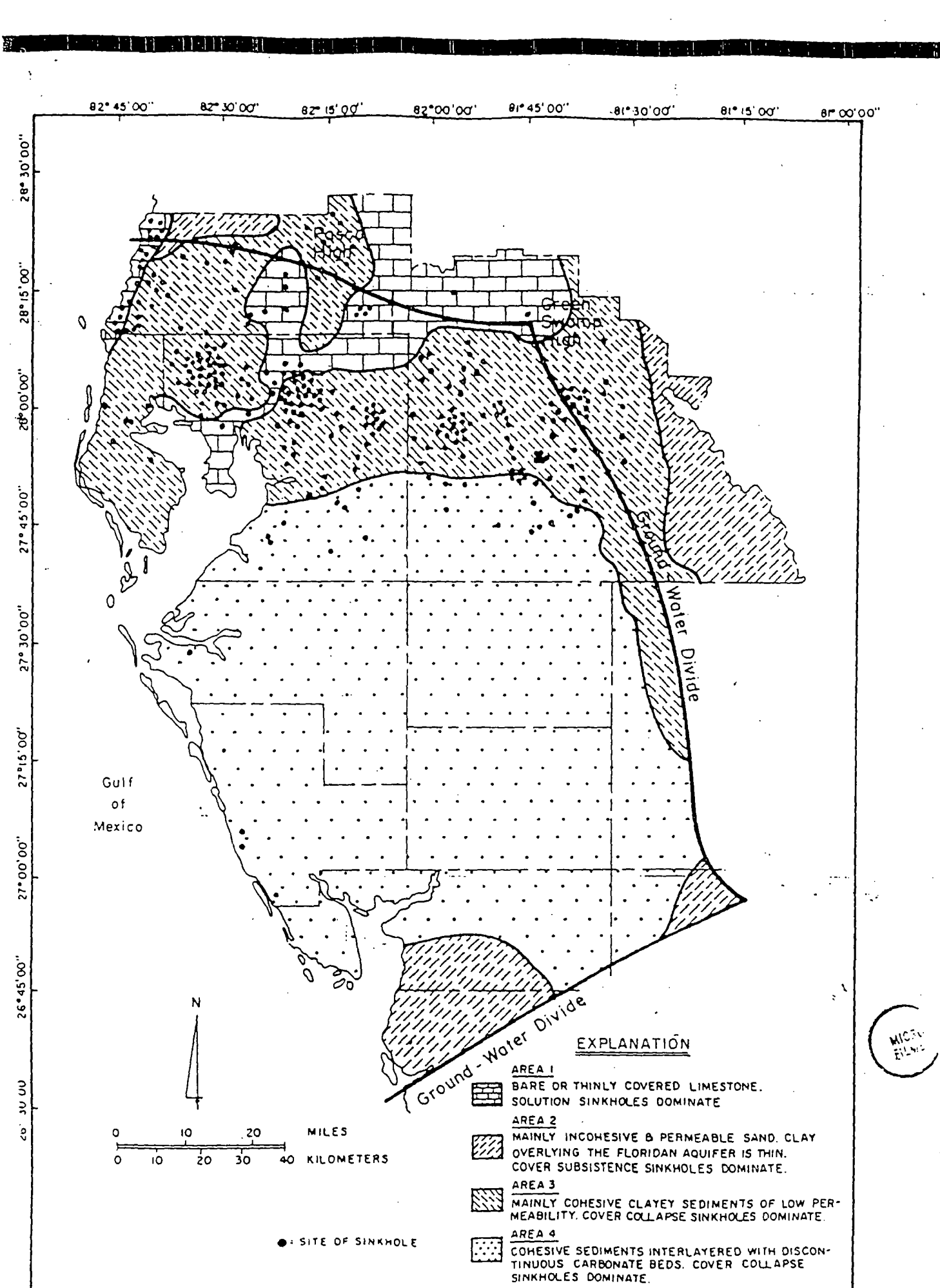

Figure 17. Categories, development distribution, and site locations of sinkholes in the Southern West-Central Florida Ground-Water Basin (modified from Sinclair and others, 1985).

TABLE 3: Springflows greater than 1 cfs in the Southern West-Central Florida Ground-Water Basin (from Roseneau and others, 1977).

INDEX	SPRINGS	DISCHG(CFS)	INDEX	SPRINGS	DISCHG(CFS)
1	SALT	9.5	7	SIX MILE CREEK	1.5
2	CRYSTAL	60	8	BUCKHORN	15.5
3	HEALTH	6.5	9	LITHIA	51
4	SULPHUR	44	10	WARM MINERAL	9.5
5	LETTUCE LAKE	9.5	11	LITTLE SALT	1
6	EUREKA	1.5	12	UNNAMED	30

GROUND WATER

Surficial Aquifer System

A distinct surficial aquifer system exists throughout nearly all of the SWCFGWB and consists of marine and non-marine quartz sand, clayey sand, shell, shelly marl, and phosphorite, with occasional stringers of marl and limestone. The surficial system extends from land surface to the top of the upper confining bed of the Caloosahatchee Marl, Bone Valley Formation, Tamiami Formation, or Hawthorn Formation, whichever is first stratigraphically encountered. Water in the surficial aquifer system is generally unconfined; however, locally within the aquifer system are weak semi-confined layers that poorly confine the ground water. Average thickness of the aquifer is about 25 feet, but ranges from a foot or less, where limestone or clay outcrop or are near land surface, to several hundred feet beneath the Highland Ridge (Figure 13). Extreme thicknesses of 300 to 600 feet or more have been reported along the eastern side of the Lake Wales Ridge in Polk County (Stewart, 1966).

Surficial Aquifer Hydraulic Properties

Hydraulic properties of the surficial aquifer system in the SWCFGWB vary widely due to variation in types of material that comprise the aquifer; its physical characteristics, such as grain size and sorting; and thickness of the saturated zone. Hydraulic properties for the surficial aquifer system are listed in Table 4. The locations of the aquifer test sites at which these values were derived are given in Figure 19.

Transmissivity of the surficial aquifer system ranges from about 20 feet squared per day (ft^2/d) where fine clayey sand predominates, to greater than 5,000 ft^2/d in some clean shell beds in the southern areas of the SWCFGWB. Transmissivities are lowest to the north and along the coast where the aquifer is composed of mostly fine grained clastics, and saturated thickness is least. Transmissivities are greatest in southern Sarasota, Charlotte, and Lee Counties.

Specific yield of the surficial aquifer ranges from 0.05 to 0.3 (Wilson and Gerhart, 1980). Determinations of vertical hydraulic conductivity have been made from lab tests on undisturbed samples, range from 0.12×10^{-5} to 13 feet per day (ft/d) (Sinclair, 1974; Hutchinson and Stewart, 1978; Healy and Hunn, 1984). Determinations of horizontal hydraulic conductivity range from 0.0028 ft/d to greater than 1,000 ft/d (Healy and Hunn, 1984).

Table 4. Continued

SITE	AQUIFER TESTED	TRANS-MISSIVITY (Ft^2/d)	STORAGE COEFFI-CIENT (Ft^3/Ft^3)	LEAKANCE (Ft^3/d) /Ft^3)
139. Unnamed	Surficial	600.	0.05	----
140. Unnamed	Intermediate	9,000.	0.0001	0.0001
" "	Floridan	16,000.	0.0001	----
141. Unnamed	Intermediate	2,400.	----	----
142. Unnamed	Surficial	1,070.	0.16	----
" "	Intermediate	2,740.	----	----
143. Unnamed	Surficial	1,000.	----	----
" "	Intermediate	800.- 2,500.	0.0001	0.0001-0.0002
" "	Floridan	18,700.	----	----
144. Unnamed	Intermediate	500.	0.0002	0.0008
145. Unnamed	Surficial	3,800.	----	----
146. Unnamed	Surficial	6,000.	----	----
" "	Intermediate	8,000.	----	----
147. Cross Bar Ranch	Surficial	160.	0.2	----
" "	Floridan	70,855.	0.0004	0.0015
148. Dade City	Floridan	294,120.	----	----
149. IMC Murrell	Floridan	21,390.	0.0001	----
150. 814-139-5	Floridan	90,909.	0.0018	0.0056
151. 815-134-12	Surficial	16.	0.22	----

Surficial Aquifer Water Quality

Water quality of aquifer systems is primarily affected by the chemical nature of rainfall that infiltrates land surface, the composition and solubility of the surficial material coming in contact with the water, and the certain properties and characteristics that the soluble earth materials impart to the water. The water quality of aquifers is also influenced by surface water that directly recharges the aquifer via solution features and other direct hydraulic connections such as aquifer outcrop areas near rivers, streams, and swamps. Water quality along the coast is also effected by the position of the freshwater/saltwater interface.

Generally, with the exception of coastal areas, water quality of the surficial aquifer in the SWCFGWB is within the Florida Department of Environmental Regulations (DER) potable standards (Table 5). It is characteristically low in dissolved minerals, soft to moderate in calcium hardness, and frequently exceeds DER standards for iron and color. Chloride concentrations measured inland seldom exceed 250 milligrams per liter (mg/l).

Figure 20 illustrates regional trends of total dissolved solids (TDS), hardness, chloride, and sulfate in the surficial aquifer system of the SWCFGWB. These trends were depicted primarily utilizing data obtained during the initial sampling of the SWFWMD's Ambient Ground-Water Quality Monitoring Program Background Network, which was sampled between June, 1985 and December, 1985, and water-quality data obtained from public drinking water wells permitted under the Consumptive Use Permit (CUP) program of the SWFWMD. Other additional data sites were utilized to supplement the these data.

Intermediate Aquifer System

Duerr and others (in press) have recently completed "Hydrogeology of the Intermediate Aquifer System, Southwest Florida". This report, which was prepared in cooperation with the SWFWMD, summarizes the most comprehensive investigation of the intermediate aquifer system in the SWCFGWB to date. For the sake of efficiently completing the intermediate aquifer system discussion of the SWCFGWB in this report, several section's of Duerr and other's report are included in nearly their entirety below. Sections included from Duerr and other's are delineated by an asterisk (*).

Overview of the Intermediate Aquifer System (*)

The intermediate aquifer system includes all water-bearing units and confining units between the overlying surficial aquifer system and the underlying Floridan aquifer system. The water-bearing units of the intermediate aquifer system consist of discontinuous sand, gravel, shell, and limestone and dolomite beds in the Caloosahatchee, Tamiami, and Bone Valley Formations of Pliocene and Pliestocene age, and the Hawthorn Formation of late and middle Miocene age. In parts of Polk, Manatee, Hardee, DeSoto, Sarasota, and Charlotte Counties, sand and clay beds within the Tampa Limestone are hydraulically connected to the Hawthorn Formation and are also included in the intermediate aquifer system (Corral and Wolansky, 1984). In these areas, a confining unit separates the Tampa Limestone from the underlying Floridan aquifer system.

The intermediate aquifer system also contains confining beds that consist of sandy clay, clay, and marl. These confining beds retard vertical movement of ground water between the overlying surficial aquifer and the underlying Upper Floridan aquifer.

Within the intermediate aquifer system are deposits of sufficient permeability to be used as important water supplies in coastal areas. The intermediate aquifer system thus consists of three hydrogeologic units (Table 1): (1) a confining unit in the lower part that lies directly on the Floridan aquifer system; (2) an aquifer unit that consists of one, two, or three water-bearing units made up primarily of sand and carbonate rocks; and (3) a confining unit in the upper part that separates the aquifers in the intermediate aquifer system from the overlying surficial aquifer (Ryder, 1985).

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The water-bearing part of the intermediate aquifer system is equivalent to the secondary artesian aquifer as used by Stewart (1966) for Polk County; to zones 2 and 3 as used by Sutcliffe (1975) for Charlotte County; to the upper and lower Hawthorn aquifers as used by Sproul and others (1972) for part of Lee County; and to the upper unit of the Floridan aquifer as used by Wilson (1977) for DeSoto and Hardee Counties.

Six hydrogeologic cross-sections illustrating stratigraphic relationships of near surface deposits in the SWCFGWB are shown in Figure 22. Locations of the six cross-sections are depicted in Figure 23. The sections were constructed primarily from geologists' logs of test wells. Geophysical logs also were used for correlating aquifers. The sections show the thicknesses and relative positions

of the surficial and intermediate aquifer systems. There are lateral inconsistencies between interpretations of rock stratigraphic units in the study area and they are not included in the sections.

In the SWCFGWB, the top of the intermediate aquifer system ranges from less than 100 feet below NGVD in Highlands County to more than 100 feet above NGVD in central Polk County (Figure 24). Throughout most of the southern and western parts of the study area, the top of the intermediate aquifer system is within 50 feet of NGVD. Along the Gulf Coast, it lies about 20 feet below NGVD. The thickness of the intermediate aquifer system ranges from less than 100 feet in central Hillsborough and northern Polk Counties to more than 800 feet in Southern Charlotte County (Figure 24). The bottom of the intermediate aquifer system (top of the Floridan aquifer system) ranges from about 50 feet above NGVD in northern Polk County to more than 800 feet below NGVD in southern Charlotte County.

Hydraulic Properties (*)

Transmissivities of the permeable deposits of the intermediate aquifer system, as determined by field tests, are given in Table 4. Transmissivity ranges from less than 200 to about 13,000 ft^2/d. Transmissivity is generally less than 1,000 ft^2/d in eastern Hillsborough and northern Polk Counties where the permeable deposits are thin. Near the Peace River, transmissivity is generally higher than 4,000 ft^2/d, indicating that perhaps a more active flow system exists in a carbonate section where ground-water discharges to the river and the carbonate rocks' secondary porosity has been enhanced by dissolution, thus providing greater permeability. Transmissivities of the permeable beds of the intermediate aquifer system in the SWCFGWB used by Ryder (1985) in a ground-water flow model ranged from 0.0001 ft^2/d in central Hillsborough and Polk Counties to greater than 10,000 ft^2/d in southern Sarasota County (Figure 25).

Clay beds of limited lateral extent and variable thickness may occur within the permeable deposits of the intermediate aquifer system, particularly near the coast. Where laterally persistent clay beds occur, the permeable zone has been separated into two or three local artesian zones by some investigators (Joyner and Sutcliffe, 1976; Sutcliffe and Thompson, 1983; Wolansky, 1983).

The permeable deposits of the intermediate aquifer system are confined above and below by less permeable material. Leakance of the uppermost confining bed used by Ryder (1985) in a ground-water flow model of west-central Florida range from 7×10^{-6} (ft/d)/ft in eastern Manatee County to 4×10^{-4} (ft/d)/ft near the Tampa Bay coast (Figure 26). Leakance of the lowermost confining layer of the intermediate aquifer system ranges from 1×10^{-7} (ft/d)/ft in southwest Sarasota and western Charlotte Counties to 7×10^{-5} (ft/d)/ft in the eastern part of the study area (Ryder, 1985).

Water Quality

Generally, with the exception of the central and southern coastal areas, water quality of the intermediate system is within DER table standards. Figure 27 illustrates regional trends in TDS, hardness, chloride, and sulfate. These trends were also depicted primarily utilizing data obtained during the initial sampling of the

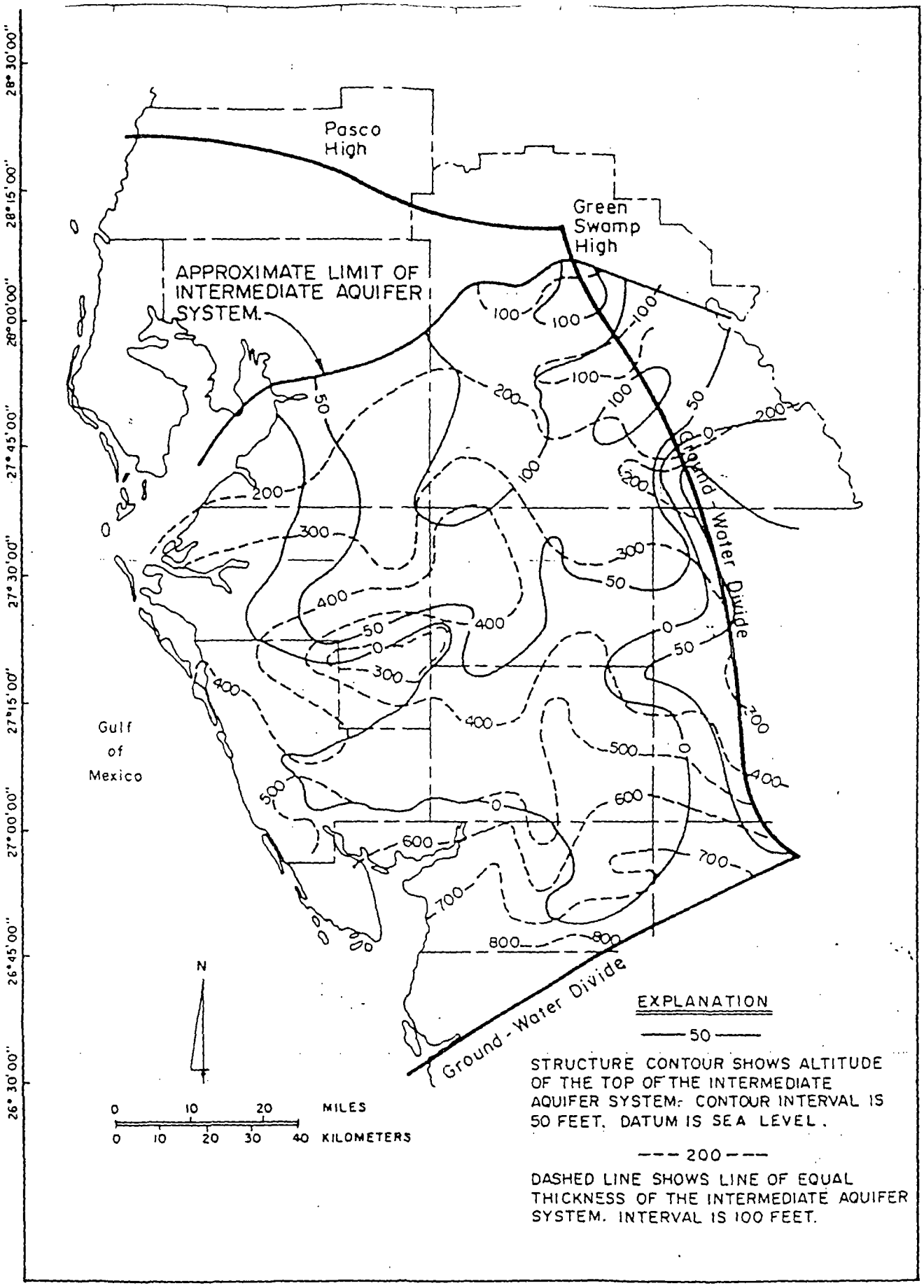
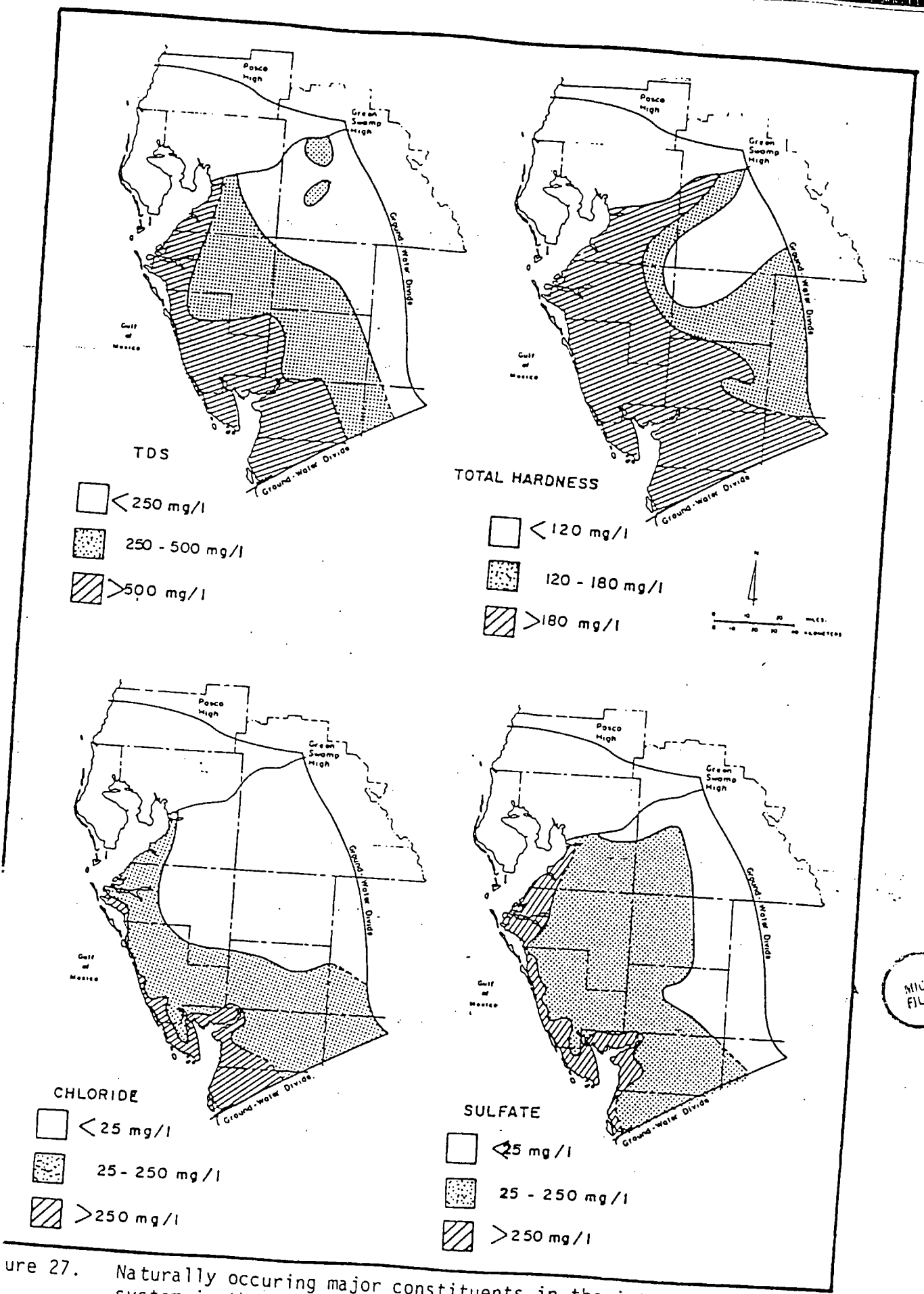


Figure 24. Altitide of the top of the intermediate aquifer system and lines of equal thickness of the intermediate aquifer system in the Southern West-Central Florida Ground-Water Basin (from Duerr, in press).



ure 27. Naturally occuring major constituents in the intermediate aquifer system in the Southern West-Central Florida Ground-Water Basin.

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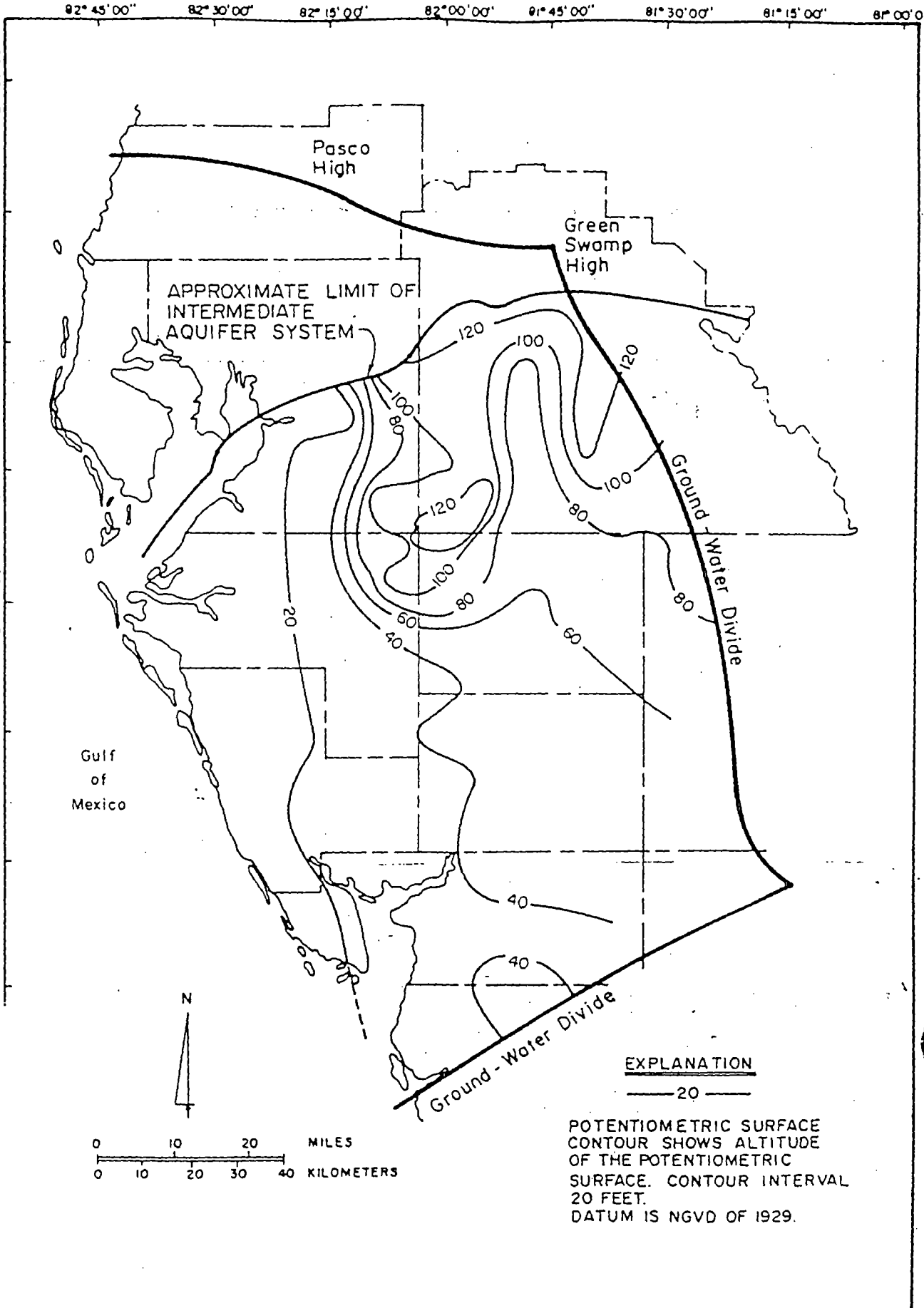


igure 28. Potentiometric surface of the intermediate aquifer system, September 1985, in the Southern West-Central Florida Ground-Water Basin (from Duerr, in press).

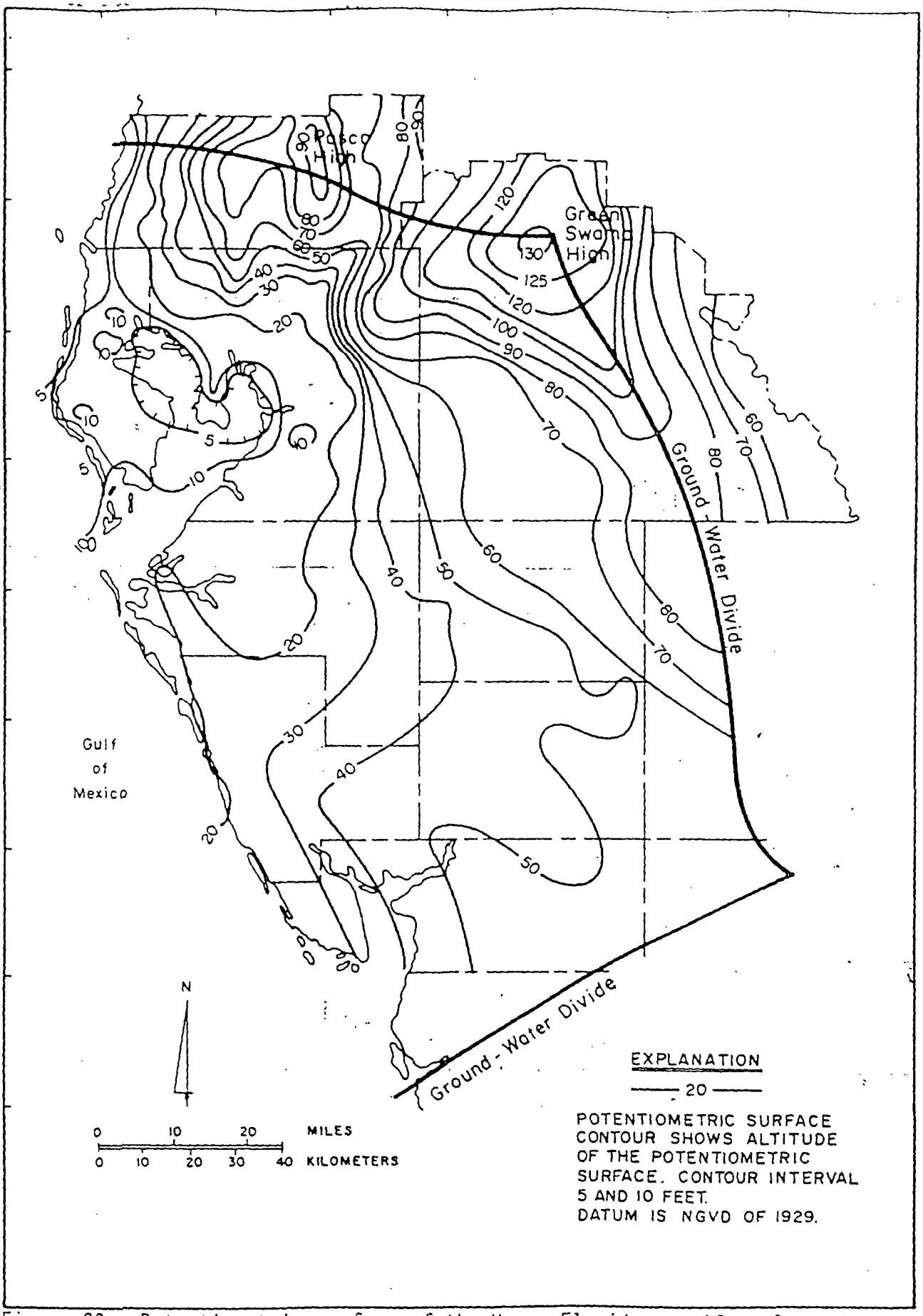
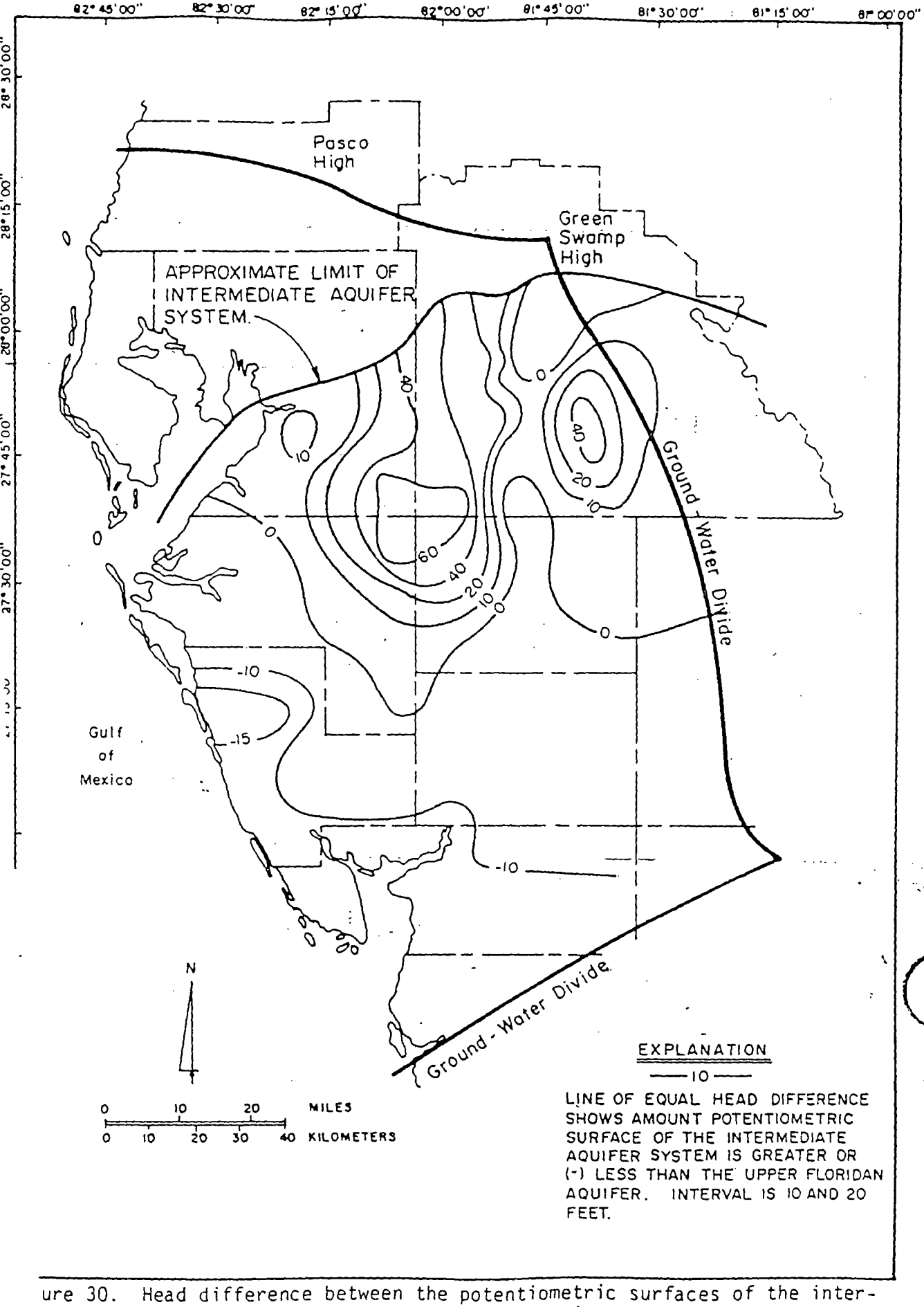


Figure 29. Potentiometric surface of the Upper Floridan aquifer, September 1985, in the Southern West-Central Florida Ground-Water Basin (from Barr, 1985).



ure 30. Head difference between the potentiometric surfaces of the intermediate aquifer system and the underlying Upper Floridan aquifer, September 1985, in the Southern West-Central Florida Ground-Water Basin (from Duerr, in press).

has a higher head than the head in the intermediate aquifer system. There, water is transmitted upward through the confining unit into the intermediate aquifer system. Head differences (intermediate-Upper Floridan) range from about +60 feet near the corner of Hillsborough, Manatee, Polk, and Hardee Counties to about -15 feet in western Sarasota County.

The potentiometric surface of the intermediate aquifer system is generally higher than the water level in the surficial aquifer system in the low-lying areas near the Peace River. As a result, in these areas, ground water moves upward from the intermediate aquifer system into the surficial aquifer system. The upward flow tends to depress the potentiometric surface of the intermediate aquifer system near the Peace River (Figure 28). Along reaches of the river where the Hawthorn Formation crops out, as in parts of Hardee and northern DeSoto Counties, ground water may discharge by springflow directly from the intermediate aquifer system to the river, thus further depressing the potentiometric surface of the intermediate aquifer system.

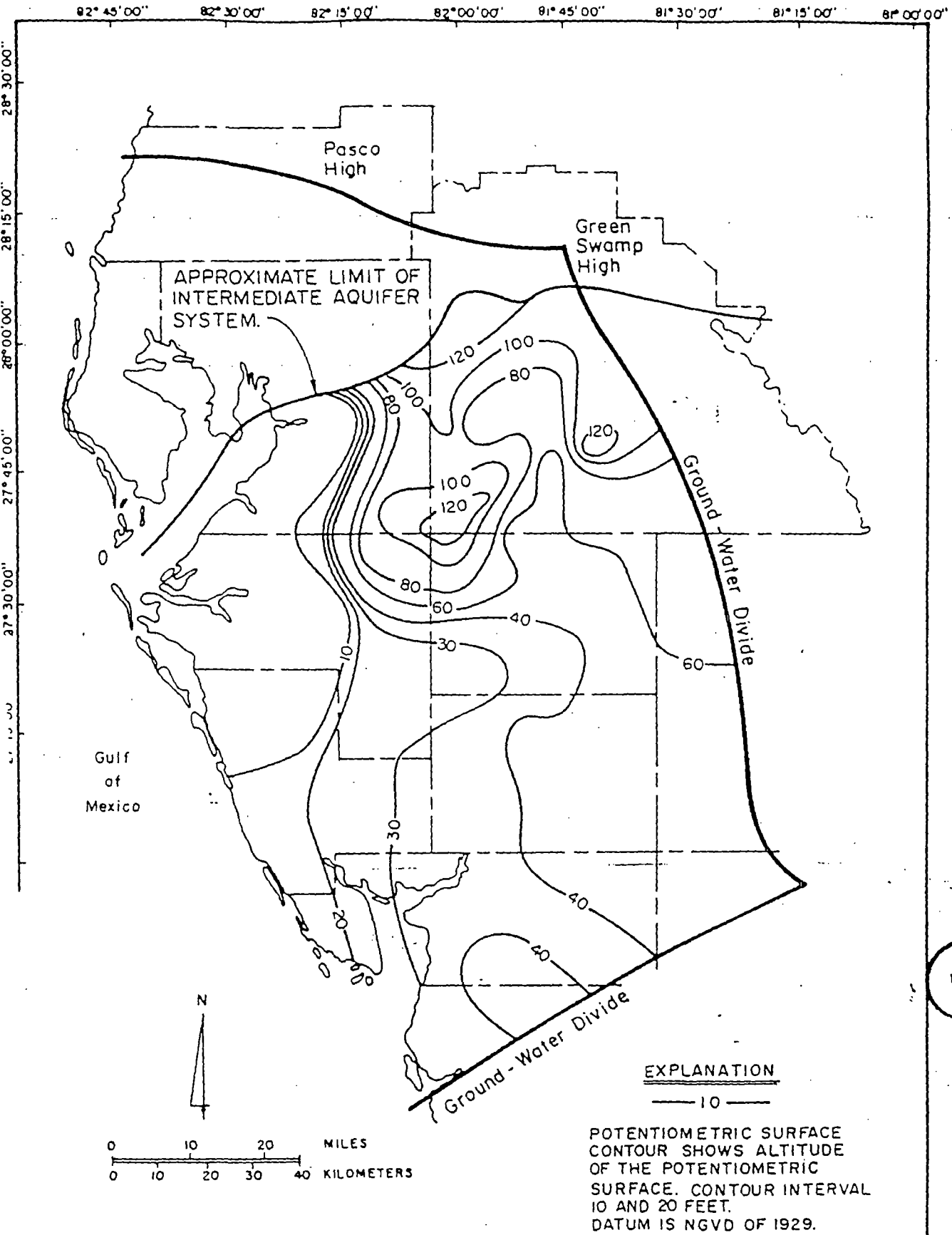
Figure 31 shows the potentiometric surface of the intermediate aquifer system in May 1986 near the end of the dry season when ground-water withdrawals are greatest and water levels are at their seasonal low. The altitude of the potentiometric surface ranges from about 120 feet above NGVD in Polk County to less than 10 feet above NGVD near the coast. The decline in the potentiometric surface from September 1985 to May 1986 ranged from about 1 to 20 feet. Largest declines were in south-central Polk, central Hardee, and north-central DeSoto Counties. Smallest declines were in Charlotte County.

The potentiometric surface of the Upper Floridan aquifer in May 1986 is shown in Figure 32. Head differences between the two aquifers are shown in Figure 33. As in September 1985, the potentiometric surface of the intermediate aquifer system in May 1986 was greater than the potentiometric surface of the underlying Upper Floridan aquifer throughout the northern part of the study area. Head differences were greater in May 1986 than in September 1985 and the area where the intermediate aquifer system heads were higher extended further south. Head differences ranged from +100 feet in southwestern Polk County to about -10 feet in Charlotte County.

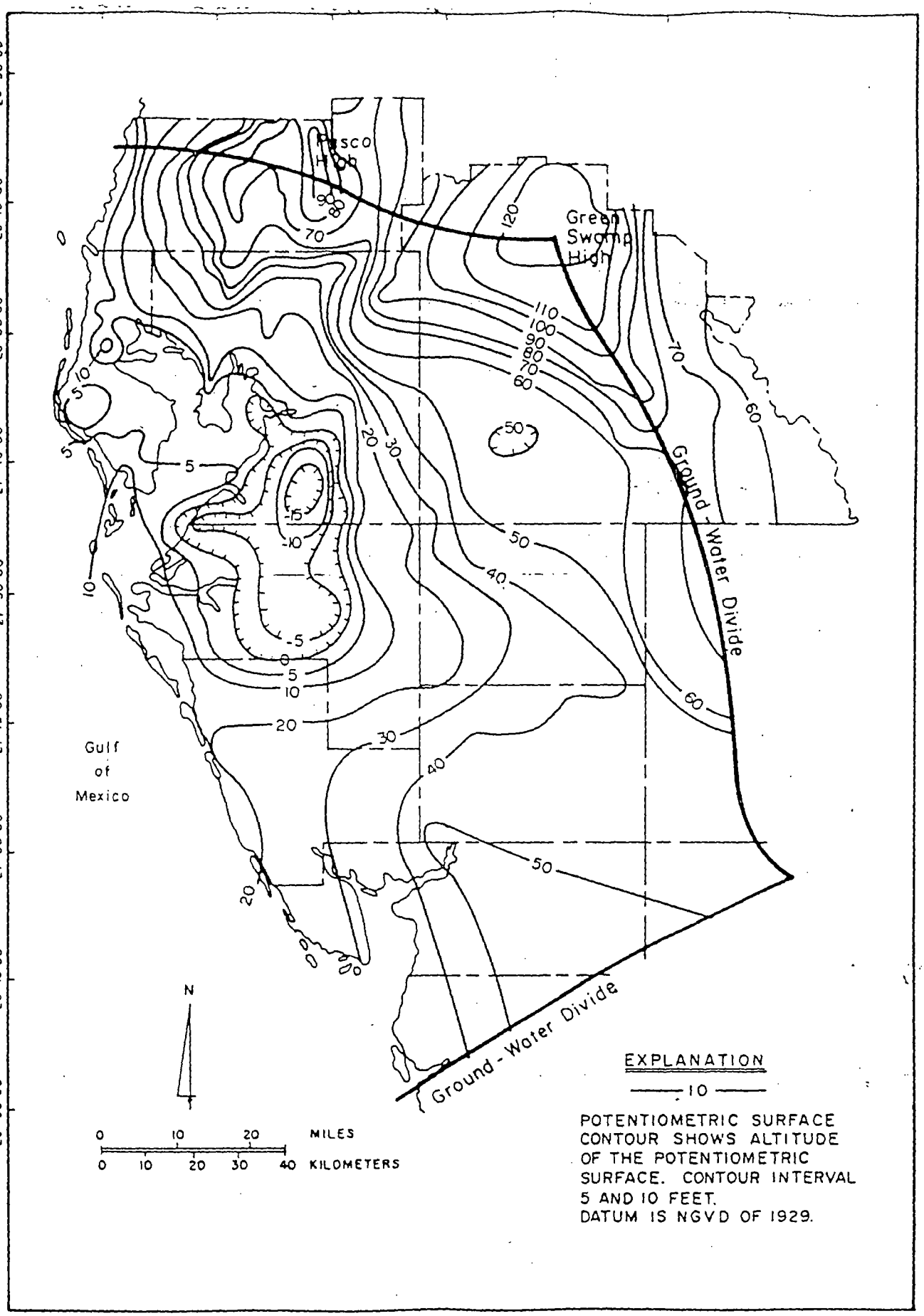
Large head differences between the Upper Floridan aquifer and the intermediate aquifer system in May 1986 in the northern half of the study area were caused by large ground-water withdrawals from the Upper Floridan aquifer for irrigation during the dry spring season. The potentiometric surface of the intermediate aquifer system was only slightly lower in May than in September because of relatively small ground-water withdrawals from the intermediate aquifer system for irrigation during the dry spring season.

Water Use (*)

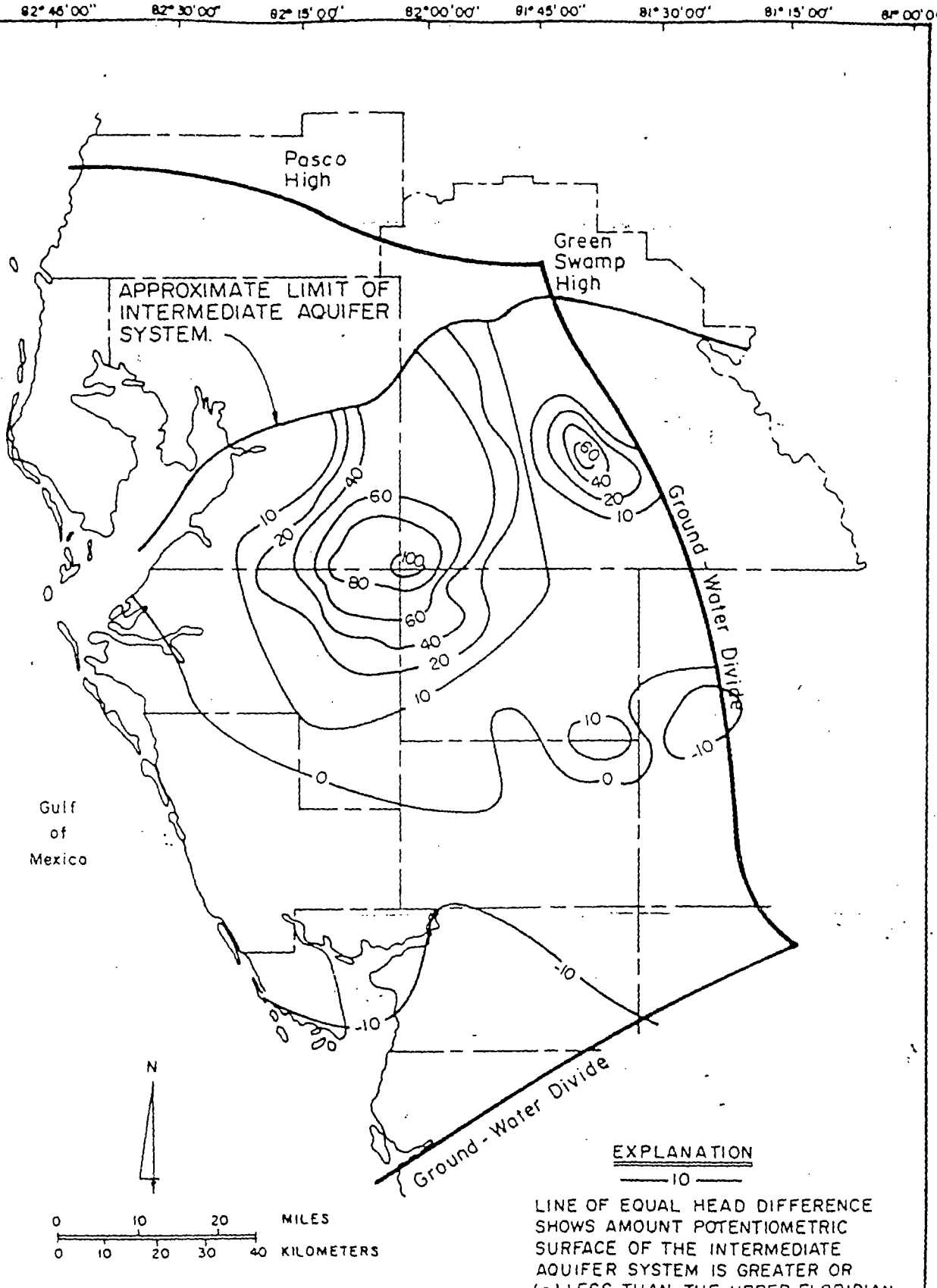
Ground-water and surface-water withdrawal data for the SWCFGWB are collected cooperatively by the SWFWMD and the U. S. Geological Survey (USGS). A combined total of about 1,512 Mgal/d of freshwater was withdrawn in 1986 for irrigation, public and rural supply, industrial, and other uses from the surficial, intermediate, and



ire 31. Potentiometric surface of the intermediate aquifer system May 1986, in the Southern West-Central Florida Ground-Water Basin (from Duerr, in press).



igure 32. Potentiometric surface of the Upper Floridan aquifer May 1986, in the Southern West-Central Florida Ground-Water Basin (Barr and Lewelling, 1986).



33. Head difference between the potentiometric surfaces of the intermediate aquifer system and the underlying Upper Floridan aquifer May 1986, in the Southern West-Central Florid[illegible]

Floridan aquifer systems in the SWFWMD (Stieglitz, 1986). Of this total, an estimated 1,310 Mgal/d was withdrawn in the SWCFGWB. Withdrawal data are not delineated by individual aquifers.

Following is an estimate of the amount of freshwater withdrawn from the intermediate aquifer system in 1985 in the study area and an explanation of the techniques used to make the estimate. Withdrawals outside of the SWFWMD boundary are not included in the estimate.

The Upper Floridan aquifer is by far the most productive aquifer and supplies more than 10 times the amount of water pumped from either the surficial aquifer or the intermediate aquifer system in most of the SWCFGWB. However, the importance of the Upper Floridan aquifer as a source of water diminishes as the water quality in the aquifer decreases in the southern and western areas where concentrations of dissolved solids, chloride, and sulfate exceed maximum drinking water standards (Wolansky, 1983). The saline water is the probable result of past marine inundations and subsequent mixing and water-rock reactions (Steinkampf, 1982). In these areas, the intermediate aquifer system is the most important source of ground water for public supply because it has better water quality.

Estimates of water withdrawn from the intermediate aquifer system were based upon: (1) SWFWMD well construction and consumptive-use permitting files; (2) USGS Ground-Water Site Inventory Files; (3) specific capacity and transmissivity data for various aquifers; (4) and data reported by previous investigators, such as Sutcliffe (1975), Wilson (1977), and Stieglitz (1986).

Well construction was the primary factor for estimating water withdrawn from the intermediate aquifer system. Depth and casing of withdrawal wells in each county were estimated from well-construction data. The depth and casing data indicated from which aquifer or aquifers the well was producing water. In areas where wells were constructed with producing zones in more than one aquifer, the ratio of the specific capacities or transmissivities of the two aquifers from the site or a nearby site was used to estimate the proportion of water withdrawn from each aquifer. Information on sources of withdrawals reported by previous investigators also was used to estimate withdrawals from the system.

An estimated 68.9 Mgal/d of water was withdrawn for all use categories in 1985 from the intermediate aquifer system in the SWCFGWB (Table 7). The largest of water was for irrigation, about 38.8 Mgal/d. Sarasota County used the most water from the system, about 18.3 Mgal/d (Stieglitz, 1986).

The public-supply water-use category includes all water distributed by public-supply water systems to households, industry, agriculture, and other uses (Duerr and Sohm, 1983). A total of about 11.1 Mgal/d was withdrawn from the intermediate aquifer system in the SWCFGWB within the SWFWMD. The largest withdrawals from the intermediate aquifer system for public-supply were in Sarasota County, about 10.0 Mgal/d.

Table 7. Water withdrawn from the intermediate aquifer system in the SWFWMD area of the SWCFGWB, 1985

County	Water withdrawn for indicated purpose, in million gallons per day				
	Public Supply	Rural	Industrial	Irrigation	Total
Charlotte[1/]	0.4	2.0	0.0	15.0	17.4
DeSoto	.7	1.1	.1	2.0	3.9
Hardee	0	1.2	.4	3.0	4.6
Highlands[1/]	0	1.0	0	3.6	4.6
Hillsborough	0	1.5	.1	.5	2.1
Manatee	0	.3	0	6.2	6.5
Polk[1/]	0	4.0	4.2	3.3	11.5
Sarasota	10.0	3.1	0	5.2	18.3
Total	11.1	14.2	4.8	38.8	68.9

[1/]Includes only data for parts of the county that are in the Southwest Florida Water Management District.

In coastal Charlotte and Sarasota Counties, the intermediate aquifer system contains some slightly saline water that is treated by reverse osmosis before it is used for public-supply (Sutcliffe and Thompson, 1983). In other parts of the study area, water from the intermediate aquifer system receives only minimal treatment before being distributed for use. Major municipal wellfields which utilize the intermediate system as a major supply are shown in Figure 21, and listed in Table 6. Major municipal wellfields in the SWCFGWB that utilize the intermediate aquifer system include the Englewood Water District, Venice Utilities, Sarasota County Utilities, and Verna Wellfield.

The rural water-use category includes all water used by households that are not supplied by large (withdrawing more than 100,000 gal/d) public-supply systems. This includes households that have their own water supply and households that are supplied by small public-supply systems. Well diameters generally range from 2 to 4 inches. About 14.2 Mgal/d was withdrawn from the intermediate aquifer system for rural use in the SWFWMD area of the SWCFGWB, in 1985 (Table 7). The largest rural water use from the intermediate aquifer system occurred in Polk County, about 4 Mgal/d.

The industrial water-use category includes water used by industries that supply their own water. Data do not include water sold to industries by public-supply systems. About 4.8 Mgal/d was withdrawn from the intermediate aquifer system in the SWFWMD area of the SWCFGWB, in 1985 (Table 7). Polk County had the largest use from the intermediate system in this category, about 4.2 Mgal/d, most of which was withdrawn for phosphate mining, chemical processing, and citrus processing.

The irrigation water-use category includes water withdrawn by irrigators from private wells and does not include water supplied by public-supply systems. Irrigation water use is generally not metered and estimates of water use for irrigation are the least accurate of all water use data. For a more complete discussion of irrigation water use see Duerr and Sohm (1983) and Stieglitz (1986). About 38.8 Mgal/d was withdrawn from the intermediate aquifer system in the SWFWMD area of the SWCFGWB, in 1985 (Table 7). Irrigation

use was largest in Charlotte County, 15 Mgal/d, most of which was used for citrus and vegetable irrigation.

Upper Floridan Aquifer

The Upper Floridan aquifer is the principal source of water for consumptive use in the SWCFGWB. This aquifer is composed chiefly of limestone and dolomite beds that range in age from early Miocene to middle Eocene. The Upper Floridan thickens from less than 800 feet in the northern areas of the SWCFGWB to greater than 2,000 feet in the southern areas (Figure 11). The bottom of the Upper Floridan is defined as the beginning of vertically consistent intergranular evaporites (gypsum or anhydrite) occurring in either the Avon Park, Lake City, or Oldsmar Limestone of Eocene age, (Wolansky and Garbade, 1981).

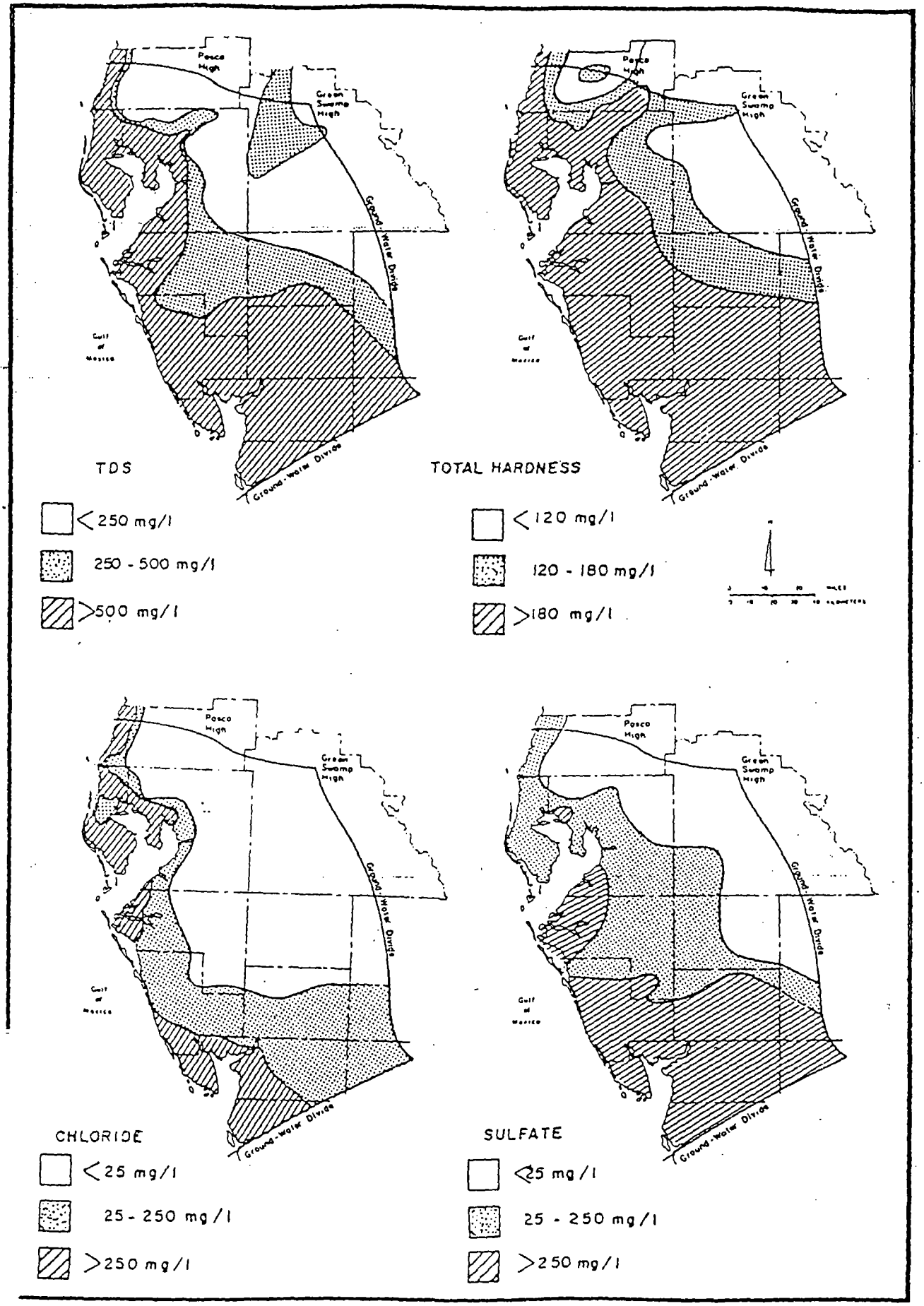
Hydraulic Properties

Transmissivity of the Upper Floridan aquifer in the SWCFGWB is highly variable,a common occurrence in karst environments. Locations of known Upper Floridan aquifer tests in the SWCFGWB and aquifer test values are presented in Figure 19 and Table 4, respectively. Reported transmissivities range from less than 50,000 ft^2/d in the northern areas to greater than 9,000,000 ft^2/d in the central and eastern—areas of the SWCFGWB. Values of leakance coefficients of the confining units overlying the Upper Floridan aquifer ranged from 1.0×10^{-4} to 2.0×10^{-2} cubic feet per day per cubic foot ($ft^3/day/ft^3$).

In addition to leakance and transmissivity values derived from aquifer tests, these values have been approximated by several digital models for the SWCFGWB during the past decade. One of the more recent models, Ryder (1985), derived transmissivity and leakance values from a two-layered, steady-state, finite-difference model with four-mile by four-mile nodes. This model included all of the SWCFGWB within the modeled area. Figure 34 and 35 respectively depict transmissivity values of the Upper Floridan aquifer and leakance values of the confining beds overlying the Upper Floridan aquifer derived from this model.

Water Quality

Figure 36 illustrates regional trends in TDS, hardness, chloride and sulfate for the upper producing zones of the Upper Floridan aquifer in the SWCFGWB. Figure 37 illustrates regional trends in TDS, hardness, chloride, and sulfate for the lower producing intervals of the Floridan aquifer system in the SWCFGWB. These trends were depicted primarily utilizing data obtained during the initial sampling of SWFWMD's Ambient Ground-Water Quality Monitoring Program Background Network, which was sampled between May and December, 1985, and water-quality data required from public supply wells under the CUP program of the SWFWMD. As with the surficial and intermediate aquifer systems, these data were supplemented utilizing other additional data. Within most of the SWCFGWB the quality of water in the Upper Floridan aquifer is within DER standards; however, the quality deteriorates at depth, towards the coast, and towards the south where the surficial and intermediate aquifer systems are extensively utilized for consumptive use due to



gure 36. Naturally occurring major constituents in the upper producing intervals of the Upper Floridan aquifer within the Southern West-Central Florida Ground-Water Basin.

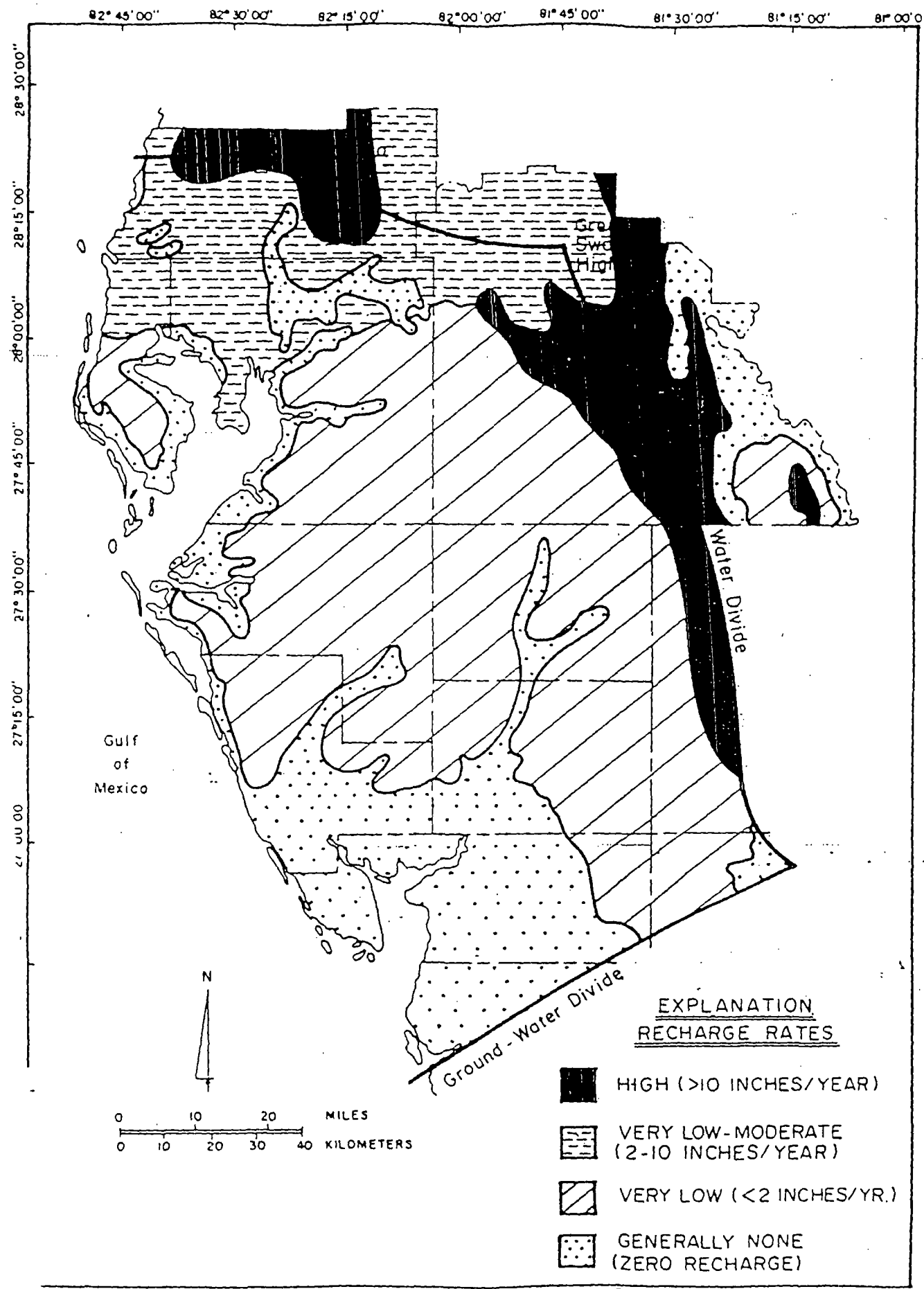
the excessive mineralization of the Upper Floridan. The best water quality for the Upper Floridan in the SWCFGWB is in the northern and eastern areas where the aquifer is essentially the sole ground-water supply for consumptive use.

Figure 37 depicts the water quality of the highly permeable unit in the lower sections of the Upper Floridan aquifer, as reported by Corral (1983). Water quality of this lower zone is poorer than overlying units again indicating that water quality deteriorates with depth.

RECHARGE AND DISCHARGE AREAS

One of the WMD's primary requirements relative to the GWBRAI is the delineation of the ground-water basin's "associated recharge areas". There have been numerous investigations which include recharge/discharge discussions relative to the SWCFGWB. The more significant studies include Parker's (1955) "Water Resources of Southeastern Florida, with special references to the geology and ground-water of the Miami area"; Pride's and others' (1966) "Hydrology of the Green Swamp area in central Florida"; Stewart's (1966) "Ground-Water Resources of Polk County"; Tibbal's (1975) "Recharge Areas of the Floridan Aquifer in Seminole County and Vicinity, Florida"; Grubb's and Rutledge's (1979) "Long-Term Water Supply Potential, Green Swamp Area, Florida"; Stewart's (1980) "Areas of Natural Recharge to the Predevelopment Flow in the Tertiary Limestone (Floridan) Aquifer System in West-Central Florida"; Geraghty and Miller's (1980) "Highlands Ridge Hydrologic Investigation"; Ryder's (1982) "Digital Model of Predevelopment Flow in the Tertiary Limestone (Floridan) Aquifer System in West-Central Florida"; Brown's (1983) "Water Resources of Manatee County, Florida", and Wolansky's (1983) "Hydrogeology of the Sarasota-Port Charlotte Area, Florida". Recharge values for the SWCFGWB reported through 1980, estimated recharge by analyzing certain hydrogeologic factors which affect recharge such as soil type, confining bed thickness and continuity, water balance calculations, and difference between water table and the potentiometric levels. Ryder (1985) used a two-layer steady-state digital model to simulate hydraulic head and calibrate recharge and upward leakage from the Upper Floridan aquifer.

tewart (1980) delineated four categories of natural recharge: reas of generally no recharge, areas of known very low recharge less than 2 inches per year), areas of very low to moderate echarge (less than 2 inches to as much as 10 inches per year), and reas of high recharge (greater than 10 inches per year). Areas of enerally no recharge are located where the potentiometric surface the Upper Floridan aquifer is above land surface much of the time d coincide with areas of artesian flow shown by Healy (1975). The eas of known very low recharge are where the Upper Floridan uifer is known to be overlain by relatively impermeable confining ds generally more than 25 feet thick. In these areas recharge tes are estimated to be less than 2 inches per year. The areas of y low to moderate recharge are where the confining beds are erally less than 25 feet thick and unbreached. Areas of very low moderate recharge also include areas where the confining bed is ent, but where the water table and potentiometric surface of the er Floridan aquifer are both close to land surface so little harge occurs. The areas of high recharge are generally a



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gure 38. Generalized recharge areas to the Upper Floridan aquifer in the Southern West-Central Florida Ground-Water Basin (from Stewart, 1980).

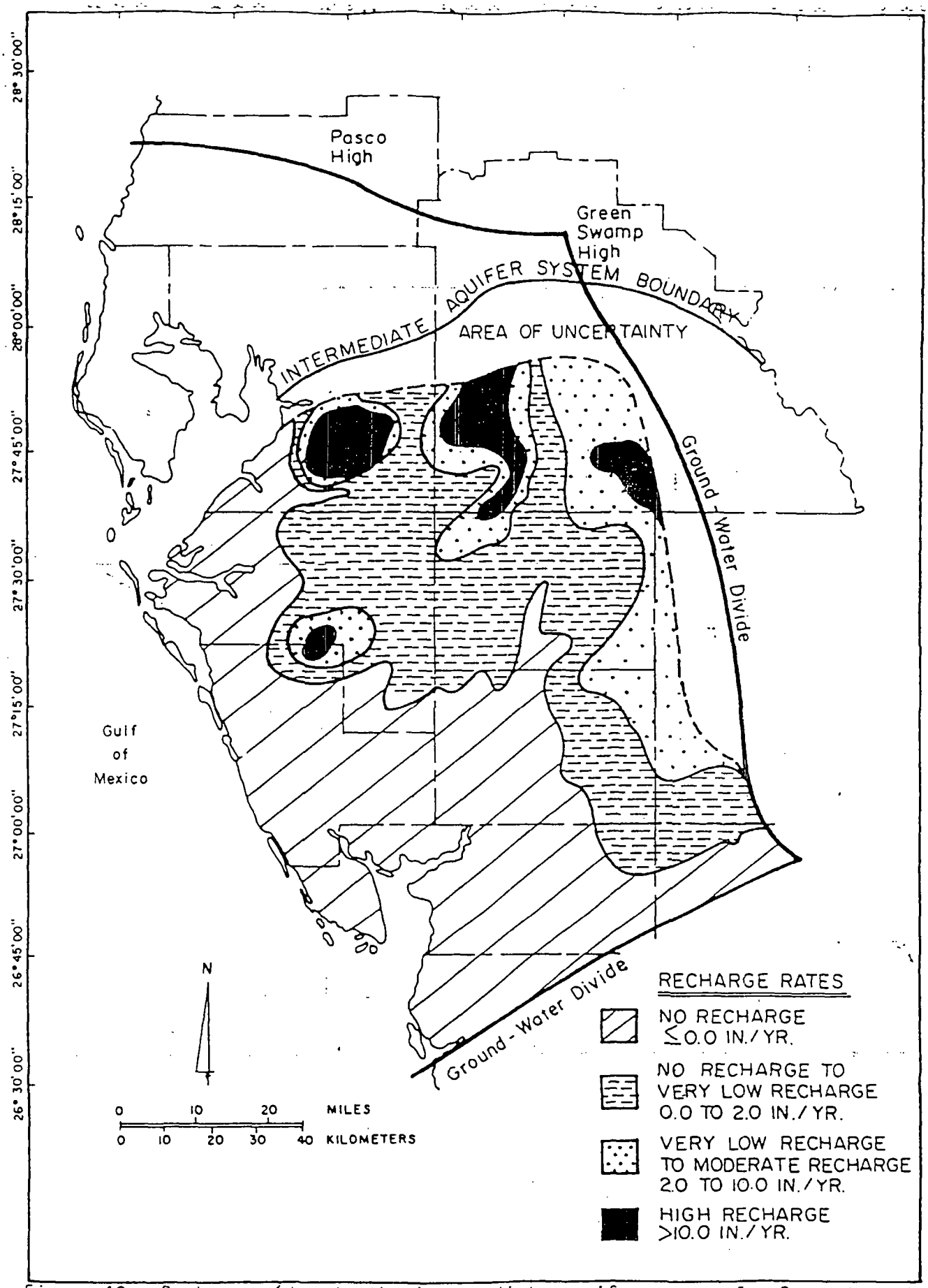

Figure 40. Recharge rates to the intermediate aquifer system for September 1986, in the Southern West-Central Florida Ground-Water Basin.

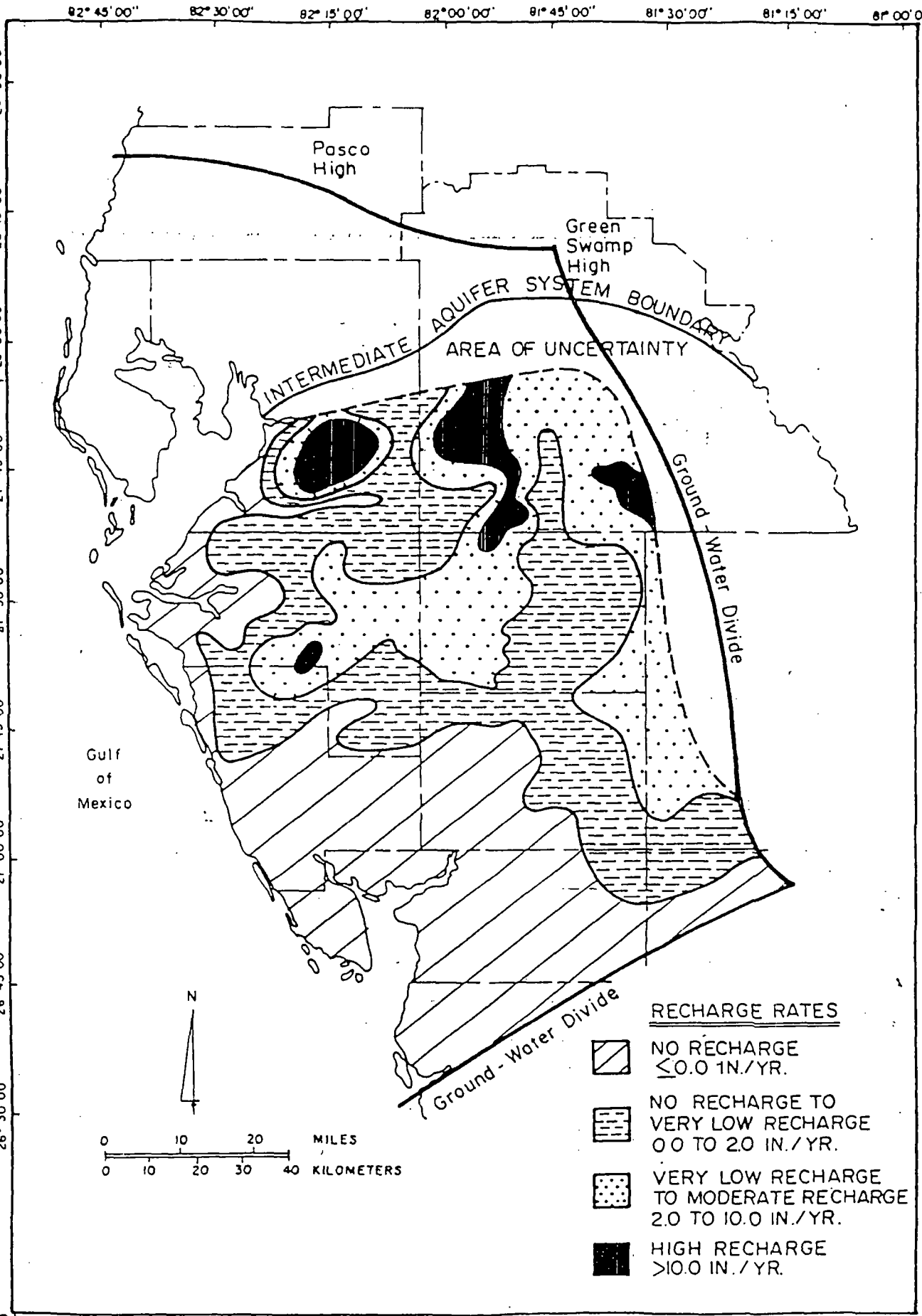

Figure 41. Recharge rates to the intermediate aquifer system for May 1987, in the Southern West-Central Florida Ground-Water Basin.

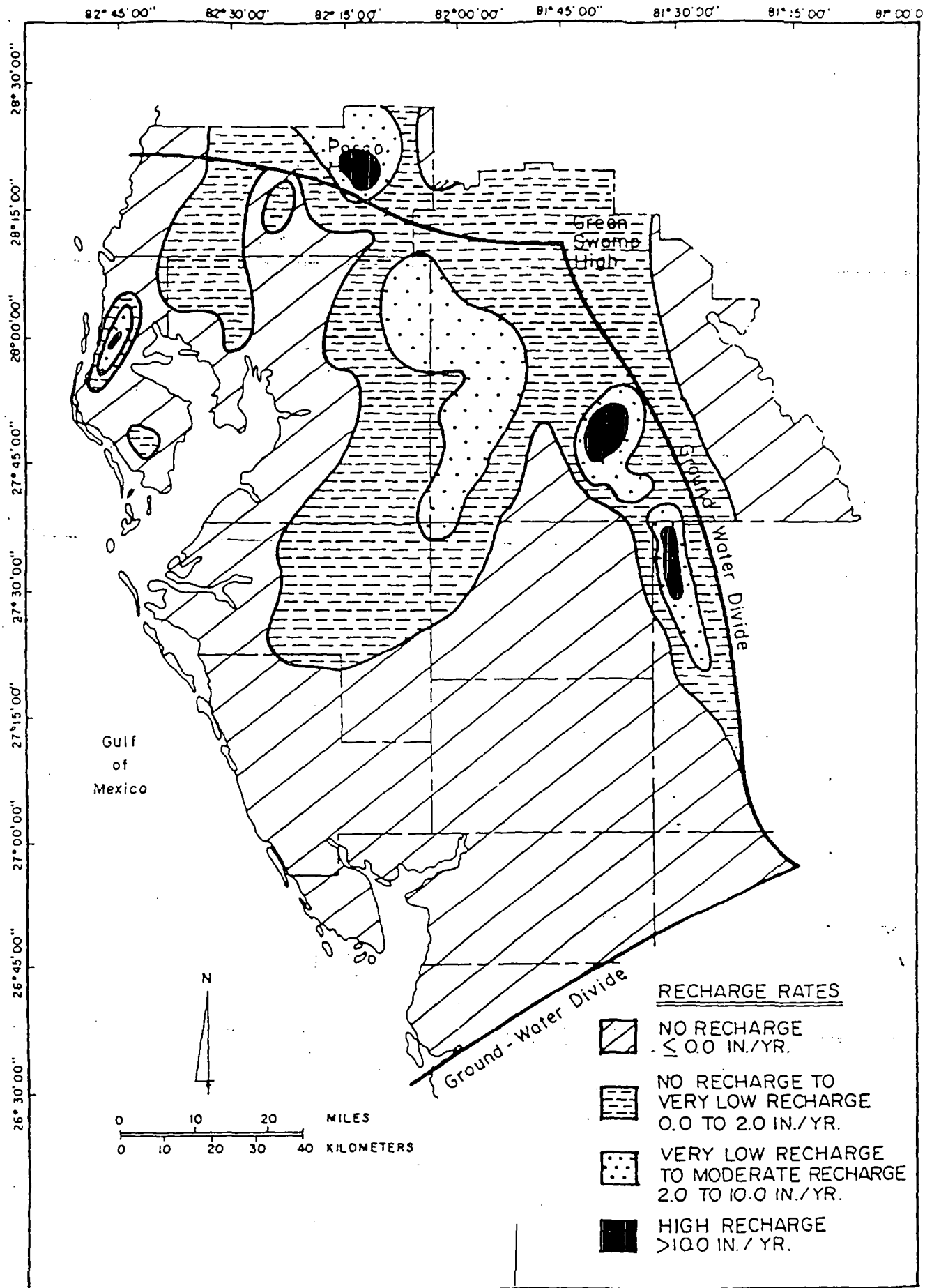

Figure 42. Recharge rates of the Upper Floridan aquifer for September 1986, in the Southern West-Central Florida Ground-Water Basin.

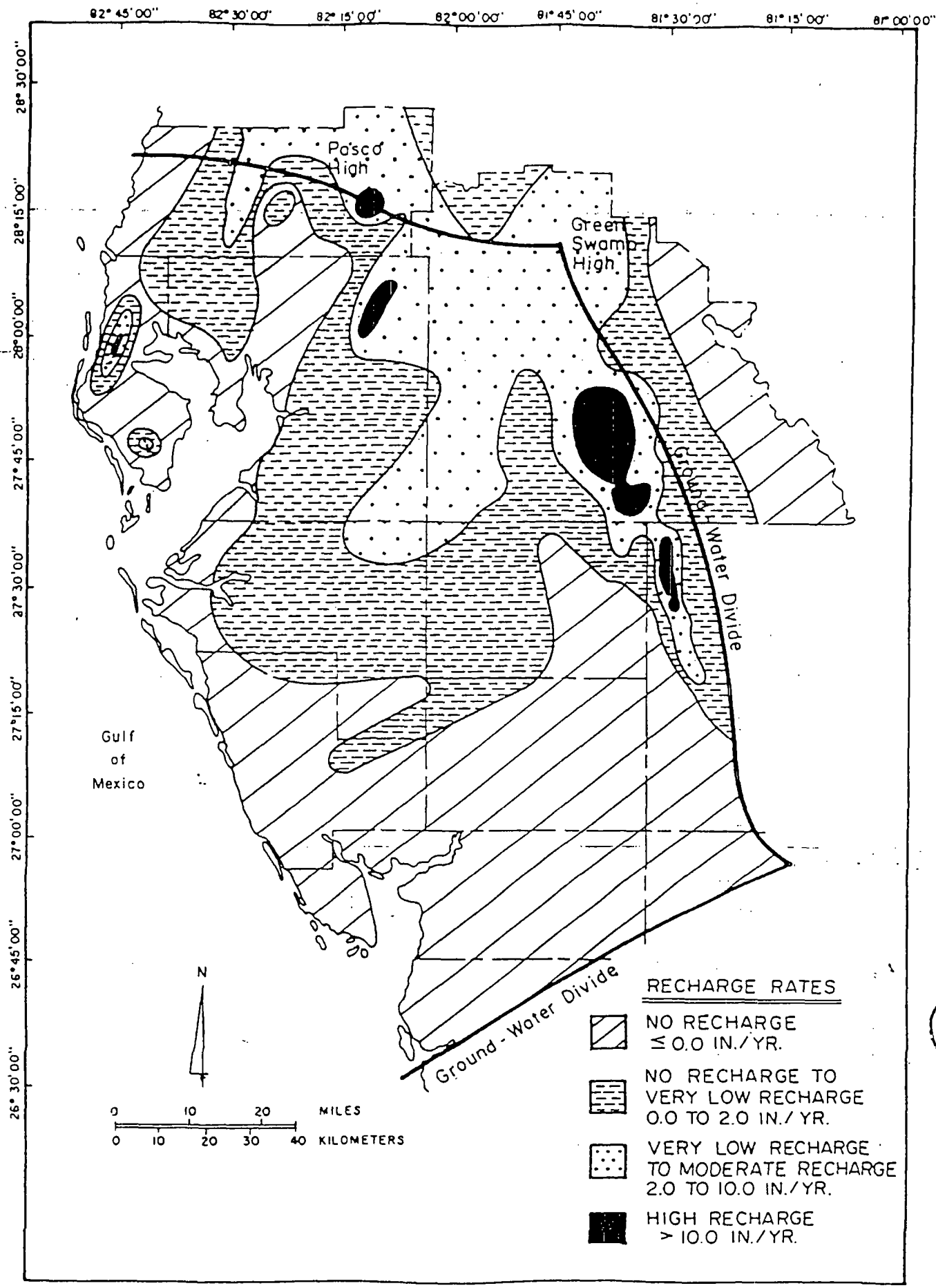

Figure 43. Recharge rates of the Upper Floridan aquifer for May 1987, in the Southern West-Central Florida Ground-Water Basin.

III. POLK COUNTY OVERVIEW

GEOGRAPHIC SETTING, PHYSIOGRAPHY-TOPOGRAPHY, AND DRAINAGE

Polk County, located in the central part of peninsular Florida, is bounded on the north by Sumter and Lake Counties, on the east by Osceola County, on the south by Highlands and Hardee Counties, and on the west by Hillsborough and Pasco Counties (Figure 53). Polk County has a surface area of approximately 1860 square miles. Land surface elevations range from 50 to 305 feet above NGVD, however most common land elevations lie between 75 and 250 feet above NGVD (Figure 54).

Polk County is divided into 9 major physiographic provinces (White, 1970): the Lakeland Ridge, Winter Haven Ridge, Lake Henry Ridge, Lake Wales Ridge, Bombing Range Ridge, Lake Upland, Polk Upland, Osceola Plain, and Western Valley (Figure 6). These physiographic areas are primarily a function of topographic relief and underlying sediments, all associated with higher sea level stands.

Most of the county lies within the Polk and Lake Uplands collectively termed the Central Highland topographic division (Cooke, 1945). Elevations range from 100 to 130 feet above NGVD. In the northern portion of the county the Polk Upland merges with the Lake Upland. Because there is no distinct topographic break between the two uplands, the dividing line is drawn arbitrarily (White, 1970).

The Lakeland, Winter Haven, and Lake Henry Ridges rise from the Polk Upland and appear to be remnants of a previous widespread upland. The westernmost ridge, the Lakeland Ridge, begins abruptly about 10 miles northwest of Lakeland and extends south-southeastward to the vicinity of Ft. Meade. Elevations along the crest of the Lakeland Ridge range from 150 to 270 feet above NGVD. The Winter Haven Ridge, east of the Lakeland Ridge, is actually an 8 mile wide zone of small ridge-remnants. Elevations along the crest of the Winter Haven Ridge range from 150 to 200 feet above NGVD. The southern extension of the Winter Haven Ridge is known as the Lake Henry Ridge. Elevations along this ridge range from 200 to 230 feet above NGVD.

The Lake Wales Ridge borders the eastern edge of the Polk Upland and extends from the northeast corner of the county into the southern part of Highlands County. It is the most prominent topographic feature in peninsular Florida with elevations ranging from 150 to 305 feet above NGVD. The sediments which form the ridge are composed of coarse clastic material which has been dissected by streams and karst activity and straightened on its flanks by coastal erosion to produce its present western bounding scarp and a probable buried former eastern bounding scarp (White, 1978).

The Osceola Plain is a marine terrace which lies east of the Lake Wales Ridge. Elevations of the plain range from 60 to 70 feet above NGVD. The Bombing Range Ridge rises from the Osceola Plain in the southeast corner of the county, reaching elevations of 125 to 145 feet above NGVD. This ridge is probably the result of a former large marine sand bar (White, 1978).

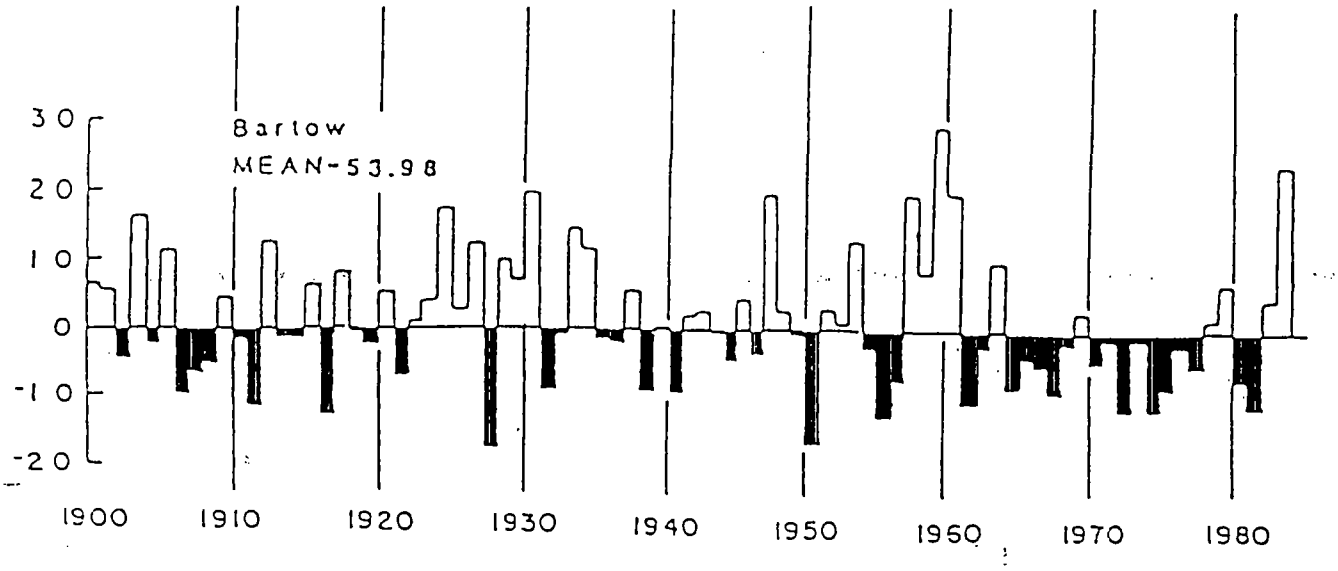

Figure 56. Departure from average annual rainfall at Bartow (from Hammett, in press).

GEOLOGY(*)

For the sake of efficiency Campbell's 1986 Florida Bureau of Geology, Open File Report Number 13 was used exclusively in the geologic assessment of Polk County. Sections from Campbell's (1986) publication are delineated by asterisks (*).

Surface and near surface sediments in Polk County consist of quartz sand, silt, clay, phosphorite, and limestone. The surficial geology as mapped by Brooks (1981) is shown in Figure 10. A simplified stratigraphic sequence from top to bottom includes unnamed Holocene deposits (predominantly sand), Pleistocene and Pliocene marine sands (some containing phosphate) overlying clays, sandy clays, and phosphatic limestones of the Miocene Hawthorn Formation. These overlie a thick sequence of limestones including the Miocene Tampa Formation, Oligocene Suwannee Formation, Eocene Ocala Group, and Avon Park Formation. These sediments range in age from late Eocene to Holocene (40 million years ago to present). Figure 57 shows the distribution of these sediments in two geologic cross-sections.

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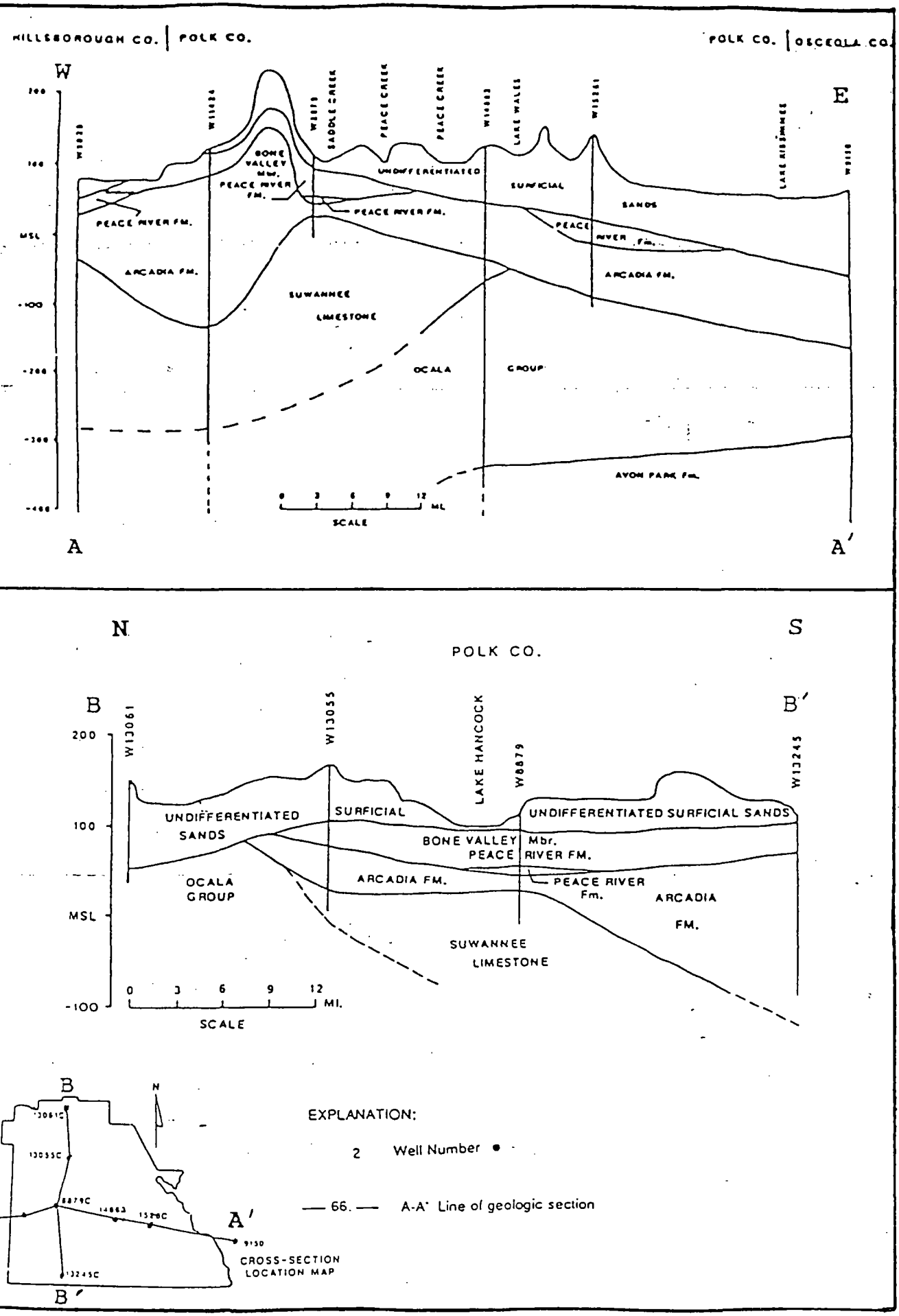
Holocene to Recent(*)

Holocene to recent surficial deposits blanket Polk County. This veneer of unconsolidated quartz sands interbedded with minor amounts of clay is a marine terrace deposit (Scott, 1981; Stewart, 1966). Grain size of the quartz sand ranges from fine to coarse and the grains are angular to rounded, poorly sorted, and commonly frosted. Porosity is 30-35 percent and is intergranular. Induration is absent or poor. Deposits of Holocene Age (10,000 years ago to present) are primarily limited to present day stream floodplains, swamps, marshes, and lakes.



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gure 57 Generalized geologic sections (from Scott, in press).

Plio-Pleistocene(*)

Plio-Pleistocene sediments consist of unlithified coastal sand, shell, silts, sand, gravelly sand, and beach and dune sands in the eastern part of the county. Terrace deposits occur in the northwest corner of the county and the Pliocene Bone Valley Member, which contains sand with pebble phosphate, outcrops in the southwestern part of the county. The Lake Wales and Winter Haven Ridges are composed of clayey micaceous, quartz pebbly sands which in the past have been described as "Miocene coarse clastics" (Scott, in press). These sediments are presently thought to be Pliocene in age and are included in the undifferentiated surficial sediments within the geologic cross-section of this report. In general, the surficial sediments are thinnest in the southwest portion of the county and are thicker to the north and east, and beneath the ridges. The thickness of the undifferentiated surficial deposits ranges from less than 10 feet to more than 120 feet.

Miocene(*)

Miocene sediments include the Tampa, Hawthorn, and part of the Bone Valley Formations. Scott (1986) has raised the Hawthorn from formation status to group status. The Hawthorn Group now includes those sediments which in the past have been included in the Tampa, Hawthorn, and Bone Valley Formations. In Polk County, the Hawthorn Group consists of, in ascending order, the Arcadia Formation and the Peace River Formation.

The Arcadia Formation contains, in ascending order, the Nocatee and Tampa Members and an unnamed member. The Nocatee Member is composed of the sediments which were previously described as the "sand and clay unit" of the Tampa Limestone (Wilson, 1977). The Tampa Member includes the sediments of the Tampa Formation as described by King and Wright (1979). The unnamed (upper) member includes those sediments which in the past have been referred to as the "Hawthorn carbonate unit" (Scott, 1986).

The Nocatee Member consists of a complexly interbedded sequence of variably phosphatic quartz sands, clays, and carbonates (Scott, 1986). The Nocatee is predominantly a clastic (sand and clay) unit. Quartz sands are typically fine to coarse grained, sometimes silty, clayey, calcareous or dolomitic, and variably phosphatic (Scott, 1986). Clay beds are common. The clays have variable amounts of quartz sandy and silt, phosphate, and are calcareous to dolomitic. Carbonate beds are not as commonly present within the Nocatee (Scott, 1986).

The Nocatee within Polk County is present only in the southwestern corner of the county. The top of the formation is encountered at elevations which range from 81 to 150 feet below NGVD (Scott, 1986). Thickness of the Nocatee ranges from less than 50 to slightly more than 100 feet. The upper surface dips generally to the south and southeast. The limits of the formation are primarily indicated by facies change (Scott, 1986).

The Tampa Member of the Arcadia Formation is lithologically similar to the Tampa Formation as described by King and Wright (1979), but

has a slightly greater phosphate content (1-3 percent) and greater areal extent (Scott, 1986). The Tampa Member is a white to tan-colored, quartz sandy limestone with a carbonate mud matrix. Varying amounts of clay are usually disseminated throughout the rock (King and Wright, 1979; Scott, 1986). Some beds within the Tampa Member contain more than 50 percent quartz sand. Dolomite is relatively uncommon within the Tampa Member (King and Wright, 1979; Scott, 1986).

The Tampa Member is present only in the southwestern corner of Polk County, becoming indistinct due to a facies change at its eastern extent. The top of the Tampa is encountered at elevations which range from slightly greater than 50 feet above NGVD to approximately 150 feet below NGVD in the extreme southwestern corner of Polk County. The thickness of the member in Polk County is less than 50 feet (Scott, 1986).

The upper (unnamed) member of the Arcadia Formation includes those sediments which in the past have been referred to as the "Hawthorn carbonate unit" (Scott, 1986). Lithologically, these sediments consist of white to yellowish gray, quartz sandy, phosphatic, and sometimes clayey, dolomites and limestones (uncommon). Occasional beds of carbonate-rich quartz sand and thin clay beds are present.

The upper member of the Arcadia is present throughout Polk County with the exception of the northernmost portion of the county. In those areas where the Tampa and Nocatee Members are not recognized, the entire formation remains undifferentiated. The top of the formation ranges from 112 feet above NGVD in the vicinity of Lakeland, to approximately 125 feet below NGVD in the southeastern corner of the county (Scott, 1986). The thickness of the Arcadia ranges from zero at its northern extent, to approximately 300 feet in the southwest corner of the county. In general, the formation dips to the south and southeast (Scott, 1986).

The Peace River Formation includes two members: a downdip, unnamed member and the updip Bone Valley Member [formerly the Bone Valley Formation (Matson and Clapp, 1909)] (Scott, 1986). Lithologically, the unnamed member consists of yellowish gray to light olive-green interbedded sands, clays, and dolomite with variable phosphate content. In the past, this unit has been described as the "Upper Hawthorn clastics" (Scott, 1986). Scott (1986) defines the Bone Valley Member as "all the phosphorite pebble or gravel bearing beds with sand-sized phosphorite in a sandy to clayey matrix".

The Peace River Formation is present throughout Polk County with the exception of the northernmost part of the county. The Bone Valley Member is present only in the western part of the county and thins in all directions from a center of deposition located in the Bartow-Mulberry area (Bernardi and Hall, 1980; Scott, 1986). Throughout much of the area underlain by the Bone Valley Member, the Bone Valley comprises the entire Peace River section, with the Bone Valley directly overlying the Arcadia (Scott, 1986). In southern-most Polk County, the Bone Valley Members interfingers laterally and vertically with the undifferentiated Peace River Formation. In the eastern part of the county, only the undifferentiated Peace River is present (Scott, 1986).

The Bone Valley Member of the Peace River Formation is found at elevations as high as 175 feet above NGVD in southwestern Polk County. The top of the Bone Valley throughout much of its extent occurs above 100 feet NGVD (Scott, 1986). In Polk County, the top of the Peace River dips to the east and is found at depths slightly greater than 50 feet below NGVD. The thickness of the Peace River is generally less than 50 feet in Polk County (Scott, 1986). The Bone Valley Member has a maximum thickness of approximately 50 feet (Figure 16).

Oligocene

Oligocene deposits are represented by the Suwannee Formation which is present throughout the western portion of Polk County, but is missing in the north and eastern portion of the county due to erosion on the flanks of the Ocala Uplift (NW-SE trend). The Suwannee Formation, in Polk County, is white, cream, or tan, variably textured (calcarenite to calcilutite), fossiliferous, poorly to well indurated and variably recrystallized. The formation locally contains dolomitized or silicified zones (Stewart, 1966). Common fossils include benthic foraminifera, bryozoans, mollusks, and echinoids.

The top of the Suwannee is found at 70-80 feet above NGVD in the area north of Lakeland and west of Polk City, and dips gently to the south and south-southwest. Along the western half of the southern county boundary, the Suwannee is found at approximately 250-300 feet below NGVD (Wilson, 1977).

The thinnest portion of the Suwannee is along the eastern edge of the formation's extent along the trend of the Ocala Uplift, where the formation thins to zero. The thickest portion ranges from 100-150 feet in that portion of western Polk County south of Lakeland and Bartow (Gilboy, 1984).

Eocene(*)

The Eocene Series, in Polk County, consists of the Ocala Group, Avon Park, and Oldsmar Limestones. The Ocala Group consists of three formations which, in descending order, are the Crystal River, Williston, and Inglis Formations. Essentially all of Polk County is underlain by limestone of the Ocala Group.

In Polk County, the Crystal River is a white, cream, gray, or tan very pure limestone. The formation is generally poorly indurated and consists of a coquina of large foraminifera in a chalky calcilutite matrix (Stewart, 1966). The Crystal River is at or near the ground surface over a large area of northern Polk County. Thicknesses in this area range from 30-60 feet and thicken southward to approximately 150 feet (Stewart, 1966). The formation is silicified throughout much of the surface exposure area of northern Polk County (Stewart, 1966).

The Williston is a white to cream or brown limestone, consisting of a coquina or foraminifera set in a pasty calcilutite matrix. The formation is generally poorly indurated and may be dolomitized (Stewart, 1966). The formation is missing in extreme northeastern

Polk County, but underlies the remainder of the county with thicknesses which range from 10-90 feet (Stewart, 1966).

The Inglis consists of white to cream to dark brown, granular, fossiliferous, well indurated limestone, and dolomite (Stewart, 1966). The Inglis ranges from approximately 35 feet thick in the northwestern portion of the county, to as much as 95 feet thick in southeastern Polk County (Stewart, 1966). The Inglis is the uppermost limestone present in extreme northeastern Polk County (vicinity of Haines City) due to erosion of overlying units (Stewart, 1966).

The Avon Park Formation consists of finely crystalline dolomite with some fossiliferous limestone. It is highly fractured and very permeable in some zones and attains thicknesses up to 700 feet. Stewart (1966) states that the visible porosity and permeability of the formation, as a unit, is high and it is the greatest water-producing unit in the Floridan aquifer in Polk County.

Below the Avon Park is the former Lake City Limestone, parts of which contain gypsum and anhydrite which significantly degrade the overall water quality of the formation. Current stratigraphic nomenclature groups the Lake City with the Avon Park and is characterized as such under one name, the "Avon Park Formation" (Miller, 1986). Limestone units continue through the Tertiary to depths of about 2,900 feet. The regional structure of the area incorporates lithologic units that thicken and dip at low angles to the south and southeast.

SOILS

The general soils map of Polk County (Figure 58) depicts four broad divisions as follows:

- Areas dominated by sandy drought soils not subject to flooding.
- Areas dominated by moderately well to poorly drained soils not subject to flooding.
- Areas dominated by poorly and very poorly drained soils subject to flooding.
- Miscellaneous land types.

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Each area outlined in Figure 58 consists of more than one type of soil; therefore, this figure is intended for general planning purposes (refer to USDA Soil Conservation Service publication "Soil Survey of Polk County, Florida 1976", for a detailed description of soil types in the county).

Excessively drained and well drained soils generally occur in the sandy ridge areas. These soils consist of the Astatula-Tavares-Basinger association and the Arredondo-Ft. Meade-Astatula association. Natural vegetation includes slash pine, turkey oak, threeawn, and bluestem.

GROUND WATER

Stewart (1966) described four different freshwater bearing aquifers in Polk County: the surficial aquifer, two intermediate aquifers (Bone Valley-Upper Hawthorn and Hawthorn-Tampa Formations), and the Upper Floridan aquifer. Hutchinson (1978) discusses three freshwater-bearing aquifers; the surficial, Upper Floridan (Hawthorn, Tampa), and Lower Floridan (Suwannee, Ocala, Avon Park). The Bone Valley-Upper Hawthorn unit as delineated by Stewart was considered by Hutchinson as part of the surficial aquifer. Due to its limited use and areal extent, this report will include, as Hutchinson did, the Bone Valley sediments with the surficial aquifer. The aquifers are consistent with the surficial, intermediate, and Floridan aquifer systems as defined by the Ad Hoc Committee on Florida Hydrostratigraphic Unit Definition (1984) and are described below.

Surficial Aquifer System

The surficial aquifer system consists of Quaternary deposits that are contiguous with land surface. The clastic deposits of eolian and marine origins are usually sand, silty sand, and clay. Their lower limit coincides with the top of laterally extensive and vertically persistent beds of much lower permeability, usually represented as a confining unit (Southeastern Geological Society AD HOC Committee on Florida Hydrostratigraphic Unit Definition, 1986). The base of the surficial aquifer system is formed by the clayey, less permeable beds of the Peace River Formation (Bone Valley Member). The surficial aquifer system underlies essentially all of Polk County and is utilized primarily for domestic and low volume irrigation uses where high flow rates are not required. Irrigation wells open solely to this unit usually produce on average 20 to 30 gpm. The thickness of the aquifer differs widely over the county and generally ranges from a few inches in the lowlands to 250 feet in the ridge areas (Figure 13).

Figure 66A portrays the regional elevation of the water table in Polk County. Highest water levels occur in the northern Lake Wales Ridge area and in the vicinity of the southern Green Swamp. The water table persists at a relatively high altitude along the length of the Lake Wales Ridge southward into Highlands County. This generalized scale map precludes any accurate representations of the contours near incised stream valleys and numerous closed lake basins of this area. The intention of the map is to portray the relative elevation of the water table on a regional scale. Greatest error in the delineation of the water table surface is likely to occur in the sandy ridges of the Central Highlands (Figure 6) where steep gradients over short distances are common due to the many closed basin lakes.

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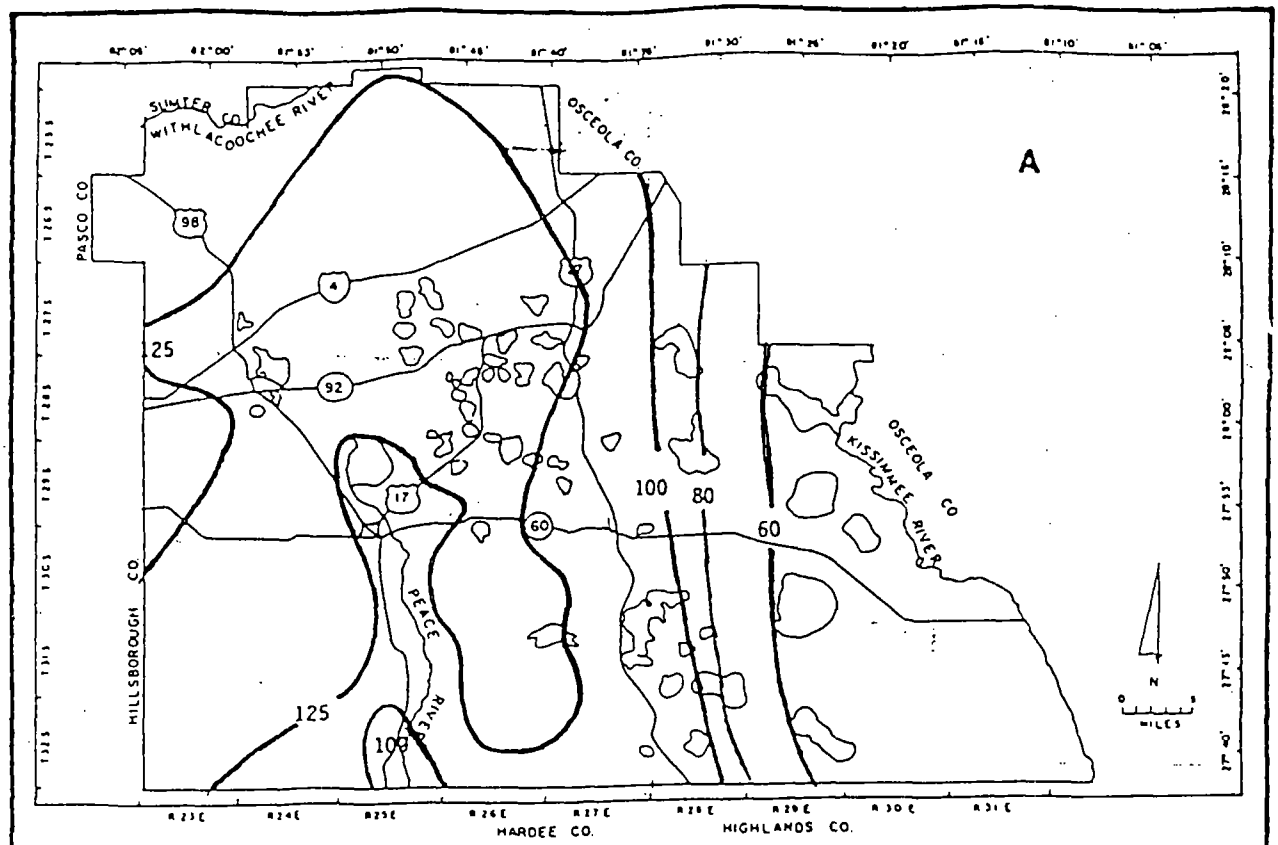
Surficial Aquifer Properties

The hydraulic properties such as hydraulic conductivity of the surficial aquifer vary from place to place due to the range of sediment types, and the variation in grain sorting in individual lithologic units which comprise the surficial aquifer system. A reported hydraulic conductivity values for individual lithologic units which comprise the surficial aquifer system vary greatly



Generalized water level surface of the surficial aquifer in Polk County (modified from Hoy, 1964).

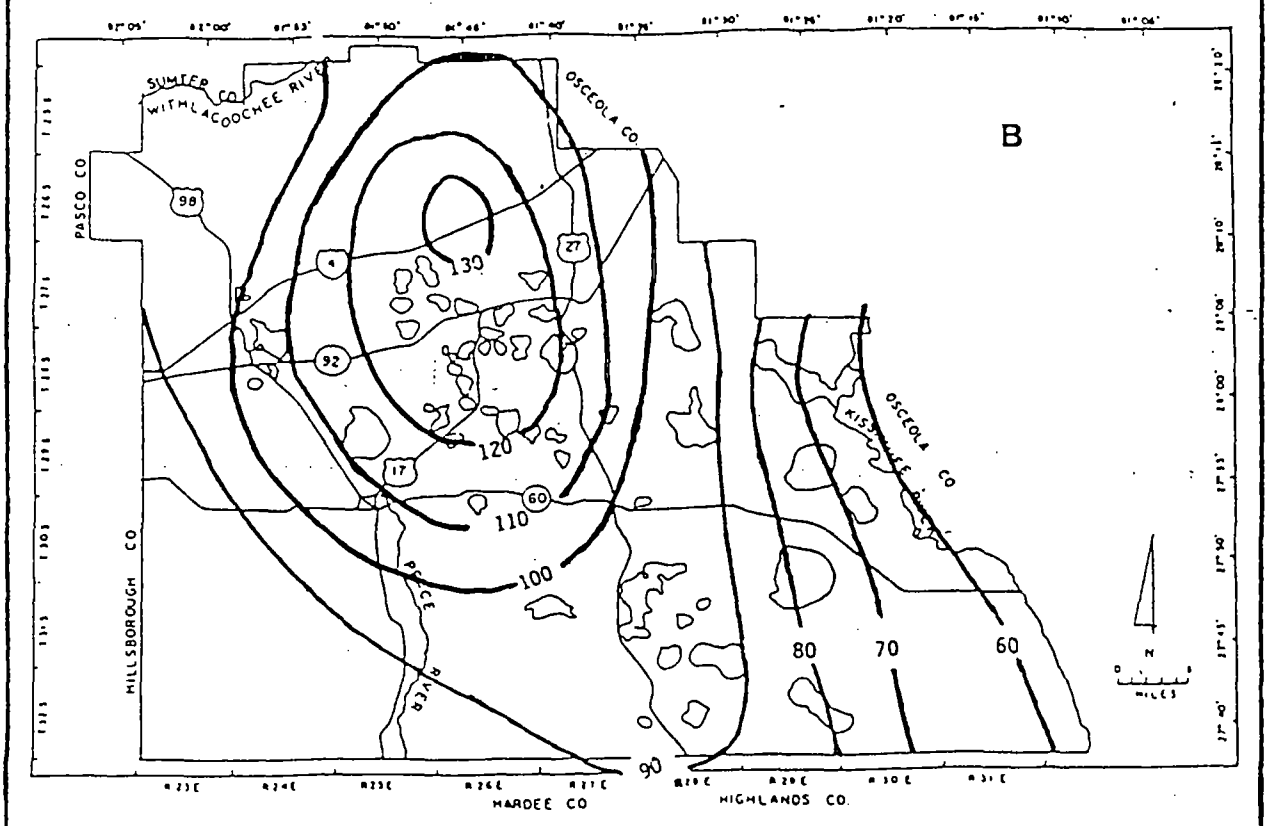


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Figure 66 Predevelopment potentiometric surface of the Floridan aquifer in Polk County (modified from Johnston, et. al., 1980).

(Wolansky, 1983). Hutchinson (1978) reports an average transmissivity of 1,900 ft^2/d and a specific yield of 0.29. Stewart (1966) obtained a specific yield of 0.3 and a hydraulic conductivity of 3.5 ft/day by comparing well hydrographs with lake levels in the Scott Lake area of Polk County. Pride and others (1966) determined a specific yield of 0.3 in the Green Swamp area of northern Polk County, by graphically analyzing the response of surficial aquifer water levels to measured rainfall events. Figure 19 and Table 4 list and display the location of additional surficial aquifer test locations and derived aquifer parameters.

Surficial Aquifer Water Quality

Rainwater becomes mineralized as it dissolves soluble minerals from the soil and rock through which it percolates. Ionic concentrations are relatively low in the surficial aquifer in Polk County. The quartz sand that constitutes the aquifer is relatively insoluble and clay particles tend to remove cations by adsorption (Hutchinson, 1978). Generally, surficial aquifer water is moderately to highly acidic, high in iron content, and highly colored. Locally, water quality within the aquifer may be affected by the natural releases of phosphatic materials present within the surficial aquifer system. Radiation in ground water is a result of weathering of uranium-bearing phosphorite deposits. The radionuclides of concern are radium-226, radon-222, and polonium-210. Each varies in concentration depending on the amount present in the subsurface. Elevated levels are commonly found within the Bone Valley (phosphate) sediments which are rarely used as an aquifer source. Nitrate contamination is evident in some areas where fertilizer or manure applications are frequent. Figure 67 shows the median quality of water in the surficial aquifer reported by Hutchinson (1978).

Surficial Aquifer Water Use

Many hundreds of wells tap the surficial aquifer. Most are two-inch diameter drive point wells that rarely yield more than 100 gpm (Hutchinson, 1978) and on the average produce 20 to 30 gpm (Stewart, 1966). Surficial aquifer water use is limited to domestic supply, lawn irrigation, and to a limited extent, small agricultural irrigation along the central ridge areas, where the surficial aquifer reaches its maximum thickness.

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Intermediate Aquifer System

The intermediate aquifer system, present over much of western Polk County south of Polk City, contains water under confined conditions and consists primarily of the limestones and dolostones of the Hawthorn and Tampa Formations (Duerr, 1987). The intermediate aquifer corresponds with the "secondary artesian aquifer" of Stewart (1966) and the "upper unit of the Floridan aquifer" of Hutchinson (1978). The upper confining layer of the intermediate aquifer system consists of the clayey sediments of the Peace River Formation. The lower confining layer consists of the Nocatee Member (Wilson's (1975) sand and clay unit) of the Arcadia Formation (Scott, 1986). The underlying sand and clay unit of the Tampa Formation (Nocatee Member) averages 42 feet in thickness, forming a southward dipping depression beneath the Peace River Valley. The

aquifer thickness over this depression ranges from less than 100 feet along northwestern Polk County, to more than 250 feet, 10 miles southwest of Bowling Green (southwest Polk County) (Hutchinson, 1978; Duerr, in press). The aquifer thins to the north (Figure 24) and the sand and clay unit becomes thin and absent in the area north of I-75. In the Lake Hamilton area and in the Kissimmee River Basin, the intermediate aquifer appears to be in direct connection with the underlying Floridan aquifer system (Hutchinson, 1978). The intermediate aquifer system in Polk County ranges from 10 to greater than 200 feet thick (Stewart, 1966; Deurr, in press).

Intermediate Aquifer Potentiometric Surface

Figures 29 and 32 represent the potentiometric surface of the intermediate aquifer system, which is delineated through a network of wells open to the entire system between the surficial and Floridan aquifers (September 1985, and May 1986). The altitude of the potentiometric surface generally ranges from 80 feet above NGVD in north-central Polk County to 120 feet above NGVD in south-central portions of the county. Head differences between the intermediate and the Floridan aquifer system range between 10 and 100 feet in May 1986 (Figure 33), indicating a potential for the intermediate to recharge the underlying Upper Floridan aquifer.

Intermediate Aquifer Hydraulic Properties

The hydraulic properties of the intermediate aquifer system vary according to its lithology and to solution development more so than to variations in thickness. Of 12 intermediate aquifer tests conducted on wells which cased off more than 10 feet of the aquifer, Hutchinson (1978) reported an average transmissivity of 723 ft^2/d. Of six tests conducted in the same aquifer system, where cased-off interval was less than 10 feet, transmissivity averaged 5,185 ft^2/d.

Storage coefficients ranged between $1.0x10^{-4}$ and $4.2x10^{-5}$ for 7 tests, and one leakage coefficient value of $2.5x10^{-4}$ (ft/d)/ft was reported. Figure 25 shows locations where transmissivity values have been determined, and Table 4 reports the accompanying values.

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Intermediate Aquifer Water Quality

In general, water quality of the intermediate aquifer system in Polk County is within FDER primary and secondary drinking water standards (Table 5). Figure 27 illustrates the variability of the water quality in the intermediate aquifer system. An area in west and south-central Polk County shows total dissolved solids ranging from 250-500 mg/l and hardness values ranging from 120-180 mg/l. Figure 67 lists the median quality of water in the intermediate aquifer as reported by Hutchinson (1978). Hutchinson (1978) reports the alkalinity is high, indicating that the bicarbonate ion concentration is high, with an accompanying high percentage of magnesium. Hardness of water ranges from 67 to more than 306 ppm (Stewart, 1966). Recent water quality data show elevated levels of gross beta (suspended and dissolved) and gross alpha (suspended) in a number of wells. Dissolved gross beta levels have been recorded as high as 29 PCI/L. These high levels are a result of the phosphate deposits in the intermediate aquifer system.

Intermediate Aquifer Water Use

Water from the intermediate system is primarily used for domestic supply in Polk County. Other uses include stock watering, irrigation, and small public supplies. Most irrigation wells that penetrate the Upper Floridan aquifer are also open to the intermediate aquifer system. Small diameter wells (2 inches) may produce 25 to 30 GPM. Large diameter wells (6 inches or larger) that fully penetrate the aquifer usually yield more than 200 GPM. The aquifer is most productive in the central and southern parts of Polk County.

Floridan Aquifer System

The Floridan Aquifer in Polk County consists of the persistent vertically permeable portions of the Avon Park (combined with the Lake City Limestone by Miller, 1986), Ocala Group, and Suwannee Formation (Stewart, 1966). In the eastern portion of the county where confining beds at the base of the Hawthorn Group are thin or missing, the Floridan includes the permeable portions of the Lower Hawthorn (Arcadia Formation) which are in hydrologic contact with the remainder of the aquifer. In addition, where the confining layers of the Tampa (Nocatee Member) are absent, permeable carbonates of the Tampa may represent the top of the Floridan aquifer system.

The Floridan aquifer is the principal aquifer in Polk County and is the source of all major municipal, industrial, and irrigation water supplies (Stewart, 1966). The Floridan is a confined artesian aquifer throughout much of the county, except in the general area north of Polk City, where the confining layers have been removed by erosion and the Floridan is unconfined. In this area the top of the Floridan is at about 100 feet above NGVD and is represented by the Ocala Group. The top dips generally to the south southeast, and southwest, and is at about 250 feet below NGVD in the southeastern and southwestern corners of the county (Buono and Rutledge, 1978). Estimations of the aquifer base elevation show that it ranges from less than 1,000 feet below NGVD in central Polk County to more than 1,200 in southern Polk County (Figure 11).

Floridan Aquifer Potentiometric Surface

The potentiometric surface of the Upper Floridan aquifer fluctuates in response to changes in the rates of recharge and the rates of discharge. Two factors which influence this process are rainfall and pumpage. Figures 29 and 32 show the potentiometric surfaces of the Upper Floridan aquifer for September 1985 and May 1986. Groundwater flows downgradient and perpendicular to the potentiometric contours from high areas to low areas.

September is normally the end of the wet season; May the end of the dry season. Generally, more stress is placed on the aquifer in May because seasonal rains have not yet begun and crop irrigation and industrial use is heaviest.

The potentiometric surface in Polk County is mapped at some of the highest levels within the state. Extensions of the Green Swamp

potentiometric high occur south along the Lake Wales Ridge where ground-water flows both east and west away from the divide.

Pride and others (1966) infer from geologic and hydrologic data that the regionally high potentiometric heads of northern Polk County result from aquifer structural features. The existence of sand filled fractures and solution features in the Green Swamp act as zones of natural grouting to the highly transmissive limestones. These features, therefore, inhibit ground-water outflow and maintain the potentiometric high of Polk County (Pride, 1966).

A comparison of the May 1986, with the September 1985 potentiometric map provides an indication of the seasonal component of potentiometric surface fluctuation for the Upper Floridan aquifer. From September to May, the potentiometric contours appear to migrate from all directions toward the Green Swamp potentiometric high in response to the seasonal diminishment of rainfall.

Johnston and others (1980) estimated the pre-pumping potentiometric surface for the Floridan aquifer in the southeastern United States (Figure 66B). Data for the map was derived from a number of maps compiled at different times and reflecting differing seasonal conditions. These include Stingfield's map showing conditions during the early 1930s (Stingfield, 1936). In Polk and Hardee Counties, the map by Stingfield was used in preparation of the predevelopment map without modification (Johnston and others, 1980). Rather than showing conditions for any particular time or season, the map represents the average configuration of the potentiometric surface prior to development (Johnston and others, 1980).

Comparison of the pre-development map (Figure 66) to the recent maps (Figures 29 and 32) indicates that long term declines of the potentiometric surface have occurred. The Polk potentiometric high appears as a dome in predevelopment times. Considerable distortion of the potentiometric contours occurs along the southwest flank of the ridge. Extensive pumpage in this area has resulted in the formation of a closed contour depression appearing on some recent potentiometric surface maps (Wilson, 1977, Figure 32). Kissengen Spring, in southwestern Polk County, had an average flow of 31 cfs in the early 1930s. Concomitant with the regional Floridan aquifer water level declines, this spring ceased to flow in February, 1950 (Peek, 1951). Another significant change from predevelopment times is the dramatic northward shift of the 50 foot contour. Plotting 60 miles south of its current position, the 50 foot contour of predevelopment time roughly coincides with the current position of the 60 foot contour (Shaw and Trost, 1984).

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The progressive decline of the potentiometric surface of the Floridan aquifer system as a result of ground-water pumpage is well documented (Peek, 1951; Kaufman, 1967; Robertson, 1973; Mills and Lauglin, 1976; Wilson, 1977; Yobbi, 1983). The area with the largest decline is south and west of Bartow (Figure 68). Estimates of the general decline of the potentiometric surface in the southwest area of the county range from 40 to 50 feet (Hammett, 1987).

Hammett (1987) discusses the probability in the long-term decline in discharge in the Peace River to the decline of artesian water levels in the underlying Floridan aquifer system. Lowering of the

potentiometric surface has indirect effect on streamflow and lakes in that lower potentiometric levels in the Floridan cause a greater potential for downward leakage from the intermediate and surficial aquifers. Increased leakage reduces the amount of water that is available to contribute to streamflow and lake levels.

Figure 69 demonstrates the local relationship between rainfall and streamflow for the Peace River. For the first 30 years of record the relation between precipitation and discharge follows a straight line in that increased rainfall would precede increased discharge. After 1965, there appears to be a change in the relation that shows up as a change in the slope of the line. Some of the declines in discharge can be attributed to deficient rainfall (Figure 56), but this is not the sole cause. If rainfall were the controlling factor all streamflow stations analyzed in the area would show similar trends, which was not the case (Hammett, in press).

Floridan Aquifer Properties

Areal variation of transmissivity of the Floridan aquifer is primarily controlled by the occurrence of solution features and fractures. The aquifer storage coefficient is controlled by thickness, and confining bed lithology and thickness control leakage. For five aquifer tests, transmissivity ranged from 51,471 to 280,749 ft^2/d; storage coefficient $4.7x10^{-2}$ to $1.0x10^{-4}$; and one reported leakance coefficient $1.0x10^{-4}$ (Table 4 and Figure 19).

Floridan Aquifer Water Quality

Chemical characteristics of ground and surface water are affected by many factors. Composition and solubility of soil and rocks over and through which water flows and the length of time water is in contact with these materials largely determine the degree of mineralization of these waters. The nature and extent of interconnection of sinkholes, ponds, lakes, and rivers with Upper Floridan aquifer also affect the degree of mineralization of aquifer and surface water. Ground-water will be diluted by surface water or vice versa depending on the nature of the interconnection and prevailing head difference.

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Chemical characteristics of water influence its use. The FDER (1982) has established different levels of drinking-water regulations wherein primary regulations set minimum standards for the quality of drinking water distributed by public water systems for human consumption. Secondary drinking-water standards (FDER, 1983) recommend limits on certain chemical constituents that are not directly related to health, but rather to the aesthetic quality of water. Criteria have also been developed for evaluating quality of water to be used for industrial and irrigation purposes (McKee and Wolf, 1963).

Median quality of water in the Floridan aquifer system is similar to that of the intermediate aquifer system (Figure 67). The water is primarily a calcium bicarbonate type in both units; however, in the Upper Floridan aquifer the concentration of magnesium is about one half that of the intermediate aquifer system (Hutchinson, 1978). Hardness values in the Upper Floridan aquifer range from 40 to 284 mg/l (Stewart, 1966). Figure 36 shows some areas with elevated

sulfate values in the Upper Floridan aquifer in Polk County, primarily associated with deep Upper Floridan wells.

Floridan Aquifer Water Use

Large diameter wells that tap the Floridan aquifer have yielded as much as 8,000 gal/min (Robertson and Mills, 1974). In Polk County, the Upper Floridan aquifer supplies nearly all water used by municipalities and industry. Presently, large withdrawals for citrus irrigation occur primarily along the central and east-central highlands of Polk County. Phosphate mining is concentrated in the southwest portion of the county. Both industries account for half the total ground-water use in the Polk County totaling 223.27 Mgal/d (Stieglitz, 1986).

RECHARGE AND DISCHARGE

There have been several investigations which have included discussions of recharge and discharge to the Upper Floridan aquifer in Polk County. Stewart (1980) primarily utilized the vertical hydraulic conductivity and thickness of the overlying confining units to calculate recharge rates to the Upper Floridan aquifer. Stewart reported that no recharge occurs along the Kissimmee River area of eastern Polk County. He reports that areas of very low recharge (zero to two inches) occur in the southwest portions of the county. Very low to moderate areas of recharge (less than two inches to as much as ten inches per year) are found in the northern Green Swamp area of Polk County. The highest values of recharge as reported by Stewart occur in a linear band directly associated with the upland sandy ridge areas, where recharge rates are estimated between 10 and 20 inches per year.

Ryder (1982) simulated values of recharge and upward leakage from the Upper Floridan aquifer through the use of a two-layered, steady-state, digital model. Ryder reported values ranging from one to 14 inches per year in Polk County (Figure 70).

SWFWMD staff, for this report examined head differences and leakance values and determined that the highest rate of recharge (greater than 10 inches per year) to the Upper Floridan aquifer occurs in a small area of southern Polk County (Figure 70).

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In addition to the Upper Floridan recharge investigations, SWFWMD staff, for this report, examined head differences between the surficial and intermediate aquifer systems and leakance values for the confining beds overlying the intermediate aquifer system to determine recharge/discharge rates for the intermediate system in the SWCFGWB. Figures 40 and 41 illustrate the recharge to the intermediate system in the SWCFGWB for September 1986, and May 1987, respectively. The highest rates of recharge to the intermediate system in the county are found in the south-southwest portion of the county.

Interaquifer Connector Wells (Artificial Recharge)

Most interaquifer connector wells in Florida are in the phosphate mining areas of Polk and Hillsborough Counties (Kimrey and Fayard, 1984). These wells serve the purpose of facilitating mining

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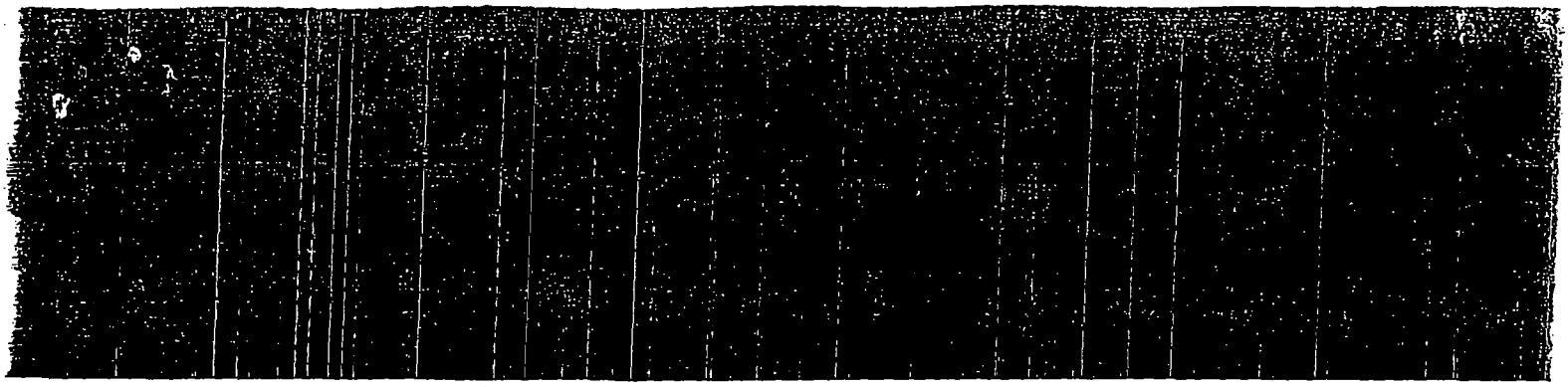
FLORIDA GEOLOGICAL SURVEY
Robert O. Vernon, Director

REPORT OF INVESTIGATIONS NO. 44

GROUND-WATER RESOURCES OF POLK COUNTY

By
Herbert G. Stewart, Jr.

Prepared by the
UNITED STATES GEOLOGICAL SURVEY
in cooperation with the
DIVISION OF GEOLOGY
the
BOARD OF COUNTY COMMISSIONERS OF POLK COUNTY
and the
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
1966



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GROUND-WATER RESOURCES OF POLK COUNTY, FLORIDA

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ABSTRACT

Polk County, Florida is located approximately in the center of the Florida peninsula, and is an area which requires large quantities of water for industry, agriculture, and municipalities. Nearly all water supplies in the county are obtained from ground-water sources. Domestic and small irrigation supplies are obtained from limestones of the Hawthorn Formation of Miocene age, and to a lesser degree from unconsolidated clastic deposits which range in age from middle Miocene to Recent. Large water supplies are obtained from the Floridan aquifer which includes limestones ranging in age from middle Eocene to middle Miocene. Geologic studies near Lakeland show that the Avon Park Limestone is the lowest unit of the Floridan aquifer, and that there has been no circulation of ground water in the underlying formations.

The southern end of the Ocala uplift extends into Polk County and the highest piezometric levels in the Floridan aquifer occur in the county. As a result of the Ocala uplift the rocks of the Floridan aquifer have been highly fractured which has resulted in solutional development of the limestone and extensive cavern systems. The fracturing has also permitted the free circulation of water between all units of the aquifer.

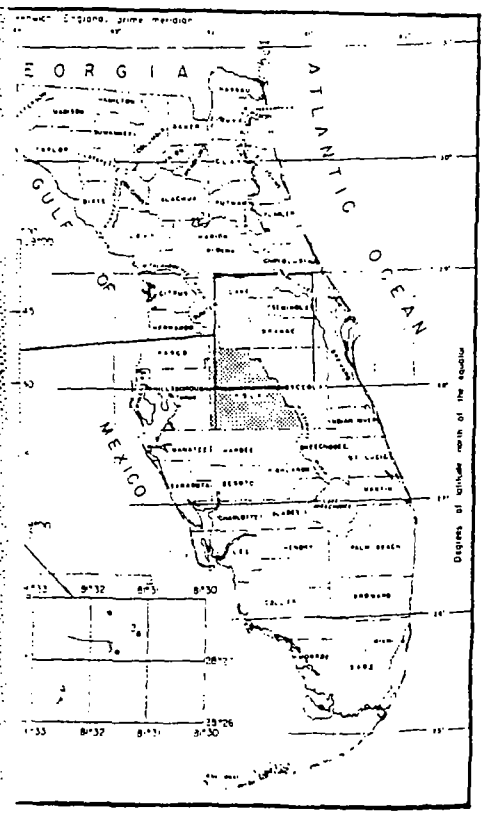
Water recharges the Floridan aquifer principally by downward percolation from surficial sands and through the intervening units to the Floridan aquifer. Only a few inches of rainfall per year enters the aquifer as recharge in the county. Water budget analyses for two lakes near Lakeland, during the first 6 months of 1956, show that the lakes recharged the underlying limestone aquifers. Lake Parker recharged water to the Floridan aquifer at a rate of about 2.5 inches per month and Scott Lake recharged water to the limestones of the Hawthorn Formation at a rate of about 5 inches per month. Data suggest that other lakes in the county may also recharge the aquifers at slow rates.

During 1959, approximately 80 billion gallons of ground water were pumped from the aquifers in the county. During the same year approximately 120 billion gallons were determined to re-

ch cuttings were not collected. These value in the interpretation of ground-hology, and geologic structure.

MBERING SYSTEM

em used in this report is based on rdinates. Figure 1 shows the well-is investigation. The well number was h well on a map that is divided into itude and longitude, then numbering the order of inventory. The well num-numbers separated by hyphens: The the last digit of the degree and the



ving the location of Polk County and the

two digits of the minute of the line of latitude on the south side of a 1-minute quadrangle; the second number is composed of the last digit of the degree and the two digits of the minute of the line of longitude on the east side of a 1-minute quadrangle; and the third number gives the order in which the well was inventoried in the quadrangle. For example, well 826-131-3 is the third well inventoried in the 1-minute quadrangle north of 28°26′ north latitude and west of 81°31′ west longitude. By means of this system, wells referred to by number in the text can be located on the various plates and illustrations of this report.

The same system is used in numbering test holes, exposed sections, sampling stations, and points of various observations that were collected or described, except that consecutive letters of the alphabet are used instead of consecutive numbers. For example, 805-156-A was a test hole. The test holes were filled and abandoned immediately after drilling, and therefore are distinguished from wells.

ACKNOWLEDGMENTS

The investigation was greatly facilitated by the interest, cooperation, and assistance of city, county, and industrial officials, residents, and landowners. Well drillers in the area have repeatedly made their time, experience, and records available to the author. Appreciation is here expressed to all of these people.

Grateful acknowledgment is here made to E. W. Bishop, geologist, Florida Geological Survey, and F. W. Meyer, geophysicist, U.S. Geological Survey, for the many beneficial discussions and the exchange of ideas and concepts during the investigation.

GEOGRAPHY

LOCATION

Polk County comprises an area of about 1,860 square miles in the central part of peninsular Florida. (See figure 2.) The county was established February 8, 1861, by separation from what was then Hillsborough County. Hetherington (1928, p. 14) records an account of Mr. B. F. Blount that indicates that the population in October 1851, of what is now Polk County, totaled about 20 fami-

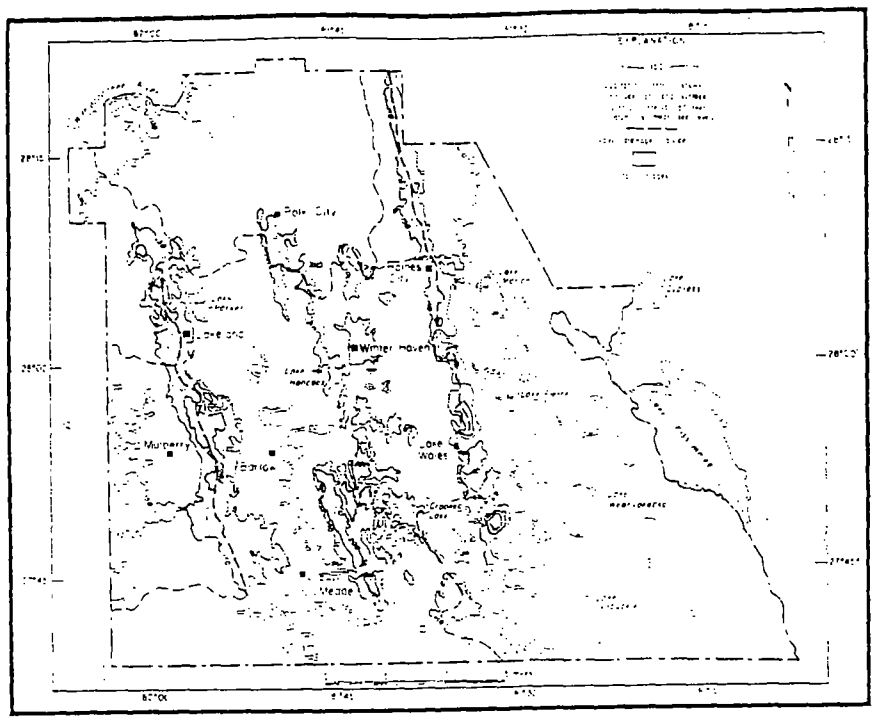


Figure 2. Topographic map showing major physiographic features.

lies, a garrison of soldiers, and some Seminole Indians. Since that time the population has increased steadily.

The following population figures for the county were taken from published reports of the U.S. Bureau of Census:

1890	7,905
1900	12,472
1910	24,148
1920	38,661
1930	72,291
1940	86,665
1950	123,997
1960	195,139

The population is concentrated in the cities and towns along the ridges in the interior of the county. Several hundred square miles in the northern part of the county and much of the area east of the Lake Wales ridge is sparsely populated. The southern part of the county is also sparsely populated. Generally, these areas are

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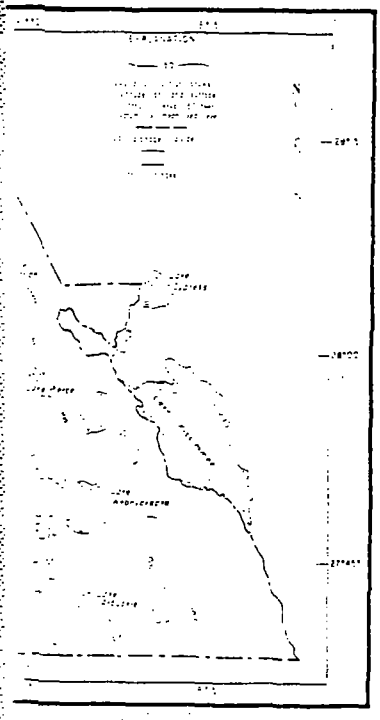

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poorly-drained grasslands and flatwoods, relatively low and flat, and are largely devoted to cattle ranching. During the period of this investigation many isolated, well-drained hills and low ridges within the northern and southern areas were cleared and citrus trees were planted.

The three major ridges and much of the well-drained inter-ridge areas are devoted to citrus groves. Numerous small truck-farms are also found in the inter-ridge areas. Vast areas in the southwestern part of the county have been mined for pebble-phosphate. Much of the mined-out area has not been improved and now stands as rugged spoil piles.

TOPOGRAPHY

Polk County is part of the Central Highlands physiographic division of Cooke (1939, p. 14, fig. 3), the Limesink and Lake Regions of the Floridan Section of the Atlantic Coastal Plain province of Fenneman (1938, p. 46-65, and the Atlantic Coastal Plain-ground-water province of Meinzer (1923a, p. 309-314).

The county is part of the highland area that trends along the longitudinal axis of the Florida peninsula. The major topographic features of the county are three long, irregular, north-south trending ridges which are separated and bounded by relatively flat lowland. These and other topographic features are shown in figure 2. The easternmost of the ridges extends from the common corner of Polk, Osceola, Orange, and Lake Counties approximately south through Haines City, Lake Wales, and Frostproof, and into the southern part of Highlands County. MacNeil (1950, p. 101) has referred to the eastern ridge as the Lake Wales ridge, and White (1958, p. 10) also uses this name. This is the highest, longest, and narrowest of the three ridges in the county. Altitudes on the crest of the ridge range from 150 to 305 feet above msl (mean sea level) and are highest at Lake Wales and Babson Park.

The central, or Winter Haven ridge (White, op. cit.), begins abruptly at Polk City, and continues south-southeastward through Auburndale and along the east side of the Peace River valley to Ft. Meade. It appears to merge with the Lake Wales ridge about 4 miles southwest of Frostproof. This ridge is actually a zone of small ridge-remnants approximately 8 miles wide. Between Bartow and Ft. Meade this ridge becomes a much more massive unit, broader and higher than the northern unit. Altitudes along the crest of the northern unit range from 150 to 200 feet msl, and

from ground-water aquifers.

More than ten companies were mining (dredging) silica sand from the unconsolidated deposits in the county in 1960. Five of these companies are located in the Lake Wales ridge, where the thickest deposits are found. Other companies were operating in or near Mulberry, Bartow, Ft. Meade, Waverly, and Winter Haven. Sand and gravel production totaled 3.3 million short tons in 1959 (U.S. Bur. Mines, 1959, table 5). Most of the water used in this production is readily obtained from the excavations, and does not represent significant industrial consumption of ground-water supplies.

Limestone has not been mined in the county due to the thickness of the unconsolidated overburden, low purity of the uppermost limestone in some areas, and high ground-water levels. However, a relatively large, previously unmapped area of silicified limestone, cropping out in the northwestern part of Polk County and southern parts of adjacent counties, which may become important to the economy of the county, is discussed later in this report. Silica replacement of the limestone surface and artesian ground-water conditions present problems in the newly mapped area, but an economic potential is clearly present. In 1960, agricultural limestone was being obtained from the Ocala-Brooksville area to the north or from western Manatee County to the southwest.

INDUSTRY

One of the major industries in the county is the packing, canning, and concentrating of citrus fruits and juices. Another, and less prominent, allied industry is the production of cattle feed from the peelings of citrus fruit. Juice concentrate plants are among the large consumers of ground water in the county.

The refining of pebble-phosphate and the preparation of commercial fertilizers is a very large and important industry of the area. Polk County ranks first in the State in the production of both the refined triple-super phosphate and fertilizers. These plants use very large quantities of ground water.

GEOLOGY

STRATIGRAPHY

A knowledge of the geology of the rock formations is essential in the evaluation of aquifers as sources of water. The texture and

composition of the rocks affect the chemical composition of the water contained and the rate of ground-water movement through them. The thickness, areal extent, and fracturing of the various rocks will also influence the rate of ground-water movement and yield of wells. Structural deformation and chemical alteration also affect the rate of movement through individual rock units and between units.

Vernon (1951), Cooke (1945), and many others have described the rock units present in Polk County, their general relationships and geologic history, the origin of the different unit names, and the criteria for their identification. However, there has been no previous work which describes the geology of the county in sufficient detail to understand the hydrology of the rock units.

The areal extent of the various units has not been previously established. The literature notes cavernous limestone in central Florida but does not detail the occurrence nor adequately consider the origin of these solution features which are so important to ground-water movement. The work of Vernon (1951, pl. 2) suggests the presence of extensive fracturing in the rocks of Polk County which would also greatly influence the hydrology. The existing literature does not define the thickness or depth of rocks which contain fresh water. Thus, a considerable part of this investigation was devoted to geologic studies that were aimed at providing more detailed information on hydrology.

All of the consolidated rocks of the county that are normally penetrated by water wells are limestones or dolomitized limestones. Over most of the county these are buried by phosphatic clays which are in turn covered by a blanket of sand that constitutes the surficial material. Consolidated rocks crop out in a few, relatively small, areas in the northern part of the county. Most of the geologic information for this report was obtained from rock cuttings taken from wells and by the interpretation of electric and gamma-ray logs of wells. Figure 4 shows the location of wells in Polk County.

Table 3 shows the depths to the tops of the various geologic formations as determined during this investigation. Table 3 does not include a summary of open-file geologic logs of wells by the Florida Geological Survey and which were used in the present study. In the following paragraphs the rock formations penetrated by wells in this county are discussed from oldest to youngest.

The stratigraphic nomenclature used in this report conforms to the usage of the Florida Geological Survey. It conforms also to

but this may be partly due to intense dolomitization and resultant destruction of fossils. The peat occurs as beds from 6 to 14 inches thick, as thin seams and bedding-plane films, and as disseminated flakes. Only a slight change in color and lithology may be noted in passing downward from the Lake City Limestone into the Oldsmar Limestone.

In wells 801-200-1 and 805-154-8 the formation has very low visible porosity and permeability. Both porosity and permeability seem to increase in fractured dolomitized zones, but some of these zones have been partially re-cemented or filled with selenite. The presence of selenite, gypsum, and anhydrite throughout the formation clearly shows that there has never been a significant amount of fresh ground water in it, because these minerals are soluble and would have been removed.

LAKE CITY LIMESTONE

The Lake City Limestone is penetrated by relatively few wells in this county, and only four wells are known to pass entirely through the formation.

According to Cooke (1945, p. 46), the formation underlies all but the northwestern part of the state. Samples were not collected from this formation in well 811-149-1. According to Cooke (1945, p. 48), the Lake City was encountered in well 750-148-1 at a depth of 1,540 feet, and it extends to a depth of 1,960 feet.

In well 805-154-8 a selenite and peat (?) replacement of *Dictyoconus americanus*, the index fossil of the Lake City, was recovered from the core at a depth of 1,028½ feet. Identification was based on the internal cell structure as illustrated by Applin and Jordan (1945, p. 136, fig. 2). Other specimens were observed in the core at this depth.

The electric log of this well shows a decrease in both resistivity and self-potential at a depth of 1,028 feet in a moderately soft, clayey, chalky zone of low visible porosity. The top of the formation is therefore placed at 1,028 feet in this well, and the formation continues to a depth of 1,445½ feet. The formation top on this electric log correlates very closely with the electric log of nearby well 807-154-4 at a depth of 1,110 feet. This depth (1,110 feet) also coincides with the first occurrence of chert and gypsum in the well according to a log prepared by E. W. Bishop of the Florida Geological Survey (FGS W-3883, July 17, 1956). Bishop (op. cit.) designates the interval 1,110-1,198 feet as Avon Park

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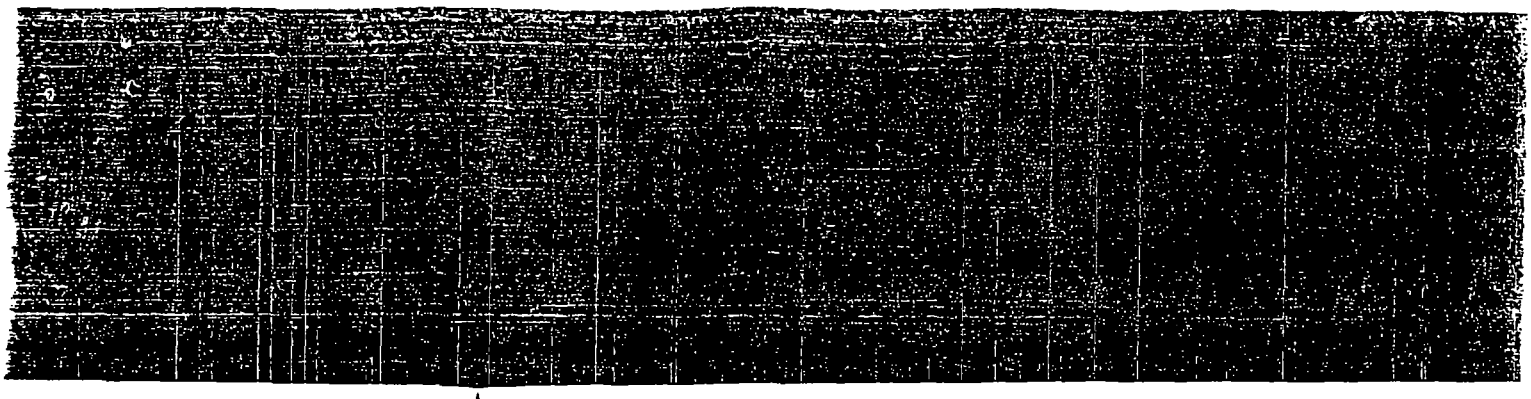

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Limestone. In well 801-200-3 the Lake City Limestone is identified in the interval from 1,198 to 1,588 feet by correlation of electric and gamma-ray logs with those of well 805-154-8. On the basis of these three wells, the thickness of the Lake City Limestone ranges from 417½ to 420 feet in Polk County.

In wells 801-200-3 and 805-154-8 the Lake City Limestone is a white to cream, moderately soft to hard, chalky limestone. The lower 75 to 130 feet of the formation contains finely crystalline, highly dolomitized zones which appear to follow bedding planes. The formation contains abundant peat films on bedding planes. Scattered chert nodules occur in the upper part of the formation and few thin apparent chert "beds" in the lower part of the formation may actually be small nodules or lenses. All of the chert appears to be of secondary origin as a replacement of limey sediments. Pre-lithification sedimentary rubble-beds, generally a few inches thick, are abundant throughout the formation in both wells 801-200-3 and 805-154-8.

In wells 801-200-3 and 805-154-8 the Lake City Limestone contains abundant anhydrite, gypsum, and selenite. The nodular mode of occurrence of these minerals in the Lake City is the same as that previously described in the Oldsmar Limestone. The same interpretation of origin and alteration, from original bedded anhydrite to nodular gypsum and selenite, also applies to the Lake City. However, the Lake City in these two wells does not contain bedded, or unaltered nodules of anhydrite. In general, the anhydrite cores of the nodules decrease in size upward and completely altered nodules of gypsum are common. Individual nodules reach as much as 12 inches in their greatest dimension. Selenite impregnation of pore spaces, small solutional tubes and cavities, small vugs, and fractures occur throughout much of the formation. Open vugs, generally less than 1 inch in diameter, resulting from solutional removal of anhydrite-gypsum nodules occur throughout the formation. These are relatively few in number, but are more numerous than in the Oldsmar.

Cooke (1945, p. 46) and Vernon (1951, p. 92, 99) indicate that the contact of the Lake City and the overlying Avon Park Limestone may be unconformable. In the cores from wells 801-200-3 and 805-154-8 the contact zone is not obvious. In well 805-154-8 gypsum nodules occur at 1,038 feet, 10 feet below the contact. In well 801-200-3 gypsum nodules occur throughout the contact zone and adjacent beds. The occurrence of gypsum nodules and the continuity of lithology strongly suggest that the contact is transi-

tional. Bishop (1956, p. 17) states that this contact is conformable in Highlands County, south of Polk County.

In wells 805-154-8 and 801-200-3 the Lake City Limestone has moderate visible porosity, but low permeability. Some secondary solutional porosity and permeability appear to be developed in the hard, fractured, dolomitized zones of the formation. Bishop (1956, p. 18) indicates that the Lake City is the major water-bearing formation of the Floridan aquifer in Highlands County, to the immediate south and southeast of Polk County.

AVON PARK LIMESTONE

The Avon Park Limestone was named by Applin and Applin (1944) and described from rock cuttings from a deep well at the Avon Park Bombing Range (well 739-121-4) in southeastern Polk County. According to Applin and Applin (1944, p. 1687) the Avon Park underlies all of peninsular Florida except Columbia and Suwannee counties.

Most of the deep wells in Polk County terminate in the Avon Park Limestone but few penetrate the full thickness of the formation. In well 805-154-8 the formation extends from 346 to 1,028 feet, and in well 801-200-3 from an estimated 440 to 1,198 feet. In the latter well the top of the formation could not be determined due to loss of cuttings above the cored section and because the interval from 129 to 590 feet could not be electric-logged due to concurrent collapse of the well when the coring casing was removed. The top of the formation was estimated from the drillers' log on the basis of hardness. The Avon Park is a dark brown to cream, very hard to soft, granular to chalky to finely crystalline, highly fossiliferous limestone which normally contains a thick hard dolomitized zone. Because of the dolomitized zone local well drillers usually refer to this formation, or the upper part of it, as the "hard brown lime."

The principal dolomitized zone ranges from 80 to 135 feet in thickness and lies from 57 to 220 feet below the top of the formation. Other thinner dolomitized zones occur downward throughout the formation. In well 805-154-8 the principal dolomitized zone extends from 167 to 269 feet below the top of the formation, and in well 801-200-3 from 212 to 339 feet below the top of the formation. In both of these wells the dolomitized zone and the harder parts of the formation are highly fractured. These fractured zones appear as coarse gravel-like zones. Some of the fractures have

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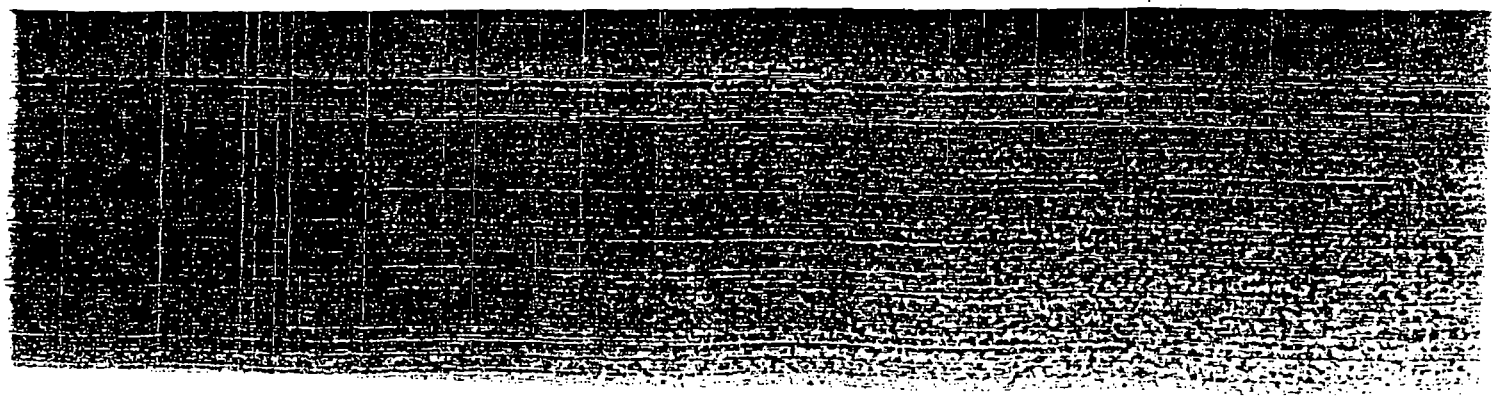

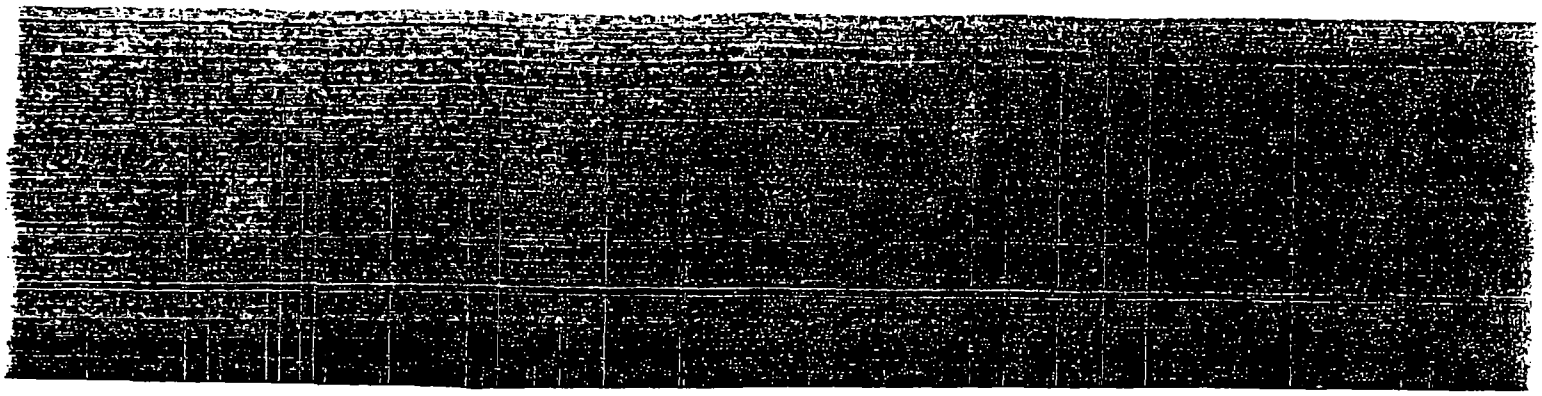

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been partially recemented by calcite and/or dolomite, and these indicate that the zones result from fracturing of a brittle rock mass rather than as a primary depositional gravel, or breakage during drilling operations. In both wells, the majority of fractures were at a high angle (45°-90°) to the bedding, but low-angle fractures were also observed. The most common range was 45° to 60° to the bedding.

Fractured dolomite was also found in a 6-inch piece of rock from a depth of 700 feet in well 754-136-3 near Lake Wales. Many of these fractures were lined or re-cemented with quartz crystal growths. The fractures tended to be at a high angle (45°-90°) to the bedding of the specimen.

Lying above the dolomite zone is a prominent zone of high resistivity a few feet thick that is traceable in the electric logs. This areally extensive marker is a chert zone in well 805-154-8, but its wide-spread occurrence and variability in thickness and resistivity indicate that it may be a weathered or clayey horizon which has been locally silicified or dolomitized. The thickness of this zone ranges from 10 to 65 feet, and its depth below the top of the formation ranges from 30 to 120 feet.

This study indicates that the marker zone and the top of the thick dolomite zone closely parallel the formational contacts below the Crystal River Formation, but do not follow the contacts and bedding of the Crystal River Formation, Suwannee Limestone and subsequent formations. This suggests that the dolomitization and silicification occurred after subaerial erosion of the Avon Park and during the marine transgression preceding deposition of the Ocala Group.

Like the Oldsmar and Lake City Limestones, the Avon Park also contains numerous pre-lithification sedimentary rubble-beds, and the interpretations applied to these features in earlier formations are also applied to the Avon Park.

Within the dolomite section in the cores from wells 801-200-3 and 805-154-8 there are numerous zones of dolomitized breccia, containing large, distinct, very angular to slightly subangular inclusions up to 2½ inches in length. These inclusions are in a generally unsorted heterogeneous matrix ranging from clay to coarse sand-sized grains. The deposits may be collapse debris from solutional caverns which were present prior to the period of dolomitization. The existence of these caverns supports the previously stated belief that dolomitization was controlled by pre-existing zones of permeability, probably along the bedding. These breccias

and their significance will be discussed in more detail in the section on solutional features.

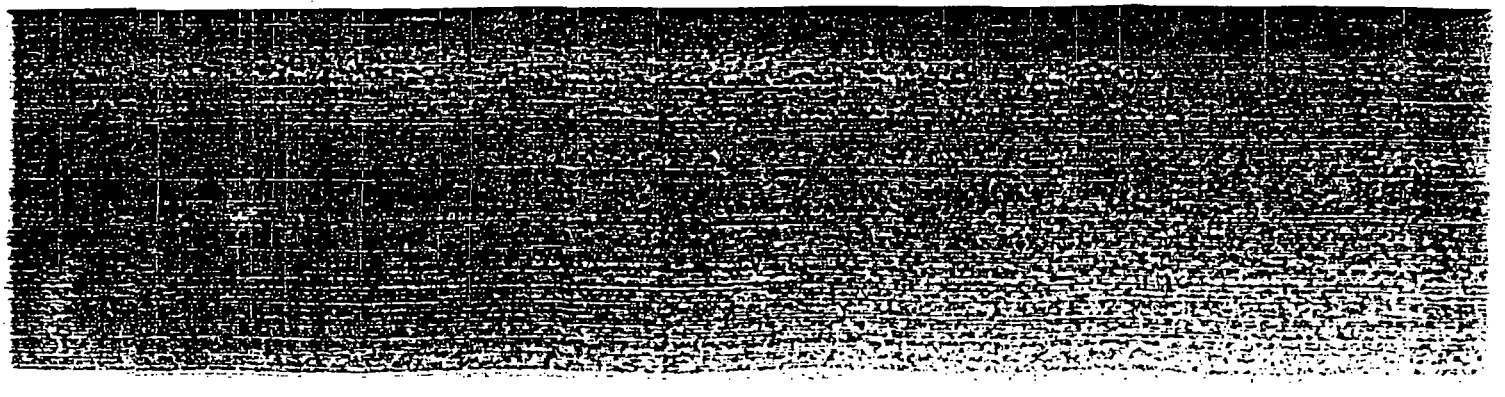
The Avon Park contains anhydrite-gypsum nodules in the same mode of occurrence as has been previously described in the Oldsmar and Lake City Limestones. The same interpretations of origin and alteration, from original-bedded anhydrite to nodular gypsum and selenite, stated for these earlier formations is also applied to the Avon Park. However, in wells 801-200-3 and 805-154-8 the Avon Park does not contain unaltered anhydrite, and it now contains considerably less total anhydrite, gypsum, and selenite than the two underlying formations. In well 801-200-3, the cored well southwest of Lakeland, the Avon Park contained scattered gypsum nodules and clusters and selenite impregnations only in the lower 70 feet (1,128-1,198). In well 805-154-8, northeast of Lakeland, the Avon Park contained such deposits only in the lower 13 feet (1,015-1,028). In both wells the gypsum nodules contained cores of anhydrite.

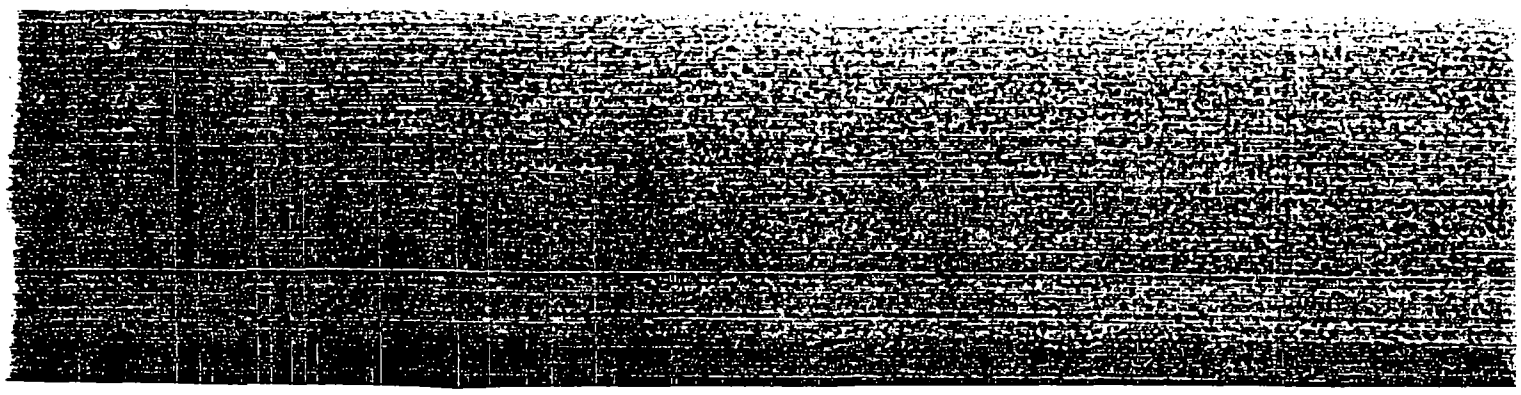
There is no doubt that the Avon Park once contained a much greater amount of the evaporate nodules. In well 805-154-8 many open vugs with irregular, concavely rounded walls, occurred at depths of 685 to 885 feet. It seems clear that these vugs result from the complete solutional removal of evaporite nodules. The open vugs were scattered and sparse in number from 885 to 1,015 feet. Only a few vugs were found in the cores from well 801-200-3 and these occurred from 829 to 1,128 feet.

The Avon Park Limestone contains numerous thin, porous, granular, sand-like zones of dolomite, the origin of which is unknown. There are several suggested origins that may be possible: (1) Some zones may be a depositional dolomite-sand in solutional cavities; (2) some zones may be an ultra-fine honeycomb developed along fractures and other openings by solution; and (3) some of the zones may be the result of precipitation of ultra-fine dolomite crystals. Such zones are also found in the dolomitized zones of the underlying Lake City and Oldsmar Limestones.

The formation also contains, particularly in the lower part, numerous chalky or clayey zones; some thin, well-defined calcareous clay beds; and abundant peat as thin films on bedding planes. There are also chert nodules, apparent chert beds, and diffused silicified zones.

Vernon (1951, p. 99) states that both of the formational contacts are erosional unconformities. The present studies of cores from wells 801-200-3 and 805-154-8 in the Lakeland area, and





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many sets of cuttings indicate that the contact in Polk County is unconformable. The lower few feet of the overlying Inglis Formation generally contain pieces of dark, granular rubble up to $\frac{1}{4}$-inch diameter and abundant eroded *Dictyoconus sp.* and *Coskinolina sp.* from the Avon Park. This is interpreted as weathered Avon Park Limestone, eroded and re-deposited in the early stages of Inglis deposition and hence an unconformable contact.

Permeability of the formation ranges from very low in some of the clayey or chalky zones to extremely high in cavernous zones. The visible porsity and permeability of the formation, as a unit, is high and it is the greatest water-producing unit in the Floridan aquifer in Polk County. Local areas in which the formation as a whole is of low permeability have been encountered, but these are relatively few in number.

OCALA GROUP

In recent years the Florida Geological Survey has subdivided the rocks formerly grouped within the Ocala Limestone. Vernon (1951, p. 113-171) divided this sequence of rocks into the Ocala Limestone (restricted) and the Moodys Branch Formation. He divided the Moodys Branch Formation of his usage into two parts. The lower unit was named the Inglis Member, and the upper unit was named the Williston Member.

Puri (1953a, 1957) gave the name Crystal River Formation to Vernon's restricted Ocala Limestone and gave formation rank to Vernon's Inglis and Williston Members of the Moodys Branch Formation. The Crystal River, Williston, and Inglis Formations are now referred to as the Ocala Group by the Florida Geological Survey and the name Moodys Branch Formation is no longer used in Florida. The northeastern half of Polk County is underlain by the Ocala Group as shown in figure 5.

Inglis Formation

The Inglis Formation underlies almost the entire county except in local areas in northeastern part and is a white to cream to dark brown, generally hard to very hard, granular, partially to highly dolomitized, highly fossiliferous limestone with some local soft chalky zones. In the area lying generally north and west of Polk City, the formation is highly dolomitized, very hard and contains many sand-filled solutional cavities.

In the central part of the county the formation has a relatively

uniform thickness of 35-45 feet. In well 821-202-3 in Sumter County, northwest of Rock Ridge (fig. 4), the Inglis is 29 feet thick. This well is located along the crest of the major structural feature in the area. In well 805-154-8, northeast of Lakeland, the Inglis is approximately 50 feet thick. It thickens slightly along the extreme western part of the county to about 45-50 feet. In the southeastern part of the county the Inglis is as much as 95 feet thick.

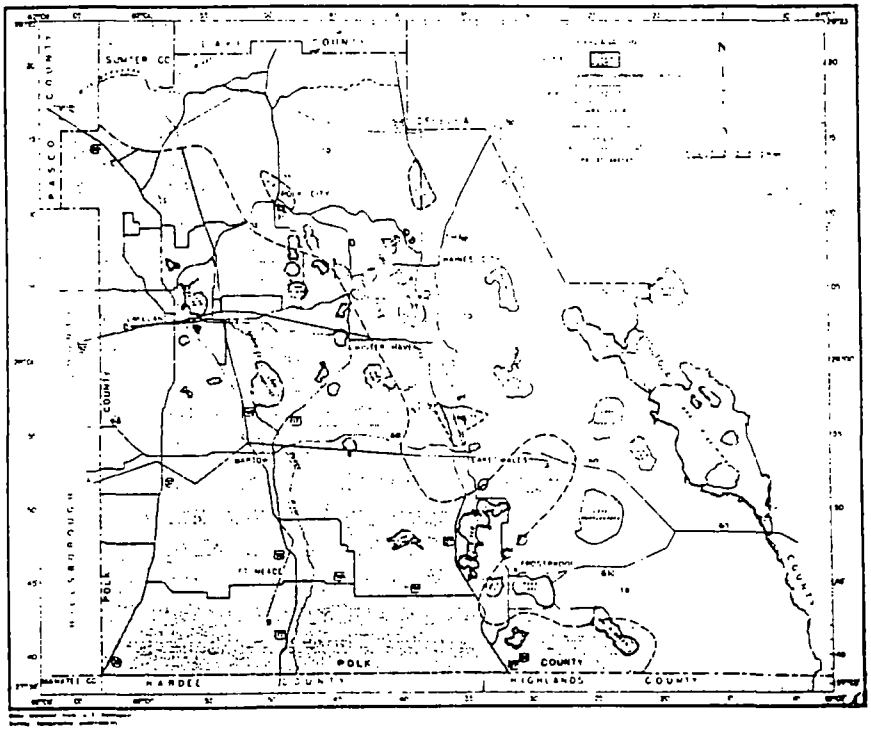

Figure 5. Geologic map of the pre-Miocene formations.

The Inglis is the uppermost limestone in extreme northeastern Polk County due to erosion of the overlying beds along the crest of a structural high. The Inglis conformably underlies the Williston Formation, and unconformably overlies the Avon Park Limestone. (Vernon, 1951, p. 212).

In well 805-154-8 the Inglis appears to have low to moderate porosity in the upper part of the formation. Moderate to high visible porosity in the lower part of the formation is due to the removal of the calci fossiliferous zones. Ti penetrated by water producer due to cave lar texture. However, of obtaining water f

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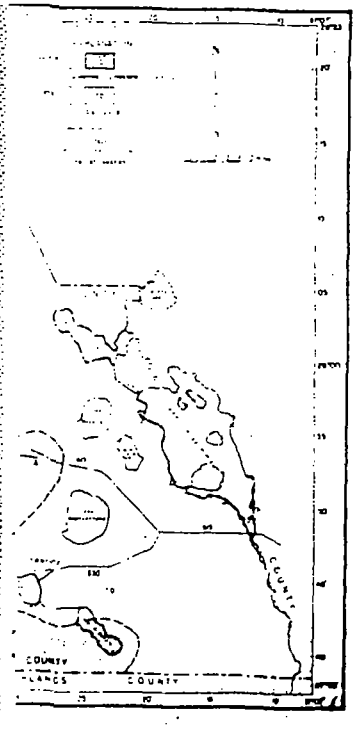

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Williston Formation

The Williston Formation is a white to cream to brown limestone, and is a generally soft, coarse, coquina of foraminifera, set in a chalky calcite matrix. The lower 5-15 feet are usually harder than the rest of the formation due to dolomitization. The formation has moderate visible porosity. The Williston is generally less highly dolomitized than the underlying Inglis Formation.

The formation underlies most of the county with a thickness which ranges from 10 to 100 feet, and averages about 30 feet. These thicknesses are based principally upon electric-log determinations. In extreme northeastern Polk County the formation is missing, having been removed by erosion, and may be missing from other local areas near the crest of the structural high.

Vernon (1951, p. 143) states that the formation lies conformably between the Inglis and the overlying Crystal River Formation. The lower contact is marked by a distinct lithologic change, but the upper contact is transitional and very difficult to define.

The Williston is one of several formations usually penetrated by water wells in this county, and it is believed to contribute some water to wells. The general character of the formation (soft, coquinoid, and chalky matrix) results in a lower porosity and permeability, as compared to the more productive underlying formations.

Crystal River Formation

In the subsurface the Crystal River Formation is a white, gray, cream, or tan, generally very soft, coarse, granular, limestone of very high purity which contains great numbers of large foraminifera in a chalky carbonate matrix. Locally it may contain thin hard dolomitized beds or zones which are controlled by bedding.

The Crystal River is easily recognized from the abundance of disc-shaped foraminifers of the genus *Lepidocyclina*. In some of the species the disc has a saddlelike shape. The formation com-

monly is referred to as "Ocala," "shell," or "limeshell" by local drillers.

The formation ranges in thickness from 80 to 125 feet in an east-west belt across the county between Lakeland and Ft. Meade. South of this belt it thickens gradually southward to 150 feet, possibly even thicker locally. North of the belt, it ranges from 30 to 60 feet in thickness due to erosion and has been entirely removed from broad areas lying northeast of Polk City. The formation has been removed by erosion in the vicinity of eastern Winter Haven, where the Williston Formation appears to be directly overlain by the Suwannee Limestone. Both the Crystal River and Williston have been removed by erosion from the vicinity of Haines City and the Inglis is directly overlain by the Suwannee Limestone.

The Crystal River is the uppermost Limestone in the northern part of the county due to erosion of the overlying Suwannee and younger formations. Along the crest of the structural high area in northwestern Polk and adjacent parts of Lake and Sumter counties, the Crystal River Formation is at, or within a few feet of the surface over an area of approximately 100 square miles. This outcrop area has not been previously mapped or described in any literature. The outcrop area was mapped and studies in a reconnaissance by E. W. Bishop, geologist, Florida Geological Survey, and the author in April 1957. The results are discussed here with the permission of Mr. Bishop.[3]

Throughout the area of surface exposure the limestone is silicified by replacement with hard, dark gray to white chert. In these exposures the fossil content has been generally destroyed by the replacement, but locally small concentrations of *Lepidocyclina ocalana* were found. *Lepidocyclina ocalana* is a diagnostic fossil of the Crystal River and is usually abundant in the formations.

Numerous echinoids were observed in many parts of the outcrop area. In some locations the echinoids were found adjacent to occurrences of *Lepidocyclina ocalana*. More than 40 specimens of echinoids were collected, and they appear to represent a single species. Nine of the best specimens from the area of outcrop, and one from a limestone pit at Lacoochee, Pasco County, were identified as *Rhyncholampas* (*Cassidulus*) *gouldii* (Bouve) by Mr. Porter Kier, Associate Curator, Division of Invertebrate Paleontology and Paleobotany, U.S. National Museum.[4] *Cassidu-*

[3] Personal communication. E. W. Bishop, December 12, 1960.

[4] Personal communication, Porter M. Kier, April 10, 1961.

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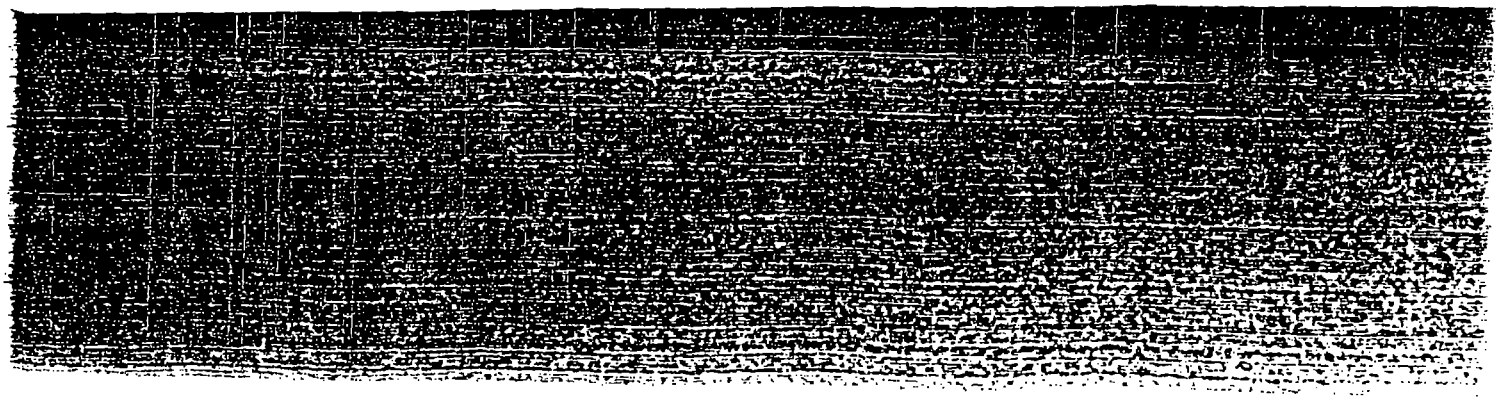

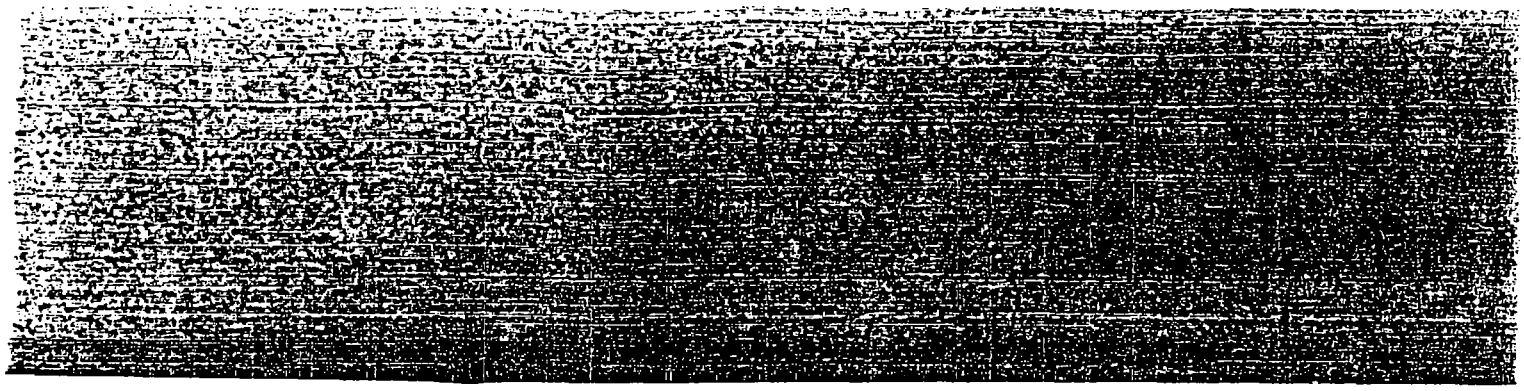

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lus gouldii (Bouve) is a diagnostic fossil of the Suwannee Limestone of Oligocene age, which normally overlies the Crystal River.

The echinoids are preserved as filled molds, the filling being a miliolid-rich granular limestone. In one such echinoid, a specimen of *Dictyoconus cookei* was found and, although this foraminifer is diagnostic of the Avon Park Limestone, it is also frequently found in the Suwannee Limestone.

Because of the observed association of Suwannee and Crystal River fauna the outcrop area is interpreted as being the eroded remnant of the original contact zone of the two formations. Such interpretation thus places the thickness of the Crystal River on the crest of the Ocala uplift at 60 feet or less. Only one outcrop of slightly calcareous limestone was observed.

A well in the outcrop area in southern Sumter County, 821-202-3, penetrated 72 feet of the Crystal River Formation.

Surrounding the area of outcrop is a broad belt of boulders and isolated boulders and cobbles. The closeness of the formation to the surface is inferred by the presence of many silicified and sparsely fossiliferous boulders and cobbles in the spoil piles or in the bottoms of the extensive shallow drainage canals in the area. Many of the boulders and some of the outcrops showed extensive solutional erosion prior to silification. It is evident that some of the boulders were originally geodes or parts of small caverns that were armored through replacement by, or deposition of, gray to white chert, while the main body of limestone remained unaltered and soluble. Subsequently the soluble limestone portions of the formation were removed by chemical and/or mechanical erosion, during exposure at land surface, leaving the resistant silicified solutional features. Several boulders contained solutional cavities lined with banded, botryoidal, amorphous chalcedony, and geode-like, clear, quartz-crystal growths.

The Crystal River, according to Vernon (1951, p. 160) lies conformably upon the Williston Formation and is unconformably overlain by the Suwannee Limestone of Oligocene age, or by younger unconsolidated clays and sands.

In well 805-154-8 the Crystal River is 124 feet thick and has low to moderate visible porosity and permeability. Small incipient solutional tubes and cavities were observed in the interval from 182 to 224 feet. Cores were not taken from this formation in well 801-200-3.

The yield of wells terminating in the Crystal River Formation is considerably less than those drilled into the Avon Park Lime-

stone, due to the very soft, chalky matrix. The yield of such a well can usually be increased by deepening the well into one or more of the underlying formations. The formation will generally produce a sufficient quantity for domestic supplies.

OLIGOCENE SERIES

SUWANNEE LIMESTONE

The Suwannee Limestone is white, cream, or tan, generally very soft, granular, detrital limestone which is generally very pure. Locally, however, it contains a small amount of fine quartz sand as disseminated grains. It contains abundant bryozoa, small mollusca, and large echinoids. Local drillers refer to it as the "coquina." In some places the upper surface, and/or a zone near the middle of the formation, is replaced by dark-brown or gray chert which commonly ranges from a few inches to a few feet thick. The greatest thickness of chert encountered, or reported, in the county was 10 feet in well 803-156-11 in Lakeland. The chert zone occurred from 208½ to 218½ feet, near the middle of the formation. The area of Polk County underlain by the Suwannee Limestone is shown in Figure 5.

In well 805-154-8 the formation is 91 feet thick and contains thin hard dolomitic zones from 73 to 75 feet. The formation contains some small solutional tubes and cavities which are lined with small calcite crystals. The lower portion of the formation is chalky and less granular than the upper part. The Suwannee in this well has a moderate to low visible porosity and permeability. The lower few feet appear to be an indistinct pre-lithification rubble zone, and contain films of black peat along bedding planes.

The thickness of the Suwannee in well 801-200-3 is unknown due to loss of cuttings and circulation at 136 feet. In this well, however, the upper 3 feet of the formation was cored, and is a complete replacement by gray chert. The silicification preserved in detail many solutional cavities in the limestone. Some of these cavities contained a filling of cream colored sandy limestone, which contained a number of *Sorites sp.*, and which is tentatively identified as limestone of the Hawthorn Formation of Miocene age. This clearly establishes one reason for the finding of this particular fossil, as reported by Stewart (1959, p. 22), in what might otherwise be considered as slightly sandy Suwannee Limestone.

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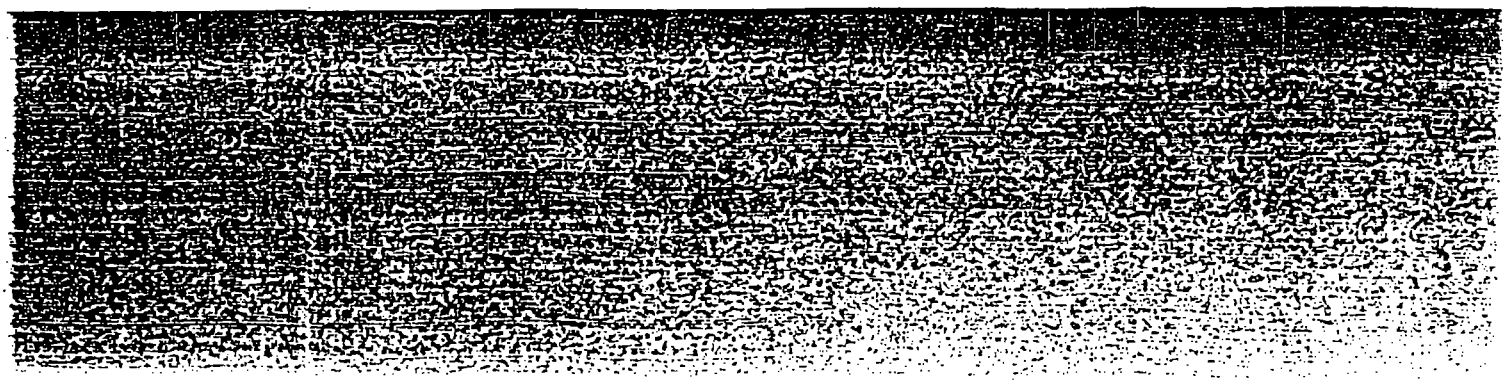

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Thickness of the Suwannee generally ranges from 80 to 120 feet in the central and southern parts of the county. It thickens rather abruptly from 70 feet in a well southwest of Lakeland (759-201-1), to 195 feet in a well in south-central Hillsborough County (746-209-1). In the northern part of Polk County the formation thins considerably due to both depositional and erosional thinning, and is absent in much of the northern and eastern parts of the county (fig. 5).

In several sets of well cuttings the Suwannee Limestone contained some fossils that are diagnostic of the Crystal River Formation. Some of these samples also contained a few specimens of the Suwannee foramanifer *Rotalia mexicana*, which is not a durable fossil. Such rocks, though containing predominantly Crystal River fossils, are interpreted as Suwannee Limestone. They indicate local erosion and re-deposition of Ocala rocks during deposition of the Suwannee. An example of such deposits was found in the upper 36 feet of limestone in well 800-142-1.

The yield of wells terminating in the Suwannee Limestone is considerably less than those in the Avon Park Limestone, but is generally greater than the yield of wells in the Crystal River Formation. The Suwannee furnishes adequate supplies for domestic and small irrigation wells, and it is widely used for these purposes.

MIOCENE SERIES

The correlation of the formations of Miocene age in Florida and adjacent states has long been a major geologic problem. Recently great strides have been made with this problem in the Florida panhandle by Puri (1953b). Major problems still exist, however, in the peninsular part of the state. Reports by Bergendahl (1956, p. 69-84), Cooke (1945, p. 109 ff), Vernon (1951, p. 178-186), Puri (1953b, p. 15 ff), and others contain summaries of the problem.

In recent years the Miocene and younger deposits in the central part of the peninsula have been studied by many geologists of the U.S. Geological Survey. Some of the findings are reported by Cathcart and McGreevy (1959), Ketner and McGreevy (1959), Carr and Alverson (1959), Altschuler, Jaffee, and Cuttitta (1956), Altschuler, Clarke, and Young (1958), Altschuler and Young (1960), and others. With these recent contributions some of the questions regarding the Hawthorn and Tampa Formations may have been resolved, but in the case of the limestone units

of these formations, which are widely used ground-water aquifers, a basic practical problem of identification and delineation still exists.

The chemical and lithologic constitution (Carr and Alverson, 1953, p. 175 ff) of the limestone units of the two formations is identical for field mapping purposes. The fossil fauna is largely mollusca which are not individually diagnostic of either formation, and faunal assemblages are only generally diagnostic of the early and middle Miocene ages presently assigned to the Tampa and Hawthorn Formation respectively (Vernon, 1951; Puri, 1953b; Espenshade and Spencer, 1963). Identification of these formations is made even more unlikely in Polk County because of dolomitization and because most of the geologic work must be done from well cuttings, in which large mollusca molds are rarely recovered intact. *Sorites sp.*, common to the Tampa but not diagnostic of it, has not been found in known exposures of the Hawthorn, but has been found in well cuttings in both typical Suwannee and Hawthorn lithology, thus complicating the problem further. *Archaias floridanus*, a foraminifer commonly accepted as diagnostic of the Tampa, has not been found in well cuttings in this area.

TAMPA FORMATION

Cole (1941, p. 6) identified the Tampa between the depths of 117 and 180 feet in a well 4 miles north of Lakeland (805-157-15) at the Carpenter's Home, on the assumption that the Tampa Formation underlies all of Polk County, and on the basis of general lithology, and an interpretation of fossil evidence. In his diagrammatic illustration of the well (op. cit., p. 5, fig. 2) he also includes the interval of 180 to 250 feet in the Tampa. This well was in use during the entire course of the present investigation, and exploration of the well was not possible. However, on the basis of an electric log obtained in well 805-157-16, approximately 50 feet west of the well described by Cole, the interval 117-250 feet was determined to be the Suwannee Limestone.

Cooke (1945, p. 132) states that the Tampa probably underlies all of Polk County south of Lakeland. Vernon (1951) does not discuss the Tampa Formation in his description of stratigraphic units. Cathcart and McGreevy (1959, p. 228) found the Tampa Limestone in western Polk and adjacent parts of other counties, and report it to be a sandy, clayey, limestone containing abundant chert fragments and very few phosphate nodules. They

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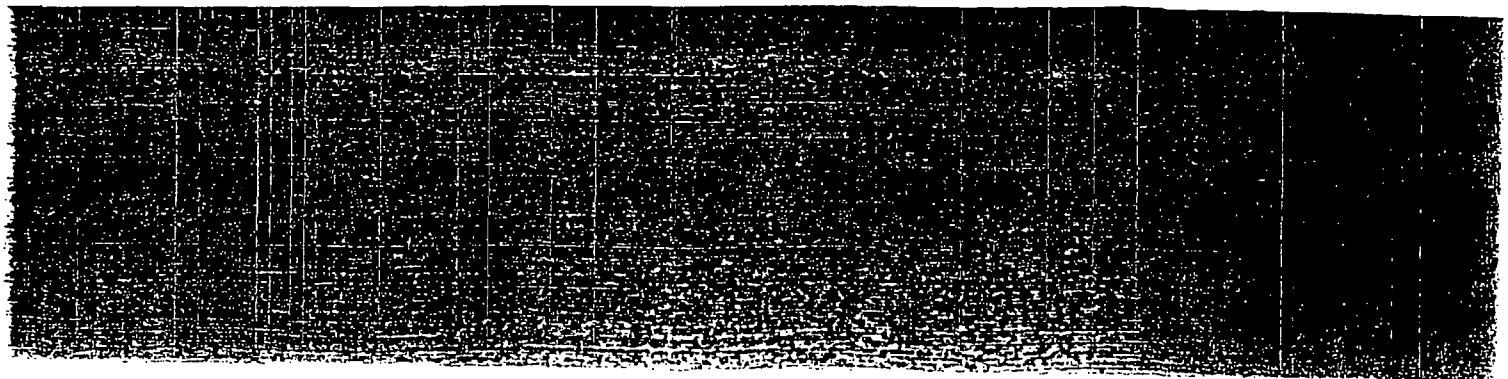

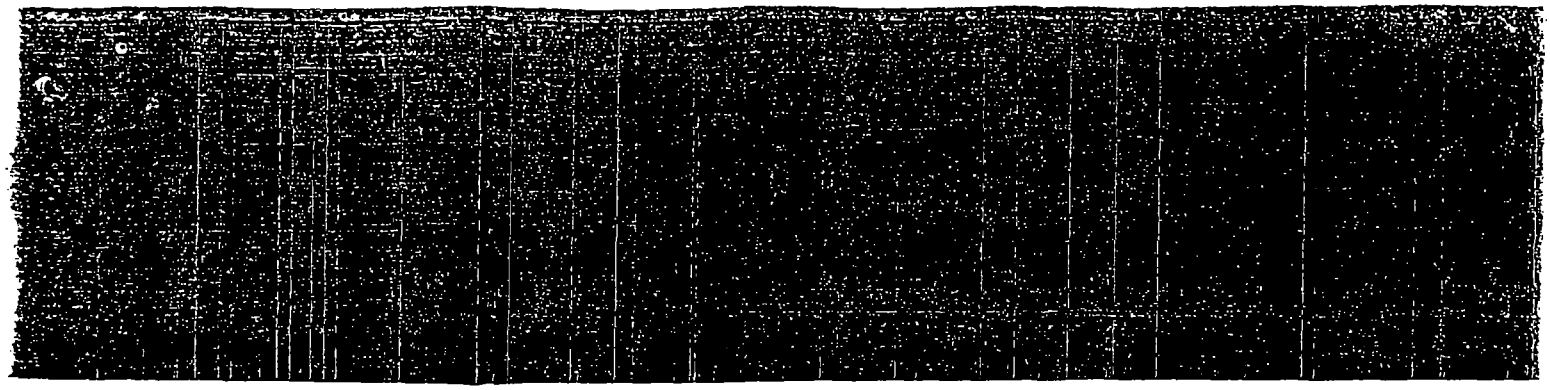

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state that the limestone is interbedded with clay and sandy clay, and describe a locally developed residual mantle of green calcareous clay which contains chert and limestone fragments and a few phosphate nodules.

Ketner and McGreevy (1959, p. 59-65) consider the Tampa Limestone to consist of three units, only two of which are present in Polk County. Their upper, so-called "phosphorite unit" lies north of this county and does not occur in the area of this investigation. In northern Polk, according to Ketner and McGreevy, the Tampa is represented by a limestone unit and a clay unit. The clay unit consists of "greenish-gray to brown clay containing well-sorted, very fine- to fine-grained quartz sand. Sand ranges from 5 to 80 percent, averaging about 35 percent." They further state that the clay unit "apparently grades into the limestone unit of the Tampa about where the limestone unit of the Hawthorn Formation appears." Their limestone unit of the Tampa is described from an exposure in the Tenoroc Mine of the Coronet Phosphate Co., northeast of Lakeland, as being "fossiliferous, yellow, somewhat soft, clayey, and sandy. The sand consists of very fine- to fine-grained quartz and sand- to pebble-sized, rounded, polished phosphorite nodules." They do not describe the areal extent of the limestone unit, but identify it in two drill holes.

Carr and Alverson (1959, p. 14-33) present the most complete studies and discussions of the Tampa in recent years and extend the formation eastward from Tampa Bay as far as central Polk County. According to these authors, the Tampa is a white to light yellow, soft, moderately sandy and clayey, locally phosphatic, finely granular, and locally highly fossiliferous limestone. They state that both marine and fresh water limestones are present, and that both upper and lower contacts of the formation are erosional unconformities. Further, they state that limestone commonly interfingers with calcareous sandy clay which may be equivalent to, or be, the Chattahoochee facies of Puri (1953b, p. 20). If so, this is the first such recognition in this area. They describe a section of the formation near the Hillsborough River Dam as illustrating the interfingering of the clay and limestone beds. They state—"Most clayey beds in the Tampa limestone are small lenses, but several wells in Polk County, including two drilled in 1952 at the Davison Chemical Corp. in western Polk County, were drilled through about 50 feet of rather uniform greenish-gray dolomitic sandy clay. This unit is tentatively placed at the base of the Tampa; in the Davison wells it

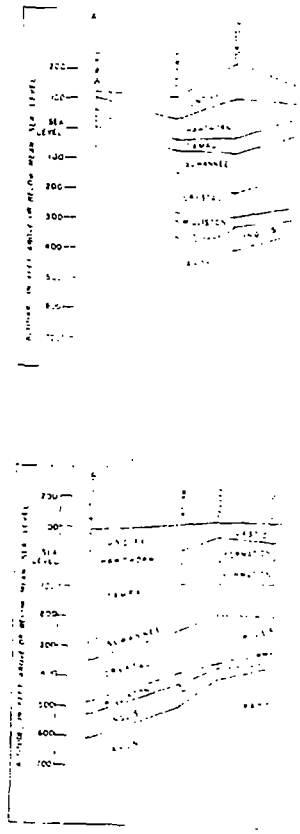
rests in sharp contact upon pure, white limestone containing *Cassidulus gouldii* (Bouve). The wells in which the unit was noted roughly delimit an area with corners near Mulberry, Lakeland, Winter Haven, and Fort Meade." The Davison wells referred to here are wells 754-155-1 and -3 of this report.

The Tampa Formation has been identified in relatively few wells in this county. Open-file logs of the Florida Geological Survey by E. W. Bishop and R. O. Vernon identify the Tampa Formation from faunal evidence in a well south of Frostproof (742-131-2), and a well at Lake Wales (753-134-4). Examination of cuttings of the thick Miocene section in a well southwest of Lakeland (801-200-3), revealed no limestone in the Tampa Formation. Cuttings from wells 754-155-1 and -3 were studied and no evidence was found on which to base identification of Tampa limestone units in these wells as identified by Carr and Alverson (1959, p. 25, and fig. 7).

Field evidence obtained during the earlier phases of this investigation (Stewart, 1959, p. 22) did not justify an identification of limestone in the Tampa in northwestern Polk County. A slightly sandy limestone, similar in lithology to early descriptions of the Tampa was noted in northwestern Polk, and was tentatively placed in the Tampa. This has since been identified as Suwannee Limestone. The same report (Stewart, 1959, p. 23) also included in the Tampa Formation a "variegated (blue-gray or blue-green and cream) silty sandy clay" which was thought to overlie the limestone unit of the Tampa.

Figures 6 and 7 are geologic sections showing the formations penetrated by wells in the Polk County area. These sections were constructed from electric and sample logs. Data for the cased sections in wells were interpreted from drillers' logs. In order to identify the Tampa Formation in Polk County, it was necessary to examine logs in southwestern Hillsborough County where the Tampa Formation is better known and well defined. The correlation of the Tampa Formation in the Polk County area is based on electric logs from Hillsborough County.

In the Hillsborough County wells, the Tampa consists of a limestone unit approximately 80-110 feet thick, and an overlying sequence of interbedded, bluish to greenish gray sandy clays with stringers of sandy limestone and calcareous sandstone which may be weathered limestone remnants. The limestone unit overlies, and is in direct contact with, the Suwannee Limestone. The clay unit of the Tampa underlies limestones of the Hawthorn Forma-



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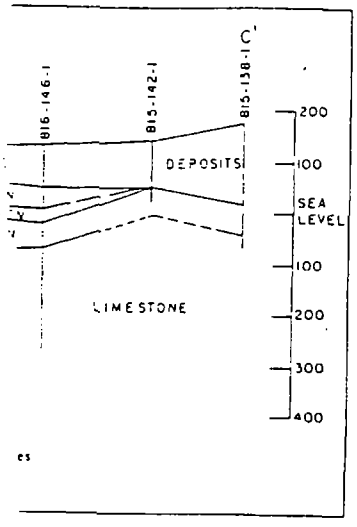

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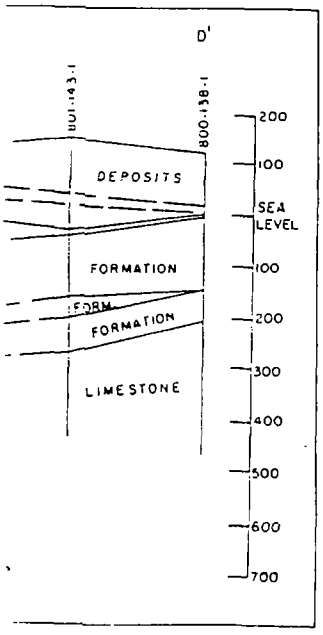

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formation become thinner northward. This thinning is probably due to deposition rather than to removal by erosion. In eastern Hillsborough and western Polk County the Tampa changes up-dip, from a predominantly limestone sequence to a predominantly clay sequence, and becomes the well-known "blue-clay" of local drillers, the 50 feet of greenish-gray sandy clay of Carr and Alverson (1959, p. 25), and the variegated sandy clay of Stewart (op. cit.). Possibly this clay is also related or identical to the "residual mantle of green calcareous clay" of Cathcart and McGreevy (1959, p. 228), and to the "clay unit" of the Tampa Limestone as described by Ketner and McGreevy (1959, p. 64).

The electric logs available do not indicate any significant change in character in the rocks above the blue clay of the Tampa, and it is believed that in Polk County these generally constitute only the Hawthorn Formation.

To summarize, in Polk County the Tampa Formation is generally composed of a bluish- to greenish-gray, calcareous, locally phosphoritic, sandy, shaley clay that contains lenses, fragments, and occasional thin beds of white to gray sandy limestone. The blue clay unit of the Tampa was found to be more extensive than stated by Carr and Alverson (1959, p. 25). This unit underlies the limestone members of the Hawthorn Formation in all but local areas along the northern edge of that formation, and east of the Lake Wales ridge.

The Tampa Formation ranges in thickness from about 10 feet in well 805-155-2 to about 80 feet in well 752-150-1, although possibly even greater thicknesses exist.

The blue clay in the Tampa Formation is important in the hydrology of the area because it is the lower confining bed of one artesian aquifer and the upper confining bed of another.

The interpretations of the Tampa Formation in the present investigation tend to agree with those of Carr and Alverson (1959, p. 21), postulating the existence of Puri's (1953b, p. 19-21) Chattahoochee facies of the Tampa stage of the Miocene Series in peninsular Florida.

HAWTHORN FORMATION

In Polk County the Hawthorn Formation consists of massive, interbedded sandy limestones and sandy clays which are not individually distinctive. The clays are soft, sandy, phosphatic, and usually a gray to dark bluish- or greenish-gray. The limestone beds are light-cream to yellow or tan, very hard to soft,

very sandy, clayey, and phosphatic. The beds are areally extensive but not really identifiable or distinguishable. Some of the beds appear to be nonfossiliferous but where the beds are fossiliferous, they contain casts and molds of large marine mollusca, silicified and phosphatized bones, and a few silicified shells. In mine pits east of Lakeland, the invertebrate fossils occurred in definite zones or beds that were traceable across the mine.

Generally the basal limestone units have been dolomitized and are highly crystalline, hard, and resistant. This characteristic shows on the electric logs as a zone of very high resistivity and appears to be a more massive bed, as much as 20 feet thick. Along the northern edge of the formation the limestones are more highly weathered and earthy, and the dolomitic beds are less pronounced. Thickness of the formation differs greatly over the county, ranging from a few feet thick immediately north of the Lake Parker area to about 160 feet thick in well 747-158-3 at Bradley Junction. This is perhaps the greatest thickness in the county.

The upper 2 to 10 feet of Hawthorn limestone were exposed occasionally in 1954-55 during mining operations in the Saddle Creek Mine just north of U.S. Highway 92 near Saddle Creek. A number of sections were measured, described, and photographed in these mines. Mining has since terminated in this location and all of the sections described have been mined-out, buried, or flooded. The upper surface of the limestone in these pits is usually highly eroded and overlain by 1 to 6 feet of brown, sandy, gritty clay. Locally the limestone is overlain by brown, well-indurated, clayey, sandstone which, in places, fills the irregularities on the limestone surface. In a few small areas the limestone is overlain unconformably by lenses of white to dark-green, massive, dense, blocky clay. Both the clayey sandstone and the dense clay are included in the Hawthorn Formation.

The limestones are sufficiently permeable to supply water for domestic and small irrigation requirements, and locally they contain well-developed solutional cavities which enable them to yield large quantities of water.

The Hawthorn Formation overlies the Tampa Formation unconformably, and unconformably underlies sands and clays of Miocene to Recent age.

UNDIFFERENTIATED CLASTIC DEPOSITS

Overlying the limestones of the county are sands, clays, clayey sands and sandy phosphatic clays. The age of these materials ranges from middle Miocene to Recent.

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PHOSPHATE DEPOSITS

Over much of the area lying west of the northern unit of the Winter Haven ridge and the southern part of the Lake Wales ridge, and generally south of the latitude of Polk City, the Hawthorn Formation is overlain by sandy clays containing pebble phosphate, which are in turn overlain by sandy clays and sands that have been largely leached of their original phosphate content. In part, these phosphate-bearing beds are a weathered residuum of the Hawthorn Formation, and in part constitute the Bone Valley Formation generally considered to be of Pliocene age.

North of the latitude of Polk City and west of the Lake Wales ridge, outside of the general pebble-phosphate area, the limestones are overlain by sandy clays which have variously been described and placed in the Alachua, Tampa, and Hawthorn Formations by Vernon (1951), Cathcart and McGreevy (1959), and Ketner and McGreevy (1959), respectively. For the most part these sandy, slightly phosphatic clays are not readily identifiable in the field as to formation.

In the area generally east of Polk City, Winter Haven, and Frostproof, and south of Polk City and Haines City, the limestones are overlain by sandy, slightly phosphatic clays, and marls, or by clayey sands. In general, these materials are less dense than the phosphate-bearing clays in the western part of the county. These clays function as a confining bed for the artesian aquifers developed in the limestones of the county.

In the remaining part of the county, north and east of Haines City, the limestones are overlain by generally less clayey and more permeable marls and sands. In the north end of the Lake Wales ridge and other parts of this area, the limestones are overlain by relatively clean or only slightly clayey sands.

COARSE CLASTIC DEPOSITS

Overlying the clays in some areas of the county is a deposit of clayey, poorly- to well-indurated, quartz sand which is generally white and very clayey in its lower portion and red to purple to orange and less clayey in its upper portion. These sands are micaceous and contain stringers and beds of discoid quartzite pebbles. Bishop (1956, p. 26) describes these sediments as grading downward into the Hawthorn Formation in Highlands County to the south of Polk and as a deltaic unit of that formation. Pirkle (1957, p. 21) describes them in Alachua County as a marine deposit of probably Pleistocene age. Ketner and McGreevy (1959, p. 71–

73) discuss this unit, and assign it to the late middle Miocene or the early late Miocene.

The unit is very thick in the Lake Wales ridge. However, the unit appears to be absent from well 811-138-3 and others along this ridge. It is found in many lowland locations, though it is most prominent in the ridge areas. For example, remnants of the unit constitute the many low hills and knobs along Fla. Highway 33 in the area north of Polk City.

The unit is used locally as a source for small domestic water supplies and is a part of the nonartesian aquifer. It is of considerable importance to the hydrology of the county because of the high storage capacity available and resultant recharge to the underlying limestones.

The entire county is blanketed by unconsolidated quartz sands, on which the present soils have developed. These deposits have been customarily assigned to the Pleistocene, as marine terrace deposits. Recently, however, Altschuler and Young (1960, p. 202-203) have established that the surface sands in the Lakeland Ridge and the phosphate-mining area of west-central Polk County are "mainly an insoluble residue of lateritic alteration of the Bone Valley formation, and not a transgressive Pleistocene deposit." The observed lack of marine terraces, shorelines, or related topographic features at supposed terrace elevations in this part of the county strongly supports these findings.

Some terraces do exist in the eastern part of the county. These are best developed and preserved on the east flank of the Lake Wales ridge, south and east of the city of Lake Wales.

STRUCTURE

The rocks in Polk County dip at low angles and thicken to the southeast, south, and southwest, from the north-central part of the county around the southern end of the Ocala uplift. This broad dome, or regional anticline, is developed in the Tertiary formations of northern and central Florida, and it has been mapped and discussed in considerable detail by Vernon (1951, p. 47-58, and plate 2).

The Ocala uplift is an elongate dome whose long axis trends northwest-southeast on an approximate line from Cross City, Dixie County, to Haines City in northeastern Polk County. According to Vernon (1951, p. 53) the structurally highest point on the crest of the uplift is in eastern Citrus and Levy counties.

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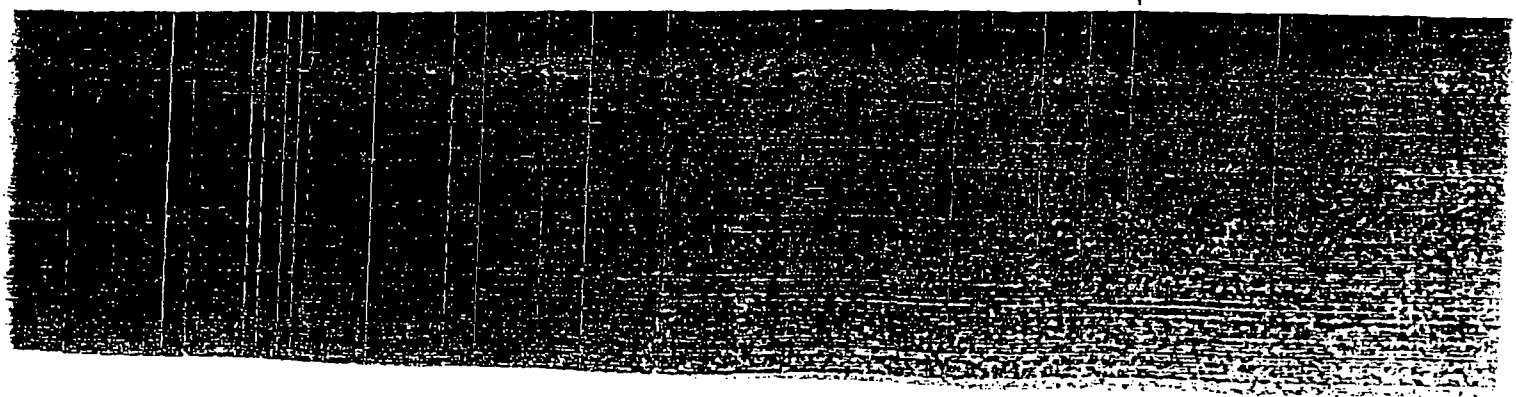

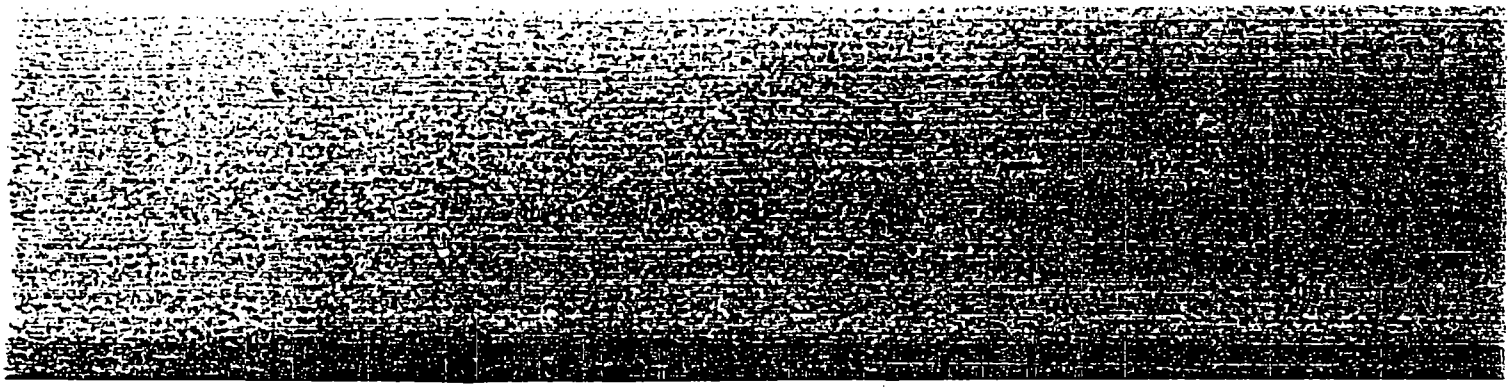

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In addition to this series of features, three separate caverns were penetrated in the Avon Park Limestone in well 801-200-3: these were in the intervals of 440-445 feet, 540½-547½, and 729½-731½ feet, respectively. The upper cavern (440-445 feet) was underlain by quartz sand and mud fill from 445-455 feet. The middle cavern was apparently underlain by 105½ feet of soft mud and sand fill, and/or very soft honeycomb limestone, because casing was set through this interval without drilling.

Limestone-filled solutional cavities were also found in the upper surface of the Suwannee Limestone in well 801-200-3. After development of the solutional features, the surface of the Suwannee was replaced by chert. Limestone of Miocene age [Tampa (?) Formation] which contained numerous *Sorites sp.* was then deposited and filled the preserved solutional features.

No significant solutional features, other than some fine honeycomb, were observed in the soft, chalky, highly calcareous Suwannee Limestone or Crystal River Formation in wells 801-200-3 and 805-154-8.

SINKHOLES

Undoubtedly the most spectacular surficial evidence of solutional activity is the formation of collapse sinkholes. Thirty active sinks were recorded in west-central Florida from 1953 to 1960. Nineteen of these have occurred in Polk County, including those referred to by Stewart (1959, p. 13-16), and all of these are listed in table 5. Location of these sinkholes are shown in figure 10.

Because of the relatively small diameter and observable depth, all of these sinks are believed to have had their origin in the upper-most limestone of the area concerned. Study of the data in table 5 and the piezometric, structural, and geologic maps presented elsewhere in this report indicate a wide variety of local conditions at the different sites. None of the sinks occurred on local topographic highs. Land surface at the sites did not exceed 150 feet above sea level. Land surface at 13 sites is 70 feet or less above limestone; at 5 sites the depth to limestone ranged from 100 to 225 feet. Only six sites were not closely associated with, or adjacent to, pre-existing sinkhole areas. Figure 11 shows two of the sinkholes developed recently in the county.

Between 1953 and 1960, 11 sinks were formed in adjacent Hillsborough, Pasco, and Hernando counties, and probably others occurred elsewhere. Though most of these sinks have been of

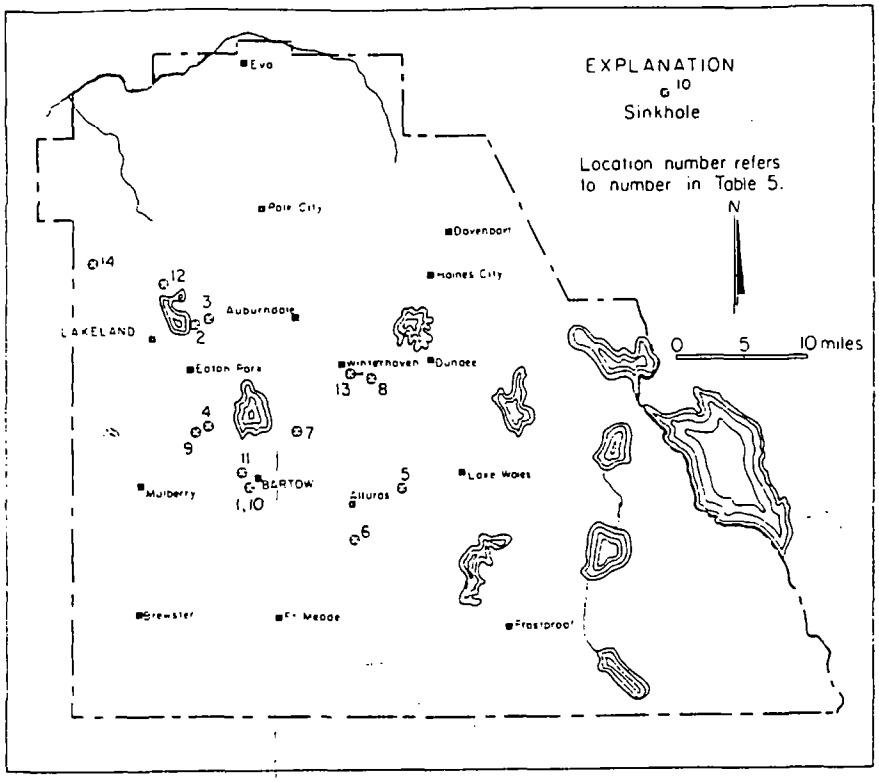

Figure 10. Map showing location of recent sinkhole collapses.

small dimensions their sudden appearance has caused considerable local alarm. The formation of sinkholes is a completely natural occurrence and perhaps most vividly illustrates the principal geomorphic process operating in this area. Other such collapses in the future are a certainty.

The multitude of round, closed-in basin lakes in central Florida and Polk County are widely held to be of sinkhole origin, and as such are evidence of considerable solutional activity in the geologic past. Though many of them may have occurred prior to the historic past, they are none the less spectacular due to their size and numbers. The smaller lakes in Lakeland, such as Lakes Mirror, Wire, and Morton, are almost certainly single sinks. Because of their very circular shoreline, larger lakes, such as Hollingsworth in Lakeland, Ariana in Auburndale, and Howard in the City of Winter Haven, and scores of others in the county, are also believed to be single sinks. A number of large lakes, with

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TABLE 5. Records of the occurrence of recent sinkholes in Polk County
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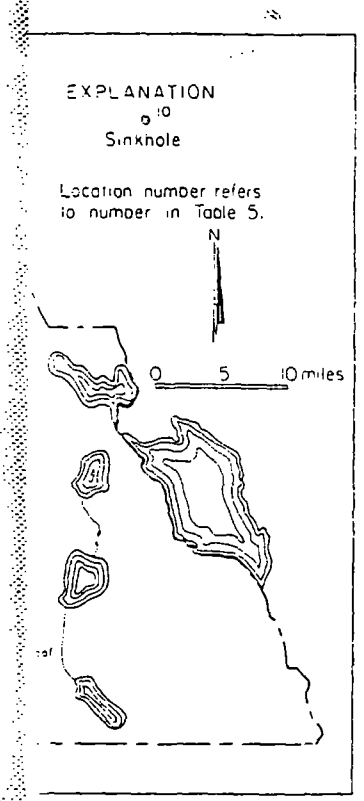

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TABLE 5. Records of the occurrence of recent sinkholes in Polk County
(Reported data shown by "r")

Location Number (on fig. 13)	Date of collapse	Mode of occurrence	Diameter in feet at land surface	Depth in feet below land surface	Altitude in feet above land surface	Quarter section	Section	Township south	Range east	Nearest town
1	1953–51 (1)	Instant	8–12	12–40 r	115±	SE	6	30	25	In Bartow
2	4– –54	do	8 r	8 r	130	NE	7			
3	9– –54	do	22	4+	110±	NW	15	28	24	Lakeland
4	5–8–55	do	30	30	135	NW	11	28	24	Lakeland
				(40 r)		SW	14	29	24	Highland City
5	4–7–56	do	83	20+	120	NE	7	30	27	West Lake Wales
				(40 r)						
6	4– –56	do	40 r	4 r	175±	NW	31	30	26	Alturas
7	4–9–56 (2)	3 months	30	1–15±	126	NW	23	29	25	Bartow
		2 hours	100	35						
8	4–10–56	Instant	75 r	10 r	130±	SE	31	28	26	Winter Haven
9	7– –57	do	50	16+	150	NW	22	29	24	Lakeland
10	9–10–57	do	8 r	10 r	115	NE	7	30	25	In Bartow
11	11–8–58	do	60 r	40 r	100±	SW	6	30	25	Bartow
12	4–17–59	do	5	9–10	140	SW	30	27	24	Lakeland
13	5–5–59	do	70 r	40 r	130	NE	33	28	26	Winter Haven
14	5–28–60	do	30	unknown	110	SW	17	27	23	Kathleen

aeration, and reached the zone of saturation. The ground water then moves laterally, under the influence of gravity, toward places of discharge such as wells, springs, streams, lakes, or the ocean. Where hydrologic conditions permit, some of the water may move downward into other underlying aquifers.

An aquifer is a formation, group of formations, or part of a formation, in the zone of saturation, that is permeable enough to transmit usable quantities of water. Ground water may occur under either nonartesian or artesian conditions. Where the upper surface of the zone of saturation, called the water table, is free to rise and fall it is said to be nonartesian. Where the water is confined in a permeable bed between less permeable beds, so that its surface is not free to rise and fall, it is said to be artesian. The term artesian is applied to ground water that is confined under sufficient pressure to rise in wells above the top of the permeable bed that contains it, though not necessarily above the land surface. These less permeable beds are called confining beds.

The height to which water will rise in a tightly cased artesian well is called the artesian pressure head. The imaginary surface coinciding with the water levels of artesian wells is called the piezometric surface. This surface is generally represented on a map by contour lines that connect points of equal altitude of the pressure surface. Water in an artesian aquifer moves from areas of high artesian pressure toward areas of lower artesian pressure, at right angles to the contour lines representing the piezometric surface. Where the contour lines enclose an area of high water levels (high artesian pressure), the flow is away from the area on all sides. The artesian aquifer is being replenished in such an area. Conversely, where the contour lines enclose an area of low water levels, water is flowing into the area from all sides and is being discharged from the aquifer. Areas in which aquifers are replenished are called recharge areas; areas in which water is lost from aquifers are called discharge areas.

NONARTESIAN AQUIFER

CHARACTERISTICS

In Polk County ground-water supplies are obtained from four different aquifers, which were first recognized by Matson (Matson and Sanford, 1913, p. 389). The uppermost of the four aquifers is in the unconsolidated sand and clayey sand at, and just below, land surface. These sands cover the entire county and, together with the underlying coarse clastics where present, form the non-

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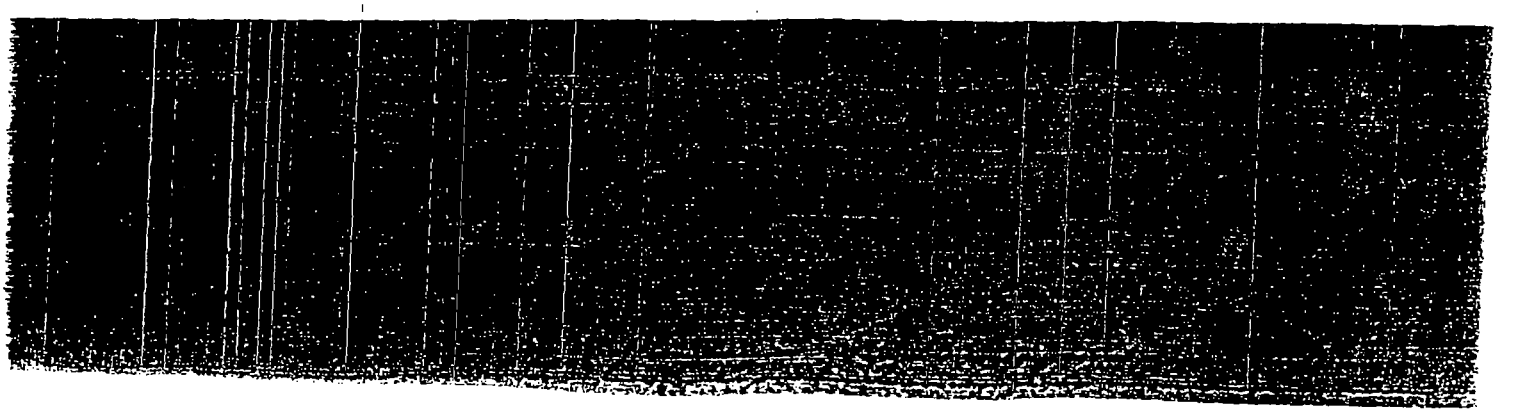

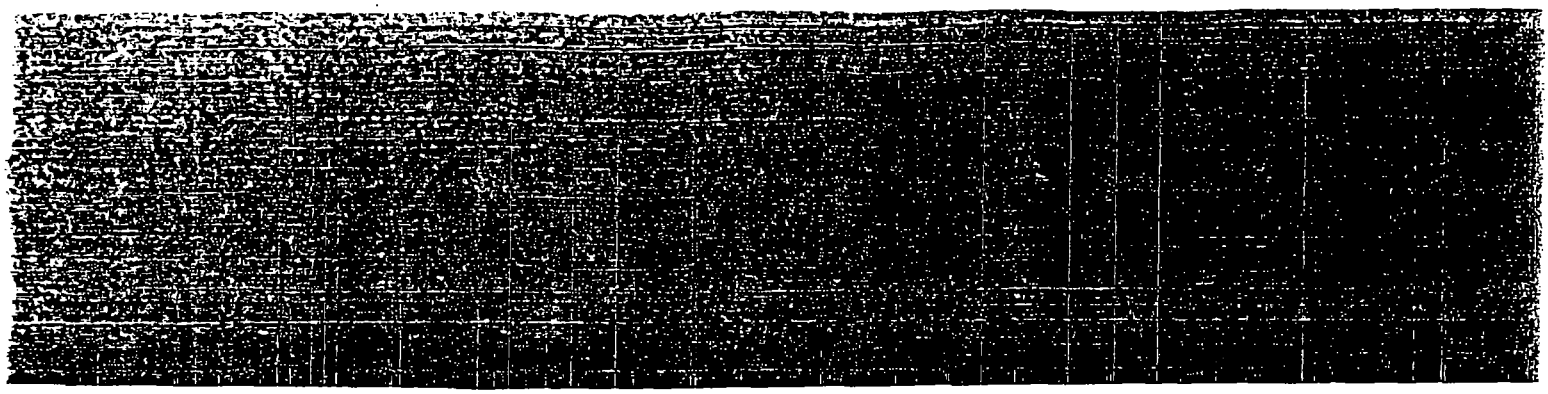

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lies are obtained from four ognized by Matson (Matson most of the four aquifers is y sand at, and just below, entire county and, together here present, form the non-artesian aquifer. The aquifer is used for domestic supplies and for irrigation purposes requiring relatively small amounts of water. Tubular wells in this aquifer range from 1¼ to 4 inches in diameter and from 7 to 35 feet in depth; there are also a few dug wells and pits in use. Hand (pitcher) Pumps are commonly used for domestic purposes, and gasoline-driven suction pumps are used for irrigation. The irrigation wells usually do not produce more than 20 to 30 gpm (gallons per minute), though several are known to produce 100 gpm or more.

Wells are commonly constructed by driving small-diameter pipe into this aquifer. The sand is then cleaned from the pipe, and the well is deepened by water-jetting. There are very few dug, sand-point, screened, or gravel-packed wells in the county. Wells in the aquifer, as locally constructed, rarely retain their original depth because the loose sand will not stand in the walls of an open hole.

The thickness of the aquifer differs widely over the county, and generally ranges from a few inches to 250 feet. However, extreme thicknesses of 300-600 feet or more are reported along the eastern side and on the crest of the Lake Wales ridge (fig. 4, wells 755-134-1, 801-136-2, 818-140-1, 820-140-1). Clay content, and hence porosity and permeability, likewise differ widely over the county.

Figures 13 and 14 show the water levels in, and the locations of, some of the nonartesian wells in the county. Though a great number exist, there were not enough to provide the amount of control necessary for a reasonably accurate map of the water table of the entire county.

WATER-LEVEL FLUCTUATIONS

During the course of this investigation, water levels were measured periodically in several wells in the nonartesian aquifer, and continuous recorders were installed on others. Hydrographs of representative wells in this aquifer are shown in figure 15. The well illustrated in figure 15 is a part of the permanent network of observation wells maintained in the state, and records of the water levels have been previously published in Water-Supply Papers of the U.S. Geological Survey under the well number Polk 47. Additional water-level data from wells in this aquifer in Polk County have been previously published (Stewart, 1963, table 4).

Water-level fluctuations in this aquifer are due to (1) recharge by rainfall, and (2) discharge by natural gravity flow down gra-

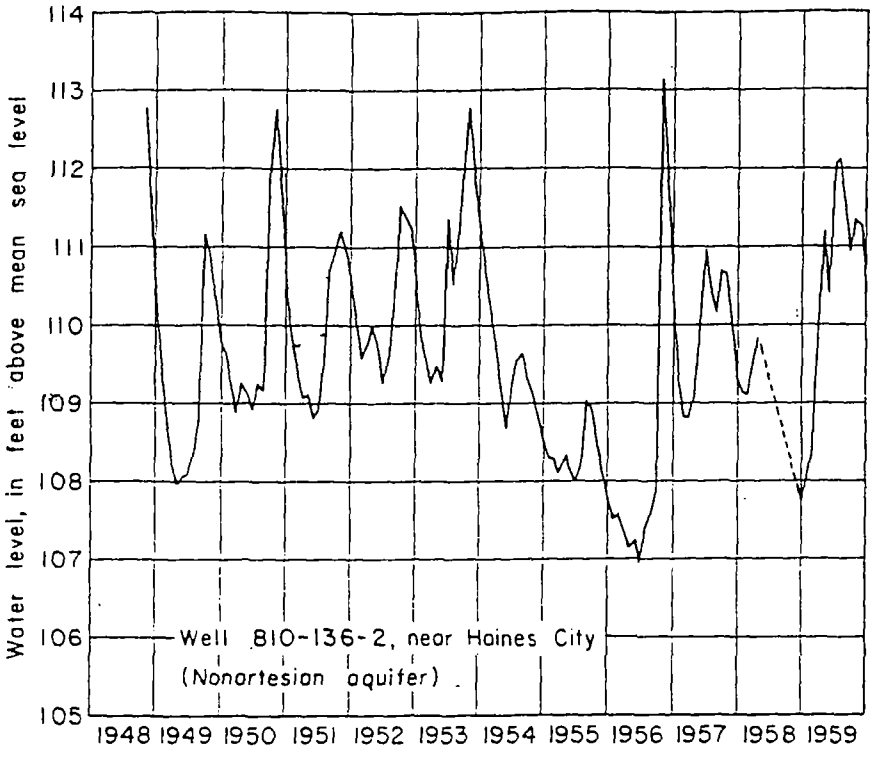

Figure 15. Hydrograph showing fluctuations of the water table in a well near Haines City (810-136-2) in the nonartesian aquifer.

UPPERMOST ARTESIAN AQUIFER

The pebble phosphate deposits that immediately underlie the surficial sands of the Lakeland-Auburndale area form an artesian aquifer of undetermined thickness and areal extent which is referred to as the "uppermost artesian aquifer" in this report. The aquifer is in the coarse, sandy, phosphatic gravel zones (matrix) of the phosphate deposits, and is confined above by the heavy dense clays of the Bone Valley Formation, and below by clays which may be either of the Bone Valley or Hawthorn Formations. The few wells penetrating this aquifer are located on the lowland between Lakeland and Auburndale, and are similar in construction to wells in the nonartesian aquifer. Near Saddle Creek the piezometric surface of this aquifer is near the level of the water table (figs. 13 and 14). Generally, however, it is 3 to 6 feet below the water table.

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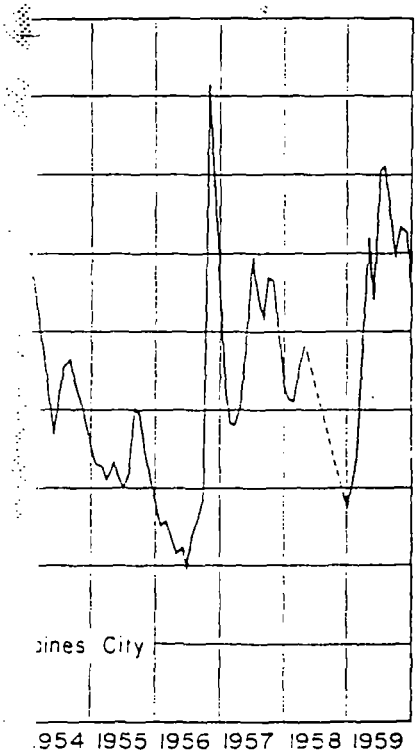

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In the southern part of the pebble phosphate fields (Bartow-Homeland–Ft. Meade, fig. 4) the aquifer may be more productive because it is generally thicker and coarser. In that area, the piezometric surface may be intimately related to the nonartesian aquifer because the upper confining bed is more porous than in the Saddle Creek area. Well data from the southern part of the mining area are very few. Though well data are lacking, similar artesian conditions may exist elsewhere in the county in the sands and clays generally overlying the limestone surface. Such occurrences may be of local nature and unrelated to the geologic units present in the Saddle Creek-Peace River mining area.

Water-level observations made during the drilling of deep wells in the Lakeland area indicate that the piezometric surface of this aquifer is higher than that of the aquifers below it.

SECONDARY ARTESIAN AQUIFER

CHARACTERISTICS

The secondary artesian aquifer which is formed in the limestone members of the Hawthorn Formation is used much more than either of the two aquifers previously described. It is confined above by the clays in the upper part of the Hawthorn Formation or the lower part of the Bone Valley Formation, and is confined below by the blue clay of the Tampa Formation.

The aquifer is present over much of the county south of Polk City. Along much of the northern boundary the limestones are 10 feet or less in thickness, and are soft and deeply weathered. Permeabilities in such locations (wells 805-153-2, 805-156-1, 806-156-1) are very low. Isolated areas in which these limestones have been removed by erosion exist miles south of the general boundary indicated.

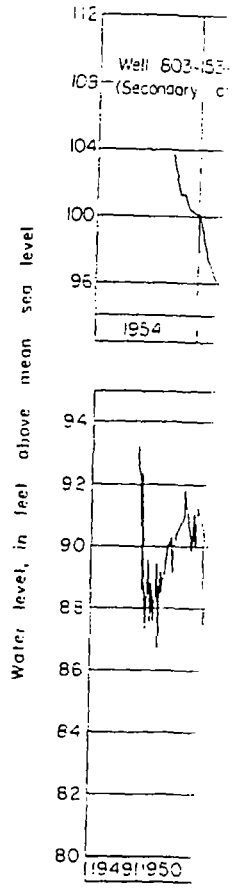
An aquifer within the Hawthorn Formation is also reported in recent investigations of other parts of central Florida. Bermes (1958, p. 19-20) refers to this aquifer as the "Shallow artesian aquifer" in Indian River County; Peek and Anders (1955, p. 20), and Peek (1958, p. 26), report a separate artesian aquifer in these limestone units in Manatee County; Klein (1954, p. 22) likewise reports a separate artesian aquifer in the limestones of the Hawthorn Formation in the Naples area of Collier County. All of these authors find that the pressure head in these aquifers is 5 to 20 feet below that of the underlying Floridan aquifer, in the areas

concerned. Peek and Anders (op. cit.) note that the difference in head appears to decrease eastward in Manatee County.

In Polk County many wells draw water from this aquifer in the lowland of Saddle Creek and the Peace River, and these are used for domestic supplies and truck-farm irrigation . Others, used almost exclusively for domestic supplies, are scattered over the southern two-thirds of the county. Locally, a few large diameter citrus irrigation wells produce large quantities of water from this aquifer. Such production is possible because these wells penetrate large solutional caverns in the limestones. Generally wells in this aquifer range from 1¼ to 6 inches in diameter and from 30 to 75 feet in depth. Wells that utilize this aquifer in the southern part of the county and in the ridge sections are considerably deeper because of the dip of the formations and the altitude of land surface. The casing of wells drilled into this aquifer usually terminates in the uppermost part of the limestone, but in some wells it is driven only into the clays of the overlying formations. This latter practice may lead to eventual collapse of the clays and clogging of the wells.

In lowland areas, water levels in wells open only to this aquifer are generally 5 to 10 feet below the water table and are also below water levels in the uppermost artesian aquifer where it is present. In the ridge areas the water level may be more than 100 feet below the water table because of the higher altitude of land surface. Figure 16 shows hydrographs of wells which are open only to the secondary artesian aquifer. Well 744-131-1 is one of the permanent network of observation wells in use by the U.S. Geological Survey, and annual water-level data have been previously published in Water-Supply Papers of the Survey under the well number Polk 51. Additional water-level data has been published by Stewart (1963, table 6). The hydrographs from widely separated wells in this aquifer correlate closely, and the very local effect of pumping causes only slight variations in the general pattern of the water-level fluctuations.

Locally the secondary artesian and the Floridan aquifers are in direct contact or relatively better hydraulic connection through faulting, jointing, buried sinks, areas of artesian flow, or areas in which the clay of the Tampa Formation is absent. The water level of the secondary artesian aquifer will equal or closely approach that of the Floridan aquifer in these areas. However, a short distance from such areas the secondary aquifer resumes its separate identity.



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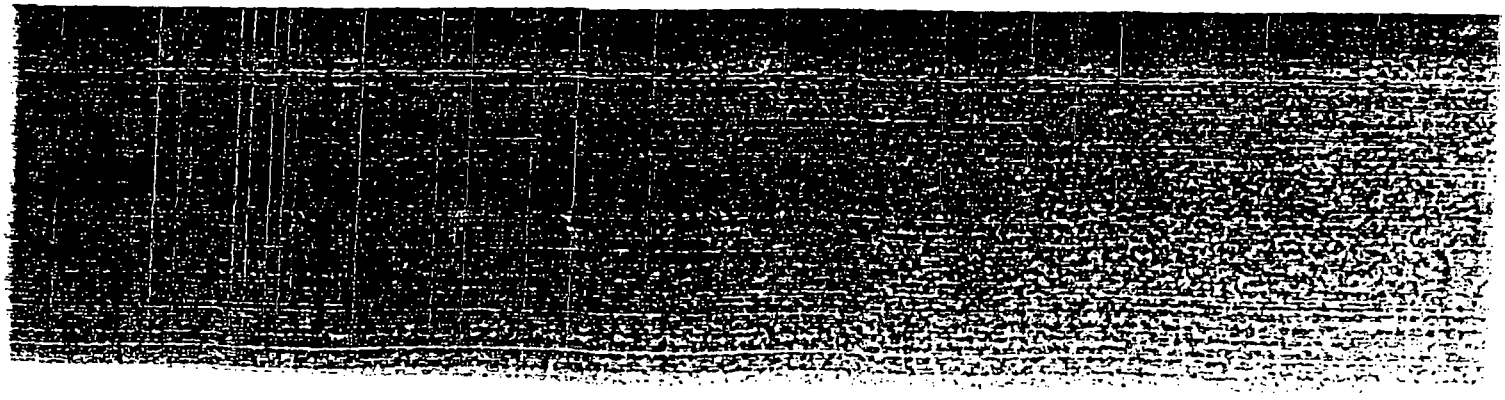

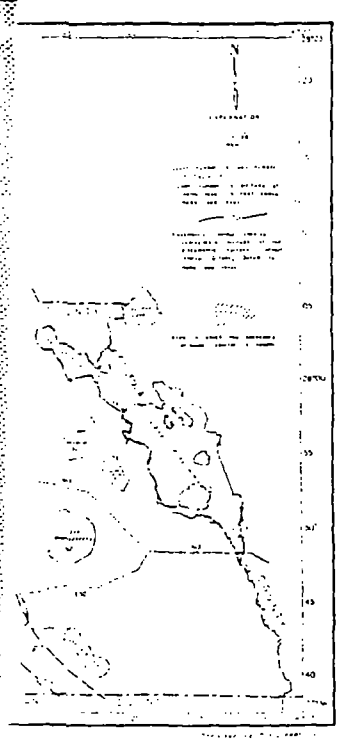

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levels in that area were reported to have been about 2 feet above land surface in 1948, but they had dropped to about 11 feet below the surface by 1956. In 1959 they closely approached land surface for brief periods, and generally were about 2 feet below land surface. The area of artesian flow apparently extended about three-fourths of a mile on either side of Saddle Creek; its north-south extent is unknown. The area of flow was described by Sellards and Gunter (1913, p. 263), and Matson and Sanford (1913, table facing p. 390) reported a flowing well in this area.

It is likely that flowing wells could be obtained along the valley of the Peace River from the southern county line north midway to Lake Hancock. Observations of ground-water leakage in the secondary aquifer in the vicinity of well 745-147-1 (fig. 19), in August 1958, showed that water levels rise rapidly toward high ground up the valley wall, and the area of artesian flow may be less than 100 feet wide in some places. Progressively lower flow and head may be expected upstream; and in the vicinity of Lake Hancock, wells probably would only flow during brief periods of very high ground-water levels.

WATER-LEVEL FLUCTUATIONS

The range of water-level fluctuations in wells in the aquifer differs widely over the county. The causes of the greatest fluctuations are due to recharge and to pumping from the aquifer. The hydrographs of wells show net changes from highest to lowest water levels of record of 9.4 to 24.5 feet in individual wells. The maximum annual fluctuation in these wells ranged from 7.3 to 17.9 feet.

FLORIDAN AQUIFER

CHARACTERISTICS

The principal aquifer in the area of this investigation is the Floridan aquifer, which consists of a series of limestones that range from middle Eocene to Miocene in age. It is an artesian aquifer and is the source of all major public, industrial, and irrigation water supplies in the county. The name Floridan aquifer was introduced by Parker (Parker and others, 1955, p. 189) to include "parts or all of the middle Eocene (Avon Park and Lake City limestones), upper Eocene (Ocala limestone), Oligocene (Suwannee limestone), and Miocene (Tampa limestone and per-

meable parts of the Hawthorn formation that are in hydrologic contact with the rest of the aquifer." According to Cooper, Kenner, and Brown (1953, p. 17), this aquifer "underlies almost all of Florida, the coastal area of Georgia, and the southeastern-most parts of South Carolina and Alabama."

In Polk County the youngest (uppermost) member of the Floridan aquifer in a few areas is the limestone units of the Tampa Formation. In the northern and eastern parts of the county, the uppermost limestone member of the Floridan aquifer is the Ocala Group, most commonly the Crystal River Formation (fig. 5). In the remainder of the county the Suwannee Limestone is the upper member of the aquifer, although local thin limestones of the Tampa may be found. Wells penetrating the Floridan aquifer range from 2 to 30 inches in diameter and from 60 to 1,400 feet in depth.

Wells that are open to both the secondary artesian aquifer and the Floridan aquifer are multi-aquifer wells. They range from 3 to 12 inches in diameter, and from 70 to 850 feet in depth. Most of them are small diameter and are used for domestic and small irrigation requirements. Water levels in multi-aquifer wells are about the same altitude as those in wells open only to the Floridan aquifer. This is due to the higher permeability of the Floridan aquifer.

Unklesbay (1944, p. 13-14) reports that in Orange County the formations constituting the Florida aquifer act hydrologically as a unit, and that water levels in the upper part of the aquifer are the same as those in the lower part. Bermes (1958, p. 21) reports that the aquifer also functions as a hydrologic unit in Indian River County, on the Atlantic coast. Stewart (1959, p. 33) reported similar conditions in northwestern Polk County.

Peek and Anders (1955, p. 15), and Peek (1958, p. 26), report the existence of low permeability zones in the aquifer which retard vertical movement of water. Wyrick (1960, p. 27-28) shows extensive stratigraphic barriers within the aquifer in Volusia County. Bishop suggests that significant stratigraphic barriers also exist in the aquifer in Highlands County.

Table 7 is a compilation of water-level measurements made in Polk County. These data do not show significant changes in static water levels with increased depth of drilling in the Floridan aquifer. This indicates that the various formations comprising the aquifer have a free hydraulic connection, and that they function as a single aquifer. The changes actually observed and re-

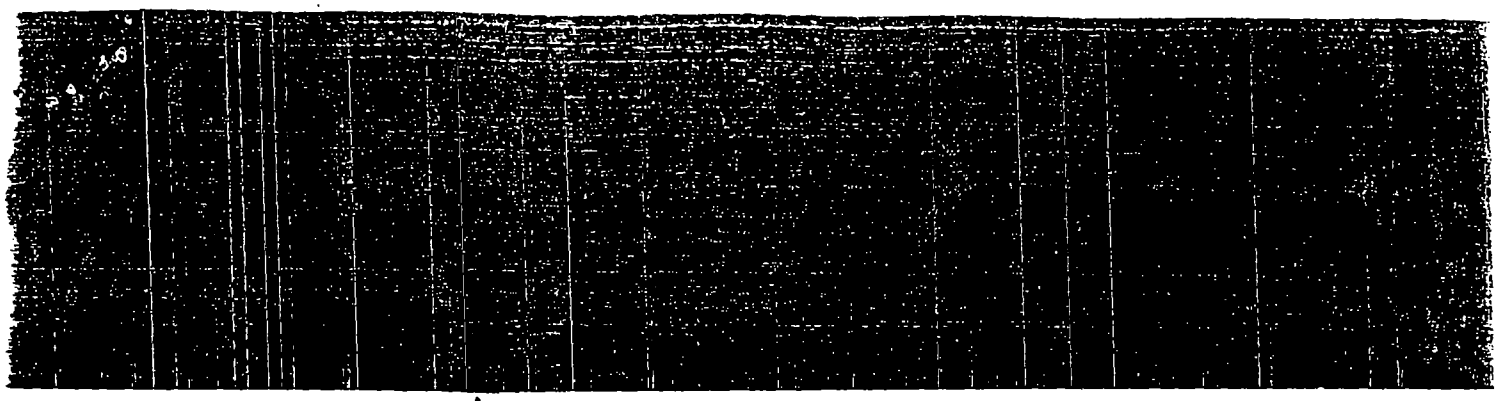
The highest coefficient of permeability determined from the core samples (field sample No. 16) is slightly less than the lowest value obtained for sand samples in this area (Stewart, 1963, table 9). This indicates that gross porosity and permeability of the limestones contributes very little water to a well, and that the very high capacity wells are supplied almost entirely by penetration of significant solutional features. Many of the samples tested contained visible solutional tubules or small cavities. The results also show that in 7 of 10 samples, the horizontal permeability exceeds vertical permeability as is generally expected in layered sediments. Horizontal and vertical permeabilities are equal in two other samples, and are nearly equal in a third (field sample No. 11).

RECHARGE

NONARTESIAN AQUIFER

The principal source of recharge to the nonartesian aquifer is local rainfall. Because of the high porosity and permeability of this aquifer, there is only a small amount of direct surface runoff. In low flat areas the aquifer is generally 3 to 20 feet thick, and with above-normal rainfall, the aquifer may become saturated in such areas. Under these conditions further recharge is rejected, and ponding and direct surface runoff occurs. In the ridge areas, however, the aquifer is as much as 250 feet or more in thickness and ponding and surface runoff do not occur except for brief periods during the most intense precipitation.

Thus, recharge to the nonartesian aquifer is essentially equal to rainfall minus evapotranspiration. In much of the broad Saddle Creek-Lake Hancock lowland the aquifer is only 1 to 4 feet thick and surface gradients are very low. Perennially ponded swamp or marsh conditions exist over much of the area, probably due partly to upward discharge of water from underlying artesian aquifers. Though the aquifer is thicker (10 to 50 feet) in much of the county north of Lakes Lowery and Parker (fig. 14), topographic gradients are about 30 feet per mile, and surface drainage is poorly developed. Perennial swamps and ponds exist over much of that part of the county, and large additional parts of the area are marshy or spongy and nearly saturated except in definite dry periods. The swampy conditions in the northern part of the county, therefore, reflect rejected recharge.



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All evidence in the county indicates that the water table in the nonartesian aquifer is the true top of the zone of saturation, and that unsaturated zones do not exist between it and the rocks now known to constitute the Floridan aquifer (base of the Avon Park Limestone).

UPPERMOST ARTESIAN AQUIFER

No data are available on recharge of the uppermost artesian aquifer, but it is inferred from water-level relationships that the aquifer is recharged largely, if not entirely, by downward percolation of water from the nonartesian aquifer.

LIMESTONE AQUIFERS

The piezometric highs in figures 19 and 20 show that recharge to the secondary artesian and Floridan aquifers is occurring over broad areas of the county. Because these aquifers are essentially buried by the nonartesian aquifer and other unconsolidated deposits, recharge to them can only occur by water percolating downward through the overlying deposits.

The approximate total amount of water recharging the secondary artesian and Floridan aquifers in Polk County may be estimated by subtracting runoff and evapotranspiration from rainfall. For these purposes the data of 1959 was used and it was assumed that there was no change in storage. In arriving at the total recharge, therefore, precipitation at the nearest Weather Bureau stations outside of the county in each of the basins were also used. Stations within the county, being nearer to the headwaters areas of the streams, were given twice the weight of those outside of the county. Out-of-county stations used were Clermont, St. Leo, Hillsborough, Parrish, Wachula, Nittaw, and Kissimmee.

Runoff data from table 6 were assumed uniform over the basin in the following computations. Evapotranspiration was estimated to be 40 inches per year, in an earlier part of the text. On the above criteria, the total water retained as recharge in each of the river basins in table 6 during 1959 is as follows:

Alafia River basin:

Area: 149 sq. mi.			
Runoff	34 inches	Rainfall	75 inches
+ Evap.	40 inches	− Loss	74 inches
Loss	74 inches		1 inch recharge

1 inch over 149 sq. mi. approx. = 2.600 mg

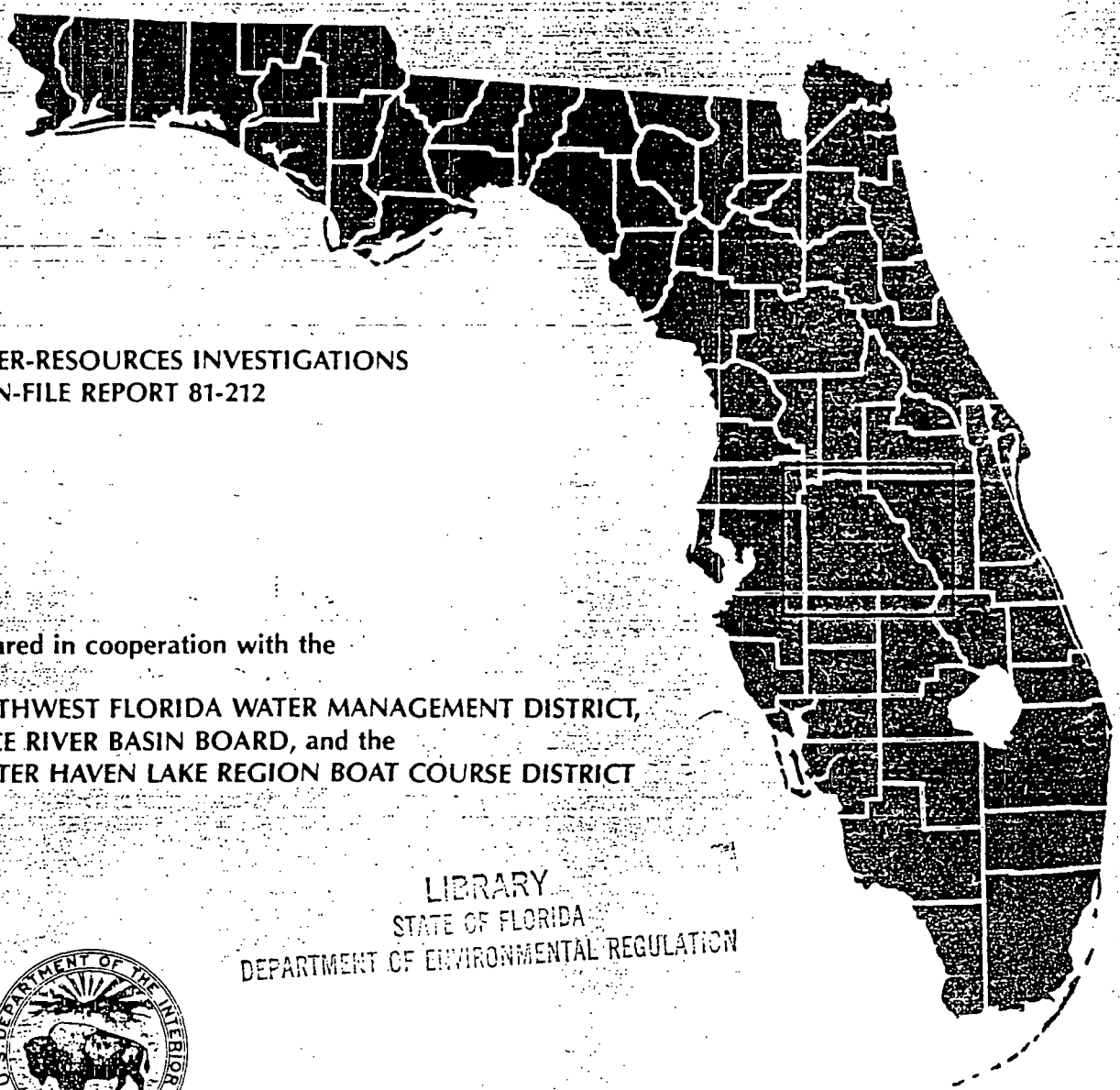
Reference

Reference 19 (SSI)

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HYDROLOGY OF THE WINTER HAVEN CHAIN OF LAKES, POLK COUNTY, FLORIDA

By William C. Sinclair and Ronald C. Reichenbaugh



WATER-RESOURCES INVESTIGATIONS
OPEN-FILE REPORT 81-212

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Prepared in cooperation with the

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT,
PEACE RIVER BASIN BOARD, and the
WINTER HAVEN LAKE REGION BOAT COURSE DISTRICT

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DEPARTMENT OF ENVIRONMENTAL REGULATION

Tallahassee, Florida

1981

INTRODUCTION

The Winter Haven Chain of Lakes consists of 14 interconnected lakes within and around the city of Winter Haven in Polk County, Fla. (fig. 1 and table 1). The lakes comprise a valuable recreational and economic resource. Concern has been expressed by citizens and business interests regarding recent low stages and the deterioration of water quality in the lakes. Lake levels in the spring of 1976 were the lowest in 31 years of record. Both the decline in stage and the deteriorating water quality threaten recreational activity.

This study was made by the U.S. Geological Survey in 1976 in cooperation with the Southwest Florida Water Management District, Peace River Basin Board, and the Winter Haven Lake Region Boat Course District to determine:

1. The quality of water in the lakes;
2. The physical configuration of the lakes and the relation of lake levels to hydrologic factors such as precipitation, inflow, and outflow; and,
3. The hydrologic relation of the lakes to the surficial aquifer and to the Floridan aquifer.

Results of the first phase of the study, item 1 above, were published in the report, "Evaluation of chemical, biological, and physical conditions in the Winter Haven Chain of Lakes, Florida, March-June 1976," by R. C. Reichenbaugh and G. H. Hughes. Reichenbaugh and Hughes (1977) found that many of the lakes were eutrophic, particularly Lakes Lulu and Shipp. The eutrophication was caused by enrichment of the waters with nutrients, principally nitrogen and phosphorus, contained in treated sewage effluent discharged into lakes and in runoff to the lakes from the urbanized watershed.

Results of the second phase of the study, items 2 and 3 above, determining the physical nature of the lake basins and evaluating fluctuations in lake stages and their relation to the hydrology and geology of the area, are contained in this report.

THE LAKES AND THEIR ENVIRONMENT

Winter Haven is in an upland area of hills and ridges that has many deep, internally-drained lake basins (fig. 1). The upland is part of the Trail Ridge-Lake Wales Ridge system that extends southward into Florida from the Georgia Piedmont. It is the oldest and highest of a series of sand ridges or relict beaches of ancient sea levels that parallel the present coastlines. Unconsolidated deposits in the area are composed of sand and sandy clay as much as 150 feet thick that mantle limestone. Solution cavities developed in the limestone are reflected at land surface because of subsidence and collapse of the unconsolidated deposits, forming the many sinkhole basins characteristic of the area.

The drainage area of the Winter Haven Chain of Lakes is 18.6 mi². The 14 lakes in the chain have a combined surface area of 6.79 mi² (4,343.5 acres), table 1, when at a stage of 131 feet above the National Geodetic Vertical Datum of 1929 (sea level). They are connected by 1.8 miles of canals that are open to small-boat traffic between lakes. Because of the open canals, the 14 lakes are at essentially the same surface altitude.

The Chain of Lakes has two outlets. Each outlet has a concrete dam maintained by the Winter Haven Lake Region Boat Course District (fig. 1) and each discharges to the Peace Creek Drainage Canal. The Peace Creek Drainage Canal, a tributary of Peace River, was dredged in the early 1900's to facilitate cultivation of flat, poorly-drained land south and east of Winter Haven. Also, about this same time, many lakes in the Winter Haven area were connected by canals, an outlet canal from Lake Lulu was dredged to the Peace Creek Drainage Canal, and Lake Hartridge was connected through a series of lakes eastward to a tributary of the Peace Creek Drainage Canal.

Most of the lakes occupied individual basins before construction of the canals, and their hydrologic regimens were controlled by rainfall within their drainage areas, by rates of evaporation and transpiration, by subsurface inflow from the surficial aquifer, and by downward leakage to the underlying limestone, the Floridan aquifer.

[illegible] for many years the levels [illegible] the lakes are maintained at a common stage even though the lakes with large

there is a wide scattering of points. Deviation of points fr[om] such as the high stages of 1946, 1947, 1969, and 1970, wh[en] departure from average rainfall is relatively low, and f[or] (1963) when cumulative departure is high, are probabl[y] many factors, including the pattern of annual rainfall [and] and the uneven distribution of rainfall in some years, t[he] Winter Haven Chain of Lakes.

Evaluation of factors contributing to low levels of La[kes] difficult because of possible effects of regulation and u[se] umes of effluent discharged into the Chain of Lakes. I[n] deficient rainfall, low stages are particularly affected by irrigation, evaporation, and other causes that complicat[e] between lake levels and rainfall.

The probable recurrence of annual minimum and stages of a given magnitude for Lakes Howard and Otis figures 7 and 8. The statistical analyses, based on past re[cord] stages, are limited in reliability by lack of informati[on] factors affecting lake levels as previously mentioned. control structures during times of high stages and pum[ping] for irrigation during times of low stages have been comm[on] the past, although to an unknown extent. The analyses in figures 7 and 8 serve as an indication of the magnitude an[d] of annual minimum and maximum stages that might [be] occur should water use continue as in the past. Figure example, that over a long period of time, the maximum [stage] of 136.2 feet above NGVD of 1929 for Lake Howard will [be] the average, about once every 30 years. The lake can[not] recede below the minimum recorded stage of 126.0 fee[t] datum on the average of about once every 50 years. The[se] not be used to estimate the probability of exceeding [a] one year because of the lack of independence of the [data].

HYDROGEOLOGY

The surficial aquifer in the Winter Haven area is clean, well-sorted sand that grades downward into clay[ey] sandy clay. Thickness of the surficial aquifer ranges fro[m] feet. It is underlain by dense, relatively impermeable [clay] feet thick, which is commonly phosphatic, sandy, and d[ark] poorly permeable material forms a confining bed that re[tards] ment of water from the surficial aquifer to the lime[stone] Floridan aquifer. Limestone underlies the surficial dep[osits] of several thousand feet.

Surface drainage in the area is poorly developed be[cause] highly pervious nature of the sandy soils. Rain that does n[ot] lakes, or is not lost to evaporation, transpiration, and re[-] lates downward through the sand. Locally this water [may] adjacent lake as underflow, but eventually water in [the] aquifer and lakes that is not returned to the atmosphere or surface flow continues downward through the sandy limestone aquifer. An idealized section of the system, [in] figure 9, illustrates the movement of water in the surficial [and]

The water table generally reflects the topography surface. It is highest where the land surface is high and [is] the land surface is low. The lakes represent areas wh[ere] surface dips beneath the water table. In this respect, a[re] viewed as a window to the water table. The lakes may al[so] as the areas of greatest leakage to the Floridan aquifer, [for] they occupy basins that have developed by subsidence of [the] material into solution cavities in the Floridan aquifer.

Lateral movement of water through the surficial aqui[fer] ally confined to individual lake basins because of the high[er] surrounding the basins. Water from Lake Roy, for example, not flow through the surficial aquifer to Lake Ring, which feet lower in altitude. The water-table divide between [Lake Roy] higher than either lake, thus precluding lateral [movement] between Lake Lulu and the outlet canal is low and mar[ginal] only that water moves [illegible] Lake Lulu to the canal, as illustrated in figure 9.

To gain an understanding of the [illegible]

conditions may result in greater loss of water by downward leakage from some basins than from others.

Depths and bottom configuration of lakes in the chain are shown in figure 1. Lake Winterset, at the southeastern end of the chain, is the third largest of the lakes and is the deepest. At a surface altitude of 130 feet, a large part of Lake Winterset is between 22 and 24 feet deep. The southeast cove, known as Little Lake Winterset, is 28 feet deep. The circular nature of the bottom depressions in some lakes suggests the possibility of relatively recent subsidence, which may indicate a greater amount of downward leakage than in more shallow lakes. With passage of time, the clean, well-graded sand of the lake bottoms slumps to a relatively low angle of repose, as exemplified in Lake Howard and Lake Shipp. Lake Lulu, with depths of 6 to 9 feet, is the shallowest lake in the chain. The bottom is formed by as much as 20 feet of soft organic ooze overlying sand.

Rainfall is the ultimate source of water to the lakes, as well as to the surficial aquifer and to the underlying limestone aquifer. Slightly more than half the annual rainfall occurs during the four summer months, June through September. Figure 2 shows the annual rainfall at Winter Haven for 1946–77. The summer rain occurs as thundershowers, and, although individual showers cover a narrow swath, their total effect is one of remarkably uniform areal distribution. Precipitation during the winter months is generally less intense but more uniformly distributed; occasional frontal storms commonly cover wide areas with gentle rains that average between 2 and 3 inches per month.

Average annual rainfall at Winter Haven for the period 1946–77 is 51.52 inches. The range in annual rainfall is large.

Figure 2 also shows departures from average annual rainfall and cumulative departure from average for the same time span. In only 2 years since 1960 has the rainfall been above the 1946–77 average. The cumulative departure from 1960 to 1977 represents a rainfall deficit of 72.34 inches, a deficit equal to nearly 1½ years average rainfall. Evaporation from lakes in the Winter Haven area averages about 49 inches per year, according to Kohler and others (1959, plate 2).

RECORD OF LAKE LEVELS

Lake levels rise in response to rainfall on the lake surface, to surface runoff from the surrounding watershed, and, in a more delayed manner, to ground water that seeps into the lake from the surficial aquifer underlying the basin. The Winter Haven lake levels are also augmented by effluent from several food processing plants that pump water from the Floridan aquifer and, until recently, by treated effluent from the Winter Haven sewage treatment plant. In previous years, treated sewage discharged into Lake Lulu accounted for as much as 6 inches of water a year (about 700 Mgal/yr) over the Chain of Lakes. Discharge of sewage into the lake was discontinued in 1977. Evaporation from the lake surfaces averages about 49 inches a year (5.7 billion gallons per year). An unknown amount of water is pumped from the lakes for irrigation of surrounding citrus groves, farmland, and private lawns, and an unknown volume of water moves into the lakes from the surficial aquifer and downward from the lakes to the Floridan aquifer.

Fluctuations in the level of Lake Howard from 1946 through 1977 and of Lake Otis from 1954 through 1977 are shown in figure 3. Lake Howard is representative of the Chain of Lakes. Lake Otis, an isolated lake about a mile east and outside of the Chain of Lakes (fig. 1), is included for comparison. The hydrographs show seasonal variations and a declining trend in lake levels from about 1960 to 1977. However, the range in fluctuation is decidedly different.

The mean level of Lake Howard and the Chain of Lakes for the period 1946 to 1977 is 131.28 feet above NGVD of 1929. The mean level of Lake Otis for the period 1954 to 1977 is 125.01 feet above the datum. The level of Lake Howard has ranged 4.91 feet, whereas the level of Lake Otis has ranged 9.62 feet during their respective periods of record.

Outflow from the Winter Haven Chain of Lakes is partly controlled by concrete structures at the outlets from Lakes Lulu and Hartridge. The Lake Hartridge structure was modified to a fixed crest at an elevation of 132.20 in 1974. The Lake Lulu structure stands at an elevation of 132.25, but has flash boards that allow discharge from the lake at a somewhat lower elevation. Records of the manipulation of these control structures are not available. Miscellaneous discharge measurements were made at the outlet from Lake Hartridge between 1954 and 1966; the discharge was generally negligible, except for measurements of 28.9 and 26.8 ft^3/s made in 1960. Average annual discharge in the Lake Lulu outlet canal from 1947 to 1971 ranged from

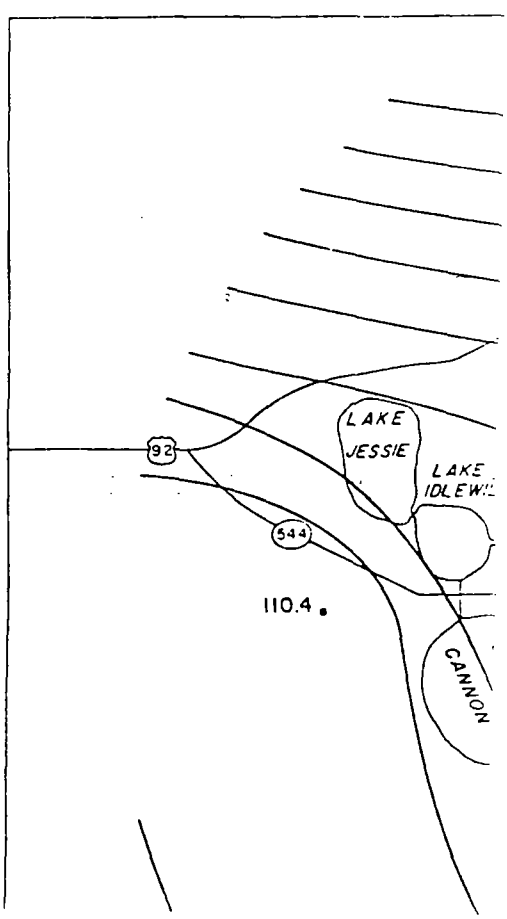
gage was installed on the lake and the canal was
sion closed the canal between Lakes Lulu and Roy
dam at 10 a.m., November 26, 1979.

The effect of isolating Lake Roy from the Ch
illustrated in figure 10. Fluctuations in stage of Lake R
diverged from those of Lake Howard. In the first 30 d
relatively slight rainfall, Lake Roy declined at a rate o
compared with a decline of about 0.01 ft/d for Lak
pumpage or other outflow from or inflow to the lakes w
this period, and the rate of evaporation presumably w
both lakes, about 0.01 ft/d. The difference in the rates o
likely due to a difference in the rates of leakage thr
aquifer underlying the lakes and in rates of ground
into the lakes. The effect of rainfall and a result
ground-water flow to the lakes is illustrated by hydr
latter part of December and during January. Follo
rises in response to rain, Lake Roy immediately be
fairly rapidly, but there is a detectable decrease in the
indicating an increase in ground-water inflow. Follow
at Lake Howard, the lake level remained relatively co
ing that ground-water inflow was sufficient to equa
quantity of water lost by evaporation and seepage.
experiment illustrates that the rate of downward le
from the lakes is a significant part of the hydrologic re
vary from one lake basin, or locale, to another.

The net volume of water lost from Lake Roy to
aquifer, assuming net water outflow from the lake is p
surface area, is 0.03 $(ft^3/d)/ft^2$ (0.04 measured loss
evaporation loss). The rate of downward leakage is c
hydraulic conductivity of the material between the
Roy and the top of the Floridan aquifer and the differ
hydraulic gradient, between the lake and the aquife
of ground-water inflow to Lake Roy at the time of th
assumed to be negligibly small, the hydraulic con
determined from the equation

$$K = \frac{Q}{I}$$

where Q = volume of leakage, in cubic feet per day p
K = hydraulic conductivity of the interven
cubic feet per day per square foot, and
I = hydraulic gradient.



At the time of the experiment, the potentiometric surface of the Floridan aquifer stood at about 114 feet and Lake Roy at about 130 feet above NGVD of 1929. Total thickness of the surficial aquifer and confining layer is about 150 feet. Thus, the hydraulic gradient is (130 − 114)/150 = 0.11, and the hydraulic conductivity is 0.03/0.11 = 0.27 $(ft^3/d)/ft^2$, assuming that leakage occurs uniformly through the lake bottom. The composite vertical hydraulic conductivity of the material between the bottom of Lake Roy and the top of the Floridan aquifer is 0.27 ft/d.

Water levels in the Winter Haven city wells define the position of the potentiometric surface of the Floridan aquifer in the vicinity of the Chain of Lakes. Water-level records are available for the Fairfax well since 1963. These are portrayed in figure 11 along with the total annual pumpage from all the city wells. The graphs of annual pumpage and water levels in figure 11 follow the same general trend. Use of ground water for citrus irrigation and food processing plants in the area accounts for a large, but unknown, volume of pumpage.

The effects of fluctuation of ground-water level in the Floridan aquifer on lake levels can be estimated from the results of the Lake Roy experiment. Water level in the Fairfax well reached a record low of 102 feet at the end of 1972, according to the hydrograph of figure 11. At that time levels of the lakes in the chain were about 129.5 feet (fig. 3). The hydraulic gradient then was (129.5 − 102)/150, or 0.18. Using the vertical hydraulic conductivity of 0.27 ft/d previously calculated and multiplying it by the 0.18 just obtained, yields a leakage of 0.05 ft/d for Lake Roy, an increase of 60 percent over that measured during the experiment and caused by the 60-percent increase in the hydraulic gradient between lake and aquifer.

The potentiometric map (fig. 12) shows the configuration of the water surface in the Floridan aquifer in the Winter Haven area for March 1979. The surface slopes generally toward the south, but the gradient is interrupted in the area east of Lake Howard where a potentiometric high is centered. The high trends southeastward to Lake Roy. The potentiometric high indicates local recharge and the downward infiltration of water from the surficial aquifer and lakes at a greater rate than occurs in surrounding areas.

Variations in the rate of recharge are most likely due to local variations in the geology and, consequently, variations in vertical hydraulic conductivity. Study of logs of wells drilled in the area indicates a wide variation in the thickness of the clay confining layer overlying the Floridan aquifer. In areas where the clay layer is thin, sandy, or dolomitic, leakage will be greater for a given head difference than in areas where the clay beds are thick and dense.

SUMMARY

Hydrographs for Lake Howard, representative of the Winter Haven Chain of Lakes, and for Lake Otis, the nearest isolated lake that has a reasonably long record, were compared with graphic representation of various other hydrologic parameters. Analyses relating stage and rainfall records indicate that deficient rainfall has been a major factor in the decline of lake levels in the area. Other factors, such as the regulation of lake levels by control structures, unknown volumes of effluent discharged to the lakes, diversion of lake water for irrigation, changes in surface drainage due to urbanization, and lowering of the potentiometric surface of the Floridan aquifer, have also affected the lake levels, but to a lesser degree.

Water from the surficial aquifer drains to the lakes by ground-water seepage. Water level in the underlying Floridan aquifer is lower than the level of any of the lakes; thus, water moves from the lakes and the surficial aquifer through the confining clay layer to the Floridan aquifer.

The [illegible] of the experiment at Lake Roy illustrate that the rate

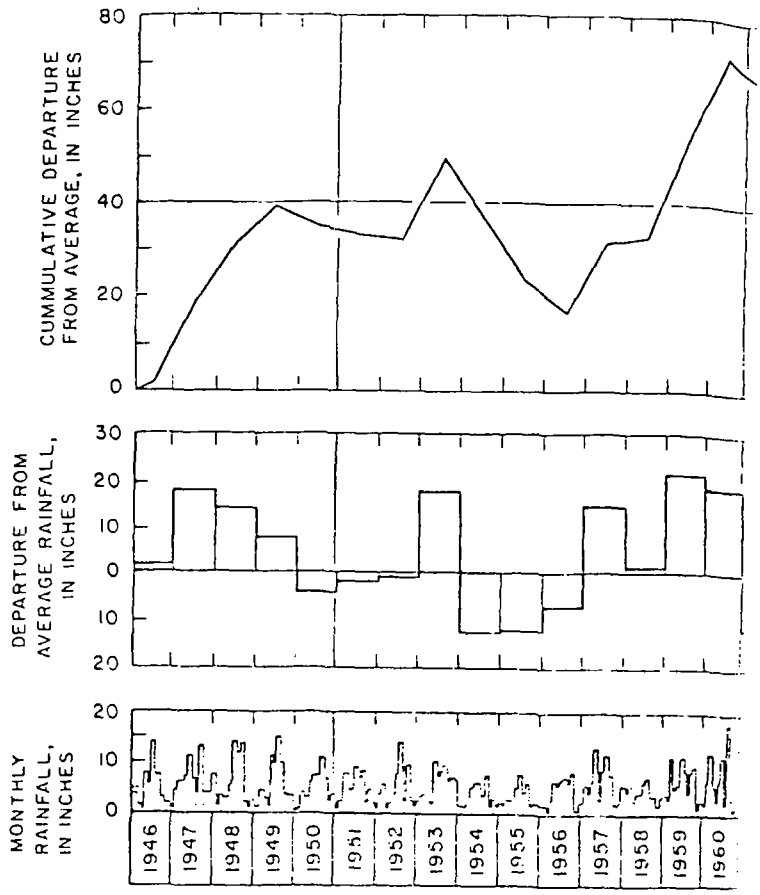
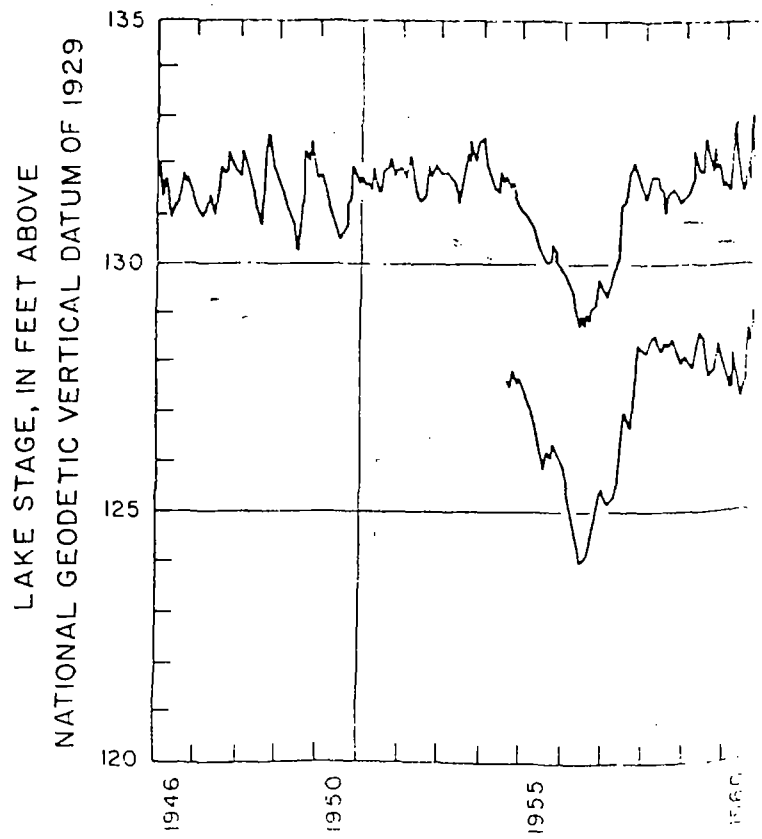


Figure 2.—Rainfall at W



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Kohler, M. A., Nordenson, J. J., and Baker, D. R., 1959, Evaporation maps of the United States. U.S. Department of Commerce, Weather Bureau Technical Paper 37, 13 p., 5 plates.

[illegible] C. H., 1977. Evaluation of chemi-

Chain of Lakes, Florida. [illegible] U.S. Geological Survey Water-Resources Investigations 77-52, 37 p.

CONVERSION FACTORS

For those readers who may prefer to use metric (SI) units rather than inch-pound units, conversion factors for terms used in this report are listed below:

Multiply inch-pound unit	By	To obtain metric (SI) unit
inch (in)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
million gallons per day (Mgal/d)	0.04381	cubic meter per second (m^3/s)

National Geodetic Vertical Datum of 1929 (NGVD of 1929).—A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "mean sea level."

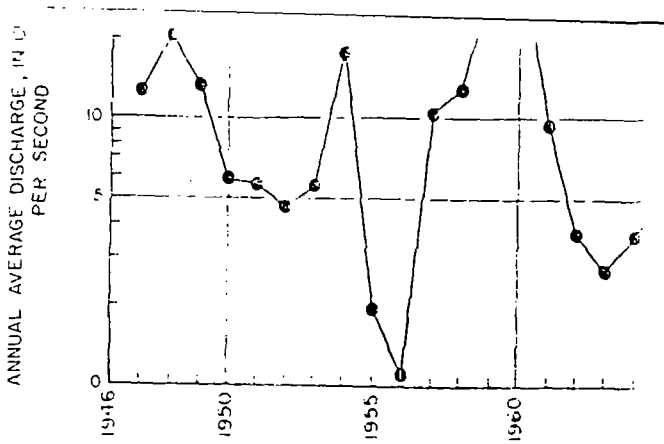


Figure 4.—Annual average discharge through Lake

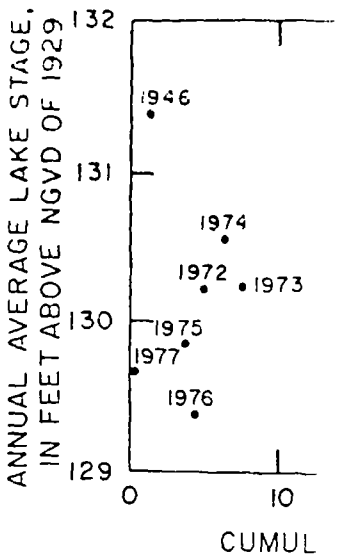
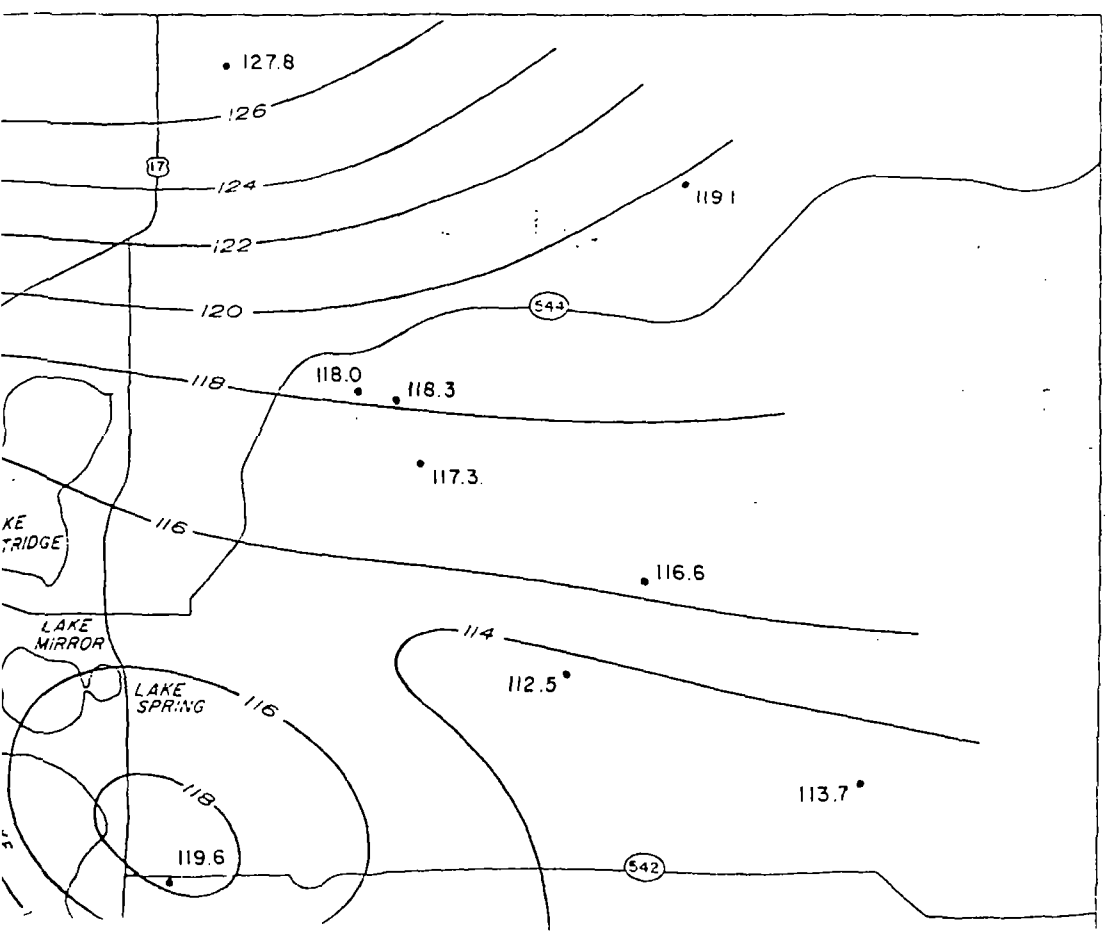


Figure 6.—Stage of Lake How



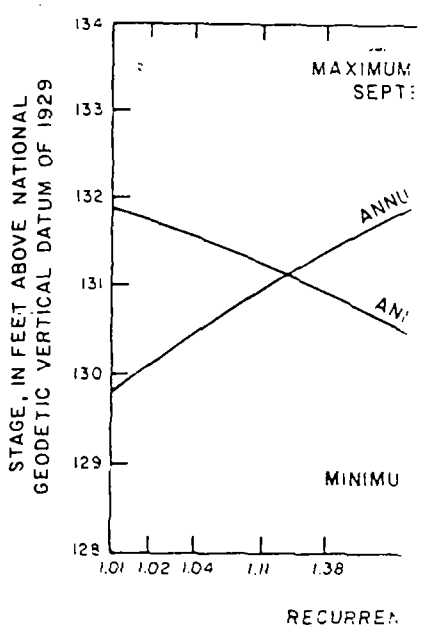


Figure 7.—Magnitude and frequen

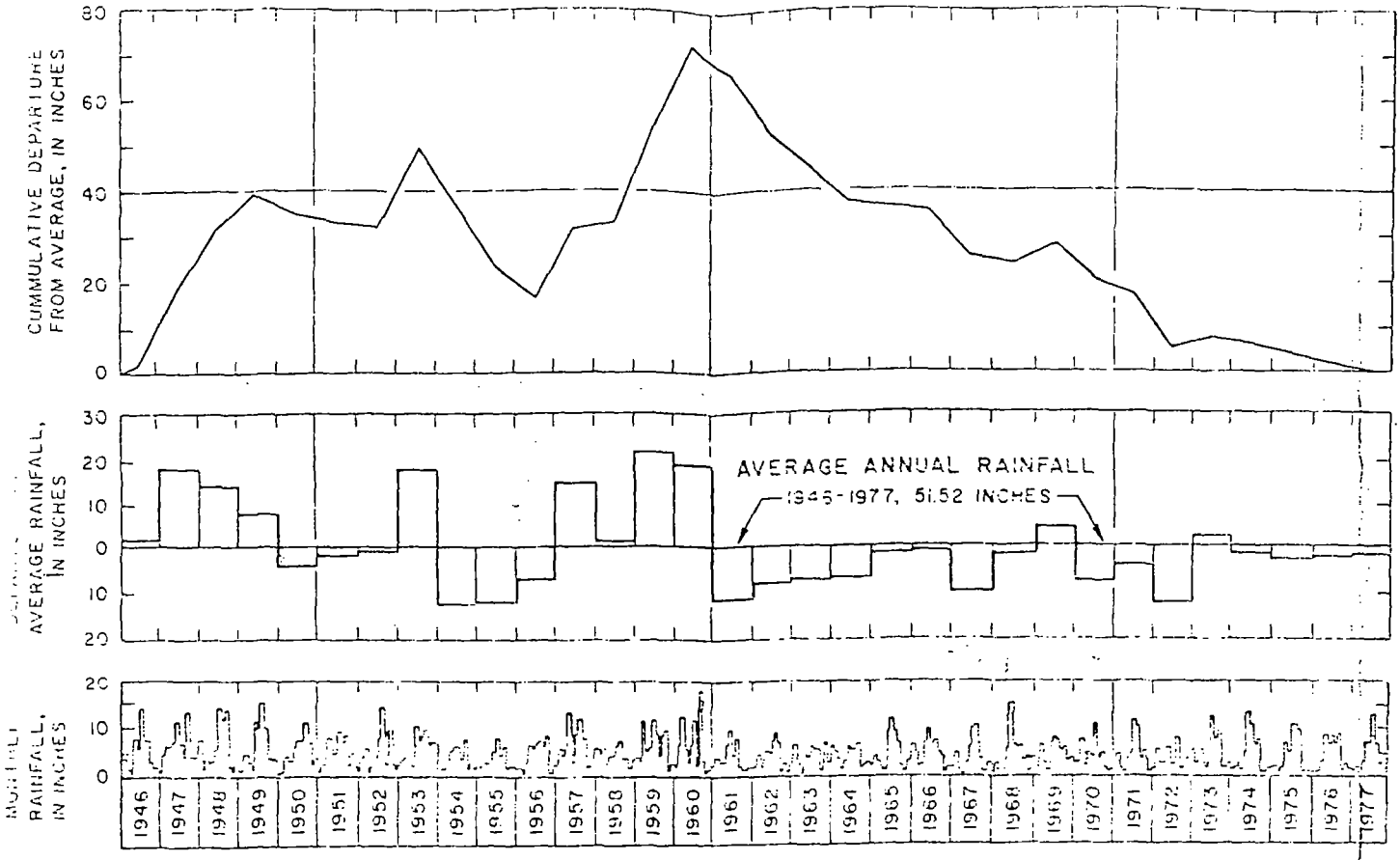


Figure 2.—Rainfall at Winter Haven, 1946–77.

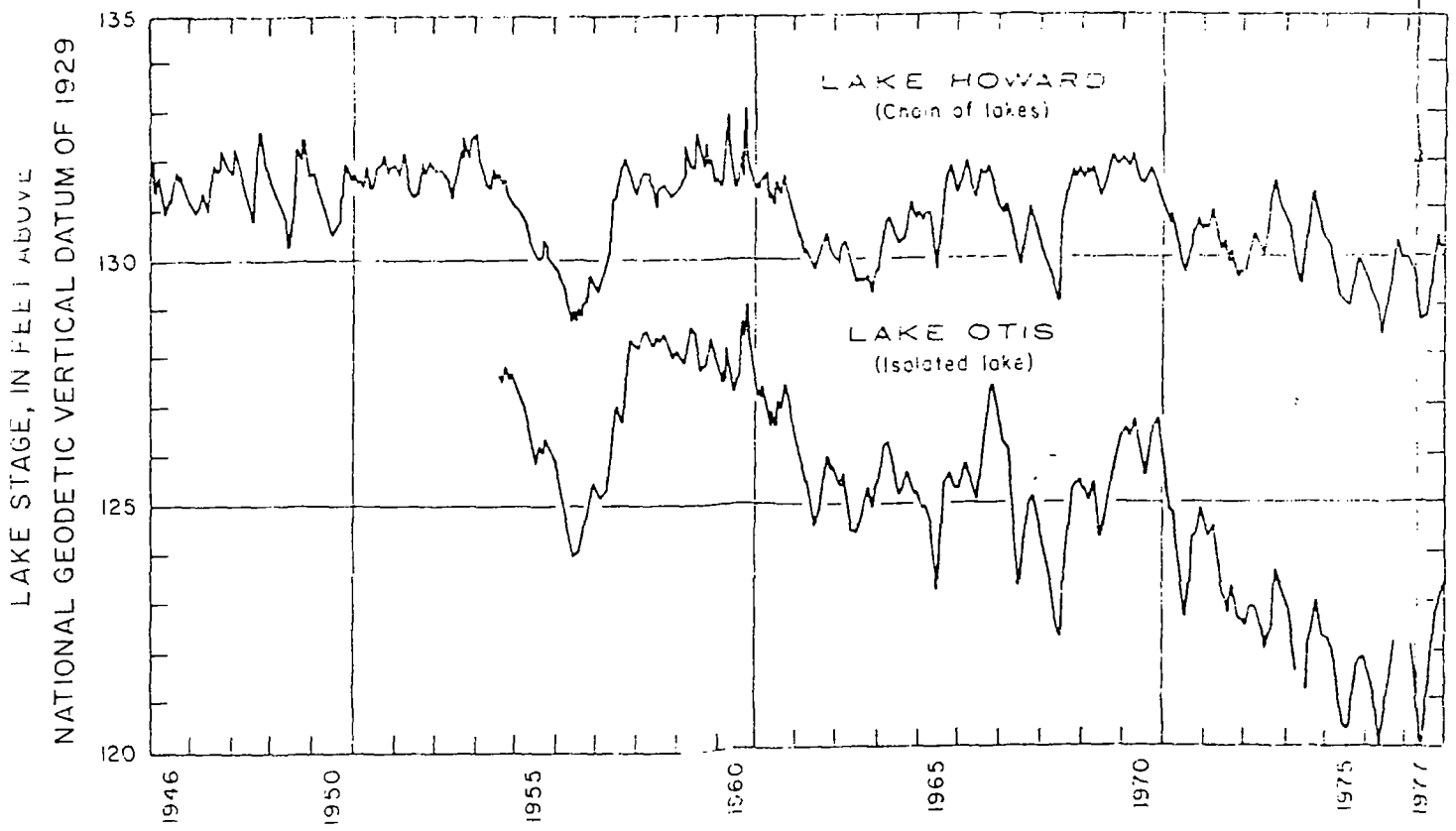


Figure 3.—Hydrographs of Lake Howard and Lake Otis.

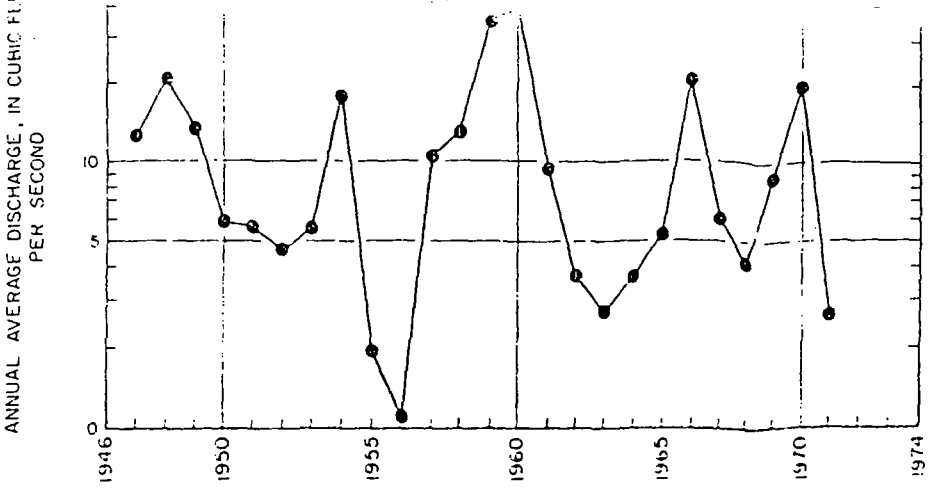


Figure 4.—Annual average discharge through Lake Lulu outlet canal.

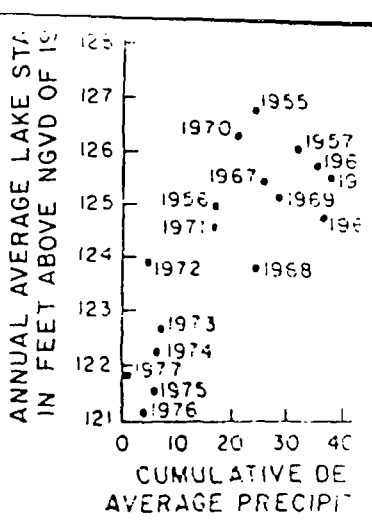


Figure 5.—Stage of Lake Otis for th
cumulative departure from avera
at Winter Haven for the period 19

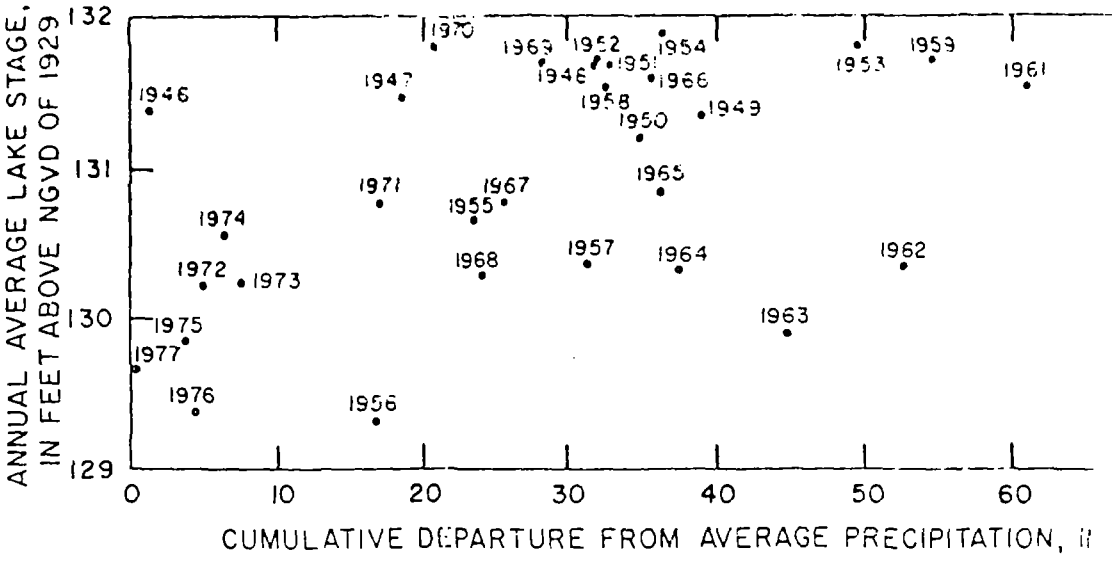
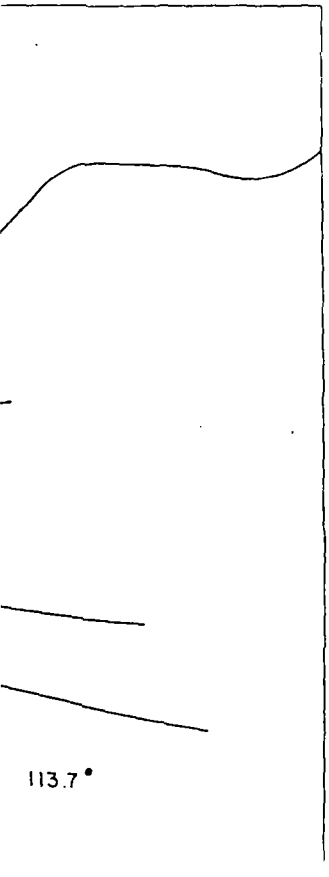
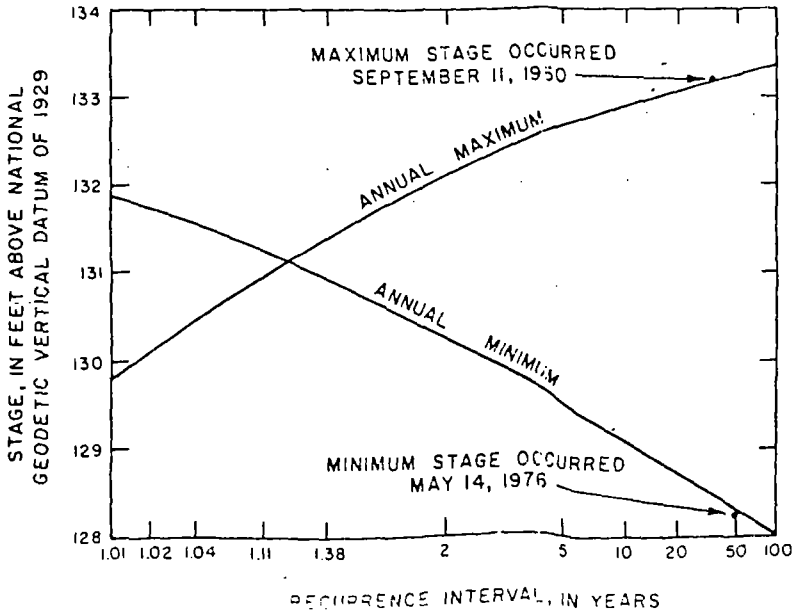
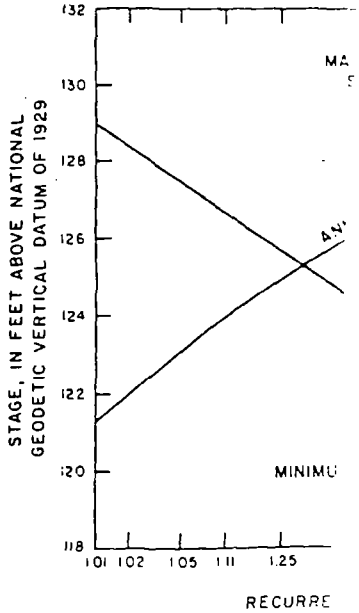


Figure 6.—Stage of Lake Howard versus cumulative departure from average precipitation at Winter Haven f







Reference 20

Reference ~~10~~ (SSI)

Date: June 15, 1988

File Name: Cypress Gardens Skis
Florida Sinkhole

Time: 1:10 p.m.

Contact Person: Barry Beck/Research Inst.

To: File

Phone No.: (SC) 343-6834

From: Mary Lubinski

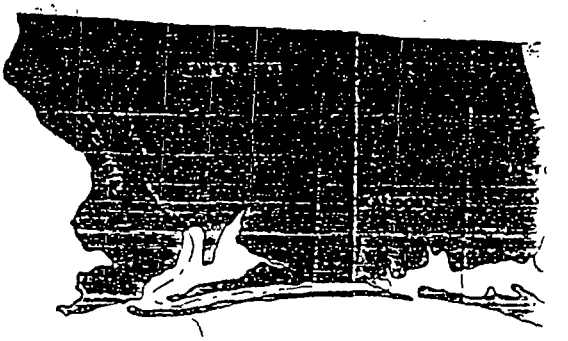
Subject: Winter Haven Lakes

Barry Beck informed me that 99% of the lakes on the Winter Haven ridge are recharge sinkholes. He did not have information on the rate of recharge.

[redacted]

REFERENCE 33

SINKHOLE TYPE, DEVELOPMENT, AND DISTRIBUTION IN FLORIDA



By
William C. Sinclair and J.W. Stewart

Prepared by the
U.S. GEOLOGICAL SURVEY

in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF WATER RESOURCES MANAGEMENT
and the
FLORIDA DEPARTMENT OF NATURAL RESOURCES
BUREAU OF GEOLOGY

Tallahassee, Florida
1985

INTRODUCTION

Sinkholes are a natural and common geologic feature in areas underlain by limestone and other rock types that are soluble in natural water. The term sinkhole is used for closed depressions in the land surface that are formed by surficial solution or by subsidence or collapse of surficial materials owing to the solution of near-surface limestone or other soluble rocks. Discussion here refers to sinkhole occurrence in limestone and dolomite, the most common rock types in Florida.

Sinkholes occur in a variety of shapes from steep-walled "natural wells" to funnel-shaped or bowl-shaped depressions. Sinkholes are a product of solution-erosion processes and are analogous to valleys carved by rivers in areas underlain by insoluble clastic rocks. Just as rivers constantly erode the land surface by carrying away particles of rocks a grain at a time, limestone is carried slowly away in chemical solution an ion at a time. The ions are carried by water that percolates through cavities and conduits that were developed by solution of the limestone along fracture systems, bedding planes, and other permeable zones in the rock. Surface erosion by rivers is well understood and subject to some control by man, but the detection of cavities at depth and prediction of potential sinkhole collapse is inherently difficult.

Sinkholes are of interest in Florida because they are one of the predominant landform features of the State; because their development may be sudden, resulting in possible loss of life and property; because they may cause flooding during storms when the drainage capacity of natural subsurface conduits is exceeded; and because they may provide an avenue for pollutants on the land surface to move rapidly into the underlying limestone and dolomite—the source of more than 80 percent of the drinking water in the State. The purpose of this report is to describe the geologic and hydrologic features controlling the development of sinkholes so that sinkholes and their related problems may be better understood.

FACTORS THAT AFFECT SOLUTION OF LIMESTONE

The ultimate cause of collapse or subsidence that forms virtually all sinkholes in Florida is solution of soluble rock by acidic water. As rain falls through the atmosphere, it dissolves carbon dioxide and other gases and becomes slightly acidic. Rainwater percolating through the soil zone continues to dissolve carbon dioxide that is released by bacterial action and decomposition of organic material. The amount of carbon dioxide available in soils is 10 to 100 times greater than that available in the atmosphere (Hem, 1960, p. 35).

Water percolating through the soil zone becomes a weak carbonic acid that reacts readily with limestone and dolomite as it moves downward. The reactions are:

$$CO_2 + H_2O \rightleftharpoons H_2CO_3$$

(carbon dioxide) (water) (carbonic acid)

$$H_2CO_3 + CaCO_3 \rightleftharpoons Ca^{++} + 2(HCO_3)^-$$

(carbonic acid) (limestone) (calcium ions) (bicarbonate ions)

$$2H_2CO_3 + (CaMg(CO_3)_2 \rightleftharpoons Ca^{++} + Mg^{++} +$$

(carbonic acid) (dolomite) (calcium ions) (magnesium ions)

$$4(HCO_3)^-$$

(bicarbonate ions)

As the reaction proceeds, water gradually assimilates calcium and bicarbonate ions until it is saturated and further solution of limestone is not possible. The reaction is reversible depending on such variables as temperature and carbon dioxide pressure. Thus, the same reaction that dissolves limestone may deposit a scale of calcium carbonate (limestone) in a teapot when water is boiled. Under natural conditions, the reaction can reverse, resulting in deposition, such as the formation of stalactites and the sealing of voids and fractures by precipitation of carbonate minerals.

The chemistry of rocks is important in controlling the development of solution cavities. Pure limestone ($CaCO_3$) is commonly more easily dissolved by natural water than is dolomite ($CaMg(CO_3)_2$), the second most prevalent rock in Florida. The presence of impurities, such as sand and clay, within the rock will reduce the rate of carbonate solution. The insoluble clay particles commonly form an impermeable residuum that mantles the limestone and retards infiltration of water, thus reducing further solution.

Although Florida is underlain by thousands of feet of limestone and dolomite that are susceptible to solution by ground water, most of the State is covered by a mantle of insoluble clastic rock material, such as sand and clay, that control, to a great extent, the ultimate route of water that falls as rain. In areas where limestone is exposed at land surface, or is thinly covered, rainfall infiltrates directly through a network of conduits that have been opened and enlarged by solution of the rock. Where the limestone is covered by permeable sand, however thick, the rainwater is largely held where it falls and infiltrates downward through the sand into the limestone below.

Surface runoff is uncommon where rainfall moves directly into the aquifers. Streams and rivers are widely separated, and valleys that were developed by occasional flood runoff are poorly defined. Conversely, in areas where limestone is covered by thick and impermeable clay layers, downward movement of water is retarded or impeded, and well-defined stream channels receive surface runoff and drain a high water table through a closely spaced network of tributaries.

TYPES OF SINKHOLES

Three major types of sinkholes common to Florida are solution sinkholes, cover-collapse sinkholes, and cover-subsidence sinkholes. These sinkhole types are distinguished by their mode of formation; the type of sinkhole that may develop in a given area is controlled largely by the geology and hydrology.

Solution Sinkholes

Solution sinkholes occur in areas where limestone is exposed at land surface or is covered by thin layers of soil and permeable sand. Solution is most active at the limestone surface and along joints, fractures, or other openings in the rock that permit water to move easily into the subsurface. Dissolved limestone and some insoluble residue are carried downward by the percolating water along enlarged openings as solution of the limestone progresses. Large voids commonly do not form because subsidence of the soil layer occurs as the limestone surface dissolves. The result is a gradual downward movement of the land surface and development of a depression that collects increasing amounts of surface runoff as its perimeter expands. This type of sinkhole usually forms as a bowl-shaped depression with the slope of its sides determined by the rate of subsidence relative to the rate of erosion of the walls of the depression from surface runoff. Surface runoff may also carry sand and clay particles into the depression, which may form a relatively impermeable seal in the bottom. A marsh or lake forms when water is ponded because infiltration is restricted by the clayey seal. The gently rolling hills and shallow depressions typical of solution-subsidence topography are common over large parts of Florida.

Cover-Collapse Sinkholes

Cover-collapse sinkholes occur where a solution cavity develops in the limestone to a size such that the overlying cover material can no longer support its own weight. Collapse is generally abrupt when this occurs and is sometimes catastrophic. Collapse sinkholes provide dramatic local changes in topography. They may occur in any area of soluble rock; however, they are less likely to occur in areas of deeply buried rocks. Collapse sinkholes generally occur in areas where the limestone is near land surface and the limestone aquifer is under water-table conditions. Ground-water circulation is most vigorous at and just below the water table where solution of the limestone is accelerated. Accelerated solution also may occur at certain depths where bedding planes in the limestone or changes in rock composition concentrate the flow of ground water.

Limestone is commonly exposed in the vertical or overhanging walls of collapse sinkholes shortly after they form. The sinkholes generally are circular in shape and the walls may be round and smooth, but mostly they are irregular in shape because of the influence of joints and fractures in the rock. Surface drainage, erosion, and deposition of sediment into collapse sinkholes will eventually smooth the sides and reduce their slopes until they may become indistinguishable from other types of sinkholes.

Cover-Subsidence Sinkholes

Limestone, like most bedrock, generally lies beneath a cover of soil and other unconsolidated material, such as sand and clay. Coastal sediments and beach deposits left during periods of high sea level occur throughout Florida at

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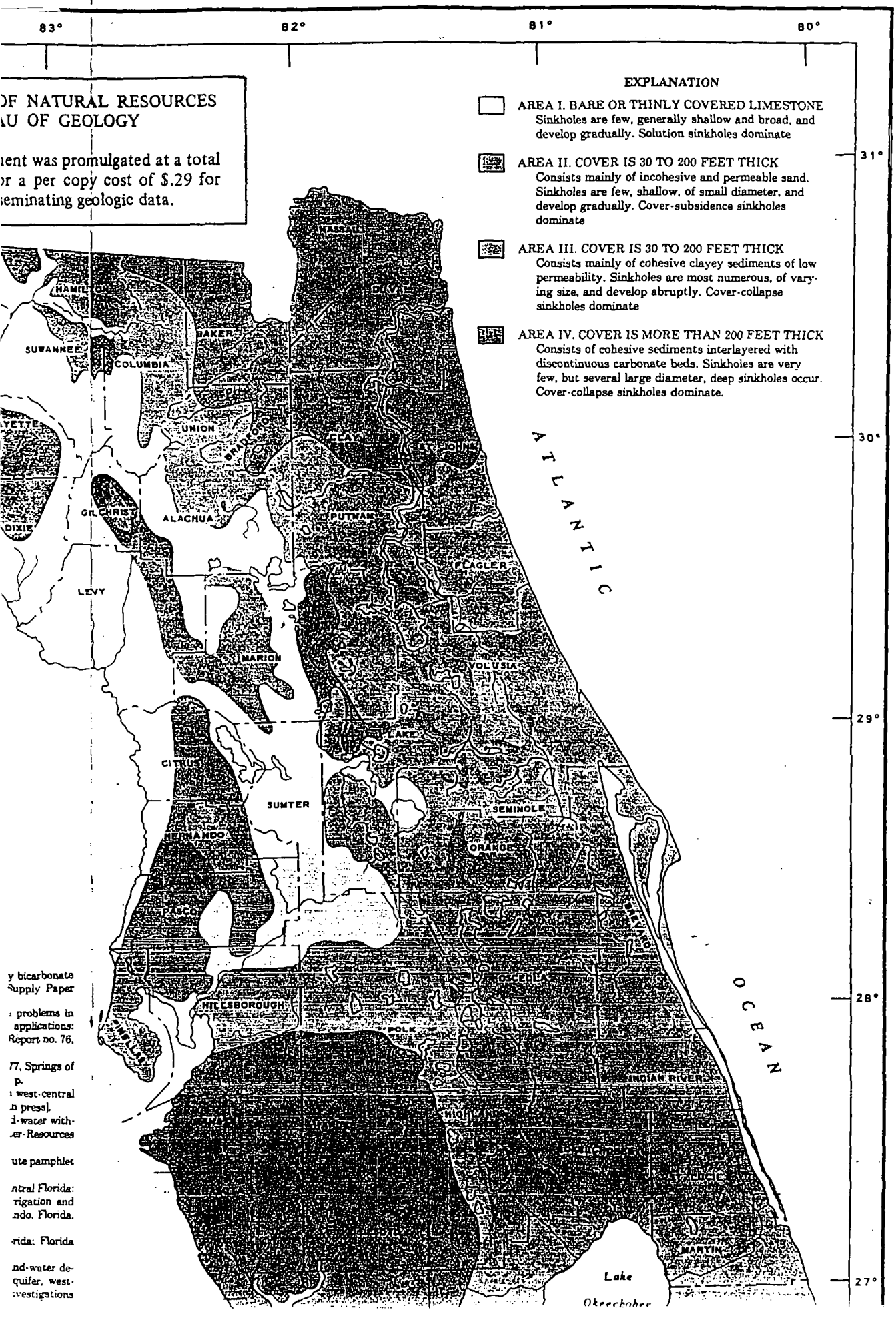

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LITHOLOGIC WELL LOG PRINTOUT — SOURCE - FGS

WELL NUMBER: W- 3315 — COUNTY - POLK)
TOTAL DEPTH: 315 FT. — LOCATION: T.28S R.26E S.21
62 SAMPLES FROM 17 TO 305 FT. — LAT/LON - NO ENTRY
COMPLETION DATE - 05/07/54 — ELEVATION - 144 FT
OTHER TYPES OF LOGS AVAILABLE - NONE

OWNER/DRILLER: CITY OF WINTER HAVEN-FLORIDA WATER WELL AND SUPPLY CO.

WORKED BY: SAMPLES DESCRIBED BY CHRISTOPHER WAYNE
GOOD SAMPLES

0. - 45.	000UNDIF	UNDIFFERENTIATED SAND AND CLAY
45. - 240.	122HTHN	HAWTHORN GROUP
240. - 265.	124CLRV	CRYSTAL RIVER FM.
265. - 425.	124OCKLL	OCALA LIMESTONE LOWER MEMBER
425. - 305.	124AVPK	AVON PARK LIMESTONE

0 - 33 SAND; DARK YELLOWISH BROWN; 35% POROSITY, INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO VERY COARSE;
ROUNDNESS:SUB-ANGULAR; MEDIUM SPHERICITY; UNCONSOLIDATED;
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-01%;
FOSSILS: NO FOSSILS;

33 - 45 SAND; VERY LIGHT ORANGE; 35% POROSITY, INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO VERY COARSE;
ROUNDNESS:SUB-ANGULAR; MEDIUM SPHERICITY; UNCONSOLIDATED;
ACCESSORY MINERALS: PHOSPHATIC SAND-02%, CLAY-01%, LIMESTONE-01%;
FOSSILS: NO FOSSILS;

45 - 55 SAND; LIGHT BROWNISH GRAY TO BLACK; 35% POROSITY, INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO COARSE;
ROUNDNESS:ANGULAR; LOW SPHERICITY; UNCONSOLIDATED;
ACCESSORY MINERALS: PHOSPHATIC GRAVEL-06%, PHOSPHATIC SAND-02%, MICA-02%;
FOSSILS: NO FOSSILS;

55 - 75 DOLOMITE; WHITE TO BROWNISH GRAY; 21% POROSITY, INTERGRANULAR, VUGULAR;
10-50% ALTERED; ANHEDRAL;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC GRAVEL-04%, PHOSPHATIC SAND-03%;
FOSSILS: MOLLUSKS;

75 - 90 DOLOMITE; WHITE TO BROWNISH GRAY; 21% POROSITY, INTERGRANULAR, VUGULAR;
10-50% ALTERED; ANHEDRAL;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: PHOSPHATIC GRAVEL-03%, PHOSPHATIC SAND-03%, QUARTZ SAND-02%, CHERT-01%;
FOSSILS: SHARKS TEETH;

90 - 105 AS ABOVE

[illegible] - [illegible] PHOSPHATE; VERY LIGHT GRAY TO LIGHT BROWNISH GRAY; 10% POROSITY, INTERGRANULAR,
POSSIBLY HIGH PERMEABILITY; GOOD INDURATION;
CEMENT TYPE(S): PHOSPHATE CEMENT;
ACCESSORY MINERALS: DOLOMITE-15%, QUARTZ SAND-02%;
FOSSILS: MOLLUSKS;

105 - 14[illegible] DOLOMITE; VERY LIGHT GRAY TO LIGHT BROWNISH GRAY; 20% POROSITY,
INTERGRANULAR, VUGULAR; 10-50% ALTERED; ANHEDRAL;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: CHERT-01%, PHOSPHATIC GRAVEL-01%, PHOSPHATIC SAND-01%, QUA[illegible]
FOSSILS: MOLLUSKS;

140 - 16[illegible] LIMESTONE; VERY LIGHT ORANGE; 20% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS; 70% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;
ACCESSORY MINERALS: CLAY-01%, QUARTZ SAND-01%;
FOSSILS: MOLLUSKS, WORM TRACES;

180 - 2[illegible] LIMESTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY; 20% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS; 70% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;
ACCESSORY MINERALS: DOLOMITE-15%, PHOSPHATIC GRAVEL-01%;
FOSSILS: MOLLUSKS;

200 - 22[illegible] LIMESTONE; VERY LIGHT GRAY; 21% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS, BIOGENIC; 80% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;
ACCESSORY MINERALS: SPAR-01%;
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, ECHINOID;

220 - 24[illegible] LIMESTONE; VERY LIGHT GRAY; 21% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS, BIOGENIC; 80% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;
ACCESSORY MINERALS: DOLOMITE-02%;
FOSSILS: VERTEBRATE, MOLLUSKS;

240 - 25[illegible] CALCARENITE; VERY LIGHT ORANGE; 30% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS, BIOGENIC; 60% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-01%;
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, BRYOZOA, WORM TRACES, ECHINOID;
WITH LEPS AND OPERCULINOIDES OCALANUS WITH ALABAMINA ORTUSA AND GYPSINA GLOB.

355 - 360 AS ABOVE

360 - 370 AS ABOVE

370 - 380 AS ABOVE
WITH HETEROSTEGINA OCALANA

380 - 390 AS ABOVE

390 - 395 AS ABOVE

395 - 405 CALCARENITE; VERY LIGHT ORANGE; 30% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS, BIOGENIC; 80% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: SPAR-02%;
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, ECHINOID, BRYOZOA;

405 - 415 LIMESTONE; VERY LIGHT ORANGE; 20% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS; 70% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT;
ACCESSORY MINERALS: SPAR-03%;
FOSSILS: BENTHIC FORAMINIFERA, ECHINOID, BRYOZOA, WORM TRACES, OSTRACODS;
INCREASE OF SPARRY CALCITE-LITHOLOGY IS LIKE LOWER OCALA

415 - 425 LIMESTONE; VERY LIGHT ORANGE; 22% POROSITY, INTERGRANULAR, VUGULAR;
GRAIN TYPE: INTRACLASTS, CRYSTALS, BIOGENIC; 80% ALLOCHEMICAL CONSTITUENTS;
GRAIN SIZE: MICROCRYSTALLINE; RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: SPAR-04%;
FOSSILS: ECHINOID, MOLLUSKS;
TYPICAL LOWER OCALA LITHOLOGY

425 - 440 AS ABOVE
WITH DICTYOCONUS COOKEI-SOME PHOSPHATE FROM CAVING

440 - 457 AS ABOVE

457 - 459 AS ABOVE

459 - 510 AS ABOVE

510 - 513 AS ABOVE

513 - 515 AS ABOVE

515 - 517 AS ABOVE

517 - 519 AS ABOVE

519 - 520 AS ABOVE

610	- 612	AS ABOVE
612	- 614	AS ABOVE
614	- 616	AS ABOVE
616	- 618	AS ABOVE
618	- 700	AS ABOVE
700	- 702	AS ABOVE
702	- 704	AS ABOVE
704	- 706	AS ABOVE
706	- 708	AS ABOVE
708	- 800	AS ABOVE
800	- 801.5	AS ABOVE
801.5	- 803	AS ABOVE
803	- 805	AS ABOVE
805		TOTAL DEPTH

FLORIDA SINKHOLE RESEARCH INSTITUTE

DR. BARRY BECK, DIRECTOR

UNIVERSITY OF CENTRAL FLORIDA

POST OFFICE BOX 25000

ORLANDO, FL 32816

REPORTED SINKHOLES IN POLK CO., AS OF MAY 5, 1989

F.S.R.I. CODE NUMBER 16-001
Do not use this information to evaluate the suitability of a specific property without verifying the reports.

1. THE MONTH, DAY AND YEAR OF OCCURRENCE: 5 16 83
THE TIME OF THE OCCURRENCE: 0

2. LOCATION: LONGITUDE 81 DEGREES 43 MINUTES 23 SECONDS
LOCATION: LATITUDE 28 DEGREES 5 MINUTES 35 SECONDS
COUNTY: POLK
7 1/2 QUAD NAME: U
ADDRESS OF PROPERTY WHERE SINK OCCURRED:
LAKE ALFRED POSE T27S
Y
NAME AND MAILING ADDRESS OF OWNER:
JAMES DAWSON
6702 LYNCHBURG RD
LAKE ALFRED 3058
NAME AND MAILING ADDRESS OF WITNESS:
NONE AVAILABLE

3. ON-SITE DATA
A SIZE AND SHAPE
ARE THE DIMENSIONS MEASURED OR ESTIMATED: ESTIMATED
DIMENSIONS AT GROUND SURFACE LENGTH 2.00 WIDTH 2.00 FEET
IS THE SINKHOLE ROUGHLY CIRCULAR YES
SLOPE OF SINKHOLE WALLS AT FORMATION TIME: 90
DEPTH OF SINKHOLE BELOW LAND SURFACE: 3.00
IS WATER IN THE SINK NO
B. CIRCUMSTANCES OF COLLAPSE.
WAS SUBSIDENCE RAPID OR SLOW SLOW
WAS THE SINK REPAIRED. YES
C. TERRAIN CHARACTERISTICS:
TOPOGRAPHY: SLOPE
ARE ANY DRAINAGE CHANNELS IN THE AREA. NO
LAND USE/COVER GROVE
SOIL TYPE AT SITE: CRY
IS THIS SINK NEAR OTHER RECENT SINKS YES

4. BACKGROUND DATA (FROM MAPS AND RECORDS)
A. GEOLOGY:
ELEVATION OF LAND SURFACE. 172.00 FEET.
ELEVATION OF LIMESTONE 20.00 FEET
THICKNESS OF COVER: 152.00 FEET.
LIMESTONE FORMATION. OCALA LIMESTONE INCLUDES CRYSTAL RIVER FORMATION, WILLISTON FM. AND INGLIS FM.
WATER TABLE ELEVATION UNKNOWN
DATE OF MAP: NONE
FROM A MAP OR MONITOR WELL: NONE
POTENTIOMETRIC SURFACE ELEVATION: 115.00
DATE OF MAP: 5 [illegible]
FROM A MAP OR MONITOR WELL: MAP
IS THIS AN AREA OF HIGH POTENTIOMETRIC SURFACE DECLINE: YES
RAINFALL ON DAY OF COLLAPSE: 0.00
RAINFALL ON DAY OF COLLAPSE AND SIX PRECEDING DAYS: 0.00
TOTAL RAINFALL OVER THE PRECEDING 90 DAYS: 12.40
LOW TEMPERATURE NIGHT PRECEDING COLLAPSE: 59
HIGH TEMPERATURE THE DAY OF COLLAPSE: 90

[illegible]

F.S.G.Y. FORM NUMBER: [illegible]
Do not use this information to evaluate the suitability of a specific property without verifying the reports.

1. THE MONTH, DAY AND YEAR OF OCCURRENCE: 5 28 83
THE TIME OF THE OCCURRENCE: 0

2. LOCATION: LONGITUDE: 81 DEGREES 43 MINUTES 8 SECONDS
LOCATION: LATITUDE: 28 DEGREES 5 MINUTES 30 SECONDS
COUNTY: POLK
7 1/2 QUAD NAME: U
ADDRESS OF PROPERTY WHERE SINK OCCURRED:
R26E T27S S32 420 E. POMELO
U
NAME AND MAILING ADDRESS OF OWNER:
CITY OF LAKE ALFRED
NAME AND MAILING ADDRESS OF WITNESS:
NONE AVAILABLE.

3. ON-SITE DATA:
A. SIZE AND SHAPE
ARE THE DIMENSIONS MEASURED OR ESTIMATED: ESTIMATED
DIMENSIONS AT GROUND SURFACE: LENGTH 30.00 WIDTH 30.00 FEET
IS THE SINKHOLE ROUGHLY CIRCULAR: YES
SLOPE OF SINKHOLE WALLS AT FORMATION TIME: 90
DEPTH OF SINKHOLE BELOW LAND SURFACE: 5.00
IS WATER IN THE SINK NO
B. CIRCUMSTANCES OF COLLAPSE:
WAS SUBSIDENCE RAPID OR SLOW RAPID
WAS THE SINK REPAIRED: YES
C. TERRAIN CHARACTERISTICS:
TOPOGRAPHY; SLOPE
ARE ANY DRAINAGE CHANNELS IN THE AREA: YES
LAND USE/COVER: GROVE
SOIL TYPE AT SITE: U
IS THIS SINK NEAR OTHER RECENT SINKS: YES

4. BACKGROUND DATA (FROM MAPS AND RECORDS)
A. GEOLOGY
ELEVATION OF LAND SURFACE: 138.00 FEET.
ELEVATION OF LIMESTONE: 20.00 FEET.
THICKNESS OF COVER: 118.00 FEET.
LIMESTONE FORMATION: OCALA LIMESTONE INCLUDES CRYSTAL RIVER FORMATION , SUWANNEE LIMESTONE AND INGLIS FM.
WATER TABLE ELEVATION: UNKNOWN
DATE OF MAP: NONE
FROM A MAP OF NEAREST WELL: NONE
POTENTIOMETRIC SURFACE ELEVATION: 110.00
DATE OF MAP: [illegible]
FROM A MAP OF NEAREST WELL: MAP
IS THERE AN AREA OF POTENTIOMETRIC SURFACE DECLINE: YES
RAINFALL ON DAY OF COLLAPSE: 0.00
RAINFALL ON DAY OF COLLAPSE AND SIX PRECEDING DAYS: 0.00
TOTAL RAINFALL OVER THE PRECEDING 90 DAYS: 11.37
LOW TEMPERATURE NIGHT PRECEDING COLLAPSE: 59
HIGH TEMPERATURE THE DAY OF COLLAPSE: 93

5. COMMENTS

24

TYPES, FEATURES, AND OCCURRENCE OF SINKHOLES IN THE KARST OF WEST-CENTRAL FLORIDA

By William C. Sinclair, J. W. Stewart, R. L. Knutilla,
A. E. Gilboy, and R. L. Miller

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 85-4126

Prepared in cooperation with the

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Tallahassee, Florida

1985

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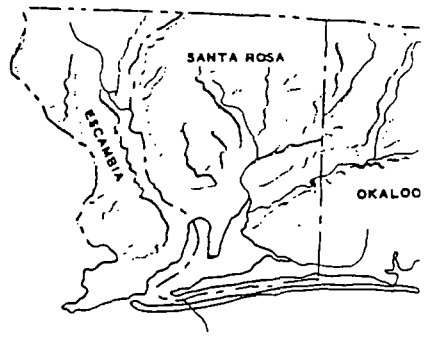
AREAS OF NATURAL RECHARGE TO THE FLORIDAN AQUIFER IN FLORIDA

By
J. W. Stewart

Prepared by the
U.S. GEOLOGICAL SURVEY
in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
BUREAU OF WATER RESOURCES MANAGEMENT

Tallahassee, Florida
1980



30°

INTRODUCTION

The Floridan aquifer is the most extensive and widely used aquifer in Florida. In 1975, about 2,072 Bgal/d (billion gallons per day) were withdrawn from the aquifer; 423 Mgal/d (million gallons per day) for public-supplies use; 880 Mgal/d for agricultural use; 706 Mgal/d for industrial use; and 63 Mgal/d for thermoelectric power generation.

Water use has increased greatly during the past decade and is expected to continue to increase. Information is needed to plan for the future development and management of the Floridan aquifer. This report identifies areas of natural recharge to the Floridan aquifer and evaluates their effectiveness. The report also includes a discussion of artificial-recharge methods that have been used or that could be used to supplement natural recharge to the Floridan. The report was prepared in cooperation with the Bureau of Water Resources Management, Florida Department of Environmental Regulation.

DISTRIBUTION OF RAINFALL

The principal source of recharge to the Floridan aquifer is rainfall. Average annual rainfall in Florida is about 56 inches statewide and ranges from about 52 inches along the east coast to more than 64 inches in northwest Florida (Hughes and others, 1971). Evapotranspiration losses range from about 33 inches to about 49 inches annually, or about 60 to 88 percent of the average annual rainfall.

29°

GEOHYDROLOGY

The Floridan aquifer is composed chiefly of limestone and dolomite and includes the following geologic formations: Lake City Limestone, Avon Park Limestone, and Ocala Group,[1] all of Eocene age; Suwannee Limestone of Oligocene age; and Tampa Limestone and lower part of the Hawthorn Formation of Miocene age where it contains limestone beds that are hydrologically connected to the older limestones (Parker and others, 1955). The aquifer ranges in thickness from about 500 feet in west-central Florida to about 2,000 feet in central and northeast Florida (Lichtler, 1972; and Healy, 1975).

In some areas the Floridan aquifer is at or near land surface. In other areas it is as much as 1,000 feet below land surface. The altitude of the top of the aquifer is shown in figure 1. Where the aquifer is buried, it is overlain by a varying sequence of sand, clay, marl, and limestone that ranges in thickness from a few feet in parts of west-central and north Florida to several hundred feet in south-central Florida. The thickness, lithology, and permeability of these materials affect the quantity and the quality of water that recharges the aquifer.

28°

Deposits of sand blanket much of Florida. The sand forms a water-table aquifer that absorbs that part of the rainfall that is not lost by evapotranspiration or surface runoff. Not all the water reaching the water table in those areas is available to recharge the Floridan, however, because as the water moves laterally some seeps into nearby streams and some is lost to evapotranspiration in topographically low areas. Part of the water that reaches the water-table aquifer percolates on downward to recharge the Floridan aquifer wherever the potentiometric surface of the Floridan is below the water table.

Where thick deposits of clay and marl lie between the water-table aquifer and the Floridan, the clay and marl impede movement of water between the aquifers and cause the water in the Floridan to be confined. Water in the Floridan aquifer is confined to some degree over much of the State.

Where the Floridan is at or near land surface (fig. 1), the water table is in the Floridan and there the aquifer is recharged directly by infiltrating rainfall. Recharge also occurs directly from streams that intersect the aquifer and through sinkholes that are open to the aquifer.

Maps of the potentiometric surface of the Floridan aquifer, when used in conjunction with other hydrologic data, are useful in delineating areas of natural recharge, discharge, and areas of large ground-water withdrawals by wells. In May 1974 (Healy, 1975) the altitude of the potentiometric surface of the Floridan aquifer ranged from about 80 feet below sea level in the heavily pumped area of coastal Okaloosa County to as much as 190 feet above sea level in northwestern Walton County (fig. 2). The head was sufficient to cause the water to rise above land surface in wells throughout the southern part of the State, along most of the coastal areas, and in most low stream valleys. In areas where the potentiometric surface of the Floridan aquifer is above the water-table, water leaks upward from the Floridan to the water-table

27°

DESCRIPTION OF RECHARGE AREAS

The potentials for natural recharge to the Floridan aquifer are classified into four types. They are: (1) areas of generally no recharge; (2) areas of known very low recharge; (3) areas of very low to moderate recharge; and (4) areas of high recharge. The areas are generalized and local discharge areas, such as some stream channels and some coastal areas, are not delineated.

The areas of generally no recharge, under natural conditions, are mostly where the potentiometric surface of the Floridan aquifer is above land surface much of the time and coincide with areas of artesian flow shown by Healy (1975). About 45 percent of the State falls within this classification. The areas of known very low recharge are where the Floridan is known to be overlaid by relatively impermeable confining beds generally more than 25 feet thick. In these areas recharge rates are estimated to be less than 2 inches per year. The areas of very low to moderate recharge are where the confining beds are generally less than 25 feet thick or breached, but include unknown areas where the confining bed may be more than 25 feet thick and unbreached. Areas of very low to moderate recharge also include areas where the confining bed is absent, but where the water table and potentiometric surface of the Floridan aquifer are both close to the land surface so that little recharge occurs. Recharge rates of very low to moderate recharge are estimated to range from less than 2 inches to as much as 10 inches per year. The areas of high recharge represent about 15 percent of the State, and in these areas recharge rates are estimated to range from 10 to 20 inches per year.

ARTIFICIAL RECHARGE

Throughout much of the State, recharge to the Floridan aquifer is increased by pumping from the Floridan aquifer. Pumping lowers the potentiometric surface and increases the head difference between the water-table aquifer and the potentiometric surface of the Floridan aquifer where the potentiometric surface is naturally below the water table. This increases the leakage through the confining beds from the overlying water-table aquifer. In areas where the potentiometric surface is shown to be below the water-table aquifer and the water table is at or near land surface, lowering of the potentiometric surface of the Floridan aquifer by pumping may result in salvaging part of the water that would otherwise be lost to runoff or evapotranspiration.

In areas where the potentiometric surface of the Floridan aquifer is above the water-table aquifer, lowering of the potentiometric surface below the water table by pumping from the Floridan aquifer generally reverses the head difference between the two aquifers. This induces recharge to the Floridan aquifer. In areas where the potentiometric surface is above land surface, such as at seeps and springs, lowering the potentiometric surface by pumping from wells in the Floridan aquifer may reverse the gradient towards the pumped area, resulting in capture of water that would otherwise be lost to spring and seep discharge. The areas of large ground-water withdrawals from the Floridan aquifer shown in figure 4 are areas of increased or induced recharge, or decreased discharge, from the Floridan aquifer.

Several other methods of artificially recharging the Floridan aquifer are as follows:

1. Artificial recharge to the Floridan aquifer by gravity flow from the surficial aquifer through a network of connector wells is a fairly recent concept in Florida. This method consists of constructing one or more wells that are open to both the water-table aquifer and the Floridan aquifer, allowing water to flow downward by gravity into the Floridan aquifer. This method is applicable in areas where the water-table aquifer has adequate storage and the water table is at least 25 to 30 feet above the potentiometric surface of the Floridan aquifer. The use of horizontal subsurface drains in conjunction with connector wells has been tested to increase recharge to the Floridan aquifer in wet, poorly drained areas. Field experiments completed in 1974 in northwest Hillsborough County indicated that this method was fairly successful (Sinclair, 1977). Areas known to have potential for artificially recharging the Floridan aquifer using connector wells include parts of southern Santa Rosa, Okaloosa, and Walton counties; parts of central Orange County; southwest Polk County; northwest Manatee County; small parts of southeast Hillsborough County; southeast Hardee County; eastern DeSoto County; and west central Highlands County.

2. Drainage wells are used extensively to drain perennially wet areas and flood-prone areas and to control lake levels. The wells were constructed throughout the south-central part of the State [illegible]

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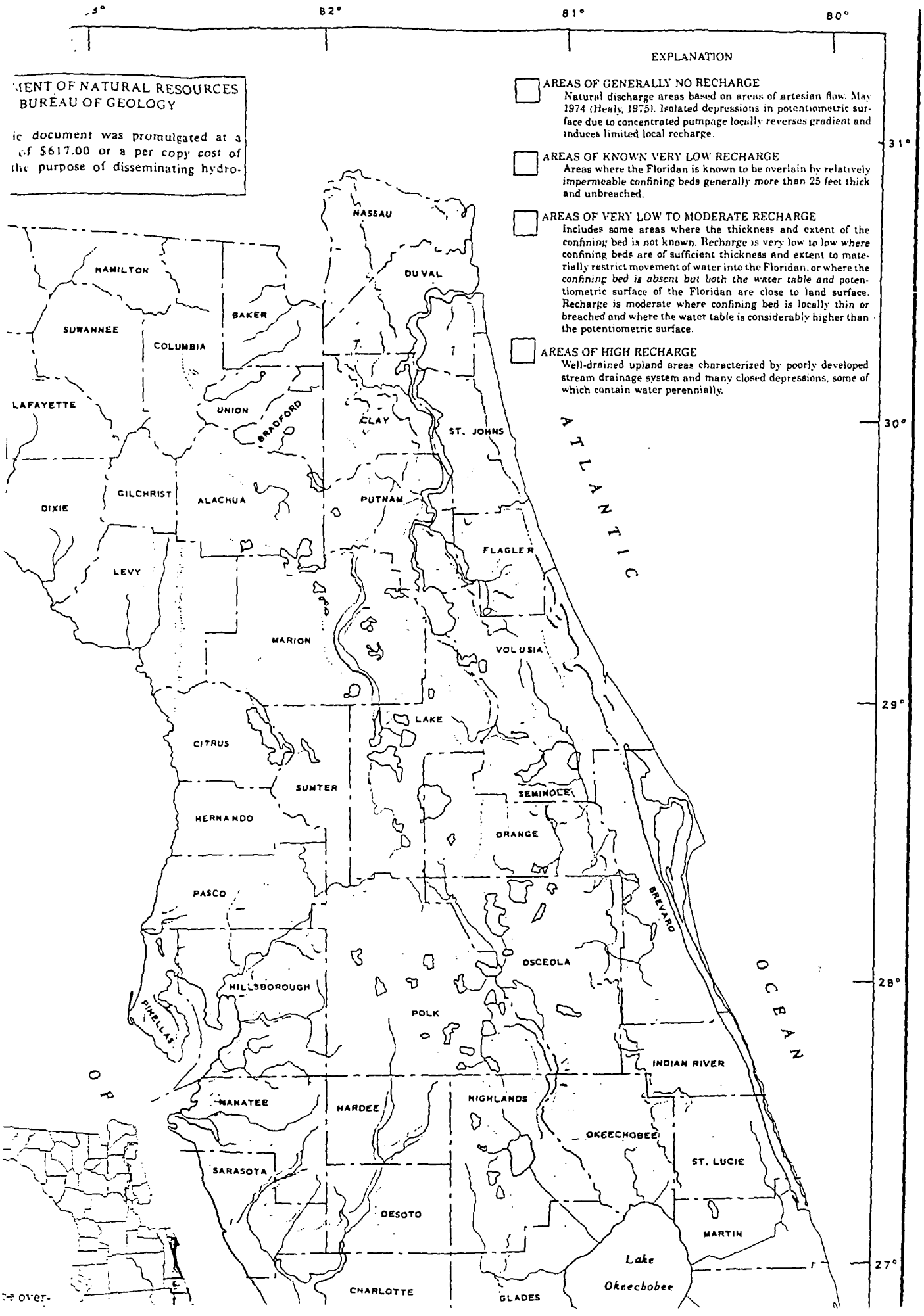

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MAP SERIES NO. 138

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

POTENTIOMETRIC SURFACE OF THE UPPER FLORIDAN AQUIFER IN FLORIDA, MAY 1990

By
G.L. Barr

Prepared by the
U.S. GEOLOGICAL SURVEY
in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
and the
FLORIDA DEPARTMENT OF NATURAL RESOURCES
FLORIDA GEOLOGICAL SURVEY
Tallahassee, Florida
1992
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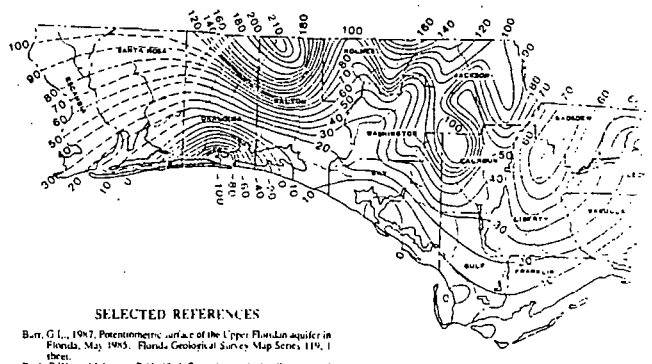

INTRODUCTION

This report defines the potentiometric surface of the highly permeable Upper Floridan aquifer of Tertiary age for May 1990 and describes changes in this surface from May 1989 to May 1990. The potentiometric surface is the level to which water will rise in tightly cased wells that tap the Upper Floridan aquifer. The surface is mapped by determining the altitude of water levels in a network of wells and is represented on maps by contours that connect points of equal altitude. The potentiometric surface was constructed from water level data collected at more than 1,300 wells during May 1-29, 1990. Contours that represent the potentiometric surface and the water-level data shown on the hydrographs in figure 2 are referenced to sea level.

This report is the fifth in a series of map reports that describes the potentiometric surface of the Floridan aquifer system in Florida (Healy, 1962, 1975, 1982, Barr, 1987). Most of the data used in the preparation of this and previous map reports were collected as part of the continuing program of monitoring the ground-water resources of Florida in cooperation with the Florida Department of Environmental Regulation, the State water management districts, and local government agencies. Major features of the potentiometric surface of the Floridan aquifer system have previously been described by Cooper and others (1953) and Stringfield (1966), and more recently by Bush and Johnston (1988).

FLORIDAN AQUIFER SYSTEM

The Floridan aquifer system consists of a thick, hydraulically connected sequence of Tertiary carbonate rocks that extends throughout the southeastern United States in Florida, southern Alabama, southeastern Georgia, and southern South Carolina (Miller, 1986). The system consists of the Upper Floridan aquifer, middle confining and semiconfining units, and the Lower Floridan aquifer. According to Miller (1986), neither the boundaries of the Floridan aquifer system nor of its component (aquifer) zones necessarily conform to either formation boundaries or time-stratigraphic breaks.

Limestone and dolomite rocks that constitute the aquifer system generally range in age from middle Eocene to Oligocene in most of the State, although units of early Miocene age occur locally in the Floridan aquifer system in the central coastal panhandle and in the Hillsborough and Pinellas County areas. Changing depositional environments, karst development, and other erosional processes during past geologic times have resulted in large variations in aquifer system thickness. Thickness of the unit in the panhandle varies from about 100 feet or less (Escambia and Okaloosa Counties) to greater than 2,300 feet (Wakulla County). Throughout the remainder of the State, the thickness is variable, ranging from about 100 feet to more than 1,500 feet (Miller, 1986, pl. 2E). More detailed descriptions of the Floridan aquifer system are in reports by Miller (1982, 1986).

Rocks that constitute the Upper Floridan aquifer generally crop out in a 50-mile-wide band along the western gulf coast from Wakulla County in the northern part of the study area to Hillsborough County in the southern part where the altitude of the top of the aquifer generally is less than 100 feet above sea level. The altitude of the top of the Upper Floridan aquifer in northeastern Florida ranges from near sea level to more than 900 feet below sea level. In northwestern Florida (Escambia County), the altitude of the top of the Upper Floridan aquifer ranges from 100 feet above sea level to more than 1,800 feet below sea level. *The altitude of the top of the Upper Floridan aquifer is near or above sea level* in an area along the gulf coast and most of central Florida between latitudes 30°N and 28°N. South of latitude 28°N, the altitude of the top of the Upper Floridan aquifer gradually decreases from near sea level to more than 1,100 feet below sea level.

POTENTIOMETRIC SURFACE

Data used to construct the May 1990 map of the potentiometric surface shown on the large map were obtained from published reports (Knochemus, 1990; Murray, 1990; Meadows, 1991a, b). For the area generally south of latitude 27°N, no interpretation was made because of a lack of water-level data [illegible] wells open only to the Upper Floridan aquifer. Interpretations of the

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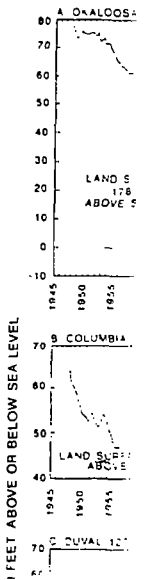

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Net changes in the potentiometric surface of the Upper Floridan aquifer that have occurred between May 1985 (Barr, 1987) and May 1990 are shown in figure 1. Small to moderate changes (rises and declines of less than 10 feet) have occurred in most of the study area. Changes are based upon hydrographs of differences in water levels in individual wells and manual and computer techniques used to determine altitude differences between published potentiometric-surface contour lines. Net changes were determined solely by water-level differences in individual wells in areas where differences between contour lines indicated unreasonable net changes that could not be related to existing hydrologic conditions. Some noticed rises or declines, not representative of regional net changes in the potentiometric surface, are not shown in figure 1. Net declines of 10 feet or more have occurred in parts of Santa Rosa, Okaloosa, Suwannee, and Hillsborough Counties due to the pumping of ground water for public supply or crop irrigation. Santa Rosa, Okaloosa, and southeastern Hillsborough Counties also had the most extreme water-level declines depicted on the May 1985 map (Barr, 1987). Declines in the potentiometric surface, although small throughout most of the State, are the result of rainfall deficits and gradually increasing demands for almost all categories of ground-water supplies (Marella, 1988, 1990). Rises in the potentiometric surface in the panhandle and west-central parts of the State are due primarily to above normal rainfall (National Oceanic and Atmospheric Administration, 1986-90) and recharge.

Hydrographs for selected wells in areas where regional ground-water withdrawals have had appreciable effects on water levels are shown in figure 2. One or two daily maximum water-level values for annual wet and dry seasons were used to create the hydrographs. Generally, one daily maximum water level in May and one in September were used. The hydrographs presented show net water-level declines in wells that are open to the Upper Floridan aquifer since the beginning of the record at each well for wells that are open to the Upper Floridan aquifer.

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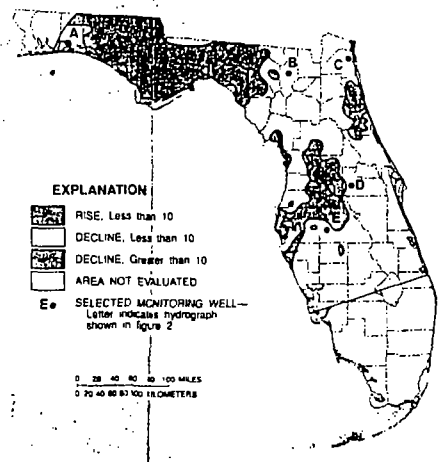

Figure 1—Generalized net change in the potentiometric surface of the Upper Floridan aquifer between May 1985 and May 1990.

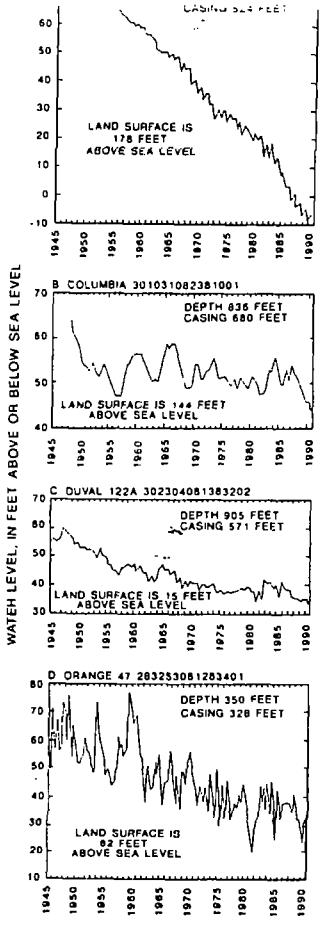

Figure 2—Fluctuations and trends of ground-water levels in selected wells in the Upper Floridan aquifer.

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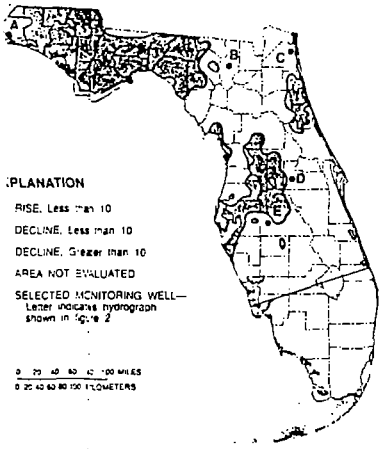

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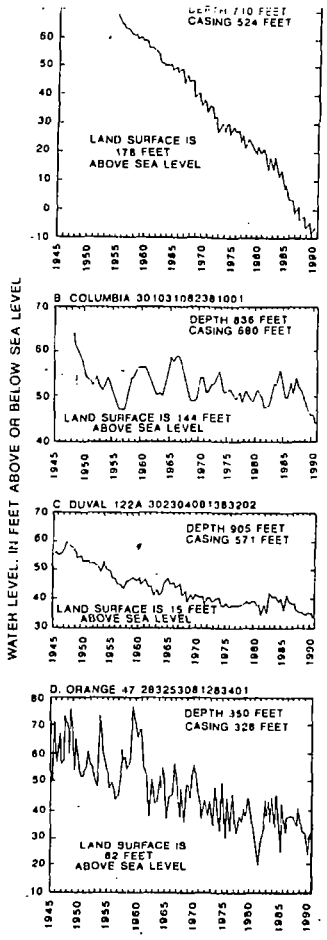

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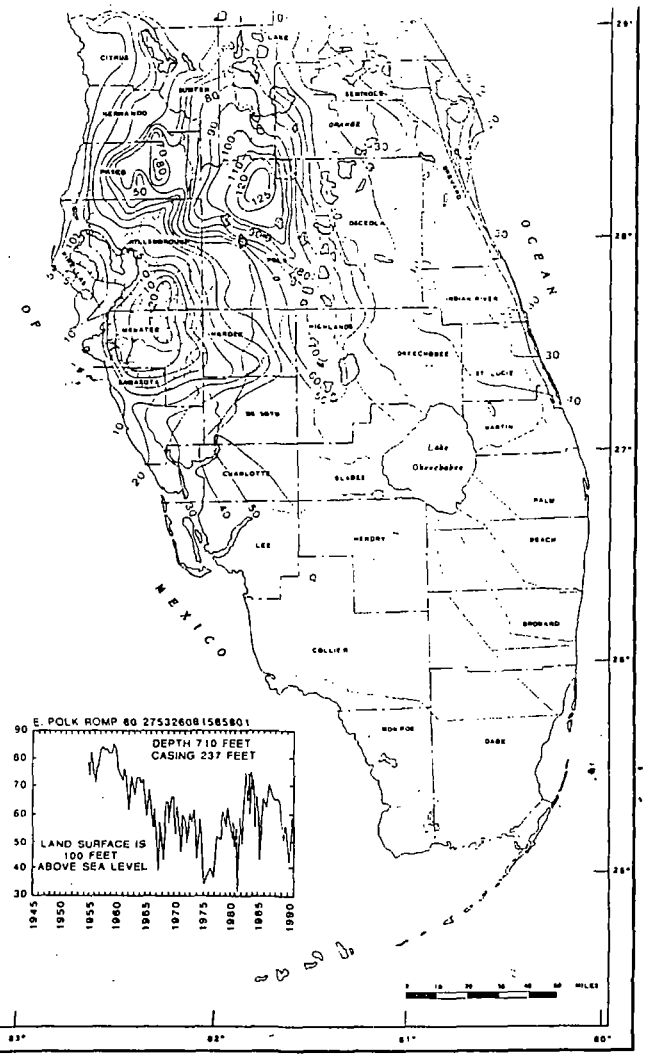

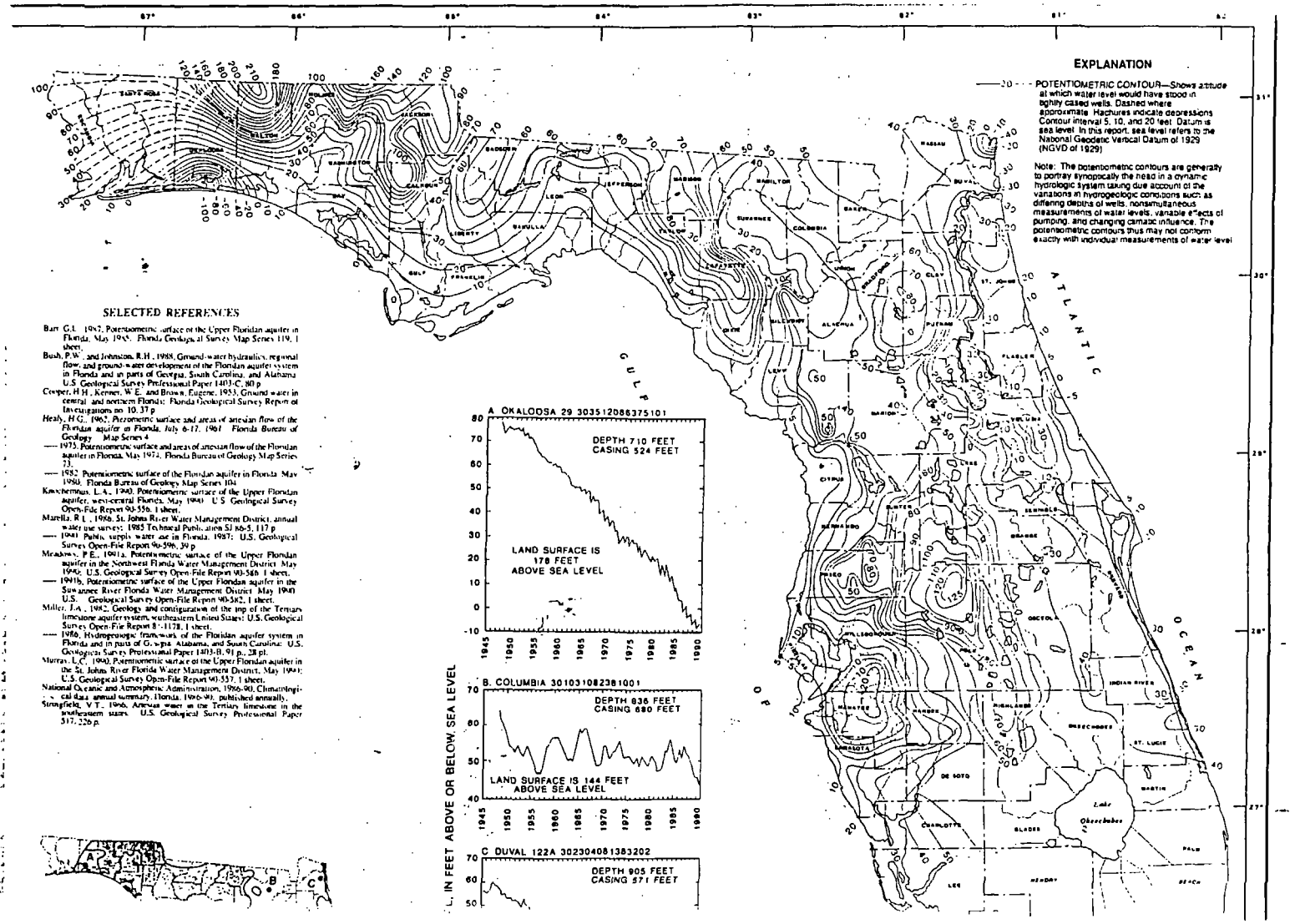

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FLORIDA GEOLOGICAL SURVEY

STATE OF FLORIDA

DEPARTMENT OF NATURAL RESOURCES
Tom Gardner, *Executive Director*

DIVISION OF RESOURCE MANAGEMENT
Jeremy Craft, *Director*

FLORIDA GEOLOGICAL SURVEY
Walter Schmidt, *State Geologist and Chief*

DEPARTMENT OF ENVIRONMENTAL REGULATION
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Howard L. Rhodes, *Director*

BUREAU OF DRINKING WATER AND GROUND WATER RESOURC
Charles C. Aller, *Chief*

FLORIDA GEOLOGICAL SURVEY SPECIAL PUBLICATION NO. 32

FLORIDA'S GROUND WATER QUALITY MONITORING PROGRAM

HYDROGEOLOGICAL FRAMEWORK

COORDINATED BY

Rick Copeland, P.G. #126

EDITED BY

Thomas M. Scott, P.G. #99
Jacqueline M. Lloyd, P.G. #74
and
Gary Maddox

Published for the

FLORIDA GEOLOGICAL SURVEY
Tallahassee
1991

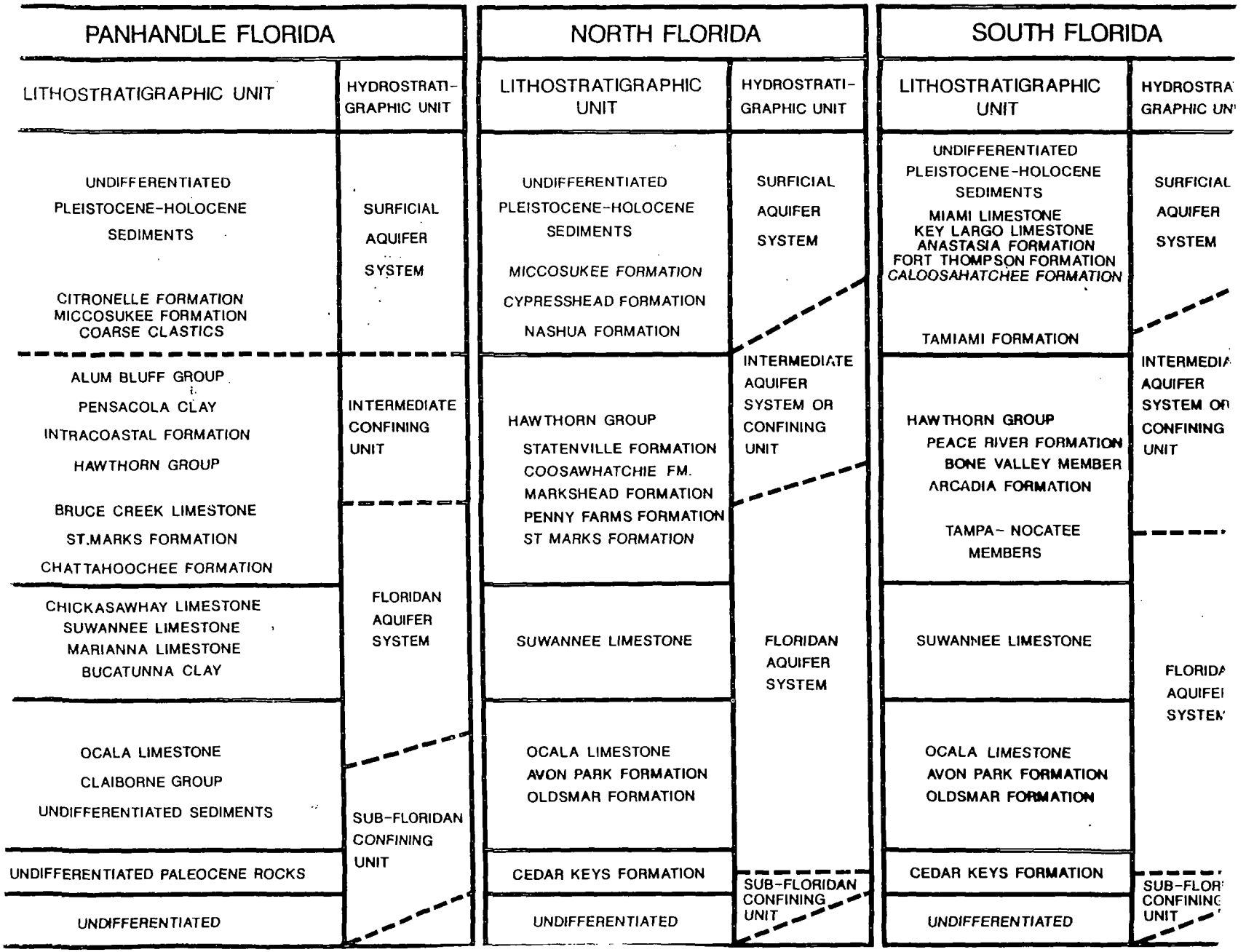
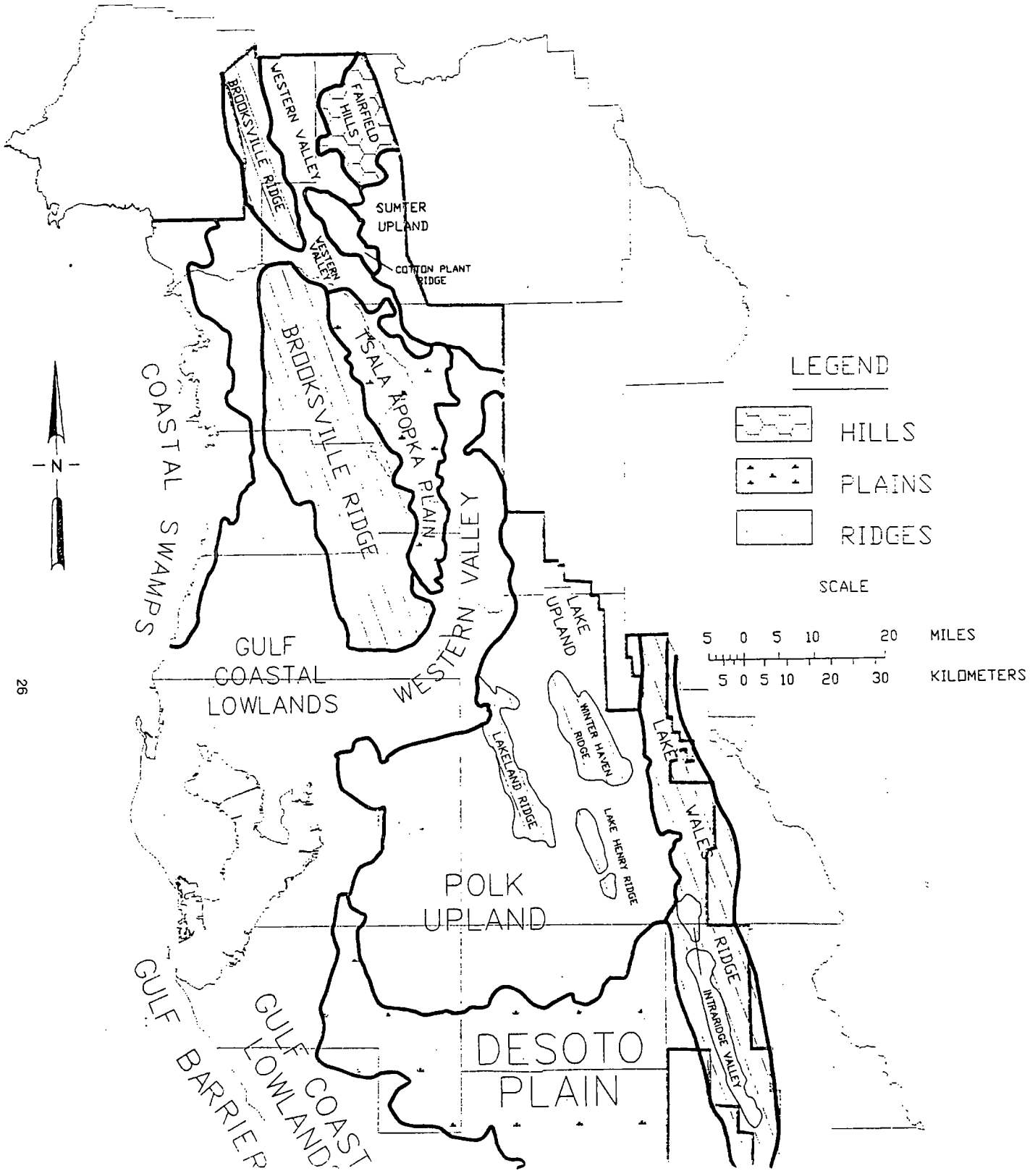


Figure 4. Hydrostratigraphic Nomenclature (modified from Southeastern Geological Society Ad Hoc Committee on Florida Hydrostratigraphic Unit


BROOKSVILLE RIDGE
WESTERN VALLEY
FAIRFIELD HILLS
SUMTER UPLAND
COTTON PLANT RIDGE
WESTERN VALLEY
TSALA APOPKA PLAIN
BROOKSVILLE RIDGE
COASTAL SWAMPS
GULF COASTAL LOWLANDS
WESTERN VALLEY
LAKE UPLAND
LAKELAND RIDGE
WINTER HAVEN RIDGE
LAKE HENRY RIDGE
LAKE WALES RIDGE
INTRARIDGE VALLEY
POLK UPLAND
DESOTO PLAIN
GULF COAST LOWLAND
GULF BARRIER
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HILLS
PLAINS
RIDGES
SCALE
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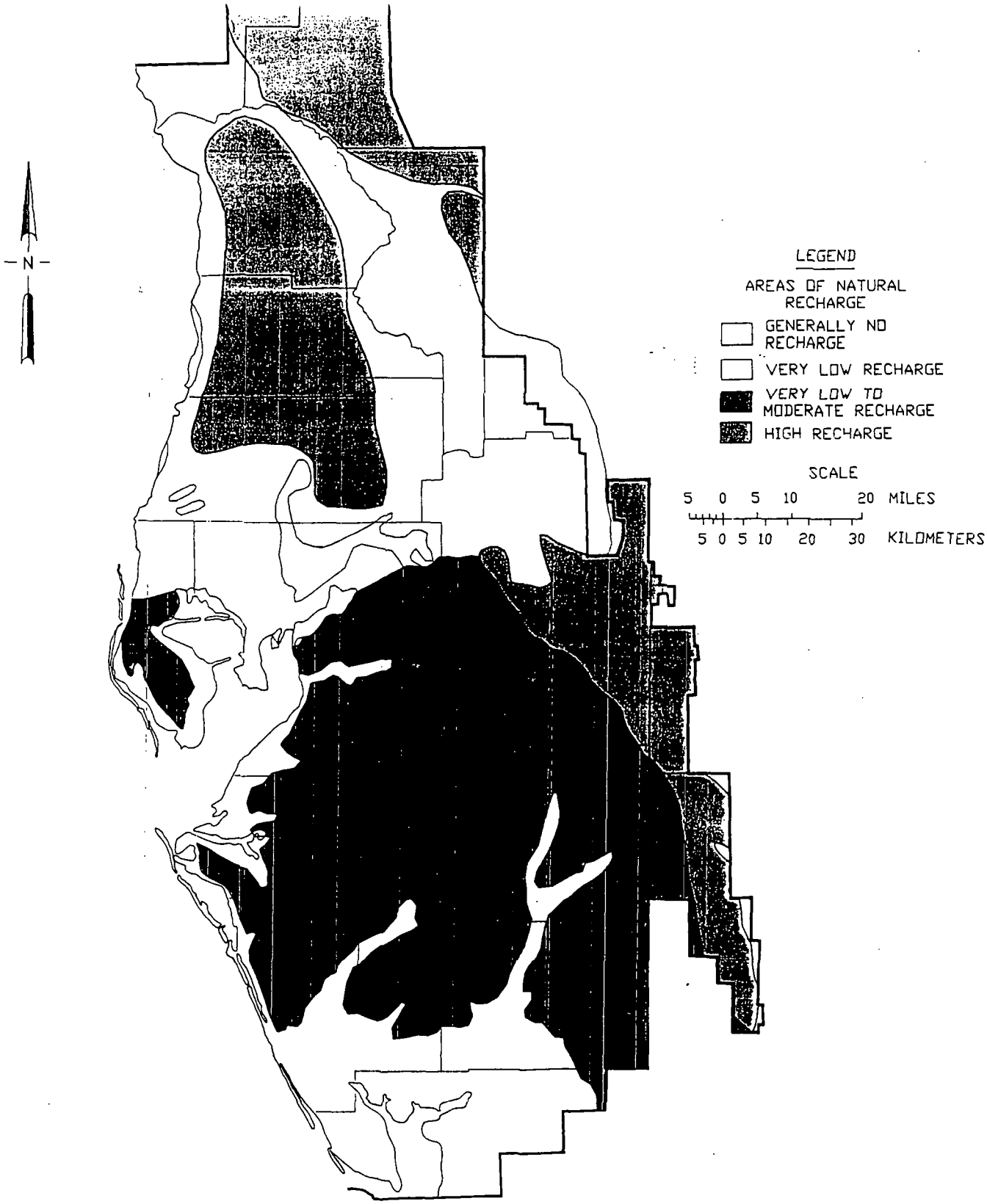
N
LEGEND
AREAS OF NATURAL RECHARGE
GENERALLY NO RECHARGE
VERY LOW RECHARGE
VERY LOW TO MODERATE RECHARGE
HIGH RECHARGE
SCALE
5 0 5 10 20 MILES
5 0 5 10 20 30 KILOMETERS

STATE OF FLORIDA
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Tom Gardner, *Executive Director*

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FLORIDA GEOLOGICAL SURVEY
Walter Schmidt, *State Geologist*

BULLETIN NO. 59

THE LITHOSTRATIGRAPHY OF THE HAWTHORN GROUP (MIOCENE) OF FLORIDA

By
Thomas M. Scott

Published for the
FLORIDA GEOLOGICAL SURVEY
TALLAHASSEE
1988

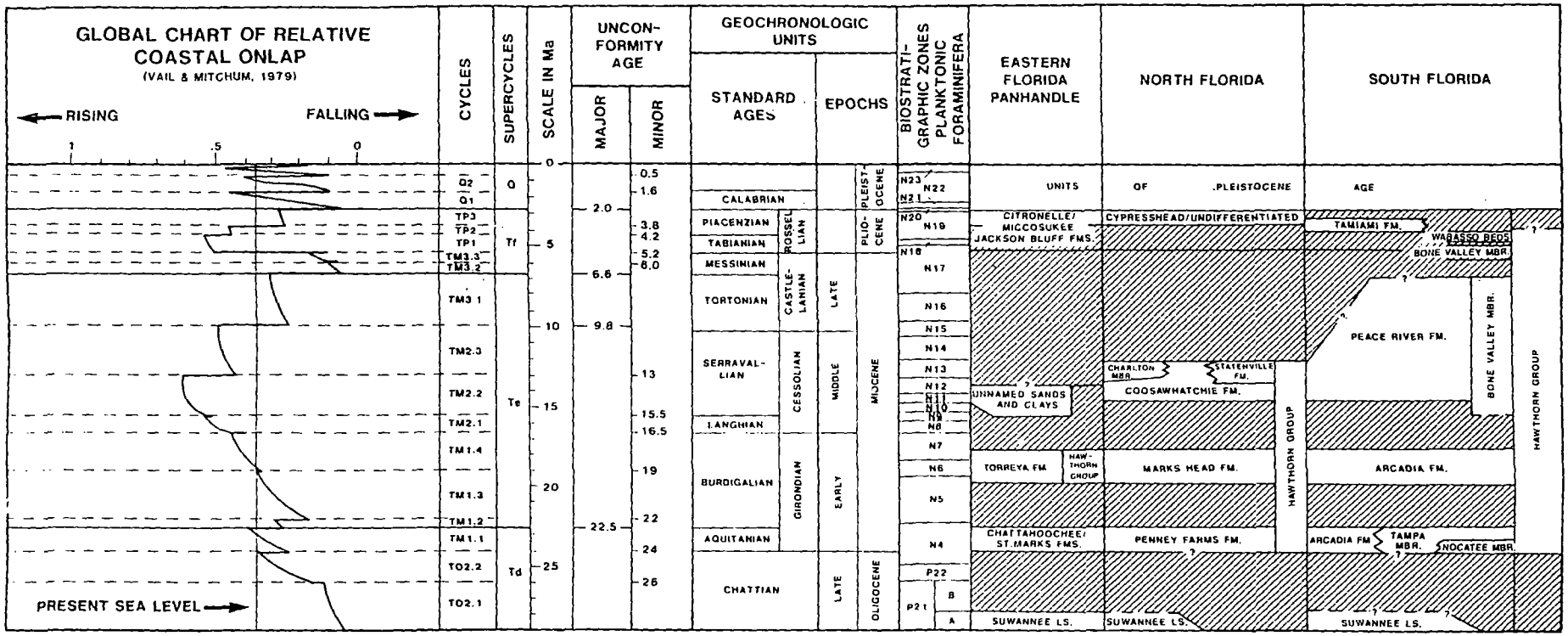

Figure 67. Lithostratigraphic units in relation to proposed sea level fluctuations (after Vail and Mitchum, 1979).

GROUNDWATER MONITORING PARAMETERS

AND

POLLUTION SOURCES

THIRD EDITION, MAY 1989

GEOFFREY B. WATTS

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

BUREAU OF WASTE CLEANUP

7.17. Pollution Source - Laundries/Dry Cleaners

Wastewater from the laundry business typically contains the ingredients of the detergents used in the cleaning process. Table 7.17.1 shows the composition of a phosphate based detergent. Dry cleaning establishments have traditionally used perchloroethylene as the cleaning solvent of choice. Because of health concerns, however, a petroleum hydrocarbon fraction "Stoddard" solvent is becoming increasingly utilized. The solvent is normally recycled on-site by filtration to remove lint and particulate matter followed by distillation. Ground water contaminantion can arise from spills or leaks in the solvent still or improper disposal of the filter material.

Table 7.17.1

Composition of a Phosphate Detergent (Shreve, et. al., 1977)

Component	Concentration (wt. %)
Surfactant (akylbenzene sulfonate)	8 - 20
Tripolyphosphate/tetrasodium pyrophosphate	30 - 50
Sodium sulfate	0 - 30
Sodium sulicate	6 - 9
Carboxymethyl cellulose	0.5 - 1.3
Fluorescent dye	0.05 - 0.1
Tarnish inhibitors	0 - 0.02
Perfume	0.1
Water	2 - 10

Table 7.17.2

Monitoring Parameters - Laundries/Dry Cleaners

Inorganic

Sulfate*
Phosphate*

Metals

Sodium*

Volatile Organics

EPA Method 601 Analytes*

Extractable Organics

Alkyl benzene sulfonates*
(MBAS Method)

*Key indicator parameter

Reference 10 (cont)

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE SCREENING SUPERFUND SUBSECTION
CONVERSATION RECORD

Date: July 29 1994 **File Name:** Central Florida Gas Gas Plant
Subject: Status of Winter Haven Municipal Wells
Winter Haven, Polk Co., Florida
Contact Person: Jerry York, City of Winter Haven
Time: 1315 HRS

From: Jim McCarthy, P.G. **Title:** Class A Operator
Professional Geologist I

To: Eric S. Nuzie **Phone No:** (813) 291-5850
Environ. Manager

Mr. Jerry York, a Class A Operator with the City of Winter Haven Water Production and Treatment Department, has given me the following update of the Cities wells:

Well Name	Status/Use
Ridge Vo-Tech Well	Active
Willow Brook Golf Course Well	Active/Irrigation only
Lucrene Park Cementary Well	Active/Irrigation only
Airport Well	Monitoring only
Inwood Well #1	Active
Inwood Well #2 (old)	Monitoring Only
Inwood Well #2 (new)[1]	Active
Inman Park Well	Monitoring Only
Fairfax Wells #s 1-5	Active
Third Street Wells #s 1-3	Active
Lake Shipp Well	Monitoring Only
Waste Water Plant #3 Well	Active
Magnolia Well	SWFWMD Monitoring Well

Two proposed new wells are being planned for future use.

[1]New Inwood Well #2 is located 250 feet east of old Inwood well #2 on Avenue T.

A:\CRCFG.DOC

Conversation Record

Contact:, Wayne Lane—City of Winter Haven Water Production (941-291-5767)

Reported by: Craig Feeny, FDEP

Date of Survey: 7/21/98

Date of Record: 7/21/98

Wayne Lane, of the City of Winter Haven Water Production Department provided the following information:

Fairfax wells # 1-6, Inwood wells #1 & 2, Third Street wells # 1-4, and the Ridge Vo-Tech well are active.

The Garden Grove Water Company was purchased this week by the City of Winter Haven. The system works independently, supplying its own discreet service population with no physical connection to the City System. The system will operate under the control of the City's new Garden Grove Division

City of WINTER HAVEN
Department of Public Works
Water Production & Treatment
1334 Fairfax St., N.E.
Winter Haven, FL 33880-0119

Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mary;

12 wells

See attachments for answers to #1, 2 and3 of your letter dated 2/15/88. The answer to question 4 is all of our wells pump into 1 (one) distribution system serving greater Winter Haven Area. Question 5, 11435 service connections, population 34,900. Question #6, all well field water is mixed serving 1 (one) distribution system.

Sincerely,

Wayne K. Lane

Wayne K. Lane
Lead Operator

FEB 25 1988

BUREAU OF
OPERATIONS

P. O. Box 2277 • Winter Haven, FL 33883-2277 • Phone (813) 294-3551

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

Please complete this form, fold, and mail with the return address showing. Some duplicate copies of this form may have been distributed. Therefore, you can disregard this request if you have already completed and mailed the previous form.

Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven

P. O. Box 2277

Winter Haven, Fla. 3388

Well Driller: Sadler Taylor Company, Inc.

Date Well Drilled: 1972

Depth of Well: 734'

Depth of Casing: 150'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Third St. well # 1

[illegible] 1987

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Sadler-Taylor Company, Inc.

Date Well Drilled: 1973

Depth of Well: 688'

Depth of Casing: 112'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Third St. # 2

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Unkown

Date Well Drilled: 1942

Depth of Well: 677'

Depth of Casing: 221'

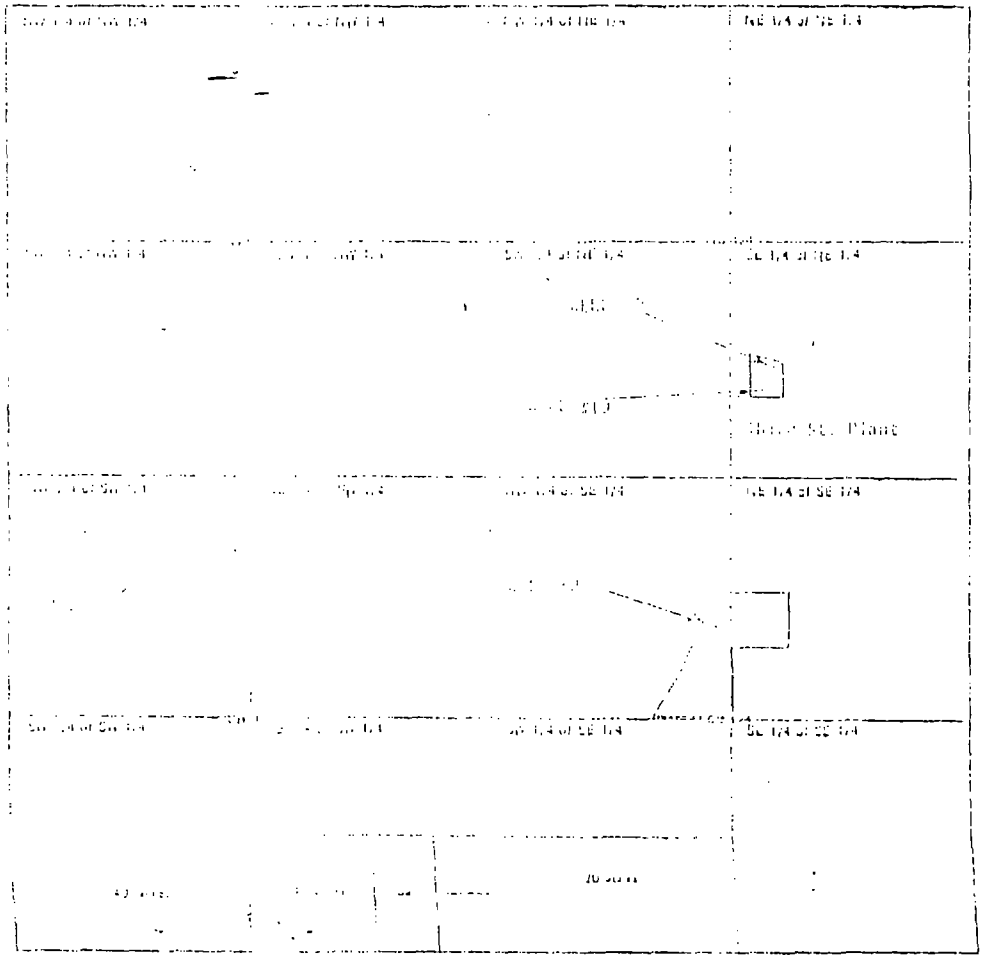
Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Old Sewer Plant well or Third St. well # 3



Well #9 and #10 - 250 Post Ave S.W.
Well #2 - Hiway 17 S
Status - Pumping

ear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department f Environmental Regulation is conducting a study of ground-water quality in our area. As part of this study, we need information on the construction haracteristics of each well which has been sampled in the EDB survey onducted by the Departments of Health and Rehabilitative Services and nvironmental Regulation. Water from your well has been tested and EDB was ot detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven

P. O. Box 2277

Winter Haven, Fla. 33880

Well Driller: Unkown

Date Well Drilled: 1976

Depth of Well: Unkown

Depth of Casing: Unkown

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Ridge Vo-Tech well # 1

Purchased from Polk County School Board approximately 1985

Ridge Vo-Tech School
Status - Stand-by

6 1 87

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven

[illegible] SW. P. O. Box 2277

[illegible], Fla. 33880

Well Driller: Layne Atlantic Company

Date Well Drilled: 1956

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OPERATIONS

Depth of Well: 601'

Depth of Casing: 185'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Inwood well #1

NOV 6 1987

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for well sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven

P. O. Box 2277

Winter Haven, Fla. 33880

Well Driller: Sadler Taylor Company, Inc.

Date Well Drilled: 1972

Depth of Well: 666'

Depth of Casing: 105'

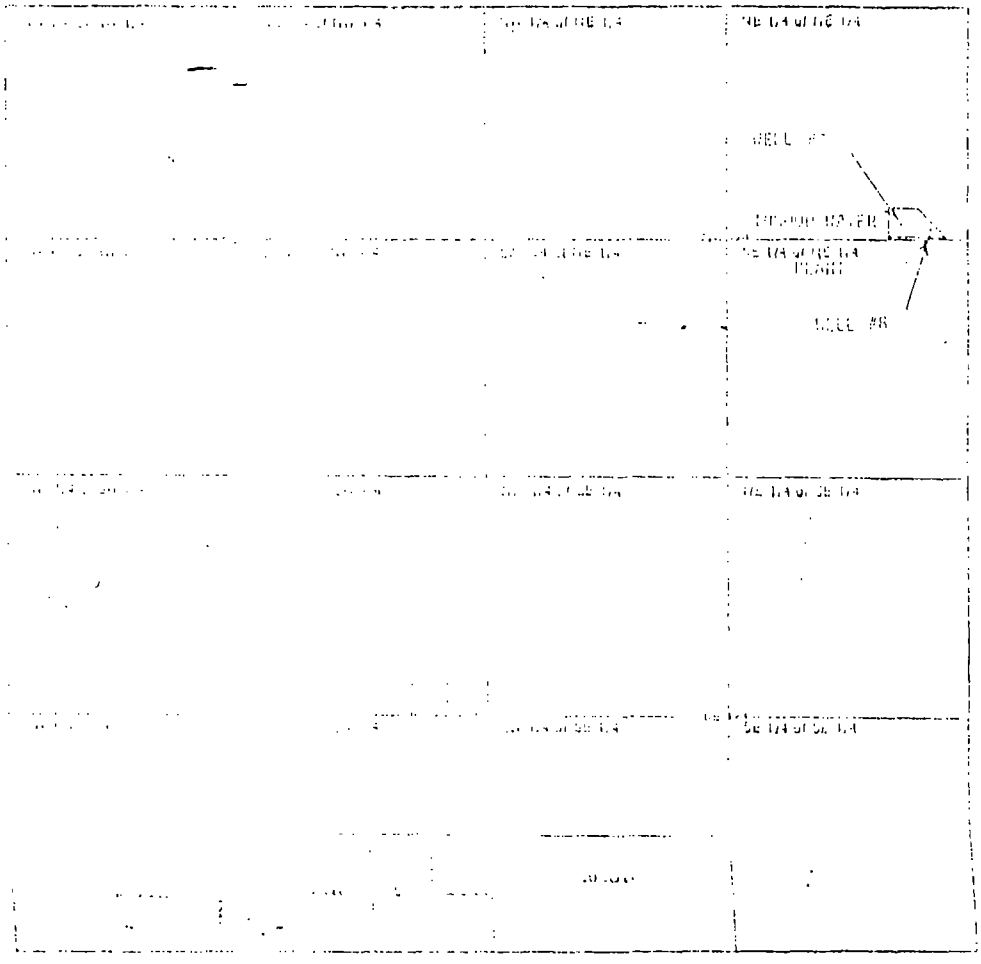
Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Inwood well #2



Well #7 and #8 - Corner of Ave T. & 34th St. N.W.
Status - Pumping

Dear Owner/Resident.

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Unknown

Date Well Drilled: 1962

Depth of Well: Unkown

Depth of Casing: 90'

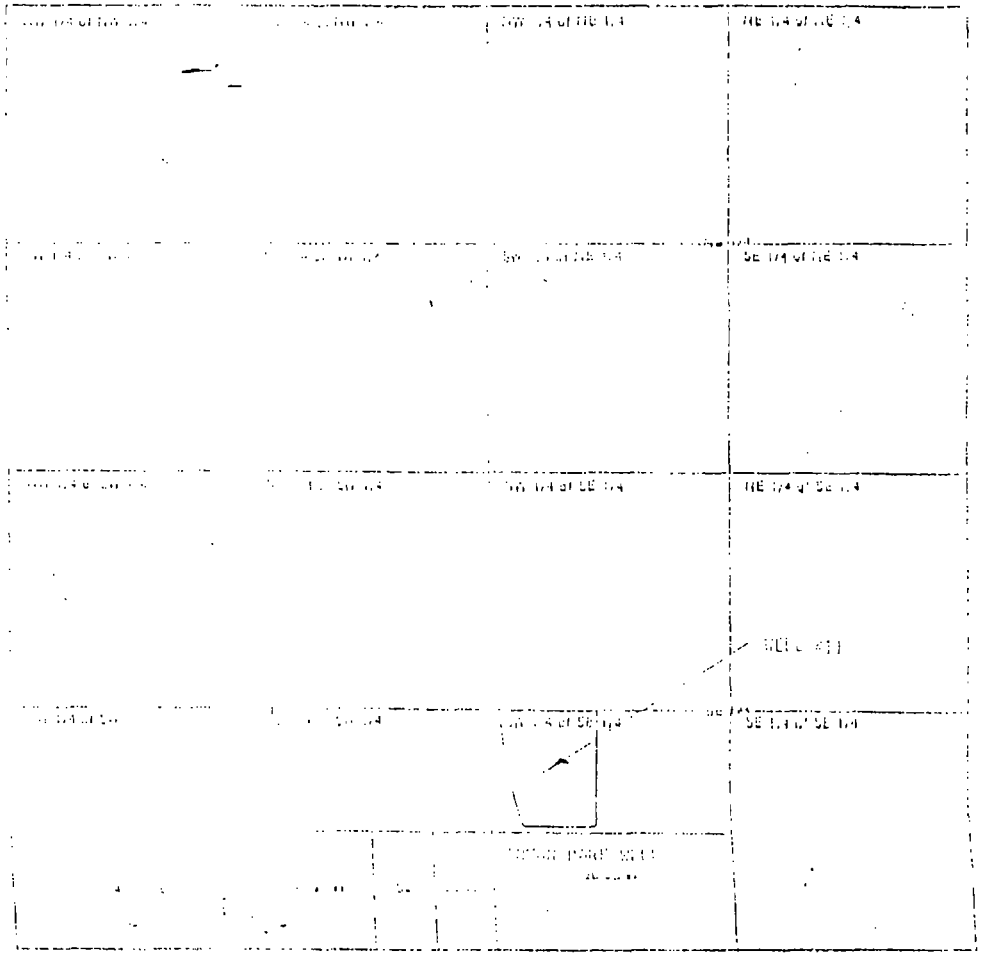
Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Inman Park well irrigation only



Well #11 - Located corner of Ave T. & Hiway 17 N.
Status - Irrigation only

NOV 6 1987

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: [illegible] Well and Supply Company

Date Well Drilled: 195-

Depth of Well: 593'

Depth of Casing: 147'

FEB 05 1988
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OPERATIONS

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Fairfax well #1

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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Thank you for your cooperation.

OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Florida Water Well and Supply Company

Date Well Drilled: 1934

Depth of Well: [illegible]

Depth of Casing: 141'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Fairfax well # 2

NOV 6 1987

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB-survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Florida Water Well and Supply Company

Date Well Drilled: 1954

Depth of Well: 642'

Depth of Casing: 175'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Fairfa[illegible] 3

NOV 6 1987

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven
P. O. Box 2277
Winter Haven, Fla. 33880

Well Driller: Florida [illegible] oil and Supply Company

Date Well Drilled: 1954

Depth of Well: 645'

Depth of Casing: 139'

Please circle correct answer:

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Fairfax well # 4

Dear Owner/Resident:

RESPOND BY

The U.S. Geological Survey in cooperation with the Florida Department of Environmental Regulation is conducting a study of ground-water quality in your area. As part of this study, we need information on the construction characteristics of each well which has been sampled in the EDB survey conducted by the Departments of Health and Rehabilitative Services and Environmental Regulation. Water from your well has been tested and EDB was not detected.

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OWNER/RESIDENT WELL INFORMATION SURVEY

Please indicate information for all wells sampled in the Florida Departments of Health and Rehabilitative Services and Environmental Regulation EDB survey program.

Owner/Resident Name and Address: City of Winter Haven

P. O. Box 2277

Winter Haven, Fla. 33880

Well Driller: Sadler-Layton Company, Inc.

Date Well Drilled: 1977

Depth of Well: 619'

Depth of Casing: 92'

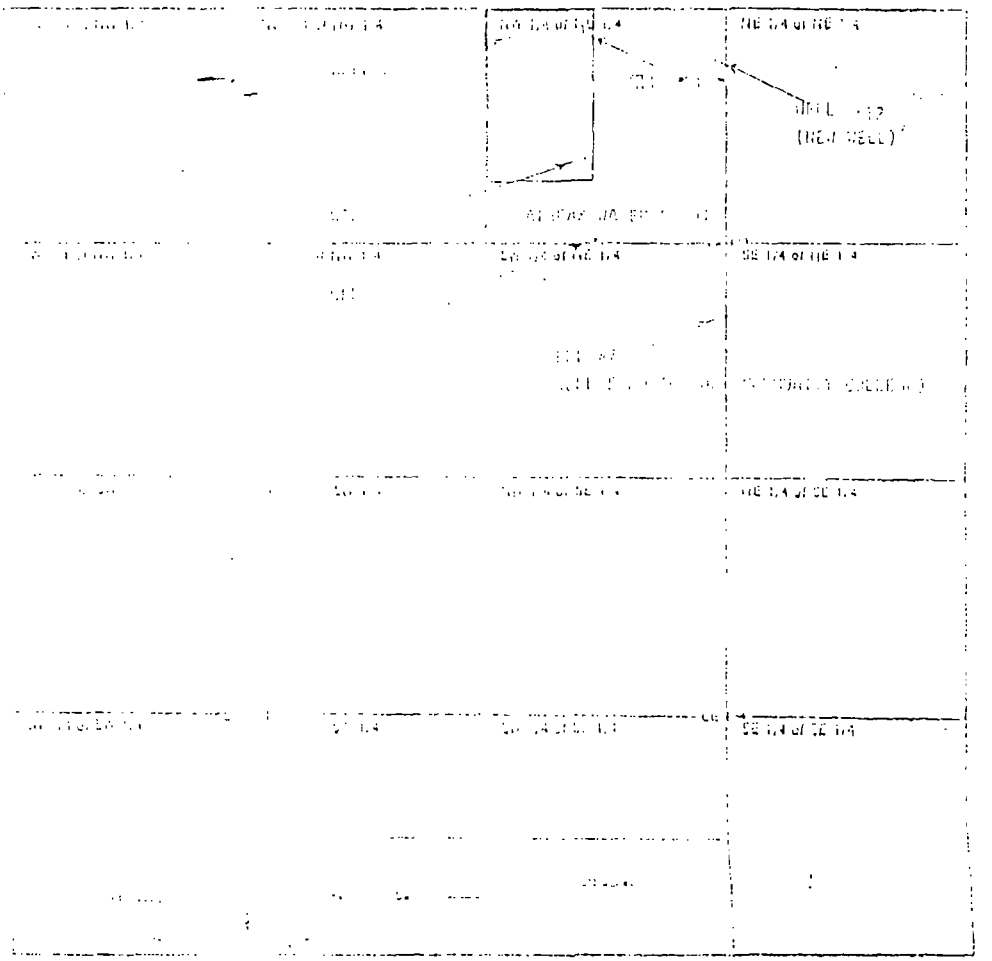
Please circle correct answer

Is your well finished with: Screen Open Hole

Type of pump: Jet Submersible Centrifugal Other Turbine

Other possible sources of information for the well(s) such as previous owners:

Fairfax well # 5



Well #3, #4, #5, #6 and #12 - Located behind 1334 Fairfax St. N.E.
Status - Pumping

To: File

File Name: Lake Mobile
Seminole County

From: Craig F. Feeny CF

Contact Person: Caroline Long
Florida Game & Freshwater Fish
Commission - Ocala Office

Date: 12/20/88

Phone No.: _____

Time: 3:20 PM

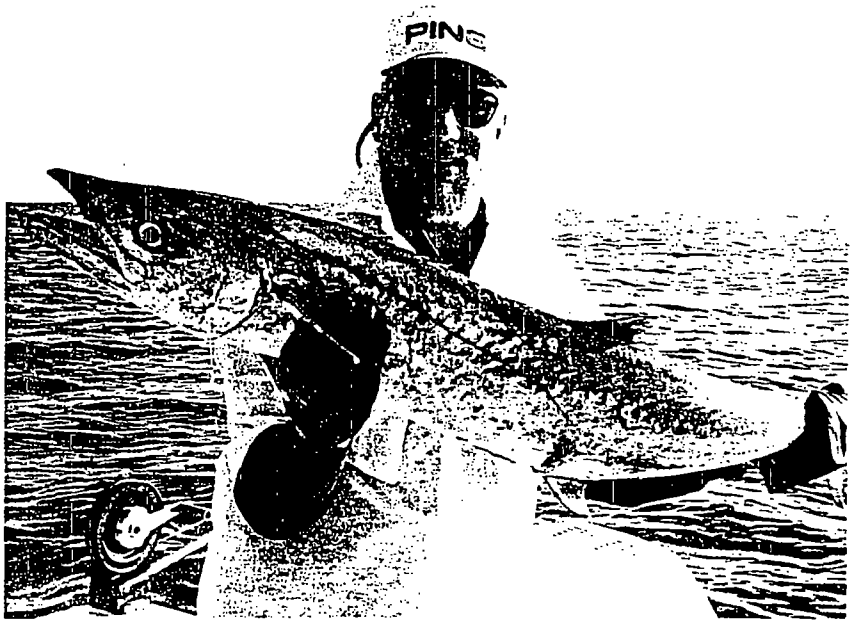
Subject: _____

There is no file on Lake Mobile at the FGFFC - Ocala office, but most accessible lakes in Florida are fished, as a rule.

CFF/mlr

ACTION SPOTTER WEST CENTRAL

Spool 'Em Up for April Action



Lou Vlasic caught this 29-pound kingfish and 21 more off Clearwater Beach.

A wise old head once told me he believed that more reels were stripped bare of line in April in **West Central** Florida than any other month.

"Smokers," he explained.

Yeah, right, old-timer, I cynically thought. Maybe, once upon a time, before kingfish were overfished in the 1980s. But that was a few years ago before tougher federal management got things back on the right track again with the king mackerel.

Now, the pack is back. And if this April is like the last, the spring run of kings will have plenty of monster leaders in the pack.

Last year, Gary Burch weighed in a 42-pounder in the King of the Beach Tournament in Pinellas County. Later in the spring run season, Karl Guenther managed to boat a 52-pounder, even though that smoker tore up his reel.

King mackerel schools are thick in April, and some of the fish in those schools are huge. There will be king action throughout the entire West Central fishing area and it will continue through May and well into June.

Capt. John O'Hanlon aboard the *Obsession* out of Palm Harbor says when you go king mackerel fishing, you need to decide if you want quantity or quality. Troll for numbers. Drift for size.

O'Hanlon tries to cover the entire water column with a display of lures and cutbait running at various depths.

If you want to win a tournament, you'll need a big fish. Here the advice is to freeline sardines using the lightest wire leader possible and a No. 2 livebait hook. Meantime, lower a chumbag over the side with a concoction of cat food and jack mackerel.

Capt. Rick Gross of Bradenton heads out to 40 feet of water, 5 to 10 miles out, and fishes the artificial reefs for kingfish. One of his favorite reefs is Seven Mile Reef where they dumped all the rip-rap when they tore down the old Sunshine Skyway bridge. He anchors up, chums with white bait, and freelines white baits using 20-pound spinning tackle.

This is not to say that kings are your only target. April is also a prime time for catching reef fish and deepwater pelagics.

When you're slow-trolling for kings, especially if you're in deep water you can

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be only mildly surprised if a sailfish or a blackfin tuna takes your bait. That's what happened to Amy Ballard last year, fishing on Chris Turner's *Shikari*. A Spanish sardine, out there to attract a big king, looked good to a 65-pound sailfish. Darren Campbell, fishing in 60 feet of water west of John's Pass, landed a 26-pound blackfin tuna on white bait intended for kings.

Grouper will be schooled up on hard bottom and structure, and biting greenbacks, whitebait, pinfish and shrimp. You can make the transition from king fishing to grouper fishing easily. Both will be found over the same hardbottom, especially if

A lone angler works the Weedon Island shoreline on foot as the sun comes up.

bait is showing on the surface. Some anglers anchor up on a grouper reef and chum for kingfish. Waiting for the kings, they put out a couple of deep rigs and catch grouper, snapper, triggerfish and the occasional cobia.

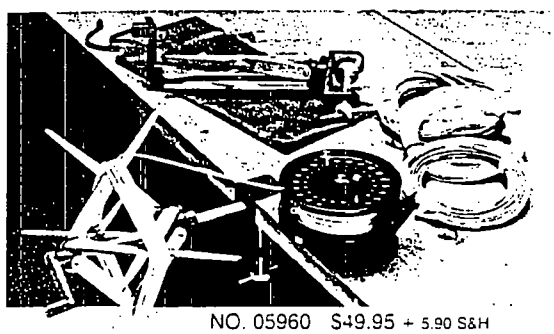
Closer to shore, mangrove snapper and sheepshead will be feeding well on bridges and piers and underwater rubble. On a calm day, you can often see the fish schooled up on the structure 12 to 15 feet down. Try the new rockpiles on the west side of the new Sunshine Skyway fishing pier. Glenn Taylor took a 9-pound mangrove snapper from one pile with a live shrimp.

Try the Capt. Robert McCue technique. McCue, of New Port Richey, sets up a drift or poles across turtlegrass or eelgrass flats and casts live bait into the sandy potholes. The key is to find the potholes that are adjacent to oyster bars. McCue catches mangrove snapper at low tide by casting a live bait into the hole. If there are no takers, he moves on to the next pothole. At night, he fishes the docks and channels on the incoming tide, particularly around the full moon.

April is a grand month for West Central anglers to catch the inshore slam—snook, redfish, and speckled trout. A good place to fish is at the downtide side of the barrier islands.

Snook are starting to move out of the warmer, backcountry sections of the rivers, canals, creeks and bayous moving down toward the mouths and, as the water warms, onto the flats. A productive method is to pole or drift across protected, sunlit water and, with a light spinning rod,

FOR SERIOUS FLY FISHERMEN



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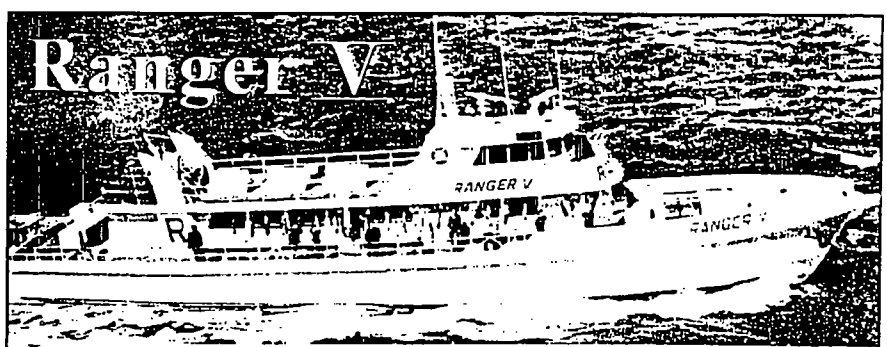

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Tues. 8 p.m. to Thurs. 6:30 a.m.

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CAPT. RICK GROSS
Tampa Bay to Boca Grande
Grouper • Spanish Mackerel • Snapper

ACTION SPOTTER continued

A successful grouper trip aboard Palm Harbor Capt. John O'Hanlon's boat *Obsession*.

cast a lively minnow in the vicinity of a linesider. Fish the mouths of the creeks and bayous, places like Fillman's Bayou, the Little Manatee, Bishop's Harbor and Terra Ceia Bay. Artificial lure enthusiasts should try bouncing a shad-tail jig off the bottom.

Capt. Mark Schindell of Sarasota likes to work the bridges over the passes like Albee Road in Nokomis, Venice Inlet and Hatchet Creek Bridge in Venice. A standard rig is a spinning rod and reel holding 10- or 12-pound line, 30-pound leader and a shrimp. The shrimp doesn't have to be big. Match, as they say, the hatch.

Reds like to forage the flats in April, sometimes in schools, sometimes alone, sometimes with a partner. Swim a gold spoon or a jig over the top of the grass. Same for gator trout. Livebait anglers say you should use light line so your bait is more active and swims more naturally.

A lot of fishermen target cobia in April. If you see a big ray, look for cobia, too, as these cruisers often swim in the turbulence of the ray so they can eat the

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morsels the ray shakes loose from the grass. Cobia eat plastic-tailed jigs, artificial worms, plugs, almost anything.

The black bass spawn will be over in most of the West Central lakes, but you can catch cooperative post-spawn bass on most lakes, including Lake Kissimmee, Lake Tarpon, the Winter Haven chain and the Harris chain. Sometimes the bass are chasing shad on the surface. To reach these schools you'll need a long-casting lure like a Rat-L-Trap. Sometimes bass are in deeper water close to their spawning beds. Flipping an artificial worm or plastic lizard will draw strikes.

Best Bet: WEST CENTRAL

Trolling is probably the quickest way to catch your limit of April kingfish. If you're looking for them, start trolling just a mile or so offshore and troll over known reefs and limestone bottom structure. Look for signs of activity, especially baitfish on the surface, a strong indication kings are within striking range.

Put out an array of lures so that you cover the entire water column from the surface to the bottom. Here is the 5-rod display that Capt. John O'Hanlon of Clearwater puts out: Line 1, flatline on one side of the boat, dragging a ballyhoo; Line

Mike Faust knows how to fish winter spawners like this largemouth bass.

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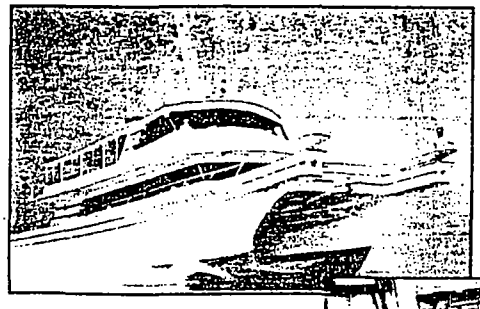

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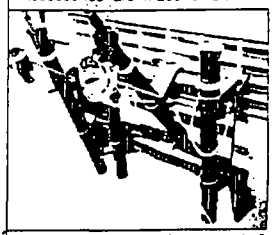
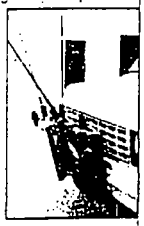
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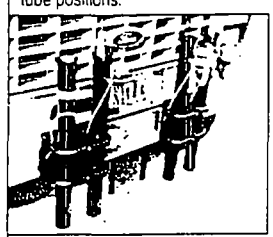
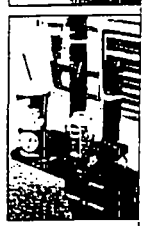

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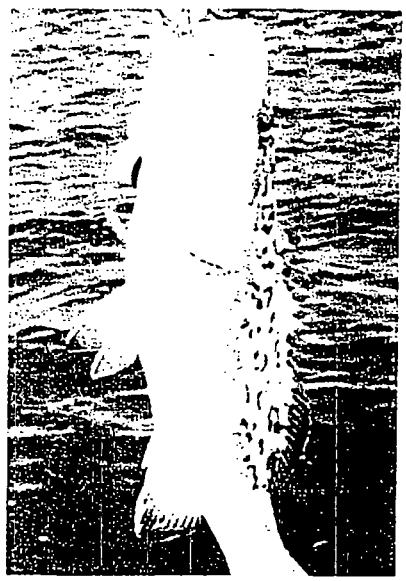
ACTION SPOTTER continued



Grass grouper, usually undersize, are bait grabbers on the Chassahowitzka Bay flats.

2. a chartreuse Bomber about 30 feet behind a No. 1 planer: Line 3, a glow-color King Spoon behind a No. 3 planer down the middle and into the propwash: Line 4, a chartreuse Bomber behind a No. 2 planer: Line 5, a big-lipped MirrOlure on a flatline with a 10-ounce trolling sinker.

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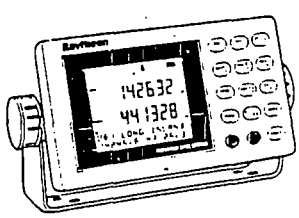

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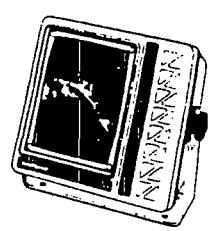

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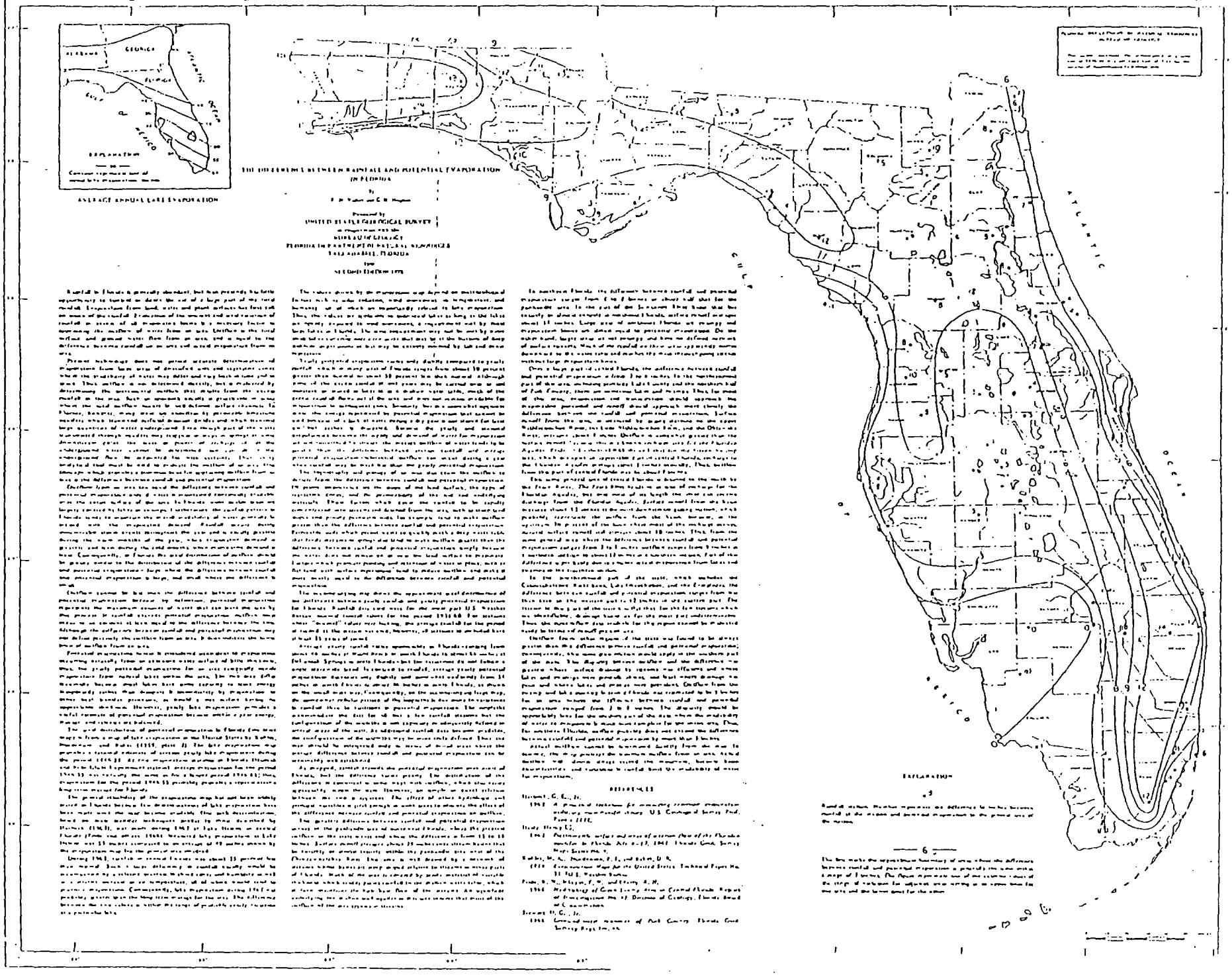
1969

NAME OF LAKE	SURFACE AREA (ACRES)	DRAINAGE AREA (SQ MI)	ELEV (FT, MSL)	TYPE OF LAKE	COUNTY	LOCATION	TOPO NO.	REMARKS
HAMILTON, LAKE	2162	20.5	120	3	POLK	S18 T28S R27E	173C	RMG
HANCOCK, LAKE	4519	131.0	97	3	POLK	S8 T29S R25E	182B	APMG
HART, LAKE	73		124	4	POLK	S24 T29S R26E	183A	AP
HARTRIDGE, LAKE	434	1.3	131	3	POLK	S8 T28S R26E	173C	RMG
HEART LAKE	10		135	4	POLK	S2 T28S R25E	172D	A
HELENE, LAKE	62	.4	150	4	POLK	S34 T26S R25E	172B	AG
HENRY, LAKE	857		126	3	POLK	S36 T27S R26E	173C	A
HENRY, LAKE	106		159	2	POLK	S16 T31S R26E	183C	A
HESTER, LAKE	9		128	4	POLK	S19 T27S R27E	173C	A
HOLLINGSWORTH, LAKE	356	1.9	133	2	POLK	S30 T28S R24E	172C	CAM
HOLLOWAY, LAKE	24		137	4	POLK	S21 T29S R24E	172C	A
HOWARD, LAKE	628	1.2	131	3	POLK	S30 T28S R26E	173C	RMG
HUNTER, LAKE	100	.8	162	2	POLK	S24 T28S R23E	172C	A
IDA, LAKE	17		134	3	POLK	S17 T28S R26E	173C	A
IDA, LAKE	1		119	4	POLK	S16 T28S R27E	173C	A
IDYL, LAKE	20		134	2	POLK	S16 T28S R26E	173C	A
IDYLWILD LAKE	102	6.2	131	3	POLK	S18 T29S R26E	173C	CA
INA, LAKE	7		129	4	POLK	S34 T28S R26E	173C	A
JESSIE, LAKE	190	4.5	130	3	POLK	S12 T28S R25E	172D	R
JOE, LAKE	11		124	2	POLK	S20 T27S R27E	173C	A
JULIANA, LAKE	926	5.4	132	4	POLK	S15 T27S R25E	172B	CAG
LEE, LAKE	9		119	4	POLK	S16 T28S R27E	173C	A
LEE, LAKE	40		119	2	POLK	S10 T29S R27E	183B	AM
LENA, LAKE	207		130	3	POLK	S9 T28S R25E	172D	R
LESTER LAKE	42		130	1	POLK	S22 T27S R23E	172D	A
LINK, LAKE	27		129	3	POLK	S27 T28S R25E	173C	
LITTLE LAKE AGNES	118		135	4	POLK	S4 T27S R25E	172B	
LITTLE LAKE HAMILTON	367		130	3	POLK	S5 T28S R27E	173C	RM
LITTLE VAN LAKE	21		135	4	POLK	S26 T27S R25E	172D	R
LIZZIE LAKE	95		146	4	POLK	S1 T31S R26E	183C	A
LONG LAKE	70		122	4	POLK	S22 T30S R26E	183C	A
LUCERNE, LAKE	42		129	4	POLK	S2 T28S R26E	173C	
LULU, LAKE	301	20.5	131	3	POLK	S4 T29S R26E	183A	MG
MABEL, LAKE	117		108	4	POLK	S11 T29S R27E	183B	A
MARIAM, LAKE	190		127	3	POLK	S27 T28S R26E	173C	A
MARTHA, LAKE	85		142	4	POLK	S21 T28S R27E	173C	
MATTIE, LAKE	1078	14.7	132	4	POLK	S14 T27S R25E	172B	A
MAUDE, LAKE	55		140	4	POLK	S21 T28S R27E	173C	
MAY, LAKE	44	13.6	131	3	POLK	S29 T28S R26E	173C	AP
MCLEOD, LAKE	512	1.5	133	4	POLK	S7 T29S R26E	182B	APMG
MEDORA, LAKE	50		130	4	POLK	S36 T27S R25E	172D	A
MENZIE, LAKE	22		148	4	POLK	S28 T28S R27E	173D	A
MIDDLE LAKE HAMILTON	106		120	3	POLK	S7 T28S R27E	173C	CAM
MILLSITE LAKE	135		122	3	POLK	S11 T29S R25E	182B	A
MIRROR LAKE	16	.1	179	4	POLK	S18 T28S R24E	172C	A
MIRROR LAKE	123	.5	131	3	POLK	S20 T28S R27E	173C	A
MORTON, LAKE	42	.2	179	4	POLK	S19 T28S R24E	172C	
MOUNTAIN LAKE	137	2.3	112	4	POLK	S26 T29S R27E	183B	AG
MUD LAKE	133		138	4	POLK	S6 T27S R25E	172B	A
MUD LAKE	60		122	4	POLK	S25 T30S R25E	182D	A
MYRTLE, LAKE	75		150	2	POLK	S32 T27S R25E	172D	A
MYRTLE, LAKE	413		118	3	POLK	S19 T29S R27E	183A	M
NED LAKE	74		131	2	POLK	S1 T29S R26E	183A	
NORALYN MINE LAKE	180		128	4	POLK	S25 T30S R24E	182D	R
OTIS, LAKE	143	1.0	139	2	POLK	S28 T28S R26E	173C	AG
PANSY, LAKE	50		129	2	POLK	S8 T28S R26E	173C	A
PARKER, LAKE	2272	23.6	128	3	POLK	S8 T28S R24E	172C	CAMG
PARKER, LAKE	123		123	4	POLK	S32 T29S R27E	183A	A
PEMBROKE, LAKE	110		109	3	POLK	S24 T30S R26E	183C	A
PERCH LAKE	67		124	2	POLK	S21 T30S R26E	183C	A
PHYLLIS LAKE	1		125	3	POLK	S26 T29S R24E	182A	
POLECAT LAKE	40		140	4	POLK	S27 T30S R26E	183C	AM
POLK LAKE	186		109	1	POLK	S2 T30S R25E	182B	A
RATTLESNAKE LAKE	120		122	4	POLK	S24 T29S R26E	183A	
REED, LAKE	13		133	4	POLK	S14 T29S R26E	183A	
REEVES LAKE	27		125	4	POLK	S13 T29S R26E	183A	
REY, LAKE	1		131	4	POLK	S33 T28S R26E	173C	A
RING, LAKE	3		129	4	POLK	S34 T28S R26E	173C	A
RIVER LAKE	26		137	4	POLK	S1 T29S R26E	183A	
ROCHELLE, LAKE	578	15.5	128	3	POLK	S4 T28S R26E	173C	CAMG
ROUND LAKE	28		129	4	POLK	S13 T29S R26E	183A	
ROY, LAKE	78	.5	131	4	POLK	S34 T28S R26E	173C	
RUBY, LAKE	255		125	1	POLK	S12 T29S R26E	183A	AM
RUTH LAKE	3		119	4	POLK	S7 T30S R25E	182B	A
SAND LAKE	68		115	4	POLK	S24 T30S R25E	182D	A

NAME OF LAKE	SURFACE AREA (ACRES)	DRAINAGE AREA (SQ MI)	ELEV (FT, MSL)	TYPE OF LAKE	COUNTY	LOCATION	TOPO NO.	REMARKS
SANITARY, LAKE	503	2.8	130	2	POLK	S1 T28S R25E	172D	RPG
SARA, LAKE	41		121	2	POLK	S17 T28S R27E	173C	AM
SARDEN LAKE	25		130	4	POLK	S16 T28S R24E	172C	A
SCOTT LAKE	285	2.1	168	3	POLK	S18 T29S R24E	182A	RMG
SEARS LAKE	63		140	2	POLK	S36 T28S R25E	172D	AP
SERENA, LAKE	8		116	4	POLK	S12 T30S R27E	183B	A
SEWARD LAKE	46		132	1	POLK	S15 T29S R24E	182A	AP
SHIPP, LAKE	353	14.9	131	3	POLK	S32 T28S R26E	173C	CAM
SICK LAKE	54		135	4	POLK	S17 T27S R24E	172A	A
SILVER, LAKE	53	.2	145	4	POLK	S20 T28S R27E	173C	A
SMART, LAKE	275	17.9	128	3	POLK	S9 T28S R26E	173C	AMG
SPIRIT LAKE	224		133	4	POLK	S35 T28S R25E	182B	A
SPRING LAKE	25		131	2	POLK	S20 T28S R27E	173C	A
STAR LAKE	84		119	4	POLK	S16 T30S R26E	183A	R
STARR, LAKE	147		108	4	POLK	S14 T29S R27E	183B	AP
STELLA, LAKE	4		150	4	POLK	S11 T28S R25E	172D	A
SUMMIT, LAKE	65	.3	131	3	POLK	S34 T28S R26E	183A	AP
SURVEYORS LAKE	293		131	4	POLK	S26 T30S R26E	183C	APM
SWOOPE, LAKE	89		131	4	POLK	S29 T27S R26E	173C	APN15
TANGERINE LAKE	29		132	4	POLK	S18 T27S R26E	173A	A
TENNESSEE, LAKE	113		132	4	POLK	S9 T27S R25E	172B	AP
THOMAS LAKE	73		135	4	POLK	S35 T28S R25E	172D	A
TICE LAKE	18		108	4	POLK	S35 T29S R25E	182B	A
TRACY, LAKE	136		124	2	POLK	S29 T27S R27E	173C	A
TWIN LAKES	47		120	4	POLK	S11 T30S R27E	183B	AN4
TWIN LAKES	143		113	4	POLK	S23 T30S R26E	183C	A
TWOMILE LAKE	14		106	2	POLK	S31 T31S R26E	183B	A
UNNAMED LAKE	35		131	2	POLK	NW1/4 S3 T26S R25E	162D	
UNNAMED LAKE *Galloway Lake*	34		130	3	POLK	NW1/4 S27 T27S R23E	171D	
UNNAMED LAKE	20		130	4	POLK	SE1/4 S3 T27S R25E	172B	A
UNNAMED LAKE	17		110	4	POLK	SE1/4 S32 T28S R24E	172C	A
UNNAMED LAKE	15		132	4	POLK	NE1/4 S18 T27S R26E	173A	A
UNNAMED LAKE	25		101	4	POLK	NW1/4 S13 T30S R23E	182A	AN1
UNNAMED LAKE 1 *Little Hodgins Lake*	13		108	1	POLK	SW1/4 S3 T30S R23E	181B	AN1
UNNAMED LAKE 2	24		109	3	POLK	SW1/4 S3 T30S R23E	181B	RN1
UNNAMED LAKE	18		99	4	POLK	NW1/4 S3 T30S R23E	181B	AN1
UNNAMED LAKE *Prong Lake*	17		109	1	POLK	SW1/4 S27 T31S R23E	181C	N1
UNNAMED LAKE	13		109	4	POLK	NE1/4 S11 T30S R23E	182A	A
UNNAMED LAKE	19		109	4	POLK	NW1/4 S11 T30S R23E	182A	AN1
UNNAMED LAKE	16		110	3	POLK	SE1/4 S2 T30S R23E	182A	AN1
UNNAMED LAKE 1	18		122	2	POLK	NE1/4 S2 T30S R23E	182A	RN1
UNNAMED LAKE 2	29		116	4	POLK	NE1/4 S2 T30S R23E	182A	RN1
UNNAMED LAKE *Cactus Lake*	10		125	4	POLK	NW1/4 S2 T30S R23E	182A	RN1
UNNAMED LAKE	13		140	4	POLK	NE1/4 S12 T30S R23E	182A	AN1
UNNAMED LAKE 1	11		122	4	POLK	SW1/4 S6 T30S R24E	182A	AN1
UNNAMED LAKE 2	12		125	4	POLK	SW1/4 S6 T30S R24E	182A	RN1
UNNAMED LAKE	19		146	2	POLK	NW1/4 S7 T30S R24E	182A	AN1
UNNAMED LAKE	23		129	4	POLK	SE1/4 S6 T30S R24E	182A	AN1
UNNAMED LAKE	12		129	2	POLK	NW1/4 S6 T30S R24E	182A	CAN1
UNNAMED LAKE 1	32		111	4	POLK	NE1/4 S1 T30S R24E	182A	RN1
UNNAMED LAKE 2	10		113	4	POLK	NE1/4 S1 T30S R24E	182A	AN1
UNNAMED LAKE	23		122	4	POLK	SW1/4 S36 T29S R23E	182A	AN1
UNNAMED LAKE 2	21		123	4	POLK	NW1/4 S36 T29S R23E	182A	AN1
UNNAMED LAKE	18		111	4	POLK	NE1/4 S34 T29S R23E	182A	
UNNAMED LAKE	21		109	4	POLK	NW1/4 S34 T29S R23E	182A	
UNNAMED LAKE	25		130	2	POLK	SW1/4 S31 T29S R24E	182A	
UNNAMED LAKE	14		201	1	POLK	SW1/4 S32 T29S R24E	182A	
UNNAMED LAKE	15		163	3	POLK	SE1/4 S7 T30S R24E	182A	AN1
UNNAMED LAKE	36		219	4	POLK	SW1/4 S33 T29S R24E	182A	A
UNNAMED LAKE	27		203	4	POLK	NW1/4 S33 T29S R24E	182A	AN1
UNNAMED LAKE 1	11		124	4	POLK	SW1/4 S25 T29S R23E	182A	N1
UNNAMED LAKE 2	22		125	4	POLK	SW1/4 S25 T29S R23E	182A	AN1
UNNAMED LAKE	17		121	2	POLK	SE1/4 S26 T29S R23E	182A	
UNNAMED LAKE	14		120	4	POLK	NW1/4 S26 T29S R23E	182A	
UNNAMED LAKE	11		136	4	POLK	NE1/4 S26 T29S R23E	182A	N1
UNNAMED LAKE	66		132	3	POLK	SW1/4 S24 T29S R23E	182A	AN1
UNNAMED LAKE	21		172	1	POLK	SW1/4 S19 T29S R24E	182A	AN1
UNNAMED LAKE	26		146	4	POLK	NW1/4 S24 T29S R23E	182A	AN1
UNNAMED LAKE	10		236	4	POLK	SE1/4 S20 T29S R24E	182A	A
UNNAMED LAKE	39		96	1	POLK	NE1/4 S3 T30S R25E	182B	A
UNNAMED LAKE 1	11		98	4	POLK	NW1/4 S3 T30S R25E	182B	AN1
UNNAMED LAKE	35		109	2	POLK	S2 T30S R25E	182B	R
UNNAMED LAKE2	11		119	4	POLK	NW1/4 S3 T30S R25E	182B	A
UNNAMED LAKE	12		102	4	POLK	SE1/4 S34 T29S R25E	182B	
UNNAMED LAKE	78		102	4	POLK	SW1/4 S21 T29S R25E	182B	A


AVERAGE ANNUAL LAKE EVAPORATION
THE DIFFERENCE BETWEEN RAINFALL AND POTENTIAL EVAPORATION IN FLORIDA
By
Prepared by
UNITED STATES GEOLOGICAL SURVEY
SECOND EDITION 1978
EXPLANATION
ATLANTIC
OCEAN
GULF OF MEXICO

37

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

WEATHER BUREAU
F. W. Reichelderfer, Chief

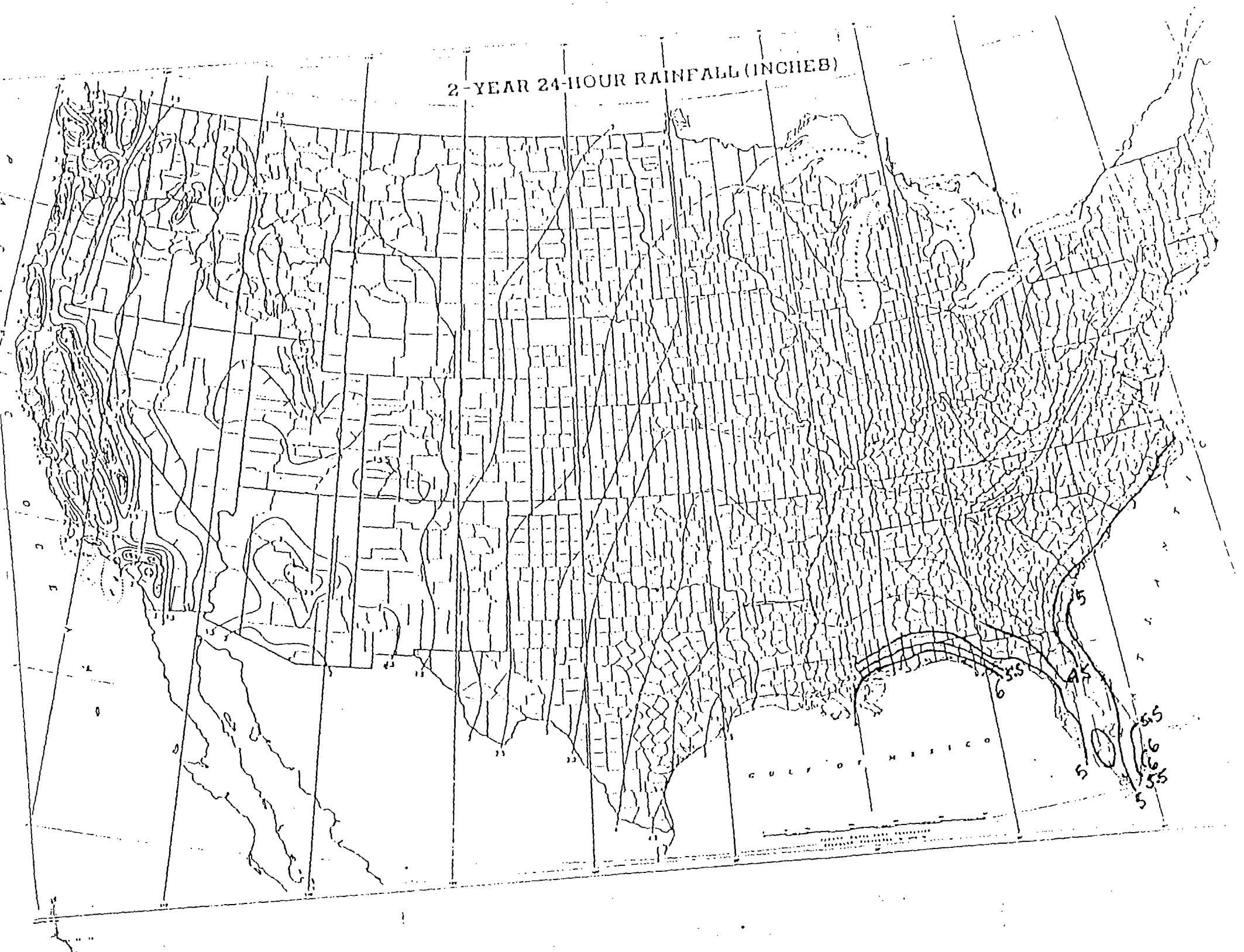
TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

Published - 1961


2-YEAR 24-HOUR RAINFALL (INCHES)
GULF OF MEXICO
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STATE OF FLORIDA
STATE BOARD OF CONSERVATION
DIVISION OF GEOLOGY

FLORIDA GEOLOGICAL SURVEY

Robert O. Vernon, *Director*

REPORT OF INVESTIGATIONS NO. 42

HYDROLOGY OF GREEN SWAMP AREA IN CENTRAL FLORIDA

By
R. W. Pride, F. W. Meyer, and R. N. Cherry

Prepared by the
UNITED STATES GEOLOGICAL SURVEY
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TALLAHASSEE
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HYDROLOGY OF GREEN SWAMP AREA IN CENTRAL FLORIDA

By

R. W. Pride, F. W. Meyer, and R. N. Cherry

ABSTRACT

Green Swamp is an area of about 870 square miles of swampy flatlands and sandy ridges near the center of the Florida Peninsula. The elevation of the land surface ranges from about 200 feet above mean sea level in the eastern part to about 75 feet in the western part. The Withlacoochee River drains two-thirds of the area. The Little Withlacoochee River, the headwaters of the Oklawaha River, the Hillsborough River, the headwaters of the Kissimmee River, and the headwaters of Peace River drain the remaining area. The surface is mantled with a varying thickness of sand and clay which comprises the nonartesian aquifer. Porous marine limestones comprising the Floridan aquifer underlie and drain the subsurface. The Floridan aquifer crops out in the western part of the area and occurs at depths ranging from 50 to more than 200 feet in the eastern part. The mineral content of both surface and ground water does not impair the usability of the water for most purposes. However, surface water is generally highly colored and acidic, and ground water is hard and generally contains objectionable amounts of iron.

Hydrologic data were collected during the period, July 1, 1958, to June 30, 1962, for making quantitative and qualitative analyses of the hydrologic budget and for determining the significance of the hydrology of the Green Swamp area with respect to central Florida.

Extremely high and unusually low annual rainfalls were recorded during the period of investigation. The factors of the water budget for each of the 3 complete years of record, 1959-1961, show that average rainfall on the area ranged from 70.9 to 34.7 inches; surface runoff ranged from 31.1 to 2.3 inches; ground-water outflow ranged from 1.8 to 2.2 inches; and water derived from change in storage ranged from insignificant amounts in 1959 and 1960 to about 4.3 inches in 1961. Evapotranspiration losses, which were the residuals in the water-budget equation, ranged from 39.1

o 34.5 inches. Surface runoff varied through a wide range from vet to dry years, while ground-water outflow varied little. The lata show that the annual losses by evapotranspiration varied ittle from wet to dry years. Evaporation losses from Lake Helene mounted to 53.1 inches during 1962.

Comparison of water-budget factors for the eastern and western arts of the area shows that higher rates of ground-water recharge o the Floridan aquifer occur in the eastern part.

The amount of annual runoff from the total area has not ignificantly changed in recent years. However, the distribution f the runoff has been changed by drainage canals that divert ome of the flow from the upper Oklawaha River into the Withlacoochee River.

Impoundment of water in Green Swamp would provide some lood protection for the lower Hillsborough River and the lower Withlacoochee River basins. Impoundment of the total discharge rom Green Swamp to the Hillsborough River during the March 1960 flood would have reduced the flood crest at 22nd Street, Tampa, y about 1 foot. Impoundment of the March 1960 flood discharge n reservoirs proposed for the Green Swamp area (Corps of Engineers, 1961) would have reduced the flood crest of the Withlacoochee River at the Trilby gaging station by about 4 feet nd at the Croom gaging station by about 1.7 feet.

Impoundment of water in Green Swamp Reservoir would have ittle effect on ground-water outflow from the total Green Swamp rea because of increased seepage rates beneath the levee, increased vaporation losses, and because the aquifer under present conditions s essentially full. Impoundment of water in the Southeastern onservation Area (Johnson, 1961) would increase the seepage ates during dry periods by about 60 percent. Impoundment of vater will become more significant relative to ground-water echarge as pumpage from the Floridan aquifer increases.

High piezometric levels in the southeastern part of the Green Swamp area are caused partly by a relatively slow rate of round-water outflow due to sand-filled fractures, caverns, and inkholes in the Floridan aquifer.

Mineral content and calcium carbonate saturation studies show hat generally the water in the Floridan aquifer in central Florida s low in mineral content and undersaturated.

Interpretation of quantitative and qualitative data indicate hat recharge to the Floridan aquifer in the Green Swamp area is bout the same as that in other parts of central Florida.

INTRODUCTION

To satisfy the demands of a rapidly increasing population, many acres of land in Florida are converted each year to residential and industrial uses. Urbanization of these areas and the demand for increasing the food supply thus require that man search for new areas to develop for agricultural uses. This search, in many instances, has led to the development of marginal lands.

The Green Swamp area, shown in figure 1, in central Florida is an area where man is developing agricultural land from marginal land. The present efforts for its development are similar to the early efforts for developing the Everglades in that many miles of canals and ditches have been constructed to improve the drainage.

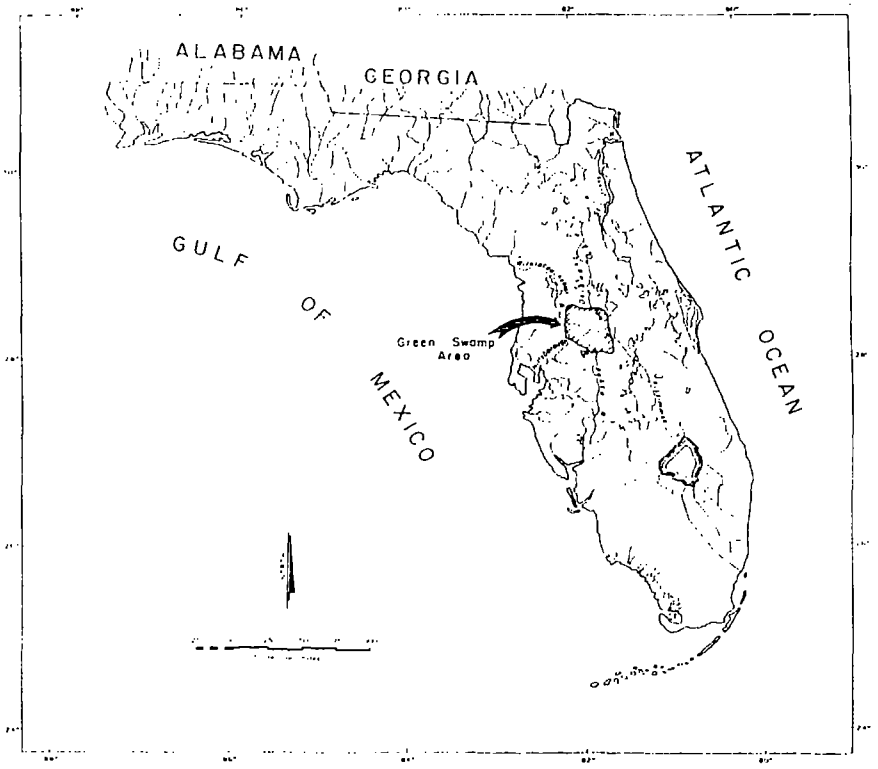


Figure 1. Map of Florida showing location of Green Swamp area.

PURPOSE AND SCOPE

Lest the early mistakes of the Everglades be repeated, the Florida Division of Water Resources and Conservation considered that an appraisal of the physical and hydrologic features of the Green Swamp area was needed for future guidance in planning water-resource policy. Lack of factual hydrologic information has contributed to the controversy on whether the area should be utilized for flood control and water conservation or for agriculture. This investigation provides factual information on the hydrology of the area for determining the feasibility of either choice of utilization.

The hydrology of the Green Swamp area was investigated by the U. S. Geological Survey in cooperation with the Florida Geological Survey, the Florida Division of Water Resources and Conservation, and the Southwest Florida Water Management District. The investigation covered a 4-year period beginning July 1, 1958. A Comprehensive Report on Four River Basins, Florida, was prepared by the Corps of Engineers in 1961.

The following factual data, used to appraise the hydrologic significance of the area, were collected during the investigation; the amount of rainfall on the area; the pattern of surface-water drainage; the effects of improved drainage channels and man-made diversions; the amount and direction of surface-water runoff; the amount and direction of ground-water outflow; the amount of evaporation losses from an open water surface; the interrelationship of rainfall, surface water, and ground water; and the chemical and physical characteristics of water in relation to the hydrologic environment.

A comprehensive appraisal of the hydrology of the Green Swamp area and its significance to central Florida have been made on the basis of the findings of this investigation. The report does not recommend any plan of development or utilization of the water resources of the area. An appraisal was made, however, of the hydrologic effectiveness of a plan of water control and water conservation proposed by the U. S. Corps of Engineers (1961).

PREVIOUS INVESTIGATIONS

Only cursory investigations of the water resources and geology of the Green Swamp area were made prior to this investigation. Few long-term records of streamflow, ground-water levels, and chemical quality had been collected in the vicinity as part of the statewide data-collection programs.

Many of the physical and hydrologic features of the area are given in an interim report by Pride, Meyer, and Cherry (1961).

General descriptions of the geology of the region have been given by Cooke (1945), Vernon (1951), White (1958), and Stewart (1959). Stringfield (1936) defined and described the principal artesian aquifer of Florida.

Analyses of water from surface and ground sources in the vicinity of the Green Swamp area are given in reports by Collins and Howard (1928) and Black and Brown (1951).

METHODS OF INVESTIGATION

Most of the data for the investigation were collected during the 4-year period from July 1958 to June 1962 and covered a wide range of hydrologic conditions.

The investigation of the water resources of the Green Swamp area involves studies of water in three main physical environments: (1) precipitation, which occurs as rainfall; (2) surface water, which occurs on the surface of the ground; and (3) ground water, which occurs beneath the surface of the ground.

Waters in these environments are interrelated. Thus, it was necessary to study the whole process or system, rather than any part, to understand and to evaluate the water resources of the area.

The methods of studying water in each environment are different. Some characteristics of water in the three environments may be measured directly; some may be evaluated by analysis of representative samples from which results may be inferred; and some characteristics and quantities must be determined indirectly. For instance, the chemical characteristics of the water at a particular place can be used as an indication of the environment through which the water has passed. The surface materials in the Green Swamp area are relatively insoluble and the surface waters are therefore low in mineral content. The rock below the surface materials is relatively soluble and the contained water is considerably more mineralized. Mineralized streamflow in areas such as the Green Swamp, where industrial and municipal disposals into streams are minor, indicates ground-water inflow into streams. Therefore, the chemistry of the water can be used as a tool to give a more complete evaluation of the hydrology of the area.

Daily records of rainfall were collected at 24 stations located as shown in the figures on pages 2 and 5. Some of these records are from U. S. Weather Bureau long-term stations. Short-term rainfall records were collected at stream or well data-collection stations during part of the investigation using standard 8-inch gages with tipping-bucket attachments to the water-stage recorders.

Surface-water characteristics of the area were determined by collecting stage, streamflow, and chemical-quality data at gaging stations and at miscellaneous sites; by making field and aerial reconnaissance of the area; and by studying maps and aerial photographs.

All surface-water data-collection stations are presented in table 1 and located in figure 2 and in the figure on page 5. The grid coordinate number shown in column 2 of table 1 is based on the

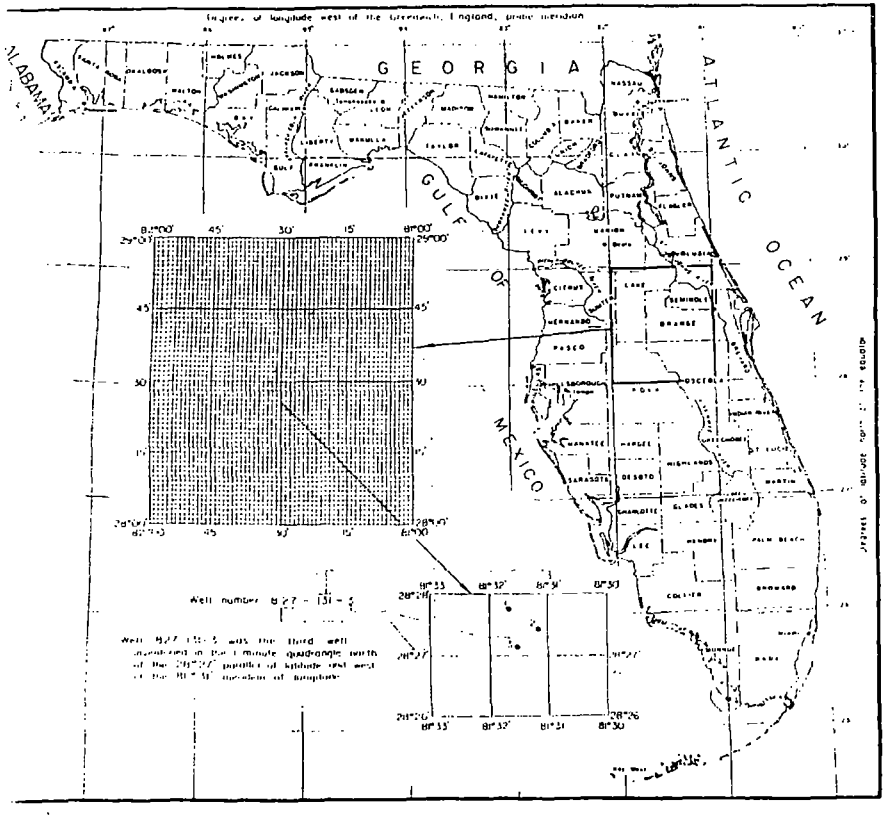


Figure 3. Diagram showing the well-numbering system used in Florida.

TABLE 1. Surface-water data-collection points in Green Swamp area and vicinity.

Type of record: A, Standard chemical analysis; D, Discharge and stage; E, Evaporation; K, Conductivity; S. Stage.

Frequency of record: d, Daily; p, periodic (monthly to bimonthly intervals); r, Continuous; w. Weekly; (9), Total number of analyses of samples or measurements of streamflow.

Station No. on fig. 5	Grid co-ordinate No. on fig. 2	Location (in downstream order)	Drainage area sq. mi.	Type and frequency of record	Period of record
		ST. JOHNS RIVER BASIN			
1	807-140	Lake Lowery near Haines City	...	Sd	June 1960 to June 1962
				A (3)	1959-62
2	815-140	Green Swamp Run near Loughman	33	Dr	March 1961 to June 1962
				A (1)	1959
3	826-144	Big Creek near Clermont	68	Dp (27)	1945-47, 1952-56
				Dr	July 1958 to June 1962
				A (11)	1956-61
4	826-144	Bear Branch near Clermont	1.9	Dp (27)	1958-61
				A (1)	1960
5	825-147	Little Creek at Cooper's Ranch near Clermont	10	Dr	June 1960 to June 1962
				A (3)	1959-61
6	827-145	Little Creek near Clermont	15	Dp (34)	1945-60
				A (6)	1956-59
7	828-147	Lake Gloria Outlet near Clermont	8.4	Dp (8)	1959-60
				Dd	April 1961 to June 1962.
8	829-144	Lake Louisa near Clermont		Sd	March 1957 to June 1962
				A (1)	1959
9	842-145	Lake Minnehaha at Clermont		Sr	June 1945 to June 1962
				A (2)	1956, 1961
10	836-146	Lake Apshawa near Minneola		Sw	April 1953 to June 1962
11	835-149	Palatlakaha Creek at Cherry Lake Outlet near Groveland	160	Dr	March 1957 to June 1962
12	837-151	Palatlakaha Creek near Mascotte	180	Dr	May 1945 to March 1956
13	832-137	Johns Lake at Oakland		Sw	September 1959 to June 1962
14	834-135	Lake Apopka at Winter Garden		Sr	September 1942 to June 1962
15	843-141	Apopka-Beauclair Canal near Astatula	180	Dr	July 1958 to June 1962

TABLE 1. (Continued)

Station No. on fig. 5	Grid coordinate No. on fig. 2	Location (in downstream order)	Drainage area sq. mi.	Type and frequency of record	Period of record
40	S21-207	Withlacoochee River near Dade City	390	Dd,Dp (29)	1930-33; 1958-62
				A(12)	1958--61
41	S22-211	Pasco Packing Co. canal at Dade City		Dp(48)	1957-62
				A(5)	1959-61
	S24-203	Hamilton Lake Outlet near Dade City	....	D(2), A(1)	1961
	S26-209	Withlacoochee River near Lacoochee	....	D(2), A(4)	1959-61
....	S26-201	Gator Hole Slough near Bay Lake	....	A(1)	1959
..	S27-203	Gator Hole Slough near Clay Sink	..	A(1)	1959
....	S21-202	Swamp near Cumpressco	....	A(1)	1959
....	S28-208	Weaver Hole Slough at Lacoochee	....	A(1)	1959
	S28-209	Withlacoochee River at Lacoochee		A(1)	1959
42	S28-210	Withlacoochee River at Trilby	580	Dr	1928-29; February 1930 to June 1962
				A(9)	1959-61
..	S29-154	Bay Lake near Bay Lake	...	A(1)	1959
...	S29-158	Bayroot Slough near Bay Lake	....	A(1)	1959
..	S29-200	Little Withlacoochee River near Clay Sink	....	A(2)	1959
43	S34-209	Little Withlacoochee River at Rerdell	160	Dr	July 1958 to June 1962
				A(9)	1959-61
44	S35-213	Withlacoochee River at Croom	880	Dr	October 1939 to June 1962
				A(8)	1959-61

well-numbering system shown in figure 3. Records of streamflow and stage at 24 sites and of stage of 20 lakes were collected in or near the area of investigation.

Information on the quality of surface water was obtained during high, intermediate, and low flows to determine the general chemical characteristics and the extremes in quality characteristics during the period of study. These data were supplemented with a series of reconnaissances over the entire area generally within a period of

1 to 3 days. The data were used to determine the quality of water prevalent in the area at a given time and to help determine the interrelations between surface water and ground water.

Ground-water characteristics were determined by collecting data concerning water levels, surface and subsurface geology, and water chemistry from an inventory of existing wells in the Green Swamp area and vicinity (fig. 2). Information on the depth of the well, the amount of casing, and the depth to static water level was recorded for more than 600 wells. Most of the inventoried wells penetrated the Floridan aquifer. The approximate elevation of land surface above mean sea level was determined at each well by use of either altimeter, topographic maps, or spirit level. These data were supplemented by selected data collected prior to this investigation and by test drilling to provide better coverage of the area.

The well-numbering system that is derived from latitude and longitude coordinates is based on a state-wide grid of 1-minute parallels of latitude and 1-minute meridians of longitude, shown in figure 3.

Instruments were used to record continuously the water-level fluctuations in the various aquifers. These data were supplemented by periodic determinations of water levels and chemical characteristics of water in selected wells in order to evaluate areas of recharge and discharge for the aquifers.

The wells in which continuous and selected periodic water-level data, and quality-of-water data were collected, are presented in table 2.

During the periods October to December 1959 and May to June 1962, water-level measurements were made to prepare piezometric maps which show the direction of water movement in the Floridan aquifer. Hydraulic gradients scaled from these maps were used to infer rates of water movement.

To obtain general information on the occurrence of artesian and nonartesian ground water in the Green Swamp area, 26 test wells were drilled at 16 different sites. At 9 of these sites a pair of wells were drilled (one into the Floridan aquifer and one into the nonartesian aquifer). A summary of test-well data is presented in table 3. During the drilling, samples of rock cuttings were collected. The lithology of the various formations and significant changes in water levels were recordered in the well log. Examination of rock cuttings of selected wells were supplemented

TABLE 3. (Continued)

Well number	Date drilled	Total depth below land surface (feet)	Casing		Open hole		Aquifer	Remarks
			Diameter (inches)	Depth below land surface (feet)	Diameter (inches)	Range in depth (feet)		
Sumter County								
S21-15S-1	July 1959	53	8	53	21/2	0	F	Chert at 53 feet impenetrable. Well destroyed.
S21-15S-2	July 1959	49	8	49	21/2	0	F	Chert at 49 feet impenetrable. Bottom of casing blasted open for use as observation well.
S27-20S-3	February 1959	29	6	29	5 1/2	20- 29	F	
	July 1959	143			21/2	29-143	F	Deepened for geologic control.
S21-20S-4	February 1959	12	6	5	5 1/2	5- 12	F	Gravel packed (limestone pebbles).
S27-15S-1	July 1959	175	8	99	21/2	99-175	F	

by interpretation of electric and gamma-ray logs of some wells and geologists' and drillers' logs of wells which are on file with the Florida Geological Survey.

GEOGRAPHY

One of the most prominent topographic features in the central part of the Florida Peninsula is Green Swamp which is an extensive area of flatland and swampland at a relatively high elevation. Five major drainage systems originate in or near the Green Swamp area and flow in several directions to the sea. The area contains the headwaters of the Oklawaha River, which flows generally northward to become the largest tributary of the St. Johns River; the Kissimmee and Peace Rivers that flow southward; the Hillsborough River that flows southwestward; and the Withlacoochee River that flows northwestward.

LOCATION

The Green Swamp area is in central Florida (see fig. 1) west of and adjacent to a high sandy ridge that forms the major axis of the peninsula. For this study the boundaries of the area were established arbitrarily and the Green Swamp area should not be confused with a small drainage basin that is generally known as Green Swamp Run in the headwaters of the Big Creek watershed in southern Lake County and northeastern Polk County. The boundaries of the Green Swamp area, as designated for this investigation, have been extended to encompass a much larger area. The project area includes the southern parts of Lake and Sumter counties, the northern part of Polk County, and the eastern parts of Pasco and Hernando counties (see fig. 2).

The eastern boundary of the Green Swamp area is U. S. Highway 27, from Clermont south-southeastward to Haines City. The southern and southwestern boundaries of the area generally coincide with the divides separating drainage northward to the Big Creek and Withlacoochee River basins from drainage southward to the Peace and Hillsborough River basins. These boundaries follow a meandering line westward from Haines City to a point two miles north of Lakeland and then northwestward to Dade City. The western boundary of the area is U. S. Highway 301 northward from Dade City to St. Catherine. The northern boundary extends from St. Catherine eastward along the Little Withlacoochee River

basin divide to State Highway 50 and along State Highway 50 eastward to Clermont. The boundaries described enclose an area of 870 square miles.

TOPOGRAPHY

The Green Swamp area is in the Central Highlands topographic region as defined by Cooke (1945). The area is bordered on the eastern side by the Lake Wales Ridge, on the southern side by the northern termini of the Winter Haven and Lakeland Ridges, and on the western side by the Brooksville Ridge (White, 1958, pp. 9-11). Figure 4 shows the locations of these ridges.

Although the area is designated the Green Swamp, it is not a continuous expanse of swamp but is a composite of many swamps that are distributed fairly uniformly within the area. Interspersed among the swamps are low ridges, hills, and flatlands. Several large and many small lakes of sinkhole origin rim the southeastern and northeastern parts of the area. The elevation of the land surface ranges from about 200 feet above mean sea level (msl) in the eastern part to about 75 feet in the river valleys in the western part.

Prominent topographic features affecting the drainage of the eastern part of the area are the alternating low ridges and swales that trend generally north-northwestward from the southern boundary to the Polk-Lake County line. The ridges parallel the major axis of the Florida Peninsula and their configuration suggests that they were formed by subsidence and erosion along fractures and joints. Aerial photographs of the area between U. S. Highway 27 and the Seaboard Air Line Railroad show five of these long narrow ridges with intervening swales.

In the western part of the Green Swamp area there is little evidence of the elongated ridges, and the main land-surface features are large swamps, flatlands, and rolling hills. There are many small swamps in patches and strips generally less than half a mile wide. Most of these swamps support good growths of cypress trees while in the uplands pine and scrub oak trees grow abundantly. The largest continuous expanse of swampland lies within the valley of the Withlacoochee River and is more than a mile wide at places. Limestone is exposed in the western part of the Green Swamp area.

DRAINAGE

The drainage system of the Green Swamp area and vicinity is shown on the map in figure 5. The headwaters of four stream systems within the Green Swamp area, listed in order of their proportion of the area drained, are: Withlacoochee River, Little Withlacoochee River, Oklawaha River, and Hillsborough River. Other streams that head near the boundaries of the Green Swamp area are: Reedy, Davenport, and Horse creeks in the Kissimmee River basin; Peace Creek drainage canal and Saddle Creek in the Peace River basin; Fox Branch in the Hillsborough River basin; and Jumper Creek Canal and a major canal that head northwest of Mascotte in the Withlacoochee River basin. Of the total area of 870 square miles, 710 square miles are drained by the Withlacoochee River and its tributaries.

The surface drainage of the Green Swamp area is poor because of the flat topography and lack of well developed stream channels. Following heavy rainfall, water stands in large shallow sheets over much of the area.

Boundaries of the elongated north-south drainage basins, in the eastern part of the Green Swamp area, are formed by low ridges. The valleys between the ridges are not deeply incised but their effectiveness as drainage channels has been improved by many miles of canals and ditches. Some parallel drainage basins are interconnected in several places by gaps or saddles through the ridges. Through these gaps water may flow at times from one stream valley into another. The amount and direction of flow depend on the relative elevation of water levels in the adjoining basins and the hydraulic conveyance of the connecting channels.

The canals and ditches, for the most part, have been dug to follow the natural drainage courses through the shallow swamps. However, in some places, probably to provide firm footing for the excavation equipment and to avoid clearing through the dense growth of cypress trees, the ditches have been dug along the edges of the large swamps rather than through the interior. Also, to provide better alignment in some places, the ditches have been cut through ridges to connect the adjacent swamps. These shortcuts have bypassed the circuitous natural drainage routes and have straightened and shortened the courses of the waterways.

Surface drainage from most of the Green Swamp area is generally toward the north and west. However, the headwaters of the Peace River basin originate along the southern boundaries of

the area and the flow is generally southward. Along the eastern boundary of the area, drainage is toward the east and southeast into the Kissimmee River basin. Other drainage from the Green Swamp area is toward the southwest into the Hillsborough River via a natural channel in eastern Pasco County.

The subsurface drainage of the Green Swamp area is generally poor. Ground-water levels in the interior of the area remain near the surface most of the time, consequently the aquifers provide little opportunity to store water from heavy rainfall. Ground-water levels fluctuate through a greater range in the ridges that form the eastern, southern, and western boundaries. The wide range of fluctuation indicates better subsurface drainage and greater storage capacity along the boundaries than in the interior.

Subsurface drainage is through both the Floridan and the nonartesian aquifers but most is via the Floridan aquifer. Water percolates downward from the overlying nonartesian aquifer to the Floridan aquifer or enters exposed portions of the Floridan aquifer.

Movement of ground water in the Floridan aquifer is generally outward in all directions from the southeastern part of the area. However, the areas contributing to the aquifer (p. 80) show that the predominant directions of ground-water movement are east and west. The ground-water divides in the aquifer shift slightly in response to demands in each contributing area. Most of the surface area that potentially would contribute recharge to the Floridan aquifer in Green Swamp lies within the Withlacoochee River basin. The distribution of ground-water outflow originating in each surface basin is shown in the tables on pages 116 and 117.

CULTURE AND DEVELOPMENT

The Green Swamp area is sparsely populated except for a few small towns and communities on the ridges along the border and along State Highway 33.

Most of the land is in large tracts owned by private individuals or corporations. The only large tract of public land in the area is the Withlacoochee State Forest, part of which is within the boundaries of the Green Swamp area in Sumter, Hernando, and Pasco counties.

The principal industry is agriculture. Much of the upland area has been cleared and planted in citrus groves. Other upland areas have been cleared and are used for cattle raising. Very little of the land is cultivated. The low swampland is unsuitable for agriculture because of poor drainage. In spite of the many miles of ditches, drainage is still inadequate. Even in the cleared areas that are suitable for agriculture, few attempts have been made to reclaim the many small, round, cypress swamps that dot the area.

Cypress lumbering was once an important industry in the western part of the area, particularly in the Withlacoochee River Swamp where there were extensive stands of trees. The first access roads to penetrate the interior of the swamp were trails and tram roads built for cypress lumbering. Timber and pulpwood are now produced from the pine flatwoods interspersed among the swamps.

There is some development of the mineral resources of the area for the commercial market. Extensive phosphate deposits in Polk County lie just south of the Green Swamp area. Some phosphate is mined within the area but the amount is only a small percentage of that produced in southern Polk and eastern Hillsborough counties. Limerock, used in road construction and agriculture, is mined in the northwestern part of the area. Deposits of sand, suitable for building uses, are mined in many places in the eastern part of the area.

CLIMATE

The location of the Green Swamp area, well south in the Temperate Zone, and its proximity to large bodies of warm water produce a warm humid climate. Precipitation and temperature, the principal climatic elements that influence the hydrology of the Green Swamp area, are described separately.

PRECIPITATION

The study of precipitation in central Florida can be restricted to rainfall only, because snow and hail are virtually unknown. The normal or long-term average annual rainfall of the Green Swamp area is 52.7 inches. This normal is computed by the Thiessen method of weighting long-term rainfall records at each of the following U. S. Weather Bureau stations in or near the project area: Clermont 6 miles south, Lake Alfred Experiment Station, Lakeland, and St. Leo (figs. 2 and 5).

The average rainfall for the station at St. Leo, west of the area, is slightly higher than that for the other three stations which are located farther inland. The average rainfall at the four stations ranges from a minimum of 50.1 inches at the Clermont station to

a maximum of 56.4 inches at the St. Leo station. In view of the small deviation of these extreme values from the mean, the weighted average rainfall of 52.7 inches for the area of investigation appears to be reasonably accurate.

The amount of rainfall on the area varies seasonally. About 50 percent of the annual total rainfall occurs during the wet season from June through September. In the spring and early summer, local thunderstorms of high intensity and short duration sweep over the area. Showers occur almost daily, or perhaps several times a day, during June and July. Heavier and more prolonged rainfalls occur generally in August and September and are often intensified by tropical storms that occasionally reach hurricane proportions. On the other hand, there are periods of a month or more with little or no rainfall. Periods of below average rainfall usually occur during the winter season from November to February.

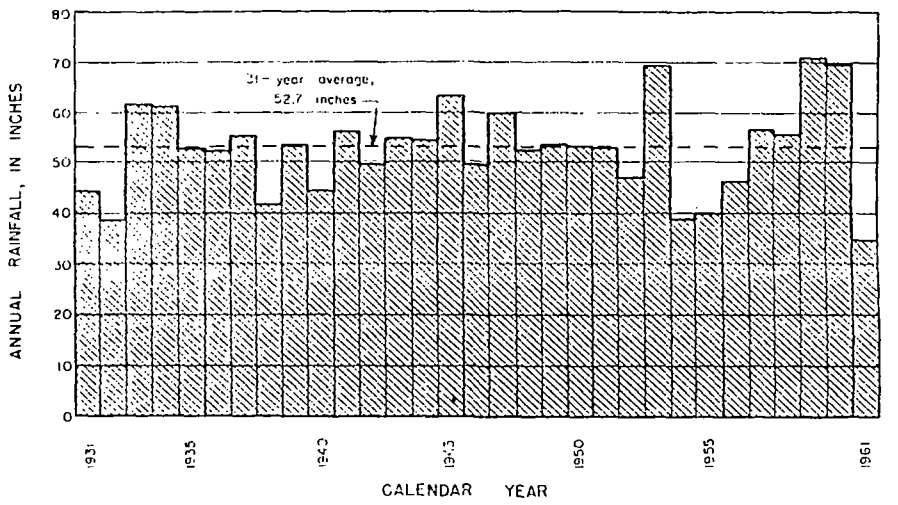
During wet years the annual rainfall is about twice that of dry years. The annual and the mean monthly rainfalls for the years 1931-1961 are shown by bar graphs in figure 6. The maximum annual rainfall during this 31-year period was 70.9 inches in 1959 and the minimum was 34.7 inches in 1961. Both occurred during the period of the investigation. It is a fortunate circumstance that the full range of hydrologic conditions was experienced during the investigation.

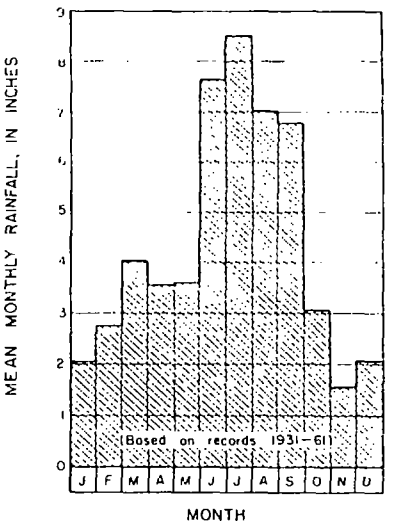
TEMPERATURE

A knowledge of temperature variations in central Florida is pertinent to a study of its water resources because of the dominant influence of temperature on rates of water losses by evaporation and transpiration.

The mean monthly temperature in the Green Swamp area ranges from 61° F. for January to 82° F. for August. The lowest temperature recorded during the 69-year period of record at the Clermont station was 18° F. and the highest was 104° F. Daily temperatures recorded at the U. S. Weather Bureau stations show that all parts of the area have essentially the same temperature, ranging no more than 2 to 3° F.

Killing frosts occur infrequently in this area, and damage to vegetation, although severe from the standpoint of agriculture, seldom is great enough to affect the hydrologic factors pertinent to water supplies.





Rainfall of Green Swamp area computed from U. S. Weather Bureau records at four stations, weighted by Thiessen method as follows:

Station	Percentage
Clermont 6S	37
Lake Alfred Exp. Sta.	22
Lakeland	11
St. Leo	30
	100

Figure 6. Graphs showing annual and mean monthly rainfall of Green Swamp area.

Water loss from a drainage basin is the difference between the average rainfall over the basin and the runoff from the basin for a given period (Williams, 1940, p. 3). In humid regions, where there is sufficient water to satisfy the demands of vegetation, the mean annual water loss is principally a function of temperature (Langbein, 1949, p. 7). The relation between mean annual

temperature and mean annual water loss under such conditions is shown in figure 7, which is taken from U. S. Geological Survey Circular 52. For the Green Swamp area where the mean annual temperature is 72° F., the annual water loss would be 48 inches according to this figure.

ENVIRONMENTAL FACTORS AFFECTING THE QUALITY OF WATER

The quality of water in the Green Swamp area reflects the solubility of the material which the water contacts and its biologic environment, both of which are natural influences. Surface water is usually lower in mineral content than ground water because of low solubility of materials on the surface of the ground and short time of contact of water with the materials.

The quality of the surface water (lakes, streams, and swamps) depends mostly on the composition of the precipitation and the

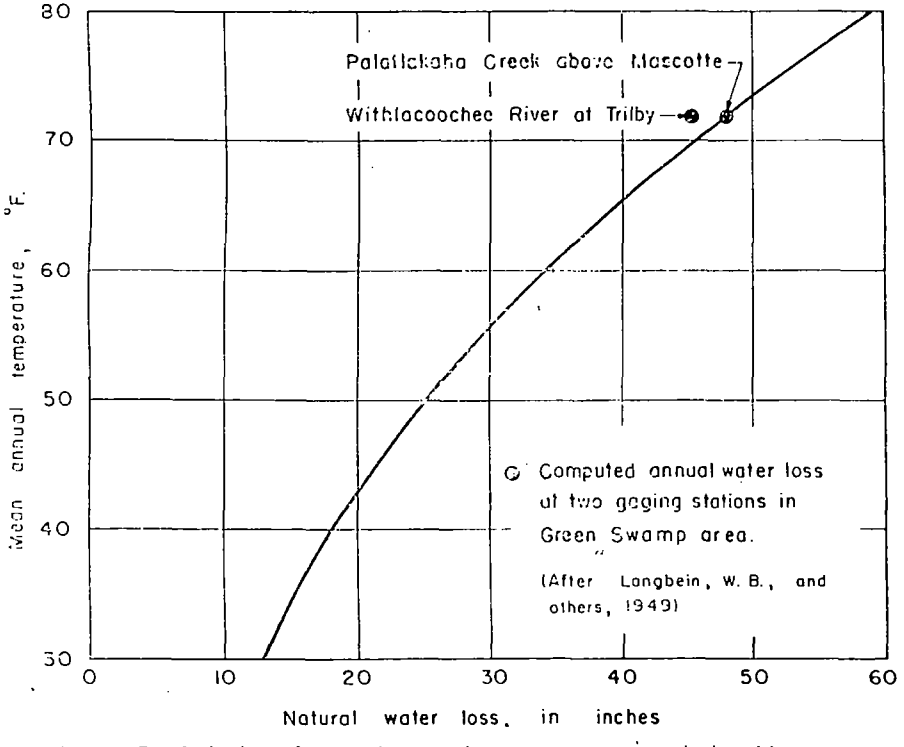


Figure 7. Relation of annual water loss to temperature in humid areas.

biologic environment. Generally, the mineral content of water in streams varies inversely with discharge. Surface waters are usually highly colored and acidic. Sodium and chloride, although in very low concentrations, are the principal dissolved mineral constituents and may be present as a result of wind and rain-borne salts from the ocean.

The quality of ground water in the Green Swamp area generally meets the requirements for most municipal, industrial, domestic, and agricultural uses. Ground water of lowest mineral content occurs along the eastern and western boundaries of the area and is lowest near the lakes. Ground water of highest mineral content occurs in the central part of the Green Swamp. The principal dissolved mineral constituents are calcium and bicarbonate which are products of limestone solution. Relatively high concentrations of calcium in the water cause hardness which is probably the most objectionable characteristic of the ground water in the Green Swamp area.

GEOLOGY[1]

Topographically, the surface of the Green Swamp area resembles a basin, or trough, opening to the north. However, geologically, the Green Swamp is part of an eroded, faulted anticline. The oldest formations are exposed along the axis of the anticline and eroded remnants of younger formations rim the flanks and present a basin-like feature.

The Green Swamp area is underlain by several hundred feet of limestone and dolomite that have been periodically exposed to solution-weathering and erosion. The surface is mantled with a varying thickness of clastic material (sand and clay) that was deposited in fluctuating shallow seas. No attempt has been made to differentiate the formations within the clastic material because of its complexity and the lack of data.

The upper part of the clastic sediments, composed of clayey sands, forms a distinct hydrologic unit, commonly referred to as the nonartesian aquifer. The basal portion of the clastic sediments, composed mostly of clay and some interbedded limestone (secondary artesian aquifer), is less permeable than the overlying,

[1]The classification and nomenclature of the rock units conform to the usage of the Florida Geological Survey and also with those of the U. S. Geological Survey, except for the Fort Preston Formation (?), the Tampa Formation, and the Ocala Group and its subdivisions.

clayey sands or the underlying porous limestone. The solution-riddled limestone formations, which underlie the clay deposits, comprise the Floridan aquifer, the principal source of artesian ground water in the State. Where present, the clay forms an aquiclude which retards the rate of water movement between the aquifers.

The principal artesian aquifer was first described by Stringfield (1936) and later named the Floridan aquifer by Parker (1955). According to Parker, the Floridan aquifer includes those limestone formations ranging in age from the middle Eocene (Lake City Limestone) to perhaps early and middle Miocene (Hawthorn Formation). In the Green Swamp area the following formations comprise the Floridan aquifer (from youngest to oldest); the Suwanee Limestone; the Ocala Group which includes the Crystal River, Williston, and Inglis Formations; and the Avon Park Limestone. The base of the aquifer is considered to be near the base of the Avon Park limestone at the first occurrence of gypsum because the presence of gypsum probably indicates poor circulation of ground water.

FORMATIONS

The formations that underlie the Green Swamp area are presented in table 4. Generalized geologic cross sections, shown in figure 8 were prepared based on data from wells located along lines A-A', B-B' and C-C'.

UNDIFFERENTIATED CLASTIC DEPOSITS

Undifferentiated clastic deposits, ranging from late Miocene to Recent in age, underlie the Green Swamp area except in the western part where Tertiary limestones are exposed at the surface. The deposits consist primarily of clayey sand or sandy clay. The following lithologic sequence (from youngest to oldest) is indicated: (1) fine quartz sand (surficial sand) with varying amounts of clay and organic material; (2) variegated (red-orange-tan) fine to coarse quartz sand with little clay; (3) white fine to very coarse quartz sand with varying amounts of white-green kaolinitic or montmorillonitic clay; and (4) white silty quartz sand with varying amounts of mica flakes.

Generally, the deposits range from 100 to 200 feet in thickness beneath the ridges that rim the Green Swamp area; however, they are thin or absent in the western part and tend to become more

TABLE 4. Geologic formations and their water-bearing characteristics in Green Swamp area and vicinity.

System	Series	Formation (after F.G.S.)	Formations used in this report	Approximate range of thickness (feet)	Lithology	Aquifer	Water-bearing characteristics
Quaternary	Recent	Recent Deposits	Undifferentiated Clastic Deposits	0-200	Light-colored clayey sands grading into sandy clays	Non-artesian	Generally poor source in the central part of the area. A fair source in the ridge areas.
	Pliocene	Terrace Sands					
	Pleistocene	Citronelle Formation					
		Fort Preston Formation (?)					
Tertiary	Miocene, Upper	Hawthorn Formation	Undifferentiated Clay	0- 60	Dark-colored phosphatic clay with limestone lenses	Secondary artesian	Generally very poor except in the Lakeland area where interbedded limestones are a fair source.
	Miocene, Middle	Tampa Formation					
	Oligocene	Suwannee Limestone	Suwannee Limestone	0- 80	Hard, white-yellow limestone	Floridan	Generally good to excellent. The best source is the dolomitic Avon Park Limestone. Evaporite (selenite) deposits near the base of the Avon Park Limestone is considered to be the base of the aquifer.
	Eocene, Upper (part only)	Crystal River Formation	Crystal River Formation	0-120	Soft, gray, limestone		
		Williston Formation	Williston Formation	0- 40	Hard, tan limestone		
		Inglis Formation	Inglis Formation	0- 50	Hard, tan limestone		
	Eocene, Middle	Avon Park Limestone	Avon Park Limestone	800-1,000	Soft to hard, white-brown, dolomitic limestone		

layey where they thin over the crest of the anticline (fig. 8, A-A'). The deposits appear to increase in coarseness from the interior of the Green Swamp area eastward to the Lake Wales Ridge. Much of these deposits occur as cavity fill in the underlying limestones specially in the ridge areas.

The undifferentiated clastic deposits form the nonartesian aquifer in the area. Generally, the deposits in the western part of the Green Swamp area are thin or absent, low in permeability and porosity; and therefore, they are of minor significance as an aquifer.

UNDIFFERENTIATED CLAY

Undifferentiated clays of Miocene age underlie most of the area, except in the western part, and contain varying amounts of quartz, phosphatic sand, and interbedded limestone. The following general lithologic sequence (from younger to older) is indicated: (1) light gray-tan-blue-green, montmorillonitic clay with varying amounts of quartz, phosphatic sand, and interbedded limestone; (2) dark gray-green-blue phosphatic, silty clay with varying amounts of quartz pebbles, silt and mica flakes.

The light-colored clay with interbedded limestone is part of the Hawthorn Formation of early and middle Miocene age. Generally, its occurrence is limited to the southeastern part of the Green Swamp area. It thickens eastward and southward and forms a secondary artesian aquifer which is a significant source of artesian water outside of the Green Swamp area. The dark, silty clay is probably equivalent to the Tampa Formation of early Miocene age (Carr, 1959). Generally, its occurrence is limited to the eastern part of the Green Swamp area where it forms an aquiclude.

SUWANNEE LIMESTONE

The Suwannee Limestone (Cooke and Mansfield, 1936) of Oligocene age is a white dense fossiliferous limestone. It is present in the southern and western parts of the Green Swamp area and crops out along the Withlacoochee River near Polk-Sumter-Pasco County line. The formation thickens southward in Polk and Hillsborough counties and westward in Pasco County. Many of the springs along the upper Hillsborough River flow from exposures of Suwannee Limestone. The Suwannee Limestone overlies the Crystal River Formation and it is overlain by either undifferentiated clay or undifferentiated clastic deposits.

OCALA GROUP

The Ocala Group (Puri, 1957) includes three limestone formations of late Eocene age. The subdivisions of the Ocala Group (*from youngest to oldest*) are the Crystal River, the Williston, and the Inglis Formations.

CRYSTAL RIVER FORMATION

The Crystal River Formation is primarily a coquina of large foraminifers and crops out in an area extending from northern Polk County through the southern end of Sumter County and into eastern Hernando County. It ranges from 50 to 120 feet in thickness, except in the eastern part of the area where it is absent. In the central part of the area, the formation contains many sand-filled cavities.

WILLISTON FORMATION

The Williston Formation is a tan-cream, medium to hard limestone containing abundant micro-fossils. The formation is slightly coarser than the underlying Inglis Formation but generally finer than the overlying Crystal River Formation. In most of the area, the Williston Formation ranges from 20 to 40 feet in thickness. It is thin or absent along the eastern boundary of the area.

INGLIS FORMATION

The Inglis Formation is generally a white-tan, hard, fossiliferous limestone. The texture of the formation appears to be finer than that of the Crystal River and Williston Formations. In most of the area, the Inglis Formation is about 50 feet thick. It is thin or absent along the eastern boundary of the Green Swamp area.

AVON PARK LIMESTONE

The Avon Park Limestone (Applin and Applin, 1944) of late middle Eocene age was the deepest formation penetrated by test drilling. The formation is nearest the surface on an upthrown fault block along the eastern side of the area (fig. 8, A-A'). The formation is found at considerable depth in the area south and southwest of Green Swamp. The top of the formation is

characterized by a distinct color change from tan to brown limestone and by abundant cone-shaped foraminifers. The formation is a brown, dolomitic, porous limestone. Selenite (gypsum) near the base of the formation probably forms the bottom of the Floridan aquifer. The Avon Park Limestone is highly permeable and is the main source of water for most of the high-capacity wells in the area. Figure 9 shows the configuration of the top of the Avon Park Limestone. The map shows the northwest-southwest trend of the faulted anticline.

STRUCTURE

The Peninsular arch (Applin, 1951), a buried anticlinal structure of Paleozoic sediments, trends generally north-northwestward and its main axis is located east of the Green Swamp area. A flexure, developed on the western flank of the Peninsular arch in the Tertiary limestones, is called the Ocala Uplift. The Green Swamp area is located at the southern end of the Ocala Uplift (figs. 8 and 9).

Vernon (1951) dated the Ocala Uplift as post-Oligocene in age. Faults in the Green Swamp area complicate the definition of the geology and the hydrology. The main area of faulting occurs along the Lake Wales Ridge. Faulting in this area was described by Vernon (1951, p. 56) and named The Kissimmee Faulted Flexure. The cross sections in figure 8 show vertical displacement along fault zones.

The faults are probably post-Oligocene. Subsequent movement along fault zones may have occurred over a long period of time, the later movements being associated primarily with subsidence and sinkhole collapse along the solution-widened zones.

Figure 9 shows a structural map based on the top of the Avon Park Limestone. The contour lines generally define the shape of the anticline with associated faults. The linearity of ridges on the anticline suggests that other faults exist in the area.

Faulting probably could affect the hydrology of the Green Swamp in the following ways:

(1) Joints or faults within the Floridan aquifer, widened by solution, could cause zones of high permeability, or could cause zones of low permeability when filled with clastic materials.

(2) Displacement along the faults could position formations of different lithology (hence permeability) one against the other, breaking the hydraulic continuity and producing barriers that retard water movement.

(3) Faults cutting confining beds could increase ground-water circulation between aquifers.

HYDROLOGY

The water supply of the earth, whether it is on the surface or below the ground, has its origin in precipitation. Of the precipitation that reaches the ground, part is returned to the atmosphere by evapotranspiration; part remains above ground and is stored temporarily in lakes, ponds, and swamps, or moves to the sea as streamflow; and part percolates into the ground, some to replenish the soil moisture and some to enter the zone of saturation and recharge the ground-water aquifers. Ground water moves in the aquifers under the influence of gravity, towards areas of discharge such as streams, lakes, springs, wells and the oceans.

WITHLACOOCHEE RIVER BASIN

DESCRIPTION OF BASIN

The Withlacoochee River drains 82 percent of the Green Swamp area. The total drainage area at stations 42 and 43 at the western boundary is 740 square miles, all of which is within the project area except for 45 square miles of lakes and hills west of U. S. Highway 301 and south of U. S. Highway 98 near Dade City.

Most of the general topographic and drainage features of the Green Swamp area, described in preceding sections of this report, apply to the Withlacoochee River basin in particular. The following description of the basin refers specifically to this stream system.

The Withlacoochee River heads in a group of lakes and swamps in the north-central part of Polk County in the vicinity of Polk City and the town of Lake Alfred (see fig. 5). Lakes Van and Juliana, the uppermost of these headwater lakes, drain into Lake Mattie. Surface drainage from Lake Mattie spills through a wide shallow marsh along the northeastern shoreline and flows northward through a series of interconnected shallow swamps and ditches to the northern boundary of Polk County. This is generally considered to be the major headwater channel of the Withlacoochee River. Other headwater tributaries originate in the marshes between Lakes Mattie and Lowery and flow generally northward between the confining ridges. These channels join near the

Bureau of Waste Cleanup

MAR 23 1993

Tech. Grant Review Section

CONTAMINATION ASSESSMENT REPORT ADDENDUM
WINTER HAVEN GAS PLANT
WINTER HAVEN, FLORIDA

PREPARED FOR:

CENTRAL FLORIDA GAS COMPANY
WINTER HAVEN, FLORIDA

PREPARED BY:

ECT

Environmental Consulting & Technology, Inc.

5405 Cypress Center Drive
Suite 200
Tampa, Florida 33609
(813) 289-9338

Kirk R. Johnson, P.G.
Project Geologist

3/22/93

Charles D. Hendry, Ph.D.
Project Manager

03/23/93

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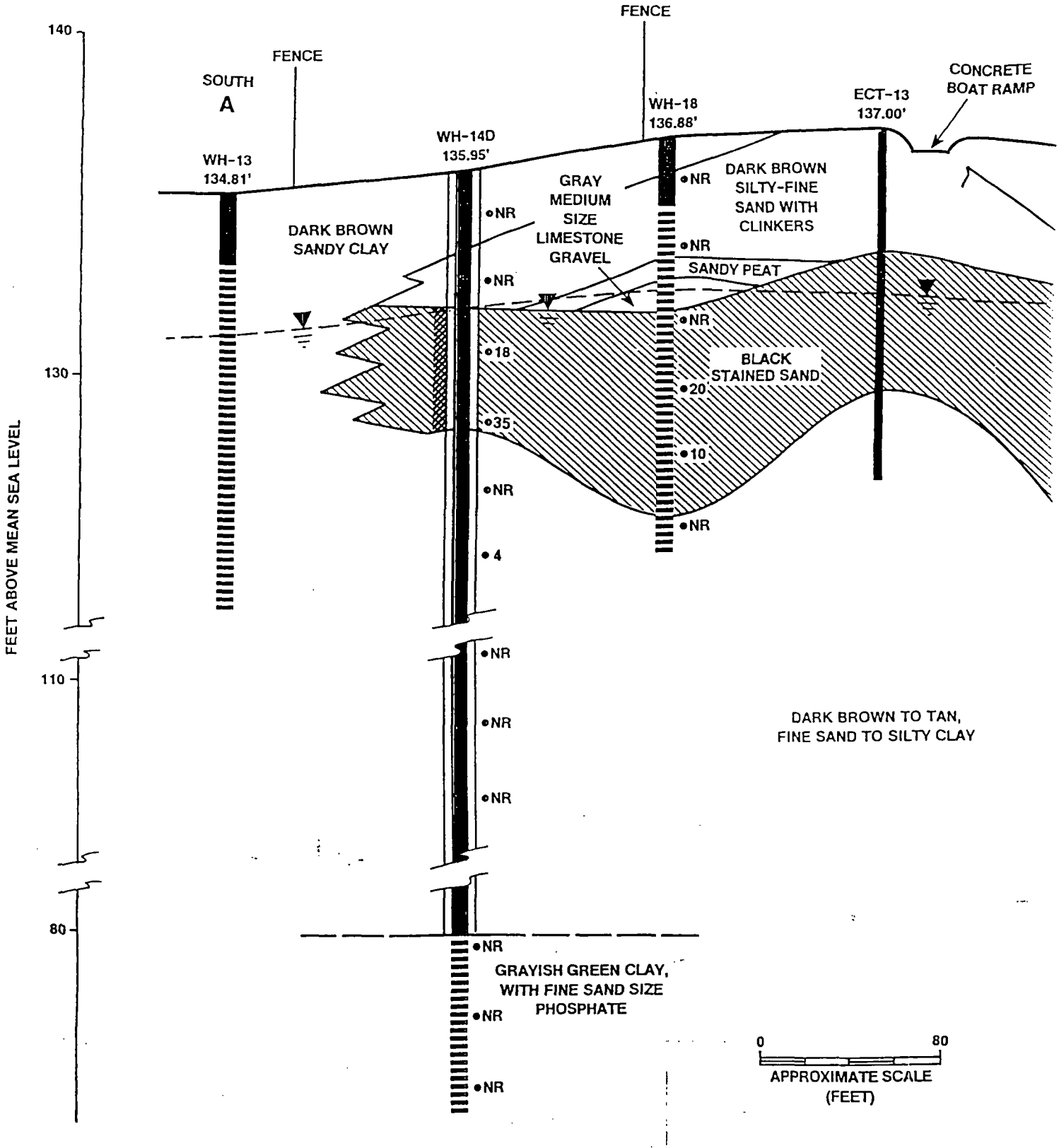
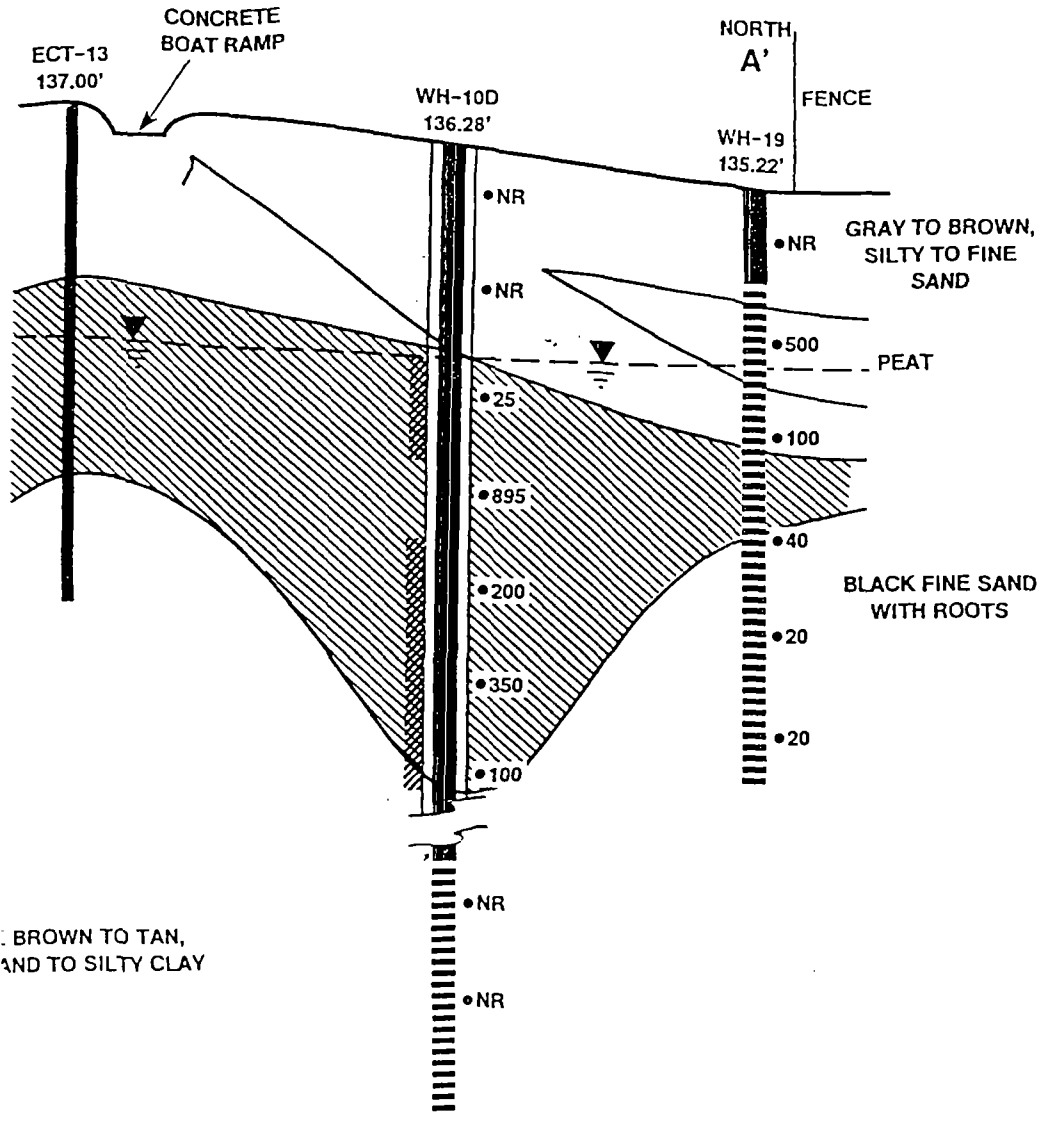
MARCH 1993



NOTE: EXCEPT AT BORING AND WELL LOCATIONS, THE GROUND SURFACE, WATER LEVEL, AND STRATIGRAPHY ARE INFERRED.

FIGURE 3.1-2
SOIL PROFILE A-A'
FORMER WINTER HAVEN GAS PLANT
WINTER HAVEN, FLORIDA
Source: ECT, 1993.



80

XIMATE SCALE
(FEET)

LEGEND

- STAINED SOIL AND CLINKERS
- NON AQUEOUS PHASE LIQUID OR SHEEN
- WELL SURFACE CASING
- WELL CASING
- WELL SCREEN
- SOIL BORING
- •10 NON-METHANE HYDROCARBON OVA RESPONSE (ppm)
- •NR NO RESPONSE
- APPROXIMATE WATER TABLE ELEVATION (6/4/92)

PHY ARE INFERRED.

ECT

Environmental Consulting & Technology, Inc.

Reference 40
ATTACHMENT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE SCREENING SUPERFUND SUBSECTION
CONVERSATION RECORD

Date: August 4, 1994 **File Name:** Central Florida Gas Gas Plant

Subject: Status of Polk Co. Utilities Wells near Winter Haven, Polk Co., Florida

Contact Person: Mike Hodge, Polk County Utilities

Time: 1330 HRS

From: Jim McCarthy, P.G. **Title:** Chief Operator
Professional Geologist I

To: Eric S. Nuzie **Phone No:** (813) 534-7351
Environ. Manager

Mr Mike Hodge, the Chief Operator of Polk County Utilities, has informed me that Jan Phyl Wells # 1, 2 and 3, the Dinner Lake Well and Gordonville Well are still active. The PWS Potable Water Search for the area indicated that these systems were inactive. The five wells are blended together and serve between 12,000 to 13,000 people.

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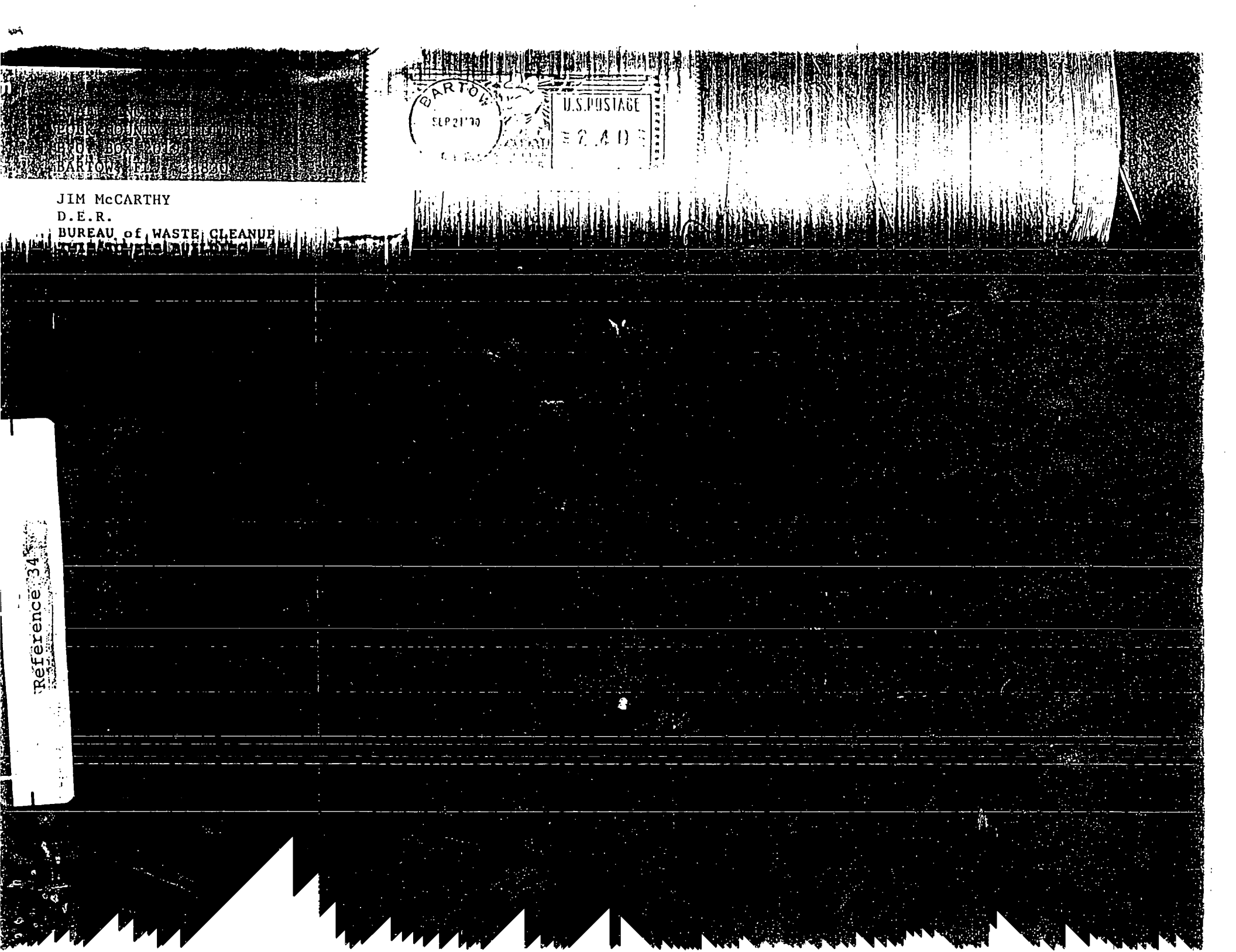
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U.S.POSTAGE
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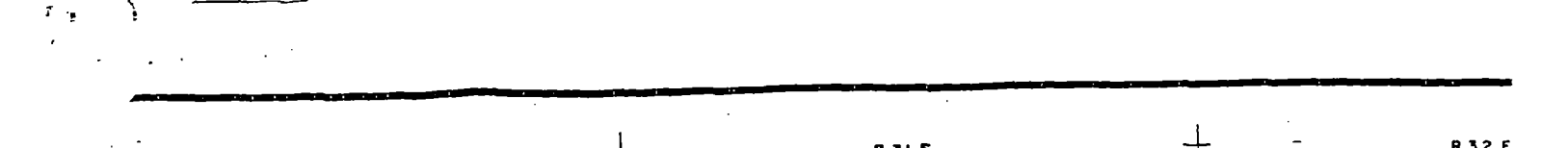
JIM McCARTHY
D.E.R.
BUREAU of WASTE CLEANUP
Reference 34



WATER PLANTS

1-INDIANWOOD
2-HOMESTEAD
3-TIMBERIDGE
4-LAKE GIBSON
5-MOUNT OLIVE
6-DAVENPORT POLO
7-POLO PARK #1
8-POLO PARK #2
9-FOUR CORNERS #1
10-FOUR CORNERS #2
11-FOUR CORNERS #3
12-MARIANNA ACRES
13-WOLF RUN
14-RAINBOW RIDGE
15-JAN PHYL #2
16-JAN PHYL #3
17-JAN PHYL #1
18-DINNER LAKE
19-GORDONVILLE
20-GREEN ACRES #1
21-GREEN ACRES #3-#1
22-GREEN ACRES #3-#2
23-LAKE GARFIELD
24-HASKELL HOMES
25-CREWS LAKE
26-IMPERIALAKES
27-PINE LAKE
28-WILLOW WOOD
29-ROLLING HILLS W.
30-WAVERLY #1
31-WAVERLY #2
32-WAVERLY #3
33-SUN AIR
34-PLEASANT ACRES
35-OAK ACRES
36-TIMBERLAKE
37-ROLLING HILLS E.
38-BABSON PARK #1
39-BABSON PARK #2
40-LAKEVIEW
41-SUN RAY #1
42-SUN RAY #2
43-WALK-IN-WATER
44-TANAMORA
45-LOMA LINDA
46-LILY LAKE
47-PALMORE

W.W.T.I

1-COUNTRY CLASS
2-THE PINES
3-FOXWOOD LAKE ESTATES
4-PADGETT ESTATES
5-LAKE GIBSON
6-MT. OLIVE
7-WILSON ACRES
8-COMBEE WOOD
9-U.S. 27 & I-92
10-REGAL INN
11-I-4 &Z U.S. 27
12-HOLIDAY INN
13-MARIANNA ACRES
14-MARIANNA SHORES
15-JAN PHYL VILLAGE
16-OAKWOOD ESTATES
17-CENTRAL REGIONAL
18-PALO ALTO
19-MEADOWLANDS
20-EXECUTIVE ESTATES

Howard
WINTER HAVEN
Pop. 21,119
LAKE MARIAM
LAKE SHIPP
L. LULU
ELOISE
CYPRESS GARDENS
LAKE ELOISE
LAKE WINTERSET
LAKE RUBY
SPIRIT LAKE
GRASSY L.
Eagle
BANANA LAKE
LAKE HANCOCK
HIGHLAND CITY
LAKE McLEOD
CYPRESS GARDENS AIRPORT
BARTOW M.A.
Saddle Creek
Peace Creek
RIDGEWOOD
PART OF BARTOW
POLK L.
LAKE GARFIELD
Drainage
BARTOW
Pop. 14,780
ALTURAS
Flora L.
Star L.
Long L.
Twin Lakes
L. Pemrose
SURVEYORS LAKE
Peace River
HOMELAND
Grassy L.
Little L.
Lake Buff
FORT MEADE
13
14
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Reference 48

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE SCREENING SUPERFUND SUBSECTION
CONVERSATION RECORD

Date: July 15 & 19 1994 **File Name:** Central Florida Gas Gas Plant

Subject: Annual Fishery Production from Chain of Lakes, Winter Haven, Florida

Contact Person: Tom Champeau and Lothian Ager, Florida Game & Fresh Water Fish Commission

Time: 1115 HRS/1400 HRS

From: Jim McCarthy, P.G. **Title:** Fishery Biologists
Professional Geologist I

To: Eric S. Nuzie **Phone No:** (813) 648-3209
Environ. Manager

Mr. Tom Champeau, a fishery biologist with the Florida Game and Fresh Water Fish Commission (FGFWFC), has informed me that no recent Creel Surveys of Lake Shipp or other lakes in the Winter Haven Chain of Lakes is currently available. The existing data is 15-20 years old and greatly outdated. However, the FGFWFC is conducting a Creel Survey of the northern and southern portions of the Chain of Lakes. A report of this investigation is due in about 2 months. Mr. Champeau has included me on the mailing list to receive a copy of the report.

Mr. Lothian Ager, a fishery biologist with the FGFWFC, has informed me that he can give me a partial report for fish harvested from Lake Shipp for a 3 mounth period (1/4 year). Mr. Lothian stated that he could send that to me in about 30 days. Mr Lothian gave me the average weights for two fish species from the Winter Haven Chain of Lakes area:

Large mouth Bass - 1 pound
Bream (Redbreast Sunfish) 0.5 pound

Attachment

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Reference

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SITE SCREENING SUPERFUND SUBSECTION
CONVERSATION RECORD

Date: 9/30/92

Time: 1400 HRS

From: Jim McCarthy, P.G.
Environ. Specialist III

To: Eric S. Nuzie
Environ. Manager

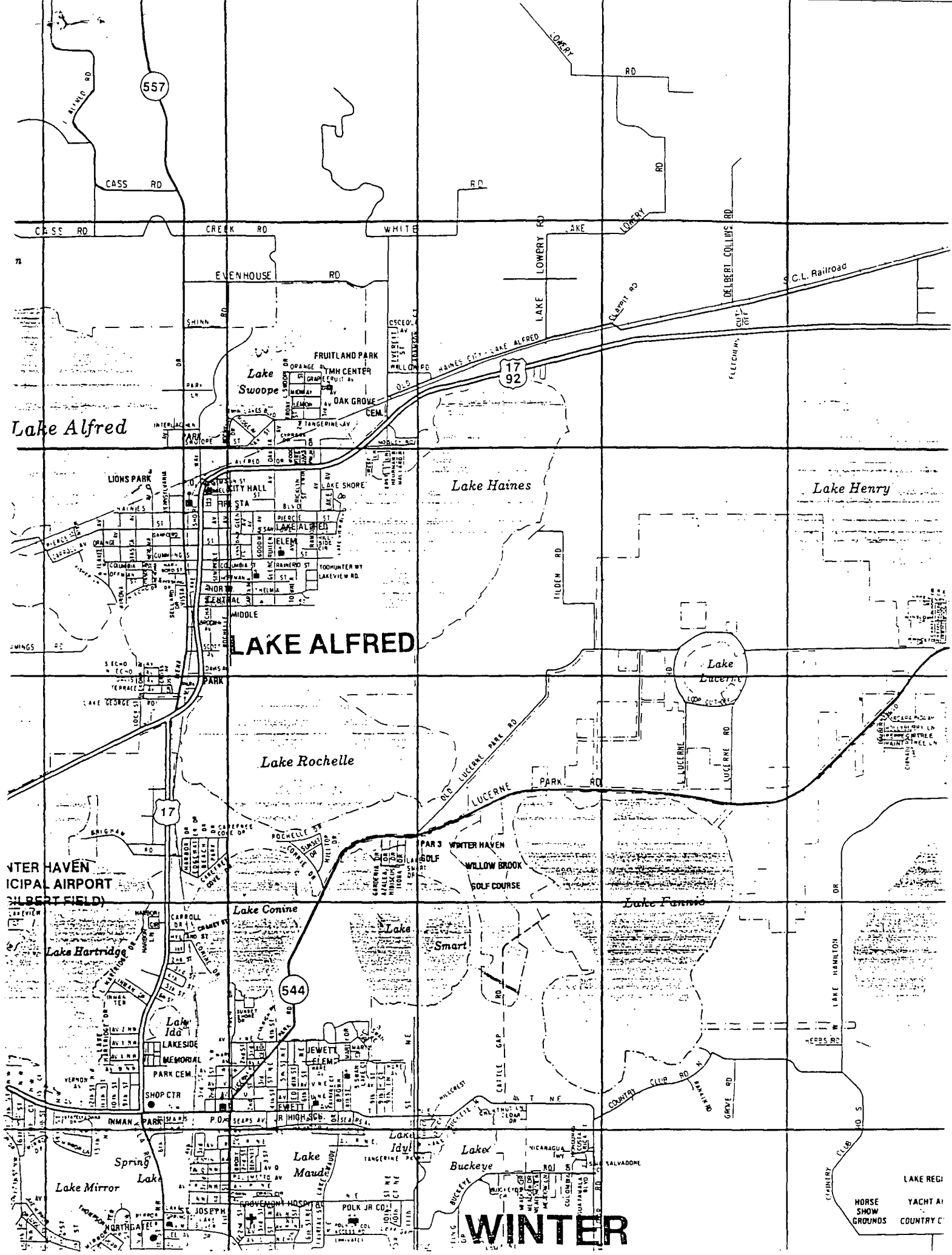
File Name:Callaway & Son Drum
Subject:
Contact Person: Lake Alfred
Util. Dept.
Title:

Phone No: (813) 956-3434

Subject: Location and Number
of Wells

The City of Lake Alfred Utilities Department has informed me that two wells are located behind City Hall near the intersection of Pomelo Street and U.S. 17-92. When participating in the Callaway & Son Drum SSI, I spotted these wells on the south side of U.S. 17-92. It appeared that some type of carbon filter system was installed on the wells.

see attached map



557
CASS RD
CREEK RD
WHITE
LAKE LOWERY RD
EVENHOUSE RD
S.C.L. Railroad
DELBERT COLLINS RD
CLAYPIT RD
HAINES CITY - LAKE ALFRED
17
92
FRUITLAND PARK
TMH CENTER
Lake Swoope
OAK GROVE CEM.
Lake Alfred
LIONS PARK
CITY HALL
FIRE STA
LAKE SHORE
Lake Haines
Lake Henry
LAKE ALFRED
ELEM
TODHUNTER WY
LAKEVIEW RD
NORTH
CENTRAL
MIDDLE
PARK
LAKE ALFRED
TILDEN RD
Lake Lucerne
LOOP CUT-OFF
Lake Rochelle
OLD LUCERNE PARK RD
LUCERNE PARK RD
LUCERNE RD
17
ROCHELLE ST
PAR 3 GOLF
WINTER HAVEN
WILLOW BROOK
GOLF COURSE
NTER HAVEN
ICIPAL AIRPORT
GILBERT FIELD)
Lake Conine
Lake Fannie
Lake Smart
Lake Hartridge
544
Lake Ida
LAKESIDE
MEMORIAL
PARK CEM.
SHOP CTR
JEWETT ELEM
INMAN PARK
JR HIGH SCH
CATTLE GAP RD
COUNTRY CLUB RD
GROVE RD
LAKE HAMILTON DR
Spring Lake
Lake Mirror
Lake Maude
Lake Idyl
Lake Buckeye
NICARAGUA
SALVADORE
ST JOSEPH
NORTHGATE
GROVEMONT HOSPITAL
POLK JR COL
WINTER
HORSE SHOW GROUNDS
YACHT A
COUNTRY C

✓ CALL BARTOW for municipal well info update

43

NUS CORPORATION **INTERNAL CORRESPONDENCE**

TO:	Julie Keller, Florida Section Leader	DATE:	December 26, 1990
FROM:	William E. Vasser	COPIES:	P. Blackwell B. Donaghue
SUBJECT:	Municipal Water Systems in the Central Florida Phosphate Mining Area		

A data base for the municipal water systems within the phosphate mining area of Polk, Hillsborough, Hardee, and Manatee counties, Florida has been prepared. Information was obtained during visits to the municipalities, by telephone conversations, through the mail, and from Southwest Florida Water Management District publications.

A data base printout of system names and specifications is attached. A detailed topographic map of most of the area has been prepared showing the extent of the municipalities' service areas and well locations. By using the data base printout and the topographic map, project managers may identify wells located within 4 miles of their sites and determine the approximate population served by those wells.

Most municipal wells within the area obtain water from the Floridan aquifer. In some cases, water is also obtained from the intermediate aquifer and/or the surficial aquifer. For systems with multiple wells, water is mixed at treatment plants and/or in distribution lines, except where noted in the "Comments" column of the printout. There are no surface water intakes from the Peace River or from the Alafia River in the area. The Manatee County Public Utilities Department obtains water from Lake Manatee, on the Manatee River.

Auburndale Public Utilities Department	Ray Allred (813)967-1144	P.O. Box 186 Auburndale, FL 33823	7,000 (C) (11/90)	4	2		Various	Auburndale	3 wells (located) s[illegible] of Lake Ariana, 616-64[illegible] feet deep) supply water t[illegible] the main water plant on Recker Highway. 1 well (located north of Lake Ariana, depth unknown) supplies water to the Winona Park water plant. Water from the two plants is not actively blended, although some mixing may occur in the distribution lines. The city also has one well for emergency use only.
Southern States Utilities, Inc. Lake Gibson/ Gibsonia Estates	Ed Mangold Mary Glennon 1-(800)432-4501	1000 Color Place Apopka, FL 32703	2,175 (P) (FL Wells Data Base)	3	2	280711 815748 280718 815731 280653 815823	24 27 S. 23 E.	Lakeland	Franchise system. 3 active wells and 2 standby wells; depths unknown.
Southern States Utilities, Inc. Orange Hill/ Sugar Creek	"	"	600 (P) (FL Wells Data Base)	1	1	280052 814911	28 28 S. 25 E.	Auburndale	1 active well and 1 backup. Depths unknown.
Garden Grove Water Company	Mark Kluytenaar (813)324-4319	3601 Cypress Gardens Road, Winter Haven, FL 33880	5,200 (C) (11/90)	11	Several	Various	Various	Winter Haven, Eloise	Water not actively blended, although mixing may occur in distribution lines. Well depths not specified, but similar to those in Winter Haven.
Eagle Lake Water Department	Linda Weldon (813)299-6578	City of Eagle Lake 75 Seventh Street N. Eagle Lake, FL 33839	800 (C) (11/90)	2	1		12 | 7 29 S. | 29 S. 25 E. | 26 E.	Bartow	

berry Water artment	Jack Gooding (813)425-4234	P.O. Box 707 Mulberry, FL 33860	1,400 (C) (11/90)	1	1	12 30 S. 23 E.	Mulberry	Primary well is 810 ft deep. 2 backup wells are 759 and 550 feet deep, respectively.
tow Water artment	Doug Allen Joe Arline (813)533-0911	450 N. Wilson Avenue Bartow, FL 33830	>5,000 (C) (11/90)	14	Several	Various	Bartow, Homeland	Water mixed at plant. Wells range from 315-750 feet deep. 9 wells located within city limits, 5 others in airport area. Also, 1 emergency well located southwest of city.
t Meade er Department	Leigh Messer (813)285-8195	521 NW. 4th Street Fort Meade, FL 33841	2,300 (C) (11/90)	3	1	27 31 S. 25 E.	Homeland	840-900 feet deep. One treatment plant.
neta Water pany	Peggy Hilliard (813)324-5389	106 8th Street E. Winter Haven (Wahneta), FL 33880	1,023 (C) (11/90)	2	1	21 29 S. 26 E.	Eloise	Depths unknown.

---

k County Utilities sion	Steven Shealy Ron Edwards (813)533-6491 534-6039	Polk County Board of Commissioners P.O. Box 2019 Bartow, FL 33830	***** Polk County operates at least 48 seperate small community water systems. Most of the systems operated by Polk County within the phosphate mining areas of the county are located in the Northwest, Southwest, and Central Regional Service areas. Many of the systems have been taken over by the county within the past few years. In most cases, the number of connections served by a particular system or well is not known. Distribution areas for individual systems are, in general, small; the limits of most systems are not accurately mapped. Some systems are interconnected with other county systems or with municipal systems. Within the regional service areas, many private residences still obtain drinking water from private wells. A house count on topographic maps may be a useful method to estimate the number of residences served by a particular system if the population is unknown. The county-operated systems within the phosphate mining areas of Polk County are listed below.

bow Ridge	Unknown	1	1	280153 814916	21 28 S. 25 E.	Auburndale	Unknown depth. No backup.
Phyl #1	Unknown	1	1	280047 814627	 28 S. 25 E.	Auburndale	651 feet deep. Interconnected with other Jan-Phyl wells.
Phyl #2	Unknown	1	1	280116 814613	25 28 S. 25 E.	Auburndale	552 feet deep. Interconnected with other Jan-Phyl wells.
Phyl #3	Unknown	1	1	280047 814624	 28 S. 25 E.	Auburndale	673 feet deep. Interconnected with other Jan-Phyl wells.
ver Lake	Unknown	1	1	275952 814721	35 28 S. 25 E.	Bartow	640 feet deep. No backup.
donville	See Footnote 1	1	1	275734 814749	15 29 S. 25 E.	Bartow	700 feet deep. No backup.
en Acres #1	Unknown	1	1	275728 814429		Eloise	Depth unknown. Interconnected with other Green Acres wells.
en Acres #3-#1	Unknown	1	1	275740 814415		Eloise	Depth unknown. Interconnected with other Green Acres wells.
en Acres #3-#2	Unknown	1	1	275743 814415		Eloise	Depth unknown. Interconnected with other Green Acres wells.
e Garfield	Unknown	1	1	275449 814310		Eloise	Depth unknown. No backup.
kell Homes	See Crews Lake	1	1	275704 815225	24 29 S. 24 E.	Bartow	315 feet deep. Interconnected with Crews Lake system.

ing Green r Department	Mack Bryan (813)375-2255	P.O. Box 608 Bowling Green, FL 33834	750 (C) (11/90)	1	1	5 33 S. 25 E.	Bowling Green	Well is >1,200 feet deep; rather high sulfur.
hula Water rtment	Mike Heine (813)773-3131	P.O. Box 818 Wauchula, FL 33873	1,820 (C) (11/90)	4	1	3 34 S. 25 E.	Wauchula	Wells near treatment plant, 630-1,150 feet deep.
t City Water rtment	Bob Hittell (813)752-6393	402 E. Herring Street Plant City, FL 33566	8,132 (C) (5/90)	5	3	Various 28 S. 22 E.	Plant City East, Plant City West	300-1,200 feet deep. 1 treatment plant.
sborough County ities - South Cental rict	Mark Lehigh (813)685-4235	402 E. Twiggs Street Tampa, FL 33601; or, Lithia Water Plant	75,133 (P) (FL Wells Data Base)	5	Keysville Field	14, 15 30 S. 22 E.	Keysville, Nichols	Water pumped to Lithia Treatment plant and blended with water from 12 other wells. Distributed to communities in western Hillsborough County. No municipal service in eastern part of county other than Plant City. Well depths not specified.
tee County Public ities Department		Bradenton, FL	****** Surface water intake from a reservior on the Manatee River (Myakka City NW quad). Service area is in western Manatee County. There is no municipal service to residences in northeastern Manatee County.					

note 1. The "Gordonville" system serves 7,620 persons, according to the Florida Wells Data Base. However, this number appears to include areas served by other Polk County systems, probably Tenamora, Rainbow Ridge, the three Jan-Phyl wells, and Dinner Lake, as well as the well located near Gordonville. For this reason, the population served by the Gordonville well is "unknown".

City of Auburndale

AUBURNDALE, FLORIDA 33823

Office of the Director of Public Utilities

P.O. BOX 186
1300 Recker Hwy.
PHONE. (813) 967-3325

June 23, 1989

Department of Environmental Regulation
Room 565
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Attention: Brian Moore

Dear Mr. Moore;

As per our telephone conversation of June 23, 1989, I am listing the City of Auburndale's wells and the depth of each:

Atlantic Avenue # 1	633 feet
Atlantic Avenue # 2	600 feet
Tampa Street # 3	616 feet
Winona Park # 4	600 feet
West Lake Avenue # 5	490 feet

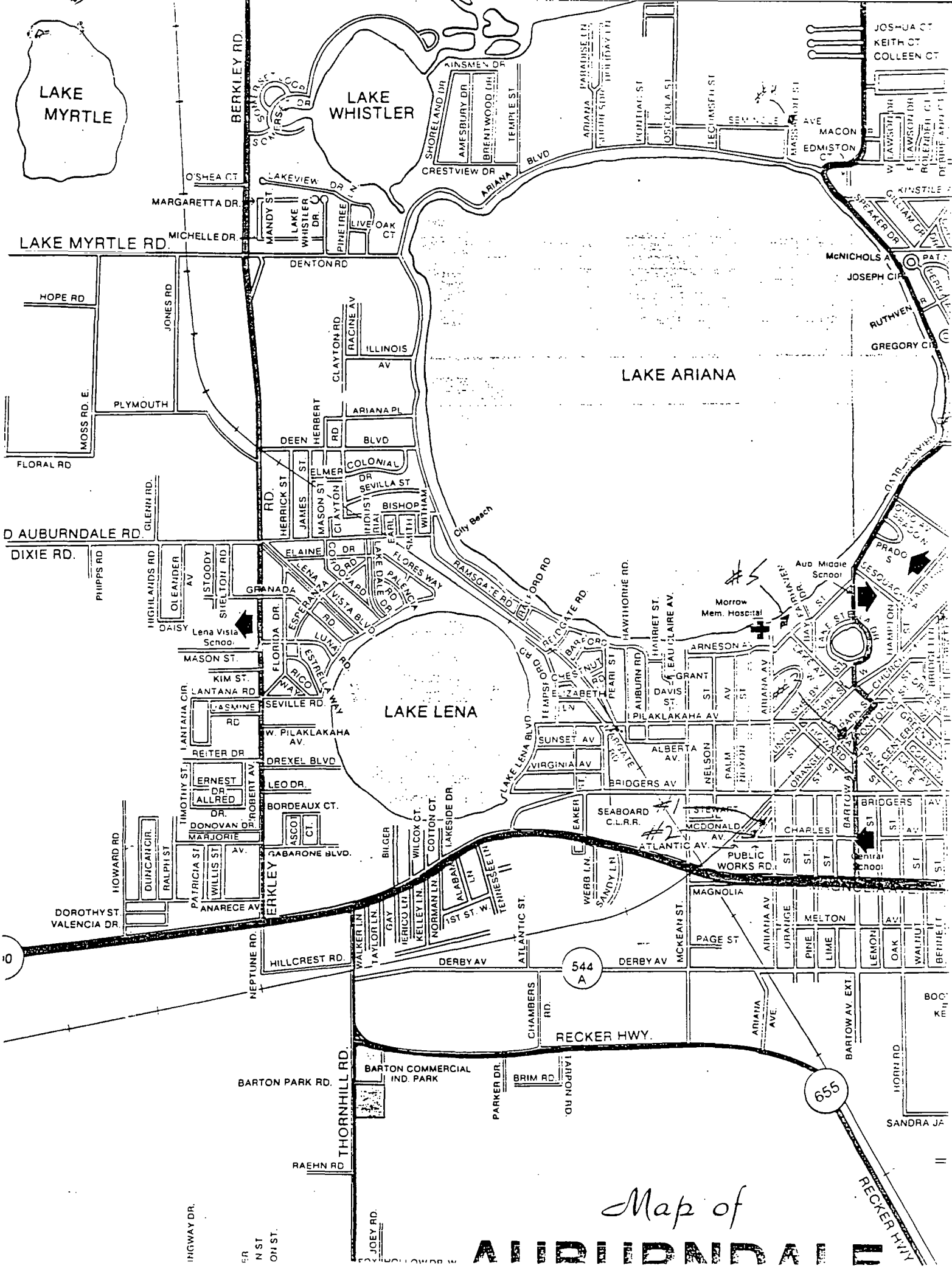
Please call if we may be of further assistance.

Sincerely,

Bobby Tillman, Superintendent

vbj

BUREAU OF WASTE CLEANUP
Twin Towers

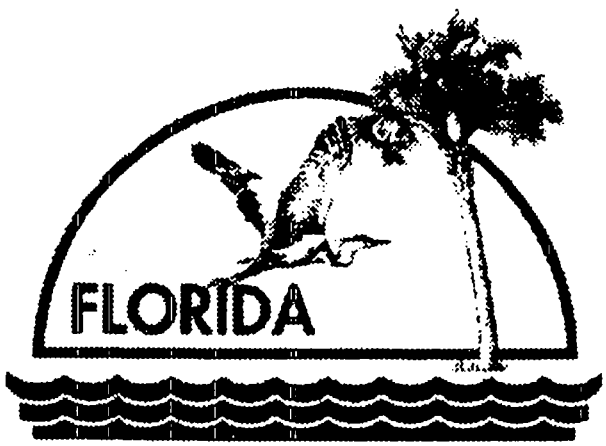

LAKE MYRTLE
LAKE WHISTLER
LAKE ARIANA
LAKE LENA
BERKLEY RD.
LAKE MYRTLE RD.
DENTON RD
MICHELLE DR.
MARGARETTA DR.
O'SHEA CT
LAKEVIEW DR N
MANDY ST.
LAKE WHISTLER DR.
PINETREE
LIVE OAK CT
KINSMEN DR
AMESBURY DR
BRENTWOOD DR
TEMPLE ST
SHORELAND DR
CRESTVIEW DR
ARIANA BLVD
ARIANA PARADISE LN
FONTIAC ST
OSCEOLA ST
LEGISLATIVE ST
MASSACHUSETTS AVE
MACON
EDMISTON
JOSHUA CT
KEITH CT
COLLEEN CT
KINSTILE
GILLIAM DR
SPEAKER DR
McNICHOLS
JOSEPH CIR
RUTHVEN
GREGORY CIR
HOPE RD
JONES RD
MOSS RD. E.
PLYMOUTH
FLORAL RD
CLAYTON RD
RACINE AV
ILLINOIS AV
ARIANA PL
HERBERT RD
DEEN BLVD
COLONIAL DR
SEVILLA ST
ELMER ST
JAMES ST
MASON ST
CLAYTON
INDUSTRIAL
EARL
SMITH
WITHAM
BISHOP
HERRICK ST
GLENN RD.
D AUBURNDALE RD.
DIXIE RD.
PHIPPS RD
HIGHLANDS RD
OLEANDER AV
STOODY
SHELTON RD
DAISY
Lena Vista School
GRANADA
ELAINE DR
COLONIAL
LAKE GATE DR
PALENCIA
FLORES WAY
ESPERANZA
VISTA BLVD
LUNA RD
FLORIDA DR.
ESTRELLA WAY
RICO WAY
MASON ST.
KIM ST.
LANTANA RD
SEVILLE RD.
JASMINE RD
W. PILAKLAKAHA AV.
REITER DR
DREXEL BLVD
ERNEST DR
ALLRED DR.
LEO DR.
BORDEAUX CT.
DONOVAN DR
MARJORIE
ASCOT CT.
GABARONE BLVD.
LANTANA CIR.
TIMOTHY ST.
HOWARD RD
DUNCAN CIR.
RALPH ST
PATRICIA ST
WILLIS ST
AV.
ANARECE AV
DOROTHY ST.
VALENCIA DR.
ERKLEY
BILGER
WILCOX CT.
COTTON CT.
LAKESIDE DR.
ALABAMA LN
TENNESSEE LN
1ST ST. W
NORMAN LN.
KELLEY LN.
ERICO LN
GAY
TAYLOR LN
WALKER LN
WEBB LN.
SANDY LN
EAKER
SEABOARD C.L.R.R.
#2
#5
STEWART
MCDONALD AV.
ATLANTIC AV.
PUBLIC WORKS RD.
CHARLES
BRIDGERS
BRIDGERS AV
Central School
Aud Middle School
Morrow Mem. Hospital
FAIRVIEW DR.
HAMPTON
CHURCH
ARNESON AV
GRANT
DAVIS ST.
PILAKLAKAHA AV
SUNSET AV
VIRGINIA AV
ALBERTA AV.
NELSON
PALM
ORANGE
CENTER
CONTOUR
PALMETTO
ARIANA AV
ARIANA ST
SESQUAC
PRADO
OLIVE AVE
HAWTHORNE RD.
HARRIET ST.
EAU CLAIRE AV.
AUBURN RD
BARFORD
PEARL ST
ELIZABETH
LAKE LENA BLVD
REINGATE RD
RAMSGATE RD
TAYLOR RD
City Beach
MAGNOLIA
MELTON
PAGE ST
ORANGE
PINE
LIME
LEMON
OAK
WALNUT
BERNETT
MCKEAN ST.
DERBY AV
544 A
HILLCREST RD.
NEPTUNE RD.
CHAMBERS RD.
RECKER HWY.
ARIANA AVE.
BARTOW AV. EXT.
655
BARTON COMMERCIAL IND. PARK
BARTON PARK RD.
PARKER DR.
BRIM RD
LAPON RD.
THORNHILL RD.
RAEHN RD
JOEY RD.
SANDRA JA
Map of
AUBURNDALE

Draft

PRELIMINARY ASSESSMENT
TENDER TOUCH CLEANERS
POLK COUNTY, FLORIDA

FLD 982136384

WASTE LAN ID 0406848



Prepared By:

Florida Department of Environmental Protection
Division of Waste Management
Bureau of Waste Clean-up
Technical Review Section
Site Screening Superfund Subsection

July 31, 1998

Date: 7/31/98

Prepared by:

Craig Feeny

Site:

Tender Touch Cleaners
1515 NW 1st Street
Winter Haven, Polk County, Florida

EPA ID Number:

FL#

1.0 Introduction

This Preliminary Assessment (PA) report was prepared by The Florida Department of Environmental Protection's Site Screening Superfund Subsection Staff pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986(SARA). The purpose of the PA was to gather and evaluate available file information, to determine the potential for a release of hazardous substances into the environment, and to assess pathways that may be affected by the site. The information presented in the PA was used to determine whether or not a CERCLA site investigation is warranted at the site pursuant to Superfund regulations.

2.0 Site Background

2.1 Location

The site is located at 1515 NW 1st Street, in Winter Haven, Polk County, Florida[1]. The approximate latitudinal and longitudinal coordinates of the site are 28° 02' 14" N and 81° 43' 37" W., respectively[1,2 (pp. 1,6 & 7)]. The site can be reached by following US Highway 27 to State Road 544 (Lucerne Park Road); follow SR 544 west to 1st Street (in Winter Haven); and continue south to Avenue P NW. The site is located on the southwest corner of the intersection of 1st Street and Avenue P NW (i.e., 1515 NW 1st Street)[1,2, & 3 (p. 7)].

2.2 Site Description

The site is a dry cleaning business[3]. Facility components include and office, a boiler room, a dry-cleaning machine, and an appurtenant chiller (refrigerated condenser). The

facility is surrounded by concrete pavement[3 (p. 7)]. The elevation of land surface at the facility is roughly 150 feet above mean sea level (msl)[1].

2.3 Local Climate

The climate of Polk County is characterized as humid-subtropical. The average annual temperature is 72° F, and average monthly temperatures range from 62° F in winter to 82° F in summer[18 (p. 11)]. Average annual, net and 2-year/24-hour precipitation figures are 51.43[18 (p. 11)], 6 [36] and 5 inches[37], respectively.

3.0 Site History

3.1 Operational History

The facility annually uses less than 1000 kg/month of chlorinated solvents in the course of dry cleaning activities[6]. Drums of facility waste are stored near the dry-cleaning machine[4]. Specific facility operations and materials have not been researched.

3.2 Regulatory/Permitting History

The facility is currently characterized as a Small Quantity RCRA Generator. PCE contamination of on-site soil was discovered during 1997[4], but the facility was recently judged ineligible for participation in the FDEP Dry-cleaning Solvent Clean-up Program. In addition, the deadline for an appeal of the judgment passed without protest (i.e., Notice of Appeal)[5,8].

3.3 Sampling and Analyses

On 5/21/97, Environmental Safety Consultants, Inc. sampled soil in the immediate vicinity of the facility's dry cleaning machine. The sample was taken from a depth of 1 foot below land surface (bls). Progress Environmental performed follow-up analyses, which documented a concentration of 241 ug/kg of tetrachloroethylene (perchloroethylene/PCE)—a common dry cleaning solvent[3 (pp. 1,2& 7), 4,29)]. Despite the establishment of site-attributable contamination in facility soils, no pursuant Consent Order has been issued[8].

4.0 Ground-Water Pathway

4.1 Hydrogeologic Setting

This site is situated on the Winter Haven Ridge of the Polk Upland geomorphologic feature of the Central Zone Geomorphologic Province of Florida. This area contains numerous closed basin karst terrain features including cover-collapse sinkholes and sinkhole lakes. A post-Oligocene age fault, associated with the Ocala Platform, is interpreted to exist northeast of the site area. This fault trends northwest-southeast and is

located within 4.2 miles of the site. There are 3 hydrostratigraphic units in Polk County. These units are the surficial aquifer, intermediate aquifer /confining unit and Floridan aquifer systems [1,17,18,19,20,21,24,38] (Figure 1).

The surficial aquifer system is principally composed of unconsolidated to poorly indurated sediments of Pleistocene to Holocene age. These sediments are between 45 to 70 feet thick in the Winter Haven area. The surficial aquifer system exists under unconfined conditions and is found between 4.5 to 5.5 feet bls at the site. The aquifer is recharged primarily by rainfall. Water levels fluctuate in the surficial aquifer system as a result of recharge by rainfall, and discharge by natural gravity flow downgradient to lakes and streams, evapotranspiration, downward loss into underlying aquifers and pumping from wells[16,17,18,22,27]..

The surficial aquifer system generally is moderately to highly acidic, high in iron content and is highly colored. The surficial aquifer system is not a major source of water and is limited to domestic supply, lawn irrigation and to a limited extent, small agricultural irrigation along the central ridge areas. The average yield from wells tapping the aquifer is between 20 to 30 gallons per minute (gpm) [16,17,18,22,27].

The intermediate aquifer system/confining unit, which is present over much of western Polk County (south of Polk City), consists of discontinuous sand, gravel, shell, limestone and dolostone beds within the Hawthorn Group. The intermediate aquifer system/confining unit includes the Peace River and Arcadia Formations[16,17,18,22,27].

The Bone Valley Member of the Peace River Fm (early Pliocene to Miocene age) forms the upper part of the Peace River Fm and consists of pebble or gravel-sized phosphate fragments and sand-sized phosphate grains in a matrix of quartz and clay. The Peace River Formation is underlain by the Arcadia Fm of lower Miocene Age. The Arcadia Fm, with the exception of the Nocatee member, consists predominantly of limestone and dolostone with varying amounts of sand, clay and phosphate grains. The Nocatee and Tampa members of this formation are absent in the site area[1,16,17,18,22,27,28,39].

The Peace River and Arcadia Fms. form the Hawthorn Group in this area of Polk County. The top of the Hawthorn Group is found approximately 60 feet bls and is between 50 to 100 feet thick in the Winter Haven area. The lower confining layer for the surficial aquifer system consists of clayey sediments of the Peace River Formation (Bone Valley member) of the Hawthorn Group. The top of this unit appears to be approximately 55 feet bls at the site. The lower confining unit of the intermediate aquifer system consists of low permeability units in the Arcadia Formation[1,16,17,18,22,27,28,39].

The intermediate aquifer system exhibits high alkalinity (high bicarbonate ion concentration) and elevated levels of magnesium. Recent water quality data indicates elevated levels of gross beta (suspended and dissolved) and gross alpha (suspended) in a number of wells screened in the intermediate aquifer system. Phosphatic sediments within the Hawthorn Group are the cause of these elevated levels. Water from the intermediate

aquifer system is primarily used for domestic supply in Polk County. Other uses include stock watering, irrigation and small public supplies [1,16,17,18,22,27,28,39].

The Floridan aquifer system consists of carbonate (limestones and dolomites) units ranging from Eocene to Oligocene age. The units comprising the Floridan aquifer system include, in ascending order, the Avon Park Formation, Ocala Limestone and the Suwannee Limestone. The top of the Floridan aquifer system (Suwannee Limestone) is found approximately 140 feet bls in the site area and the aquifer is approximately 1,000 feet thick in this section of Polk County[1,17,18,19,20,21,22,24,25,27,38].

The Suwannee Limestone of Oligocene age underlies the Hawthorn Group and consists primarily of variably vuggy and muddy limestone (grainstone to packstone). Post-Oligocene age erosional processes have removed the Suwannee Limestone on the upthrown (east) side of the nearby fault. The Suwannee Limestone is underlain by the late Eocene age Ocala Limestone[1,17,18,19,20,21,22,24,25,27,38].

The Ocala Limestone consists of white to light gray, light orange, fossiliferous, calcarenitic limestone. The limestone has poor to good induration and contains benthic foraminifera. The Avon Park Formation of middle Eocene age underlies the Ocala Limestone and is composed of white to light orange, grayish-brown fossiliferous limestone interbedded with vuggy dolostone. The Avon Park Formation is highly fractured[1,17,18,19,20,21,22,24,25,27,38].

Most of the lakes, depressions and sinkholes located in this area of Polk County may provide conduits for recharge to the aquifer[20]. Accordingly, Winter Haven is located in an area of high recharge to the Floridan aquifer system[1,17,18,19,20,21,22,24,25,27,38].

The potentiometric surface of the upper Floridan aquifer system varies between 110 to 120 feet above National Geodetic Vertical Datum (NGVD). The regional groundwater flow of the Floridan aquifer system is towards the south-southwest from the Green Swamp High. The transmissivity of the aquifer has been found to range from 51,471 to 280,749 ft^2/day and is controlled by the presence of solution features and fractures [1,17,18,19,20,21,22,24,25,27,38].

The Floridan aquifer system is primarily a calcium bicarbonate aquifer with hardness values in the upper Floridan aquifer ranging from 40-284 mg/l. The water quality of the Floridan aquifer system generally deteriorates (i.e., high TDS, hardness, chloride and sulfate values) with increasing depth and towards the coast. The upper Floridan aquifer system is the principal source all major municipal, industrial, irrigation and domestic water supplies. Large diameter wells that tap the upper Floridan aquifer can yield as much as 8,000 gpm [17,18,19,22,24,27,38].

4.2 Ground-Water Targets

Numerous potable wells, including the supply wells associated with several municipal drinking water systems, exist within 4 miles of the site. The City of Winter Haven operates the largest of the municipal drinking water systems, which includes the Fairfax, Inwood, Third Street, and Ridge Vo-Tech wellfields and their concomitant water treatment plants (WTP's). Each supply well draws drinking water from the Floridan aquifer system[16,32].

Approximately 78% of the Winter Haven municipal water supply is provided by 6 wells that operate at the Fairfax WTP. Approximately 11% of the municipal water supply is provided by 2 wells at the Inwood WTP. Another 9% of the municipal water supply is provided by 4 wells at the Third Avenue WTP. One Ridge Vo Tech well provides the balance of the municipal supply. All of the water drawn by the 13 municipal supply wells is ultimately blended and distributed to a service population of 49,815[12,13,16,30-32].

The City of Winter Haven recently purchased 5 additional wellfields and appurtenant distribution/ treatment facilities from the Garden Grove Water Company[1,12,13, 16,32]. The 5 component wellfields bear the names of their associated water treatment plants—the Roosevelt, Winterset, Garden Grove East, Eloise Woods, and Callen WTP's. The recently acquired Garden Grove system's 12 wells collectively supply a basic service population of 20,386, as well as a joint service population of 800 at the Orange Manors East & West mobile home parks[16,32].

Three wells at the Winterset WTP wellfield provide 32% of the potable water supplied to the Garden Grove distribution system. Two supply wells at the Roosevelt WTP wellfield provide 1% of the Garden Grove system's water supply. Two wells at the Garden Grove East WTP provide 5% of the water produced by the Garden Grove system. Three wells at the Callen WTP produce 3% of the water produced by the Garden Grove system. Two wells at the Eloise Woods WTP produce 26% of the water delivered by the Garden Grove system[16,31,32]. Water produced by different WTPs in the Garden Grove system is not intentionally blended; however incidental blending of water within distribution lines assuredly occurs[42].

The nearest potable well, relative to the site, is the #1 supply well of the City of Winter Haven's Fairfax WTP wellfield. The well is located approximately 3,200 feet southeast of the site and has a depth of 590 feet[1,16,32]. All 6 of the Fairfax WTP supply wells are located within 1/2-1 mile of the site[1,16].

No significant supply wells have been identified within 1-2 miles of the site. However, the 2 Inwood supply wells (City of Winter Haven system), the 4 Third Avenue supply wells (City of Winter Haven system) and 3 Callen WTP supply wells (Garden Grove system) are located within the 2-3 mile distance interval. A Nations Bank well,

providing a drinking water supply to an estimated population of 250, also operates within 2-3 miles of the site[1,16].

Wells associated with the 2 Garden Grove East WTP supply wells (Garden Grove system), the 2 Eloise Woods WTP supply wells(Garden Grove system), the Orchid Springs WTP supply well (population: 752), the Four Lakes Golf Club supply well (population: 1,344), the Gordenville Jan Phyl Main WTP supply well (population: 818), Polk County Utilities Mariana Acres WTP (population: 1,641) and both City of Lake Alfred supply wells (population: 4,176) are located within the 3-4 mile distance interval[1,16, 30-32,40,42-44]. The Ridge Vo Tech well is located more than 4 miles northeast of the site[1,16,30-32,].

Most of the potable wells that exist within 4 miles of the site were not addressed herein. However, specific information concerning these wells is readily available[16].

TABLE 1

Population served by selected wells within four miles of site.
Tender Touch Dry Cleaners.
Winter Haven, Polk County, Florida

Well Identity	# of wells/ 0-1/4 mile population	# of wells/ 1/4-1/2 mile population	# of wells/ 1/2-1 mile population	# of wells/ 1-2 mile population	# of wells/ 2-3 mile population	# of wells/ 3-4 mile population
Private					1/250	2/2,096
City of Lake Alfred						2/4,176
Gordenville Jan Phyl Main WTP						1/818
Polk County Utilities Mariana Acres WTP						2/1,641
City of Winter Haven/ Garden Grove System					3/611	4/6,319
City of Winter Haven/ Main System			6/38,856		6/9,963	
Total Pop.			**38,856**		**10,824**	**15,050**

Total population served within 4 miles = 64,730

References [1,16,30-32,40,42-44]

4.3 Ground-Water Conclusions

Soil contamination by PCE was documented[4]. No ground water samples have been collected; however, a release to ground water is suspected. Also, local sinkholes commonly act as recharge conduits to the Floridan aquifer system. No potable wells are near enough to the site to reasonably characterize them as primary ground water targets [1,16,30-32].

5.0 Surface Water Pathway

5.1 Hydrology

The site lies at an elevation of approximately 150 feet above msl[1] and outside of the 100-year flood zone[10]. On-site stormwater drainage has not been described.

The nearest surface water body is a 55-acre, landlocked lake, known as Lake Maude[1,32]. The lake is located approximately 1,400 feet east of the subject site[1]. The surface elevation of the lake is approximately 140 feet above msl[32].

Another landlocked lake, known as Lake Silver, is located approximately 1,500 feet south of the site. The lake comprises 52 acres of surface area[32]. The surface elevation of the lake is approximately 145 feet above msl[1].

Spring Lake is located approximately 2,000 feet west of the site. Narrow channels of water physically connect the lake a series of other lakes in the area (e.g., Lakes Mirror, Cannon, Hartridge, Howard, May, Shipp, Conine, Smart, Rochelle, Haines, Fannie, Hamilton, Echo, and Sara)[1]. In addition, pervasive wetlands lie along and within the borders of several of those lakes[1,35].

5.2 Surface Water Targets

Nearly all water supplies in Polk County are provided by ground water sources[18 (p. 1)]. Accordingly, no drinking water intakes have been identified in association with local surface water bodies[16].

Several freshwater fisheries, (e.g., bream, catfish, crappie, and bass), are supported by local lakes[34,41]. These lakes are presumably fished on a regular basis, given their close proximity to residential populations and highways[33].

Numerous wetlands have been identified within and along the banks of downstream surface water bodies[1]. No other sensitive environments have been identified along the Surface Water Migration Pathway[32].

5.3 Surface Water Conclusions

PCE was detected in on-site soil, however, no other media were sampled[4]. The site lies approximately 1,400 feet from the nearest surface water body (Lake Maude) and outside of the 100-year flood zone[10]. Therefore, a release of site-attributable contaminants to surface water is possible, but not suspected. Consequently, the fisheries and wetlands that are associated with the lakes cannot logically be considered primary surface water targets.

6.0 Soil Exposure and Air Migration Pathways

6.1 Physical Conditions

Contaminated soil was documented on-site[4]. Site accessibility has not been evaluated, but the facility is presumably active[3,4,6].

6.2 Soil Exposure and Air Migration Targets

Facility employees may reasonably be expected to encounter contaminated soil or vapors. However, no resident population or sensitive environment is located on-site. Residences are ostensibly located in the general vicinity of the site, but none have been specifically identified within 200 feet of the site[1,9].

6.3 Soil Exposure and Air Pathway Conclusions

PCE-contaminated soil was documented near the dry cleaning machine. Because the facility is presumably active employees could be exposed to PCE via contaminated soil or vapors. Alternatively, no residential populations or sensitive environments are located within 200 feet of the site. Given these conditions, no primary targets are likely to be associated with the Soil Exposure and Air Migration Pathways.

7.0 Summary and Conclusions

The site is a dry cleaning business owned by Don Chamberlain[3,6]. The facility annually uses less than 1000 kg/month of chlorinated solvents in the course of dry cleaning activities[6]. Drums of facility waste are stored near the dry cleaning machine[3 (p. 7)]. Also, 241 ug/kg of PCE (a common dry cleaning solvent) was detected in a soil sample collected near the dry cleaning machine[4].

The facility is presumably active, so employees may be exposed to contaminated soils and PCE vapor. However, no residential populations or sensitive environments are located within 200 feet of the site[1,9,15]. Therefore, the Soil Exposure and Air Migration Pathways are not considered significant to the present assessment.

The site is located within 1,400 feet of a sinkhole (Lake Maude) and within 2,000 feet of a chain of lakes. Most of the sinkholes in the chain are characterized as sinkhole lakes. Each of the lakes potentially supports recreational fisheries and several of the lakes are associated with pervasive wetlands[1,33,34,41]. However, the site is located outside of the 100-year flood zone[10] and no defined overland routes to the lakes are evident. Therefore, the potential influence of the site upon local surface water bodies it likely to be minimal.

No ground water samples have been collected, but a release to ground water is suspected. Six municipal wells, supplying a large population with drinking water, are located within 1 mile of the site. In addition, several other large capacity supply wells have been identified within 4 miles of the site. Although the general vicinity of the site is karst, none of the wells are characterized as primary ground water targets.[1,16,30-32].

No primary targets were identified among any of the exposure pathways. Nevertheless , the Ground Water Migration Pathway is arguably significant and merits characterization as the principal contaminant pathway of concern, considering (1) the probable existence of ground water contamination, (2) the presence of locally karst conditions, and (3) the large population supplied by local wells. In the absence of ground water samples, further sampling is warranted. However, further investigation and cleanup have not been ensured (the site is ineligible for participation in the FDEP solvent cleanup program[5,8] and no FDEP Consent Order has been signed[8]), so a **CERCLA site inspection is recommended**.

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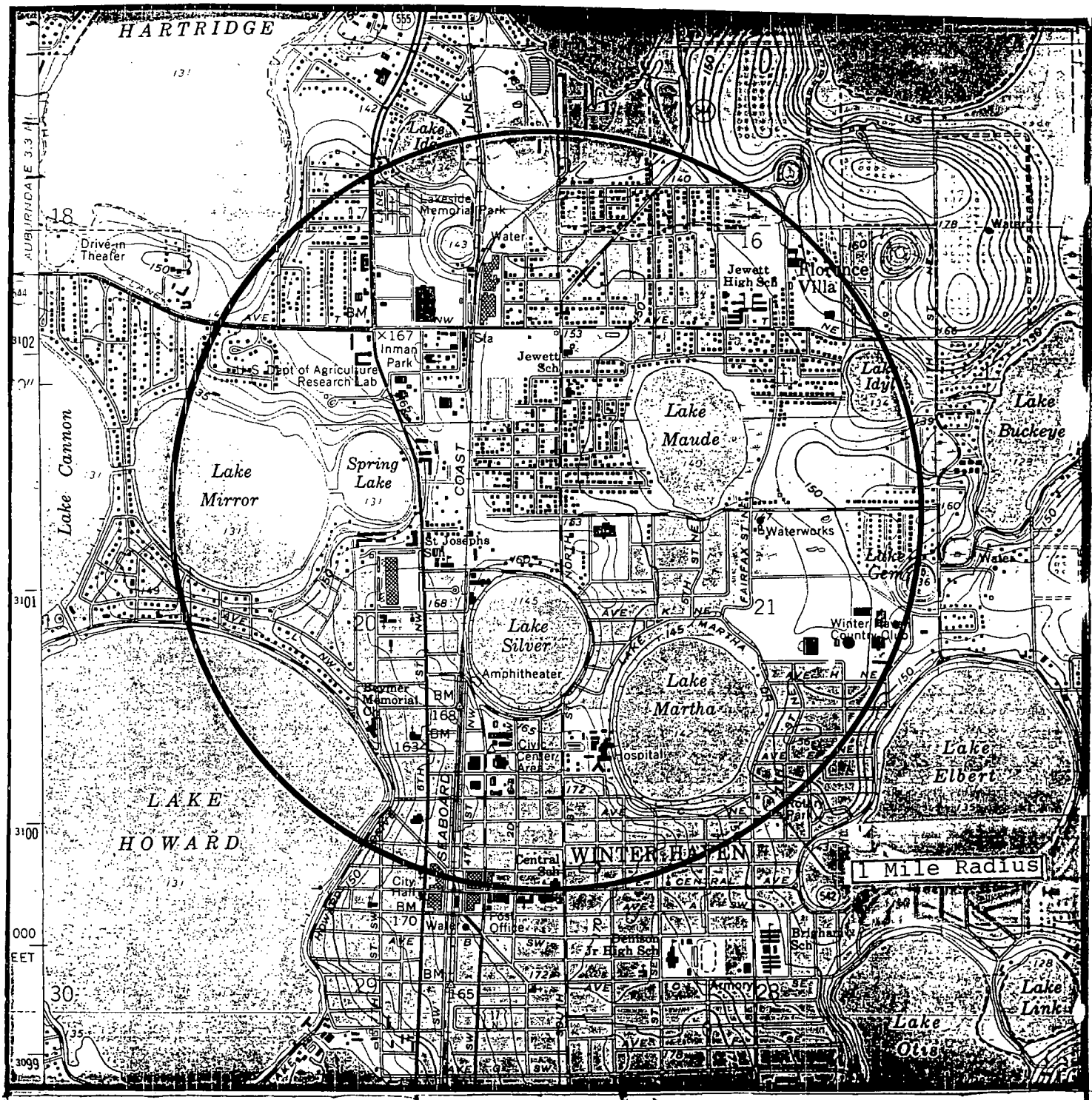
HARTRIDGE
AUBURNDALE 3.3 MI.
Drive-in Theater
Lakeside Memorial Park
Water
Jewett High Sch
Florence Villa
Inman Park
U.S. Dept of Agriculture Research Lab
Jewett Sch
Lake Idyl
Lake Buckeye
Lake Cannon
Lake Mirror
Spring Lake
COAST LINE
Lake Maude
Waterworks
St. Josephs Sch
Lake Gem
Lake Silver
Amphitheater
Winter Haven Country Club
Lake Martha
Hospital
Beymer Memorial Ctr
Civic Center Area
Lake Elbert
LAKE HOWARD
SEABOARD
Central Sch
WINTER HAVEN
1 Mile Radius
City Hall
Post Office
Denison Jr High Sch
Brigham Sch
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SITE LOCATION MAP
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