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GAINESVILLE REGIONAL UTILITIES

Water/Wastewater Engineering Department

October 11th, 2013

Mr. Jay Lawrence
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

Subject: Consumptive Water Use Permit (CUP) #11339
Gainesville Regional Utilities (GRU)

Dear Mr. Lawrence,

Please find attached Gainesville Regional Utilities' (GRU) renewal application for the referenced Consumptive Water Use Permit. This application and all enclosures are being transmitted electronically only. The application and supporting information is contained in two volumes. The first volume contains the permit application form and supplemental information and reports. The second volume is solely dedicated to the groundwater modeling files and data (data available at ftp://209.156.189.85 Username: GRUCONSUMBGmr Password: GRUCO15816). The $200 renewal application fee was submitted/paid online through the SJRWMD website.

Since our wellfield crosses water management district boundaries and GRU customers reside in both SJRWMD and SRWMD, GRU staff have worked extenisevly with staff of both water managements districts over the past year to ensure that the proper information and demonstrations are included in this application. This submittal demonstrates a reasonable-beneficial water use that does not interfere with existing legal users and is consisent with the public interest.

We look forward to working with both Districts on this renewal process. If the District needs any additional information, please call me at 352-393-1615.

Sincerely,

Tony Cunningham, P.E.
Senior Envirnonmental Engineer

xc: Warren Zwanka, SRWMD
Tim Sagul, SRMWD
Scott Laidlaw, SJRWMD
Cover letter and executive summary only:
Ann Shortelle, SRWMD
Hans Tanzler, SJRWMD
David Richardson, GRU
Ron Herget, GRU
Rae Hafer, GRU

Consumptive Use Permit Application
Gainesville Regional Utilities
Permit No. 11339

Prepared for

St. Johns River Water Management District

Prepared by

Gainesville Regional Utilities

October 2013

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CUP Renewal Request

In 2009, the St. Johns River Water Management District (SJRWMD) issued Gainesville Regional Utilities (GRU) consumptive use permit (CUP) no. 11339 authorizing the use of 10,950.0 million gallons per year (30.0 million gallons per day (average)) of groundwater from the Floridan aquifer for public supply type use (which includes household, irrigation, commercial/industrial, water utility, and unaccounted for uses), and 84.0 million gallons per day of groundwater from the Floridan aquifer for essential use (fire protection). This CUP expires on August 11, 2014.

With this expiration date in mind and with the need to continue its operations after 2014, in early 2012, GRU evaluated how to meet its future water demands in the context of its historic use, regional water supply, and environmental issues. GRU also met with local elected officials, environmental stakeholders, and business leaders to discuss this issue. Based on this evaluation and considering input from these meetings, GRU made a commitment to stay within its currently allocated 30 million gallons per day (MGD) despite projections which show that GRU's demand will increase beyond these limits.

As explained further in this application, GRU plans to employ adaptive measures and innovative technologies to reduce demands, but uncertainty associated with the effectiveness of such technologies, and the potential for higher than anticipated growth, require that GRU mitigate these risks. To that end, GRU has proposed an innovative consumptive use permitting (CUP) structure which would allow GRU to implement alternative water supply (AWS) projects to expand its allocation while offsetting any potential unacceptable impacts associated with the expanded allocation.

Extensive Pre-Application Reviews With Both SJRWMD And SRWMD Staff

A portion of GRU’s service area is located within the Suwannee River Water Management District (SRWMD). To avoid duplication in permitting, in 2006, SJRWMD and SRWMD entered into an interagency agreement delegating authority for consumptive use permitting review of GRU’s permit to SJRWMD. In August 2013, the SRWMD and SJRWMD entered into another interagency agreement renewing this delegation to SJRWMD. Thus, the SJRWMD has the sole responsibility and authority to review and act on this application, and only the SJRWMD’s rules apply to GRU’s renewal application.

Notwithstanding the SJRWMD’s sole authority to review and act on GRU’s renewal application, since late 2012, GRU’s staff and consultants have had the privilege of meeting jointly with staff from the SJRWMD and the SRWMD on nine occasions to discuss and refine details of GRU's CUP renewal. In addition, GRU and its consultants have met on at least another five occasions with staff from the SJRWMD and/or the SRWMD to discuss focused technical aspects of GRU's CUP renewal. GRU actively sought out input and feedback from both SRWMD and SJRWMD staff on preparing its CUP renewal application prior to filing this application. We feel strongly that there has been an extraordinary level of interagency coordination and openness by all parties involved in these discussions.

As a result, the attached CUP renewal application and supporting information has been developed to address permitting criteria and issues raised by staff during this process to facilitate the CUP approval process. In an effort to further speed CUP approval, GRU has developed the following summary which outlines the detailed information contained in the attached CUP renewal application.

GRU Background

Gainesville Regional Utilities (GRU) is a multiservice utility owned by the City of Gainesville. GRU's potable water service area is located in Alachua County and encompasses approximately 75,000 acres located both within and outside the City of Gainesville municipal boundary. Both Interstate 75 and U.S. Hwy. 441 run north-south through the service area and, although the entire service area is located within the same county, the service area is located in both the SJRWMD and SRWMD. The utility currently serves potable water to approximately 190,000 customers and proposes to serve approximately 235,000 customers by year 2033. In addition to residential customers, the utility also serves a large commercial/industrial base, serves the Kelly power generating plant, and has a large secondary use customer, the University of Florida. GRU supplies potable water for residential, urban landscape irrigation, commercial/industrial, and water utility types of uses as defined by the SJRWMD.

GRU's water supply system consists of 16 existing Floridan wells, all located at the Murphree well field. Both the well field and the water treatment plant are located in northeast Gainesville just north of Northwest 53rd Avenue. Fourteen of the existing wells are 24 inches in diameter, one well is 20 inches in diameter, and another is 16 inches in diameter. Fifteen of the existing wells are located within the SJRWMD and one existing well is located within the SRWMD. GRU's water treatment plant is located at the Murphree well field site. The plant is a lime-softening plant and water is also filtered and disinfected prior to distribution. GRU is permitted by FDEP to treat 54.0 mgd of water at this plant for potable use.

The water uses within the service area include household, urban landscape irrigation, commercial/industrial, water utility, and essential use (fire protection). GRU projects that the population will continue to grow within the service area over the duration of the permit with a commensurate increase in total water use. Both household and commercial/industrial use is projected to increase at steady rates through the permit duration and the water utility use rate is expected to increase in proportion to the population growth rate. As discussed in a later section, water supply planning projections of both water management districts are in line with GRU's water use projections.

Wastewater generated throughout the service area is collected and sent to one of two wastewater treatment plants (WWTPs). The Main Street Water Reclamation Facility (MSWRF) is located on the south side of the city and has a permitted plant capacity of 7.5 mgd. Currently, the plant sends treated wastewater to surface water discharge only (into Sweetwater Branch) although in the future treated wastewater from this plant will be discharged to Paynes Prairie as part of an environmental restoration project. Both the Sweetwater Branch discharge and the Paynes Prairie project ultimately discharge to Alachua Sink and then into the Floridan aquifer. The second WWTP is known as the Kanapaha Water Reclamation Facility (KWRF) and is located on the southwest side of the city.

Currently the KWRF sends public access reuse water to residences, commercial sites, and golf courses within the service area for irrigation use and also sends treated wastewater to aquifer-recharging aesthetic water features located throughout the service area (such as parks and botanical gardens). A portion of the wastewater treated at this facility is also sent to a recharge well located adjacent to the facility.

As a result of GRU's infrastructure investments, essentially all of GRU's reclaimed water is utilized to offset potable demands or recharges the aquifer either indirectly or directly.

PERMIT APPLICATION REVIEW

In order to help facilitate permit review, GRU sets forth the following and provides the enclosed supporting materials demonstrating this application to renew GRU’s CUP complies with Section 373.223, Florida Statutes (F.S.) and Section 40C-2.301, Florida Administrative Code (F.A.C.) which require GRU to establish that its continued use of water:

(a) is a reasonable beneficial use;
(b) will not interfere with any presently existing legal use of water; and
(c) is consistent with the public interest.

In addition, we have also reviewed and evaluated the additional requirements included in the District's Applicant's Handbook: Consumptive Uses of Water - September 16, 2012. Based on that review, GRU's renewal application meets the conditions for issuance and does not contain any reasons for denial. A summary of this review is provided below.

Reasonable Beneficial Use Criteria

We reviewed the proposed use of water pursuant to the District's reasonable beneficial use criteria which requires the following:

(a) The use must be in such quantity as is necessary for economic and efficient utilization.
(b) The use must be for a purpose that is both reasonable and consistent with the public interest.

(c) The source of the water must be capable of producing the requested amounts of water.
(d) The environmental or economic harm caused by the consumptive use must be reduced to an acceptable amount.
(e) All available water conservation measures must be implemented unless the applicant demonstrates that implementation is not economically, environmentally or technologically feasible.
(f) When reclaimed water is readily available it must be used in place of higher quality water sources unless the applicant demonstrates that its use is either not economically, environmentally or technologically feasible.
(g) For all uses except human food preparation and direct human consumption, the lowest acceptable quality water source, including reclaimed water or surface water (which includes stormwater), must be utilized for each consumptive use. To use a higher quality water source an applicant must demonstrate that the use of all lower quality water sources will not be economically, environmentally, or technologically feasible.
(h) The consumptive use shall not cause significant saline water intrusion or further aggravate currently existing saline water intrusion problems.
(i) The consumptive use shall not cause or contribute to flood damage.
(j) The water quality of the source of the water shall not be seriously harmed by the consumptive use.
(k) The consumptive use shall not cause or contribute to a violation of state water quality standards in receiving waters of the state.
(l) The consumptive use must not cause water levels or flows to fall below the minimum limits set forth in Chapter 40C-8, F.A.C.

In addition, we reviewed the application against the District's criteria that state a basis for denial of an application which requires an applicant to show that the proposed water use will not:

1. Significantly induce saline water encroachment; or
2. Cause the water table or surface water level to be lowered so that stage or vegetation will be adversely and significantly affected on lands other than those controlled by the applicant; or
3. Cause the water table or aquifer potentiometric surface level to be lowered so that significant and adverse impacts will affect existing legal users; or
4. Require the use of water which the SJRWMD has reserved from use by permit; or
5. Cause the rate of flow of a surface watercourse to be lowered below any minimum flow established in Chapter 40C-8, F.A.C.; or
6. Cause the level of a water table aquifer, the potentiometric surface level of an aquifer, or the water level of a surface water to be lowered below a minimum level established in Chapter 40C-8, F.A.C.

To demonstrate compliance with these criteria, GRU collected substantial quantities of data, performed numerous studies and analyses, documented historical information, field assessed environmental features, and modeled local and regional groundwater systems. Complete versions of these efforts are included in the CUP application. A summary discussion of criteria of particular concern follows.

Economic and Efficient Utilization

As set forth above, the SJRWMD rules require that a consumptive use be in such quantity as is necessary for economic and efficient utilization. The primary driver for GRU's future water demand increases are projected population growth. The basis for GRU’s projected population growth is a 2006 model for Alachua County developed for the SJRWMD and that has been used by the SJRWMD for water supply planning and permitting evaluations. These projections were recently recalibrated by SJRWMD staff to current BEBR projections by simply applying the ratio of the new projections to the old projections evenly to all the projected growth throughout the county model. The SJRWMD projections were provided to GRU in September of 2012.

SJRWMD's population projections did not include seasonal population or provide for the conversion of self-supplied population (people currently getting potable water from their own private wells) to GRU customers. Therefore, GRU made small adjustments to the SJRWMD population projections to address those items. As a result, GRU estimates that the population it will serve in 2033 will be 233,175. This GRU-calculated population is slightly less than and within 5 percent of the SJRWMD's latest population projections.

To calculate future residential water use, GRU estimated a future per capita use rate of 76 gallons per capita per day (gpcd) and applied it to future population growth. As discussed later, GRU has continued to reduce its per capita water use with time and 76 gpcd represents a very low value for this metric. Furthermore, the 76 gpcd is a significant reduction from the 92 gpcd used by the SJRWMD in 2009 to determine GRU’s water demand in GRU’s current CUP and reflects the positive effects of GRU’s aggressive water conservation measures. The 76 gpcd is also low as compared to other utilities in the SJRWMD. Future projections for commercial/industrial use, power plant use and water utility use were reasonably estimated to grow at the same rate as population. Summing water use projections for all use classes and projected unaccounted-for water resulted in a total water demand projection for GRU.

Future projections of reclaimed water use and additional water conservation (discussed in a later section) were subtracted from projected total water demand to calculate actual water demands. The resultant actual water demand is estimated to increase to 34.22 mgd in 2033. This projected demand is within 1 percent of the SJRWMD's latest demand projections developed for the 2013 District Water Supply Plan.

As described in the CUP application, GRU is only requesting that its currently allocated 30 mgd be renewed, which is below its demonstrated demand of 34.22 mgd. In the event of unanticipated events, GRU is requesting that it be authorized to implement AWS projects to offset up to an additional 4 mgd of withdrawals. Even with these additional withdrawals, the increased allocation is still less than the demonstrated demand of 34.22 mgd. Therefore, GRU has demonstrated that its proposed allocation is an economic and efficient utilization of the water resource.

Public Interest

GRU's proposal to continue to use groundwater from the Floridan aquifer for public supply type use can be considered beneficial to the collective well being of the people within the service area boundary. This consumptive use benefits people by providing a potable water supply to residents of the service area and water for fire protection when needed.

Capability of Source to Produce Water

The source for GRU's withdrawals is the Floridan aquifer, which is physically capable of producing significant quantities of water. As part of current permitted operations, GRU has withdrawn at a rate of approximately 33 mgd for a month and 40 mgd for a day on several occasions without any loss of aquifer productivity or change in aquifer water quality. In addition, GRU's CUP application contains a description of the groundwater modeling performed in order to evaluate GRU’s proposed allocation. The results of this groundwater modeling indicate that the Floridan aquifer is not only capable of producing the requested amount of water, but can do so without harmful impacts.

Environmental or Economic Harm

When GRU’s current CUP was issued in 2009 authorizing the use of 30 MGD, the SJRWMD staff evaluated whether GRU’s groundwater withdrawals would harm surface waters, springs, wetlands, crops and other types of vegetation. The SJRWMD staff visited GRU’s wellfield and reviewed aerial photographs, soils, topography, vegetation, water bodies, and other monitoring data GRU collected at various monitoring sites and visited those monitoring sites. SJRWMD staff did not find any indication of harm.

GRU has been monitoring isolated herbaceous, shrub, and forested wetlands at sentinel areas near its Murphree Wellfield and submitting annual reports to the SJRWMD since 2000. In addition, shallow piezometers with continuous water level recorders are installed in all wetlands. Furthermore, in 2004, several monitoring well clusters were installed by the SJRWMD and GRU equipped them with continuous water level recorders. The water level recorders have been providing daily water level measurements since 2006. The clusters contain separate wells that monitor the surficial, Hawthorn, and upper Floridan aquifer.

GRU reviewed annual wetland monitoring reporting to assess wetland health, reviewed monitoring well data available within and outside the wellfield, conducted wetland field assessments on March 26, 2013 and July 12, 2013 with staff from the SJRWMD and SRWMD, and evaluated groundwater modeling results to determine if the eight wetlands exhibit any evidence of hydrologic impact from past groundwater withdrawals or are likely to exhibit impacts from proposed groundwater withdrawals.

Results of this assessment indicate that the wetlands, canopy, and understory are in generally good health and are not experiencing disconcerting biotic indicators of dehydration such as widespread recruitment of facultative species, tree falls, or soil oxidation. However, moss lines in all forested wetlands near or at the ground surface indicate that the wetlands are not experiencing frequent inundation. Several wetlands also had thick duff layers, indicating a decrease in decomposition rates.

Previous monitoring reports do not indicate correlations between wetland water levels and pumpage. In fact, past monitoring reports specifically note that piezometer water levels are strongly correlated to rainfall. However, GRU evaluated additional lines of evidence to confirm that pumping is not contributing to the current condition of the monitored wetlands.

GRU reviewed boring logs for wells in and around the monitored wetlands to assess the level of confinement present between the wetlands and the underlying aquifer. Based on the data, the vertical head difference between the surficial aquifer and the upper Floridan aquifer was between 110 and 120 feet which is strongly indicative of a highly confined system. In such a system, drawdowns in the Floridan aquifer are unlikely to be significant at the surface. In addition, soil data from the wetland well installations show the presence of clay or spodic horizons in these wetlands which provide another layer of confinement from the surficial aquifer.

The groundwater modeling GRU developed and performed based upon input and direction from District staff further validates the observations that the wetlands are not well connected to GRU's Floridan aquifer withdrawals. The groundwater modeling performed in support of this CUP renewal application shows no predicted drawdown in the surficial aquifer system in the vicinity of the wellfield. Therefore, the groundwater modeling shows that the potential for GRU's withdrawals to contribute to changes in wetland hydrology is minimal.

As a result of field visits and the analysis included in this application, GRU proposes to modify the required monitoring program to more directly address GRU's minimal potential for contribution to wetland impacts. These modifications include the following:

- Remove wetland A from the monitoring program
- Within 6 months of permit issuance, install recording instrument and maintain water level monitoring equipment at wetlands B through H and at 3 well clusters 2, 3, 6 (S, H, F).
- Report water level monitoring data to District on an annual basis
- Every 5 years (2018, 2023, 2028) applicant shall conduct the following in the March to May period:
    - Establish an elevation profile along a transect at least 150 feet in length such that 50 feet of adjacent upland is included.
    - Monument with PVC or other material the jurisdictional wetland line and distinct vegetation communities breaks along the transect.
    - Record soil elevations at 5-foot intervals and wherever there is a change in plant community.

- Prepare a cross section diagram of elevations, plant communities, hydric soils, biotic hydrologic indicators (moss collars, adventitious roots, etc.) located along the transect.
- Describe plant communities present and dominant tree, shrub, and herbaceous species within 10 feet of one side of the transect line within each plant community along transect.
- Describe soil color, texture and hydric soil indicators in the top 24 inches of soil at 25 foot intervals along the transect or internals that allow a minimum of three soil characterizations per each unique vegetation community type.
- Provide a summary report on or before July 1.

GRU's requested allocation will not have harmful economic or environmental impacts.

<u>Water Conservation</u>

SJRWMD rules requires that an applicant implement all available water conservation measures unless demonstrated to be economically, environmentally, or technologically infeasible. To provide further guidance, the SJRWMD CUP Applicant's Handbook (Section 12.2.5.1) sets forth standard water conservation plan requirements for public supply type uses that an applicant may use to satisfy this criterion. For this CUP renewal, GRU has elected to implement the SJRWMD's standard water conservation plan. A summary of GRU's proposed standard water conservation plan is presented below.

(a) *Water Audit*. GRU completed a water audit of its potable water distribution system for the period January 2012 through December 2012. The CUP application contains a summary of the water audit using the District's Water Audit Form No. 40C-22-0590-3. The results of this water audit indicate that, for the period evaluated, GRU had unaccounted for water totaling 7.8 percent.

(b) *Meter Survey*. Based on the results of GRU's water audit this meter survey is not required. However, GRU has implemented a meter survey program to help identify and prioritize meters for repair or replacement. As a result of these efforts and as discussed below, GRU has developed a 5/8-inch meter change out program that replaces meters on an 18-year interval. In addition, GRU tracks its larger meters to assure that they are tested annually as discussed below.

(c) *Leak Detection Evaluation*. Based on the results of GRU's water audit this leak detection evaluation is not required. However, since 2002, GRU has operated a leak detection program and has tested over 685 miles of pipe. Based on the flows detected through GRU's ongoing leak detection program, it is believed that the majority of the unaccounted for water is due to apparent losses (i.e., water that is being utilized but not billed for) rather than "real" losses (i.e. water leaking from the system). Sources of apparent losses could include unmetered or illicit connections, meter inaccuracy, and underestimation of legal unmetered uses. In addition to field assessments, GRU is using technology to identify unaccounted-for water in the system. The program has focused efforts on several components including the regular identification of improperly billed water service (e.g., unmetered and under-metered water use), improvement of internal procedures for the identification and repair of stopped meters, improvement of current operating procedures for large meter testing, and improving the accuracy of nonrevenue water use (e.g., well lubrication water, water use for emergency events, and routine hydrant flushing).

(d) *Meter Replacement Program.* Based on the results of GRU's water audit, this meter replacement program is not required. However, GRU does have a meter change-out program in which all 5/8-inch meters older than 18 years are automatically targeted for replacement. New meter internal components are made of plastic and Teflon coated, preventing the corrosion issues present in the older models. All 3-inch or larger meters are tested annually.

(e) *Water Conservation Education Program.* The District identifies nine elements which can be used to demonstrate compliance with these requirements. The attached CUP application contains significant information that demonstrates that GRU's water conservation plan includes each of these elements. This information also includes examples of publications funded by GRU that are part of its water conservation program and demonstrate compliance with several of the nine elements listed above. A brief summary of some of this information is provided below.

1. *Televise water conservation public service announcements.* GRU has made numerous public service announcements and press releases regarding cold weather precautions, the Paynes Prairie Restoration Project, water conservation and creative water conservation competitions.
2. *Provide water conservation videos to local schools and community organizations.* GRU has provided a number of water conservation-related videos to the schools and the public library system. Titles include: Home Energy Survey, The Water Cycle of Alachua County, Boulware Springs, and The Rehabilitation of the Boulware Springs Water Works Building. In addition, a number of YouTube videos have been posted for the public to view on GRU's YouTube account. YouTube titles include: "Energy and Water Savings Tips", "Start Saving Today: Taking Simple Steps to Conserve", and "Start Saving Today: Protecting the Environment".
3. *Construct, maintain, and publicize water efficient landscape demonstration projects.* The buildings and landscaping at the new Eastside Operations Center were designed to follow LEED standards in order to have minimal impact on the inclusive and surrounding wetlands. There is a demonstration project on the roof of the Safety & Training building near the entrance where tours and signage are offered to explore the green roofing system that is now well established. GRU provides customers information on water-efficient landscaping and has sponsored several water conservation demonstration gardens. Reclaimed water is used at multiple sites for aesthetic uses (Kanapaha Botanical Gardens, Chapman's Pond, the Veterans Park, and at a demonstration garden at Kanapaha Middle School).
4. *Provide water conservation exhibits in public places such as trade shows, festivals, shopping malls, utility offices, and government buildings.* GRU regularly participates in the annual Spring Garden Festival at Kanapaha Botanical Gardens at which GRU

presents various water-related information. In addition, GRU sponsored a cooperative exhibit with the Florida Museum of Natural History and Florida's Eden on water conservation efforts and the spring systems in Alachua County. The exhibit ran from August through November of 2010.

5. *Provide/Sponsor water conservation speakers to local schools and community organizations*. GRU operates a speaker's bureau and regularly meets requests for speakers. Additional information on the Speaker's Bureau is available on the GRU website at https://www.gru.com/TabID/3852/Default.aspx

6. *Provide water conservation articles and/or reports to local news media*. GRU has released articles through the monthly newsletter, A&I, regarding pertinent energy and conservation information and GRU efforts to provide and conserve environmental resources. Topics include the Paynes Prairie Restoration Project, water conservation tips, irrigation rules, landscaping tips and community events regarding water conservation and information. Since 2010, GRU has produced over 40 articles.

7. *Display water conservation posters and distribute literature*. In addition to information from the Speaker's Bureau, GRU places water-related and water conservation posters and other media for distribution and on display in the lobby of its Administration Building in downtown Gainesville.

8. *Provide landscape irrigation audits and irrigation system operating instructions to local small businesses and residents*. On-site residential and commercial energy and water surveys are available free to all GRU customers. During these surveys trained staff inspects the home or business and checks windows, doors, ductwork, insulation, appliances and other equipment, and then offers customized tips for making the home or business more efficient. Customers also have the option to perform a video-guided home survey and an online survey available through the GRU website. Additional information available at: https://www.gru.com/TabID/3641/Default.aspx. Since 2011, GRU has performed over 400 commercial audits and almost 2400 residential audits.

9. *Establish a water audit customer assistance program which addresses both indoor and outdoor water use*. In addition to the information provide above, GRU performs a regular review of high water users of both the residential and non-residential customers. Any customer that is found to have statistically abnormal water consumption is reviewed and, if needed, approached for an energy & water survey to reduce their water consumption.

(f) *Water Conservation Promoting Rate Structure*. Currently, GRU utilizes the following three-tier incline block, water conservation promoting, rate structure:

Volume Category	Base Residential Meter Water Rate
0 – 6,000 gallons	$2.30/1,000 gallons
7,000 – 20,000 gallons	$3.75/1,000 gallons
20,000 and above	$6.00/1,000 gallons

As part of this renewal application, GRU is not proposing any modification of this existing rate structure which went into effect on October 1, 2013.

(g) *Reclaimed Water Supplementation Management Plan*. GRU is not currently requesting additional back-up water for its reclaimed water system.

(h) *Additional Water Conservation Measures*. GRU has implemented many of the programs that the District, may at its discretion, require of applicants. For example, GRU has proposed for adoption by the City of Gainesville and Alachua County many ordinances that require practices that encourage water conservation (these ordinances are included in the application). Furthermore, GRU has implemented a significant number of indoor fixture retrofit programs including showerheads, toilets, pre-rinse spray valves. GRU also has participated in studies to evaluate the effectiveness of outdoor water conservation measures including a study of soil moisture sensors.

As described above, GRU is innovating and using new technology in several of its water conservation efforts, including informational billing, customer data analysis/data mining, a robust presence in social media including YouTube, and a website that provides a central repository of GRU information.

Lastly, GRU has also taken the lead to make sure it uses water efficiently in its own operations. As a result, GRU has also implemented all available conservation measures for its own processes and system. GRU has flow meters installed that monitor water usage on all active production wells. The flow meters are checked for accuracy and recalibrated at least once every three years. The most recent accuracy checks were performed in April 2013, Additionally, all treatment process streams at the water treatment plant are recycled and there is no landscape irrigation at the treatment plant facility.

The implementation of these programs has led to quantifiable and significant reductions in water use rates. For example, the following table illustrates GRU's permitted water use rates compared to the water use rates currently requested:

Year CUP Issued	Residential Per Capita (gpcd)	Gross Per Capita (gpcd)
2001	101	160
2009	90	150
Requested	76	129

Furthermore, GRU has quantified its water conservation savings since 2001 taking into account increased reuse and changes in weather patterns. This evaluation demonstrates that GRU has reduced its water demand by 28 percent during that time as a result of water conservation and reuse.

Though GRU has been extremely successful in its water conservation efforts, GRU plans to continue performing these water conservation elements, though actual implementation may vary from year to year. In an effort to quantify potential future savings due to water conservation, GRU performed an evaluation using the Conserve Water Florida Clearinghouse (CFWC) EZ Guide online tool (http://ezguide.conservefloridawater.org) as described in the CUP application. The CFWC EZ Guide was developed pursuant to the mandate of section 373.227(2)(h), F.S. Based on this analysis, GRU derived a conservative estimate of 0.55 mgd of additional future water conservation savings. This estimate was incorporated into GRU's demand projections.

GRU's proposed standard water conservation plan meets all of the applicable SJRWMD criteria and implements all feasible water conservation measures. In addition, GRU's proposed allocation request of 30 mgd is below GRU and District demand projections. As a result, GRU has significant incentives to further increase its water conservation efforts beyond District requirements.

Reclaimed Water and Lower Quality Sources

Regarding the use of reclaimed water, as mentioned previously, GRU operates two wastewater treatment plants, the Main Street Water Reclamation Facility (MSWRF) and the Kanapaha Water Reclamation Facility (KWRF). The current permitted capacity at the MSWRF is 7.5 mgd and this capacity is not expected to change over a twenty-year time span. The current permitted capacity at the KWRF is 14.9 mgd and this capacity is not expected to change over a twenty-year time span. Currently all the flows from the MSWRF go to a surface water discharge site (the Sweetwater Branch) which flows across Paynes Prairie through a manmade channel into Alachua Sink and then recharges the Floridan aquifer.

Starting in 2014, most of the wastewater generated at the MSWRF will be discharged to the Paynes Prairie Sheetflow Restoration Project, a $28 million environmental restoration project involving GRU, the City of Gainesville, FDEP and the District. It involves the reuse of effluent from the MSWRF to restore natural wetlands in Paynes Prairie State Preserve, located southeast of the City. The plan being implemented includes upgrading the MSWRF for additional phosphorus removal, construction of a treatment wetland to intercept and treat the flow from Sweetwater Branch, and restoration of the natural sheetflow from Sweetwater Branch onto Paynes Prairie, into Alachua Sink thereby recharging the Floridan aquifer. The Paynes Prairie Sheetflow Restoration Project will serve to restore over 1,300 acres of natural wetlands in the Paynes Prairie Preserve that were degraded due to historical channelization practices. Once this project is complete, most of the effluent from MSWFR will be used for this project with the exception of some flow to be used for irrigation and commercial/industrial uses.

Currently, approximately 10% of the flows generated at the KWRF goes to residential and commercial irrigation and golf course irrigation. Approximately 15% of the flows go to infiltrating wetlands which recharge the Floridan aquifer. The majority of flows from KWRF go to recharge wells located adjacent to the KWRF. It is anticipated that within twenty years both the total amount and percentage of flows that go to residential and commercial irrigation will increase as GRU's reclaimed water service area customer base expands.

As the majority of new development is occurring within the southwest portion of the utility's service area and due to the proximity of this region to existing reclaimed water pumping and transmission facilities, GRU has instituted a policy to designate a reclaimed water service territory on the southwest side in which all new development are required to connect to reclaimed water for irrigation. GRU worked with Alachua County to institute revisions to Alachua County's Land Development Regulations (LDRs) in order for these requirements to take effect. Within this designated reclaimed water service territory, GRU extends reclaimed water lines to serve new development. In cases where a new development is located in an area where reclaimed transmission lines are not yet available the development will construct reclaimed lines within the development and will use potable water for irrigation until reclaimed water becomes available.

As a result of its actions and investment, essentially all of GRU's reclaimed water is utilized to offset potable demands or recharge the aquifer either indirectly or directly. As such, GRU is using reclaimed water to the extent economically, technically and environmentally feasible. There are no surface water or other lower quality sources near GRU that can provide a sufficient quantity of water for GRU to use.

As part of providing reasonable assurance that GRU will continue to use lower quality sources to the extent feasible, GRU proposes to submit to the SJRWMD its FDEP Reuse Report on an annual basis. GRU will also agree to submit a reuse status report at its 10-year compliance report describing what steps were taken during the term of the permit in regards to the implementation of new beneficial reuse projects and providing updates on GRU's reclaimed water system.

Saline Water Intrusion

Based on the location of GRU's withdrawals and the water quality both vertically and laterally coincident to these withdrawals, GRU's withdrawals will not cause harmful saline water intrusion.

Potential for Flood Damage

GRU withdraws groundwater prior to treatment and transmission to its potable water customers through its distribution pipe network. As such, there is no reasonable potential for harmful flood damage as a result of these withdrawals.

Source Water Quality

As it relates to GRU's proposed use, District staff previously indicated a concern that sulfate levels in GRU's production wells were exhibiting an increasing trend. To detect any potential water quality changes resulting from GRU's withdrawals, GRU implemented a District-approved water quality monitoring program. For this CUP application, GRU reviewed the sulfate data collected from the Murphree wellfield and investigated potential trends within this dataset relative to pumping at the wellfield.

Based on statistical data analyses, GRU observed no correlation between sulfate data and pumpage at the wellfield or pumpage at individual wells. While some individual wells did show increasing trends relative to time, some individual wells showed decreasing trends relative to time. As a result, no consistent trends were observed across the wellfield. Furthermore, wells with increasing temporal trends typically did not display increasing trends with pumpage. GRU also observed that wells with the highest average sulfate concentrations showed little to no correlation with pumpage. These observations agree with observations previously reported by GRU to SJRWMD. This data analysis and these observations demonstrate that GRU's current withdrawals have not induced or will induce harmful changes to the water quality of the Floridan aquifer, and GRU's proposed withdrawals will likewise not result in harmful water quality changes. However, GRU is willing to continue monitoring the its production well water for sulfate concentration on an annual basis with trend analyses submitted as part of the 10-year compliance report.

The District has previously expressed concerns regarding a Superfund site known as the Cabot/Koppers site located approximately 2 miles southwest of the Murphree wellfield. Constituents of historic wood treatment processes have been found in the surficial and Floridan aquifer. Due to this contamination, the site was designated a Superfund site in 1983 and the site has been monitored and studied extensively since that date

There is no known evidence that GRU's existing or proposed withdrawals are influencing the movement of contaminants from the Cabot/Koppers site in the aquifer. However, GRU was required to develop a Groundwater Avoidance and Mitigation Plan in 2008. As a condition of its current CUP, GRU submits annual status reports describing the monitoring and cleanup activities that have taken place at the Cabot/Koppers site over the past year and also includes proposed and finalized workplans, monitoring reports, and any EPA or FDEP reports that have been issued within the past year.

In addition, GRU has developed a contingency plan for implementing treatment to remove contaminants from drinking water should contamination be detected in the sentinel (monitoring) wells or in the GRU's water supply wells. GRU proposes to continue implementing the Groundwater Avoidance and Mitigation Plan and implementing the Cabot/Koppers Contingency Plan as part of providing adequate reasonable assurance that GRU will not cause harmful changes to the aquifer water quality.

State Water Quality Standards

GRU's proposed consumptive use will not cause or contribute to a violation of state water quality standards. GRU's water and water reclamation facilities produce water that is permitted by the

Florida Department of Environmental Protection (FDEP) and meets all applicable water quality standards.

Minimum Flows and Levels

GRU has evaluated its proposed withdrawals for compliance with SJRWMD minimum flows and levels (MFLs) using procedures developed by the SJRWMD. In addition, although not required by the SJRWMD rules, GRU has performed a separate assessment of its potential for impact on applicable SRWMD-adopted MFLs.

SJRWMD. The closest lakes to the GRU well field with minimum levels established by rule are Lake Wauberg, located about 11.5 miles south of GRU's withdrawals, and Lake Melrose, located about 15 miles to the east of GRU's withdrawals. Neither of these lakes is significantly connected to the Floridan aquifer; therefore, GRU's withdrawals will not cause these lake levels to fall below their MFL.

Lakes Geneva, Cowpen, Brooklyn and Grandin, located 20 to 30 miles east of GRU's withdrawals, have adopted MFLs, and the SJRWMD is in the process of developing revised MFLs. GRU used a SJRWMD-developed groundwater flow model to analyze the currently permitted cumulative withdrawals with GRU pumping at 34 MGD. This groundwater modeling demonstrates that currently permitted cumulative withdrawals with GRU at 34 MGD do not cause any of these four lakes to violate the proposed revised MFLs.

In addition to modeling cumulative impacts of withdrawals at these lakes, GRU also modeled the drawdown that its own withdrawals would cause. Based on the modeling performed, GRU's proposed withdrawals are expected to cause less than 0.049 foot of drawdown in the Upper Floridan Aquifer at Lake Geneva at 30 MGD and less than 0.077 foot of drawdown at 34 MGD which could occur subject to GRU's implementation of specific AWS projects as discussed in this document.

GRU's proposed withdrawals of groundwater will not cause water levels in any lakes to fall below any of the MFLs established by the SJRWMD. Therefore, GRU’s proposed withdrawals should not necessitate its participation in prevention and recovery strategies for these lakes.

SRWMD. While not currently required by the SJRWMD rules, GRU also assessed the effect of its withdrawals on MFL water bodies in the SRWMD. These included recently established MFLs for the Upper Santa Fe River. It also includes proposed MFLs for the Lower Santa Fe River that are still under evaluation and in the process of being adopted.

GRU has assessed its existing, permitted and requested allocations in light of SRWMD's MFLs. To assess its existing withdrawals, GRU collected and utilized water level data from approximately 230 Floridan aquifer wells and springflow gages throughout a 10 county region in north-central Florida. Using these data, GRU developed potentiometric surface maps for the Upper Floridan aquifer. This mapping shows that the capture area (groundwatershed) for GRU's withdrawals does not extend to the Lower Santa Fe River at existing GRU withdrawal rates which have been as high as approximately 28 mgd on a 12-month average basis. As such, GRU's withdrawals are derived from portions of the aquifer several miles east of the Lower Santa Fe River and only have the potential to indirectly affect the river system. In addition, GRU has performed analyses of water levels near its wellfield and far outside the area of influence of the wellfield to show that the water levels between the areas track closely regardless of changes in GRU's pumping on the order of a few million gallons per day. This indicates that even at 30 mgd it is unlikely that GRU's withdrawals would significantly alter this groundwatershed which does not intersect the Lower Santa Fe River.

In addition, GRU has been an existing legal user of 29 mgd since 2001 and GRU was authorized to withdraw up to 30 mgd in 2009. Since its 30 mgd allocation was issued in 2009, the SRWMD has issued an additional 21 mgd in the Santa Fe River basin. Approximately 12 mgd of this total was new CUPs with another 9 mgd of renewals. For each of these CUPs, the SRWMD determined that the CUP in conjunction with GRU's 30 mgd allocation, would meet all of the SRWMD's permitting criteria including compliance with the adopted Upper Santa Fe River MFLs.

GRU has demonstrated compliance and provided reasonable assurance that it meets the MFL criteria for both SJRWMD and SRWMD water bodies. However, as the SRWMD works to further refine the Lower Santa Fe River MFLs and address the status of these MFLs, GRU is voluntarily willing to equitably participate in the development of prevention and recovery strategies.

Water Reservations

The SJRWMD has established a water reservation of 35 cubic feet per second (23 mgd) average flow, representing approximately 45% of the calculated historic flow of surface water through Prairie Creek and Camps Canal in order to protect the fish and wildlife utilizing Paynes Prairie State Preserve. Based on groundwater modeling and hydrologic conditions of the area, GRU's proposed withdrawals will not use any of this reserved water.

Interference With Existing Legal Uses Of Water

A consumptive use must not cause an interference with a legal use of water that existed at the time of the initial application for the CUP. GRU's current permitted allocation is 30.0 mgd on a yearly average basis. Since GRU is requesting no increase in groundwater withdrawals, there are no additional withdrawals that could cause interference to existing legal users on an average basis.

Furthermore, as part of its previous CUP application, GRU performed an existing legal user evaluation that incorporated a withdrawal rate of 40 mgd to simulate a higher pumping period. GRU performed an inventory of wells and identified 11 well sites within proximity of GRU's withdrawals. During a field survey, GRU discovered that some of these identified wells did not exist, and for some of the wells that did exist, GRU was unable to locate pump curve information. However, a pump curve for a well located at the Ironwood golf course was located.

This well is one of the Floridan wells located closest to GRU's well field. Based on pump curve information for this well, it was determined that an approximately 2 percent loss in pumping capacity could occur, which is not considered harmful. Therefore, GRU's drawdown, even at higher than permitted rates, are not predicted to cause interference with existing legal uses. In addition, historically, there have been no reports of impacts to existing legal uses due to GRU's withdrawals.

However, should an unanticipated impact occur to an existing legal user, GRU is willing to continue to implement its existing Claim Investigation, Mitigation, and Reporting provisions of the Well Interference Mitigation Procedure submitted to the District as part of the CUP approved in 2009.

Public Interest

The proposal to continue to use groundwater from the Floridan aquifer for public supply type use can be considered beneficial to the collective well being of the people within the service area boundary. This consumptive use benefits people by providing a potable water supply to residents of the service area, and water for fire protection when needed.

Interdistrict Transfer

GRU proposes to withdraw water from the SJRWMD and SRWMD to serve its customers in Alachua County. Since some of the groundwater is withdrawn within one water management district to serve customers in another water management district but all within the same county, this transport is not an "interdistrict transfer and use" as that term is defined in subsection 373.2295(1), F.S. However, such a transport and use of groundwater from one District to another within the same county is still subject to subsections 373.2295(4), (11) and (13), F.S.

Subsection 373.2295(4), F.S. specifies that in determining whether the application is consistent with the public interest, projected populations contained in the future land use elements of comprehensive plans adopted by local governments within the area of withdrawal and use, together with other evidence of future use, be considered. Subsection (4) further states that if the proposed transfer and use meets the requirements of Section 373, F.S. and if the needs of the area of use and the area of withdrawal can be satisfied, the permission to transfer and use the water shall be granted.

To demonstrate this application complies with subsection 373.2295(4), F.S., GRU reviewed the population projections of local governments in the areas of withdrawal and use, recognizing that all would seek to obtain additional groundwater. The needs of this area will be met either by GRU’s service through this CUP renewal or by small domestic wells which are exempt from the need to obtain a CUP. GRU then evaluated the needs of the specific area where the groundwater will be withdrawn as subsection 373.2295(4), F.S. requires, which specific area consists of GRU’s service area. Since the needs of the area of withdrawal and use will be met either by GRU’s service or by exempt domestic wells, and since GRU’s use must comply with the requirements of Chapter 373, F.S. to be permitted by the SJRWMD, this transfer of groundwater across water management boundaries but within the same county can be authorized over the next 20 years and comply with subsection 373.2295(4), F.S. Neither subsection 373.2295(11), F.S. or 373.2295(13), F.S. are applicable at this point in time because no adverse local land use or decisions have occurred.

ALTERNATIVE WATER SUPPLY PROJECTS

As indicated previously, GRU is applying to renew its existing groundwater allocation of 30 MGD. However, GRU recognizes that demand may exceed reasonable projections. Therefore, GRU needs flexibility to increase its withdrawals if necessary to meet demands it cannot otherwise meet with the additional conservation and expanded reuse described in this application. At the same time, GRU remains committed to not increasing its acceptable groundwater withdrawal effects beyond 30 MGD.

To achieve this goal, GRU proposes to implement an AWS project in advance of or concurrent with any Floridan aquifer withdrawal of more than 30 MGD. An example of such an AWS project would be to eliminate an existing permitted consumptive use by providing that user with reclaimed water and then using a portion of the replaced use. Another example would be to increase recharge into the Floridan aquifer by adding reclaimed water to leaky wetlands or adding reclaimed water to recharge wells. GRU would select the particular AWS project in the future depending upon the extent and location of increased demands and needed offsets to those demands.

To justify this concept, GRU has performed extensive modeling of allocations beyond 30 mgd paired with AWS projects to eliminate any harmful impacts associated with these additional withdrawals. GRU has developed three types of AWS project concepts as part of this evaluation as follows:

1) CUP offset projects which entail the reduction or elimination of another permitted groundwater withdrawal by replacing the use with reclaimed water from GRU.
2) Aquifer recharge projects which increase the use of reclaimed water to recharge the Floridan aquifer at locations beneficial to environmental constraints.
3) Enhanced conservation projects which involve partnerships whereby GRU works with other industries such as agriculture or silviculture to improve water use efficiency and reduce withdrawals in the Santa Fe River basin.

GRU performed over 20 additional groundwater model simulations including AWS project concepts. This groundwater modeling was focused on quantifying the impacts to sensitive water resources associated with GRU's pumping over 30 mgd and quantifying the benefit of GRU's potential AWS projects on these resources. The results of these simulations show that there are a wide range of project types that can fully offset environmental concerns associated with withdrawals over 30 mgd. In fact, many of the AWS project options would provide benefit in excess of GRU's impact thus providing a net benefit to the environment.

As a result of this evaluation, GRU request that the SJRWMD renew GRU's 30 mgd allocation of groundwater from the Floridan aquifer for public supply type uses, and if unexpected demands occur, an additional 4 mgd of groundwater from the Floridan aquifer offset by implementation of alternative water supply projects that maintain acceptable groundwater withdrawal effects at 30 mgd. The conditions for the authorization of this additional allocation would be dependent on the type of AWS project selected.

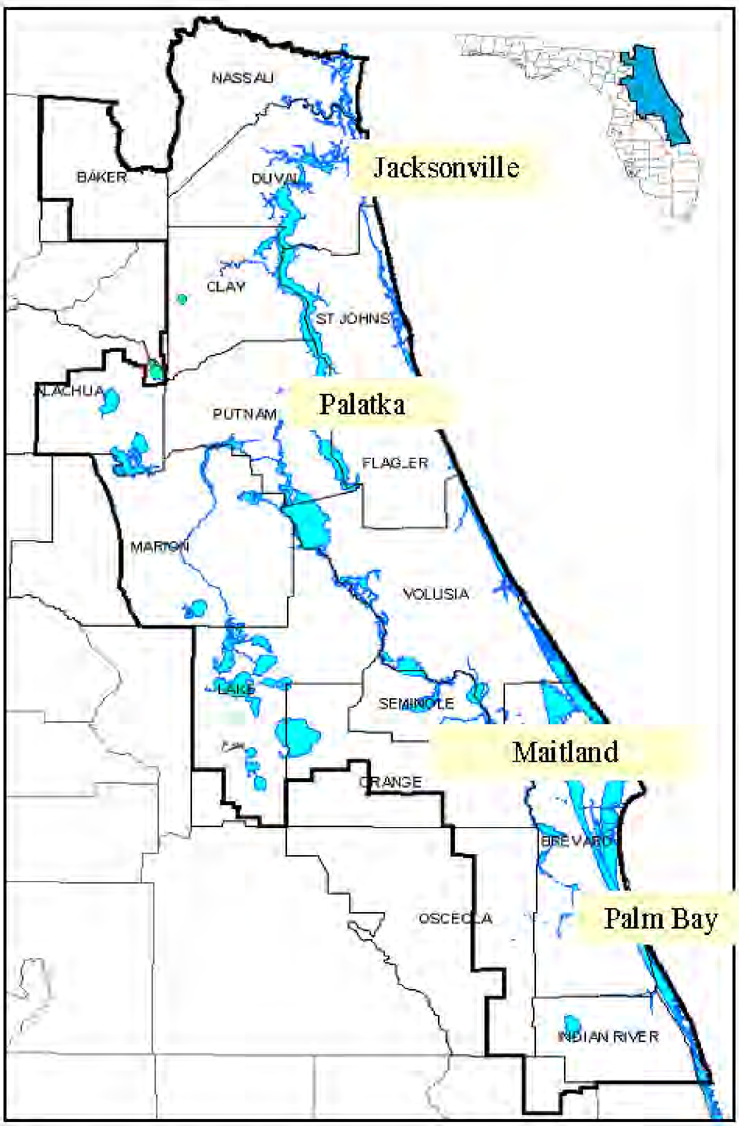
PERMIT RENEWAL DURATION

GRU has requested a 20-year permit and has provided adequate information that the proposed use will continue to meet the conditions for issuance for that period. However, in order to provide additional assurance, GRU will agree to a condition which requires GRU's equitable participation in development of prevention and recovery strategies for the Lower Santa Fe River in the SRWMD. Furthermore, GRU has developed monitoring programs and contingency plans to address unanticipated events while maintaining compliance with the conditions for issuance. Lastly, GRU will submit annual reuse reports, wetland assessment reports, and a 10-year compliance report to show that it continues to meet the conditions for issuance through the permit duration.

PERMIT APPLICATION (FORM 40C-2-1082-1)

The Permit Application Section 1 includes the SJRWMD Permit Application completed with pertinent data and information or references to appropriate sections of the application package that include the requested data/information.

St. Johns River Water Management District
Permit Application
For Consumptive Uses of Water



SJRWMD Headquarters
Palatka Service Center

P.O. Box 1429
Palatka, FL 32178-1429
(386) 329-4500

Jacksonville
Service Center

7775 Baymeadows Way, Suite 102
Jacksonville, FL 32256
(904) 730-6270

Maitland Service Center

601 South Lake Destiny Road, Ste. 200
Maitland, FL 32751
(407) 659-4800

Palm Bay
Service Center

525 Community College Parkway, S.E.
Palm Bay, FL 32909
(321) 984-4940

floridaswater.com

Form Number 40C-1082-1; Effective February 2012
Incorporated by reference in 40C-2.900(1), F.A.C.

INTRODUCTION

Unless expressly exempted by law or District regulation, a consumptive use permit is required for any use, diversion or withdrawal of surface or groundwater which meets any of the following criteria:

1. Average annual daily withdrawal exceeding one hundred thousand (100,000) gallons average per day on an annual basis.
2. Withdrawal equipment or other facility which have a capacity of more than one million (1,000,000) gallons per day.
3. Withdrawals from a combination of wells or of other facilities, having a combined capacity of more than one million (1,000,000) gallons per day.
4. Withdrawals from a well in which the outside diameter of the largest permanent water bearing casing is six inches or greater. For purposes of this paragraph, the diameter of the well at ground surface will be presumed to be the diameter of the well for the entire length unless the well owner or well contractor can demonstrate that the well has a smaller diameter water bearing casing below ground surface.
5. Within the Delineated Area as set forth in 6.7.1.6, Applicant's Handbook: Consumptive Uses of Water, withdrawals from a well in which the inside diameter of the largest permanent water bearing casing is five inches or greater. For purposes of this paragraph, the diameter of the well at ground surface will be presumed to be the diameter of the well for the entire length unless the well owner or well contractor can demonstrate that the well has a smaller diameter water bearing casing below ground surface.
6. Within the Delineated Area as set forth in 6.7.1.6, Applicant's Handbook: Consumptive Uses of Water, for freeze protection uses of water on agricultural and nursery property greater than 5 acres in size.
7. Any secondary use, as defined in paragraph 2.0(w) of the Applicant's Handbook: Consumptive Uses of Water, which exceeds 100,000 gallons per day estimated on an average annual basis.

PROCESSING

Processing of permit applications is in accordance with provisions of the Water Resources Act, Chapter 373, Florida Statutes, Chapter 120, Florida Statutes , Chapters 28-106, 28-107, 40C-1, 40C-2 and 40C-20, Florida Administrative Code and the Applicant’s Handbook: Consumptive Uses of Water

The District will notify an applicant if an application is incomplete within 30 days of receipt and will inform the applicant of what additional information is required to make the application complete. For those permits processed as individual permits, the District will issue or deny permits within 90 days of receipt of the completed application. Those permits processed as general permits will be issued within 30 days of receipt of a completed application.

Failure to obtain a permit prior to undertaking a regulated activity is a violation of District requirements, even if the project would receive a favorable review in a standard permitting process. The District may initiate administrative, civil or criminal actions against violators, and may require restorative steps.

PERMIT APPLICATION FOR CONSUMPTIVE USES OF WATER

Permit Type: Individual CUP ☒ Secondary Use ☐
Standard General CUP ☐
Application is for: New use ■ Renewal ☒
Modification of Existing Permit ☐

APPLICANT INFORMATION

ORGANIZATION NAME (please print all responses)
Gainesville Regional Utilities

LAST NAME (please print all responses)	FIRST NAME
Cunningham	Anthony

STREET NO.	STREET NAME	CITY
301 SE 4th Avenue		Gainesville

STATE	ZIP	PHONE
Florida	32601	352-334-3400

☐ Same as above — AGENT OR CONSULTANT

ORGANIZATION NAME (please print all responses)

LAST NAME (please print all responses)	FIRST NAME

STREET NO.	STREET NAME	CITY

STATE	ZIP	PHONE
Florida	32601	

☑ Same as applicant — OWNER INFORMATION

ORGANIZATION NAME (please print all responses)
Note: GRU is owned by the City of Gainesville

LAST NAME (please print all responses)	FIRST NAME

STREET NO.	STREET NAME	CITY

STATE	ZIP	PHONE

Anthony L. Cunningham P.E.	[signature]	10/07/13
APPLICANT'S NAME (Please print)	APPLICANT'S SIGNATURE	DATE

If a person other than applicant has completed this form, that person certifies by his signature below that he is acting as an authorized agent of the applicant and his signature will be certification that he is in fact the authorized agent.

AGENT'S NAME (Please print)	AGENT'S SIGNATURE	DATE

Form Number 40C-1082-1; Effective February 2012
Incorporated by reference in 40C-2.900(1), F.A.C.

SITE INFORMATION

COUNTY Alachua ACRES OWNED 80

SECTION 15 TOWNSHIP 95 RANGE 20E

PROJ. NAME ______ PROJECT ACRES ______

COUNTY PARCEL NO. 07875-000-000

USE TYPES

MARK ALL THAT APPLY

AGRICULTURAL	☐	COMMERCIAL/INDUSTRIAL/INSTITUTIONAL	☐
ENVIRONMENTAL	☐	LANDSCAPE/RECREATION/AESTHETIC	☐
MINING/DEWATERING	☐	PUBLIC SUPPLY	☒
OTHER	☐		

Previous Permit No. 11339

AMOUNT REQUESTED	INCHES PER YEAR See table 1 in [GRU Section 2] MILLION GALLONS PER YEAR ______ MILLION GALLONS PER DAY ______ DATE OF START OF USE Ongoing
REQUESTED PERMIT DURATION	20 YEARS ☒ Other (Specify Years): ______

WATER USE MONITORING

All permittees are required to measure their water usage on a continuous basis. All users must report their use using form EN-50 to the District at the intervals specified in their permit. If used, meters must be 95% accurate, verifiable and installed according to manufacturers' specifications. Meters or alternative methods utilized by the water supplier to charge for the water may suffice as a water use monitoring tool.

Alternative methods must be 90% accurate and verifiable. All alternative methods must be approved in advance and in writing by District staff.

Form Number 40C-1082-1; Effective February 2012
Incorporated by reference in 40C-2.900(1), F.A.C.

☐ Same as applicant	COMPLIANCE ENTITY

Consumptive Use Permits require the periodic submittal of data to the District. Please provide the name, address and phone number of the person who will be responsible for ensuring that the permitted conditions are met. Submittal of this information does not relieve the permit holder from the responsibility for compliance.

Name: Rae A. Hafer P.E.
Address: GRU
301 SE 4th Ave
Gainesville, Florida 32601

Phone Number: (352) - 393-1635

SECONDARY TYPE USE

Please supply information regarding the source(s) of water for your activities.

1. The name of the supplier of water. Not Applicable
2. Is this source of water potable or non-potable? (circle one)
3. What percentage of your total water use is from this supplier? ______________
4. If 100% of your water is not provided from the supplier, please indicate what uses are self supplied.
5. The applicant must also complete other packages which address the requested consumptive use identified in question 4.

Description of Use Types: Each permit shall be identified with one or more of the following use types:

(a) Agricultural – The use of water associated with the production and freeze protection of crops, nursery products, sod, and pasture, as well as the cultivation of animals and plants associated with farming and aquacultural activities.

(b) Commercial/Industrial/Institutional – The use of water associated with the production of goods or provision of services by a commercial, industrial, or institutional establishment.

(c) Environmental – The use of water to avoid or mitigate environmental harm. Examples include enhancing, restoring, or creating wetlands or other surface waters, or the use of water for groundwater remediation.

(d) Landscape/Recreation/Aesthetic – The use of water for landscape irrigation; the use of water associated with the creation, maintenance, and operation of recreational facilities such as golf courses, water-based recreational areas, and athletic fields; or the use of water for ornamental or decorative purposes, such as fountains and waterfalls.

(e) Mining/Dewatering – The use of water associated with the extraction of subsurface materials or to control surface or groundwater when performing activities such as construction or excavation.

(f) Public Supply – The use of water provided by any municipality, county, regional water supply authority, special district, public or privately owned water utility, or multijurisdictional water supply authority for human consumption and other purposes.

(g) Other – The use of water for a purpose other than as described in subsections (a)-(f).

SOURCES OF WATER
(Summary Data Sheet)

Please supply information regarding the source(s) of water for your activities. Include information regarding **all** wells/pumps on the property.

Table 1.
SUMMARY OF GROUNDWATER SOURCES

***See Table 2 in [GRU Section 2]**

Well or Pump Number	Wellfield or Facility Name	Casing Dia. (in.)	Casing Depth (ft)	Total Depth (ft)	Operation Hrs/wk	Pump Capacity (in gpm)	Date Drilled	Existing or Proposed (date)	Type of Use*

*See use descriptions on page 4. If more than one use type, show predominate use

Table 2.
SUMMARY OF SURFACE WATER SOURCES

***Not Applicable**

Pump Number	Pump Capacity (gpm)	Operation Hrs/wk	Acreage of Surface Water Body	Name of Source	Status (date if proposed)	Type of Use

]

PROPERTY CONTROL AND LOCATION

I. PROPERTY CONTROL **City of Gainesville owns Murphree Water Treatment Plant and all property near well sites located remote from the plant**

1. Property Ownership - Provide a copy of the executed deed indicating the current owner of the property which is the subject of this application.

2. Leased Property - Provide a copy of the current lease, or a letter signed by the property owner describing the lease arrangement and the duration of the lease.

II. LOCATION MAPS **See Figure 2 in [GRU Section 2]**

Provide a recent map (preferably a USGS topographic quadrangle, a map from a county plat directory, or survey map) indicating the following:

(a) property boundaries (include approximate lengths of boundaries in feet); (public supply water uses please show service areas)
(b) All existing and proposed withdrawal point locations. Indicate well number and casing size for groundwater withdrawals, and pump number and maximum pump capacity for surface water withdrawals;
(c) a north arrow;
(d) a scale designation - all maps should have a minimum scale of 1 inch = 2,000 feet; and
(e) labeled landmarks such as roads and political boundaries.

Please provide identification numbers and date permitted if you obtained or are in the process of obtaining any of the following permits for this project

Environmental Resource Permit (ERP)	
EPA Ordered Environmental Impact Statements	
Agricultural Discharge	
FDEP Wastewater Site Identification No.	
FDEP Public Water Supply (PWS) Identification No.	2010946

III. ADJACENT PROPERTY OWNERS
(not applicable to Secondary Users Permits)

Provide a complete list of adjacent property owners and mailing address as prescribed in Tables #3 and 4. Attach additional sheets as needed.

See Table 7 in [GRU Section 6]

Name	Address	City	State Florida	Zip Code

USE OF LOWEST ACCEPTABLE QUALITY WATER SOURCE

1. Are you proposing to use the most appropriate (lowest quality) source of water?

   YES, See Section 4

2. Is reclaimed water readily available as a source of water?

   YES, See Section 4

WATER CONSERVATION PLAN

See [GRU Section 5]

A water conservation plan must be submitted with this application. Please refer to Section 12.0 and Appendix I, Applicant's Handbook, Consumptive Uses of Water, for information on how to meet the District's requirements regarding water conservation. Available water conservation measures must be implemented pursuant to requirements in sections 10.2(e) and 12.0, A.H. These measures must be explained as part of this application.

Table 3 - Groundwater Withdrawals

Withdrawal Amount	Property Owners to be Listed
Less than 1,000,000 gallons maximum per day –and- Less than 100,000 gallons per day annual average	None required
Max day is between 1 and 5 million gallons -or- Average day is between 100,000 and 500,000 gallons	All property owners within 600 feet of well or 100 feet of property boundary.
Max day is between 5 and 10 million gallons -or- Average day between 500,000 and 1,000,000 gallons	All property owners within 1,320 feet of each well or 200 feet of the property boundary.
Max day exceeding 10 million gallons -or- Average day exceeds 1,000,000 gallons	All property owners within 2,640 feet of the well, or 400 feet of the property boundary.

Table 4 - Surface Water Withdrawals

Withdrawal Amount	Property Owners to be Listed
Surface area of the withdrawal lake is less than 80 acres	All riparian land owners on lake and those up to 600 feet downstream if the lake has an outlet
Surface area of the withdrawal lake is greater than 80 acres	All riparian land owners up to 600 feet from the withdrawal point
Withdrawals from a stream and average daily pumpage is less than 5 million gallons	All riparian land owners up to 600 feet upstream and 1,320 feet downstream from the withdrawal point
Withdrawals from a stream and average daily pumpage is greater than 5 million gallons	All riparian land owners up to 1,320 feet upstream and 2,640 downstream from the withdrawal point

SECTION III

Applicant Checklist

Please verify that the following information has been provided as part of this application package:

		Attached
1. Appropriate Fee	$	200
2. Signature of Applicant and/or Agent		X
3. Authorization from Owner for Agent (if Agent is listed on application)		N/A
4. Copy of Executed Deed or Lease Agreement		X
5. Location Map		X
6. List of adjacent land owners		X
7. Completed Water Use Type Package*		X
8. Water Conservation Plan		X

*NOTE: Applications for Public Supply, Commercial/Industrial/Institutional, Agricultural, Mining/Dewatering, and Landscape/Recreation/Aesthetic water uses must also include the supplemental water use package specific to each use type. Those applying for a **Secondary Use Permit** must complete and submit each of the supplemental water use packages that apply to their use type.

PUBLIC SUPPLY USE TYPE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

I. YEAR-ROUND PUBLIC SUPPLY

A. POTABLE WATER SUPPLY

1. Please submit a map (minimum 1:2000 scale or larger) showing the current and proposed service area. **See Figure 2 in [GRU Section 2]**

2. Please submit any of the following that apply: **See [GRU Section 2]**

   a) Copy of the Public Service Commission (PSC) certification describing service area;
   b) Copy of local government franchise agreement; or
   c) Documentation that utility is not regulated by PSC or local government.

3. Complete Table 1 - Historic Water Use, and Table 2 - Projected Water Use as a basis for the requested allocations. In addition:

   (a) Provide the past 12 months of monitored water use data (MOR's if available) and calculate historic average daily and maximum daily per capita use; **See [GRU Section 2]**

   (b) Explain the method of projecting population growth (historic projection preferred): **See Exhibit 1**

   Attach documentation for method of determining growth projections.

B. WASTEWATER DISPOSAL

1. Specify the present and projected amounts of wastewater:

	PRESENT (mgd)*	PROJECTED (5 YEARS)	PROJECTED (10 YEARS)	PROJECTED (15 YEARS)	PROJECTED (20 YEARS)
Average daily disposal*					
Plant capacity					

*mgd = million gallons per day
*Identify WWTP if more than one

See Table 5 in [GRU Section 3]

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Incorporated by reference in 40C-2.900(1), F.A.C.

2. Specify the percentage for each type of disposal (total 100%)
See Table 6 in [GRU Section 3]

DISPOSAL TYPE	PRESENT %	PROJECTED % (5 YEARS)	PROJECTED % (10 YEARS)	PROJECTED % (15 YEARS)	PROJECTED %(20 YEARS)
Reuse					
Offsite Discharge					
Individual Septic Tanks					
On-site Percolation Ponds					
On-site Spray Fields					
Other					

C. REUSE OF RECLAIMED WATER
See Exhibit A in [GRU Section 10]

1. Describe the method of reuse by completing the table below:

○ Check here if no reuse projected at this time

TYPE OF SITE (golf, landscape, etc)	FACILITY NAME	ACREAGE	AVERAGE USE (mgd)	PROJECTED AVE. USE (mgd)

2. Please provide a map (minimum 1:2000 scale) showing the location of the sites listed in the table above as well as the location of all major existing reuse lines and those proposed for the next 15 years. **See Figures 5 & 6 in [GRU Section 4]**

3. If wastewater is treated on-site specify level of treatment:

primary ○ secondary ○ secondary with disinfection ⊘

D. ESSENTIAL USE

Are you requesting the use of any of the identified sources for fire protection?

YES ⊘ NO O

If yes, please list the wells/pumps that will be used.

All wells have the potential to be used for fire protection as part of supplying water to the City's

Water distribution system through the Murphree Water Treatment Plant.

TABLE 1

HISTORIC WATER USE

See Table 3 in [GRU Section 2]

Last 5 years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. day (mgal)	Household Max. Day (mgal)	Commercial/Industrial Avg. day (mgal)	Commercial/ Industrial Max. day (mgal)	Irrigation (urban landscape or common areas (mgal)(ave. day)	Irrigation (urban landscape or common areas (mgal) (max. day)	Water Utility (mgal)	Unaccounted for water (mgals)	Total Annual Avg. day (mgal)	Total Annual Max day (mgal)
20													
20													
20													
20													
20													
20													
20													

Table Definitions

Household Use:	Amount sold or given to domestic customers. Typically includes 5/8 and 3/4 inch metered accounts. Includes private lawn irrigation.
Population:	Estimated number of residents served.
# of Units:	Number of residential units served.
Per Capita Use:	Use per person per household; Average household use (column 5) divided by population (column 2)
Commercial/Industrial Use:	Amount sold to commercial customers. Typically includes meters larger than 1 inch. Include bulk customers in this use.
Irrigation Use:	Amount used for common area irrigation owned or maintained by a public entity. This does not include areas privately owned areas or amounts previously accounted for under household use.
Water Utility:	Misc. monitored use (e.g.., fire protection, sewer flushing, construction use, & maint. features)
Unaccounted Water:	Unaccounted for water use. Obtained from an audit of system.
Total Use:	Sum of all uses - household + comm/ind. + irrigation + water util. = MOR's for year

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Incorporated by reference in 40C-2.900(1), F.A.C.

TABLE 2
PROJECTED WATER USE

See Table 4 in [GRU Section 2]

Next 20 years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. day (mgal)	Household Max. Day (mgal)	Commercial/ Industrial Avg. day (mgal)	Commercial/ Industrial Max. day (mgal)	Irrigation (urban landscape or common areas (mgal)(ave. day)	Irrigation (urban landscape or common areas (mgal) (max. day)	Water Utility (mgal)	Unaccounted for water (mgals)	Total Annual Avg. day (mgal)	Total Annual Max day (mgal)

*see table definitions from Table 1.

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Incorporated by reference in 40C-2.900(1), F.A.C.

Not Applicable

II. SEASONAL PUBLIC SUPPLY

(Mobile Home Parks, RV Parks, Campgrounds, etc.)
(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

1. Number of acres owned: ___________________________________

2. Total number of lots/spaces: _______________________________

3. Average number of residents over the past 12 months: ________

4. What is the maximum number of residents served?:____________________

5. What is the minimum number of residents served?: ____________________

6. Does each lot/space have an individual water meter?: _______________

7. Does this facility have any of the following water uses: (yes or no)

_____ a) Laundry
_____ b) Club house with restrooms
_____ c) Common areas with irrigation
# of Acres ___________
_____ d) Bath house/restrooms
_____ e) Swimming pool
_____ f) Other uses, please specify ____________

8. Attach copies of monthly water use reports for the last 12 months. Using the past months of water use, please calculate:

a) Average Daily water use over the past 12 months: _______ mgd*
b) Maximum Daily water use over the past 12 months: _______ mgd*
c) TOTAL water used over the past 12 months: _____ mg

9. WASTEWATER DISPOSAL - specify the percentage for each, total 100%:

DISPOSAL TYPE	PRESENT %	PROJECTED % (5 YEARS)	PROJECTED % (10 YEARS)	PROJECTED % (15 YEARS)	PROJECTED % (20 YEARS
Reuse					
Offsite Discharge					
Individual Septic Tanks					
On-site Percolation Ponds					
On-site Spray Fields					
Other					

10. If wastewater is treated on-site, specify level of treatment:

primary ○ secondary ○ secondary with disinfection ○

11. Description of lots.

a) Average lot size: _____________ sq. ft.
b) Average home size: ___________ sq. ft.
c) Square footage of drive and walkways: ___________ sq. ft.

12. WASTEWATER DISPOSAL

a) Specify the present and projected amounts of wastewater:

	PRESENT (mgd)*	PROJECTED (5 YEARS)	PROJECTED (10 YEARS)	PROJECTED (15 YEARS)	PROJECTED (20 YEARS)
Average daily disposal					
Plant capacity					

*mgd = million gallons per day

*** Not Applicable ***

COMMERCIAL/INDUSTRIAL/INSTITUTIONAL USE TYPE

(Submit 2 copies of application, supplemental information drawings, calculations, etc.)

I. PROJECT DESCRIPTION

1. Type of business and/or operation, please describe:

____

____

2 Requested Water Use:

	Existing (mgd)	Proposed (mgd) 5 years	Proposed (mgd) 10 years	Proposed (mgd) 15 years	Proposed (mgd) 20 Years
Average Daily Use					
Maximum Daily Use					
Average Off-Site Discharge					

*mgd - million gallons per day

3. Provide a graph (month vs. mgd) or table summarizing monthly water use for the previous 3 years.

4. Provide a flow chart (schematic diagram) depicting the flow of all sources of water, use and eventual discharge.

5. Please provide a table projecting expected growth over the next 15 years. What is the reason for the expected growth?

II. WASTEWATER DISPOSAL

Describe in detail the flow of wastewater from the plant to its ultimate disposal. Also, provide the applicable Florida Department of Environmental Protection, Environmental Protection Agency permit numbers (FDEP, EPA) issued for discharge to surface waters. Attach daily flow amounts for effluent discharged to surface waters for the last 12 months. Include this information in the above requested schematic diagram.

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Incorporated by reference in 40C-2.900(1), F.A.C.

III. REUSE

1. Provide water quality data for effluent discharged from this facility during the last 12 months.

2. Provide the level of water quality required for each individual manufacturing and cooling process. Provide supporting documentation as to water quality and quantity limitation of reuse for each component of the process.

Not Applicable

AGRICULTURAL USE TYPE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)
(Please submit a separate form for each non-contiguous parcel)

Field/Block/Parcel Name: ______________________________

I. Does an approved NRCS conservation plan exist for the operation included in this application? O YES O NO

If YES, please include a copy of those sections addressing water use and water conservation. Date of Plan: ________
Please estimate what percentage of the plan has been implemented: ________

II. Is this farming operation dewatered to maintain proper soil moisture?
O YES O NO

If YES, please provide a record of historic use for this purpose.

III. Please complete the following sections which apply to your usage:

A. CITRUS & BLUEBERRIES
B. VEGETABLE AND OTHER CROPS
C. PASTURE IRRIGATION
D. SOD
E. LIVESTOCK (including Dairy)
F. AQUACULTURE
G. NURSERY/FERN USES

A. CITRUS and BLUEBERRY WATER USE

1. Use Type: Citrus O Blueberries O

2. Complete the following charts:

EXISTING

IRRIGATION METHOD	IRRIGATED ACRES	APPLICATION RATE (in/yr)	WELL NUMBER	PUMP* NUMBER
Drip				
Microjet				
Overhead Sprinkler				
Other				

*indicate ground or surface water

PROPOSED

IRRIGATION METHOD	IRRIGATED ACRES	APPLICATION RATE (in/yr)	WELL NUMBER	PUMP* NUMBER
Drip				
Microjet				
Overhead Sprinkler				
(Other)				

*indicate ground or surface water

3. Indicate which of the following months the plants are typically irrigated:

Year round O

January	O	February	O	March	O	April	O
May	O	June	O	July	O	August	O
September	O	October	O	November	O	December	O

4. Please submit annual water use records for your irrigation and freeze protection for the previous 3 years.

5. What is the age and number of plants (trees/bushes):

Number of Trees/Bushes	Age of Plants*	Acreage	Tree Spacing

* Age groups: < 1 yr; 1 to 5 yrs; > 5 years

6. Freeze Protection:

Please list your freeze protection sources and the acreage protected:

		Year
Pump/well____________________	Acres ________________	______
Pump/well____________________	Acres ________________	______
Pump/well____________________	Acres ________________	______
Pump/well____________________	Acres ________________	______

7. If any irrigation water is available from on-site reservoirs, please estimate the average volume of water available: ________________ (units)

B. VEGETABLES AND OTHER CROPS WATER USE

1. Complete the following charts:

EXISTING

Crop Type	Planting Date (mo/day)	Harvest Date (mo/day)	Irrigation Method	Average System Pressure	Acres Irrigated	Amount Used (inch/ season)	Amount Used (mgal/yr)*	Well or Pump Number

PROPOSED

Crop Type	Planting Date (mo/day)	Harvest Date (mo/day)	Irrigation Method	Average System Pressure	Acres Irrigated	Amount Used (inch/ season)	Amount Used (mgal/yr)*	Well or Pump Number

*mgal/yr = million gallons per year

2. Crop Rotation: If crops are rotated, briefly describe how the various crops are rotated from season to season and year to year (e.g. tomatoes are grown in the spring of every year on 100 acres, cucumber in the fall on 70 acres, and watermelons are grown every other year on 10 acres):

____

____

____

3. Surface Runoff: (flood and seepage irrigation only)

Generally describe any surface runoff of irrigation water including amounts, receiving water body and conditions when runoff occurs:

____

____

____

4. Applicants requesting water for crop washing must fill out the Commercial/Industrial Type Uses form.

C. PASTURE IRRIGATION

1. How many acres of pasture are or will be irrigated: present ____ proposed ____

2. Please estimate the number of times that the pasture was irrigated during the past 12 months: ________________________________

3. Do flowing wells supply irrigation to your pastures? YES O NO O

4. Do you harvest pasture grasses? YES O NO O

5. Water Use Amount Information:

	Existing (mgd)	Proposed (mgd) 5 years	Proposed (mgd) 10 years	Proposed (mgd) 15 years	Proposed (mgd) 20 years
Average Daily Use					
Maximum Daily Use					

*mgd - million gallons per day

6. Please submit annual water use records for your irrigation for the previous 3 years.

D. SOD WATER USE

1. How many acres of sod are farmed?
Existing _________ Proposed __________ acres

2. At what depth below land surface do you maintain the water table: _____ feet below land surface.

3. Please submit annual water use records for your irrigation for the previous 3 years.

4. Water Use Amount Information:

	Existing (mgd)	Proposed (mgd) 5 years	Proposed (mgd) 10 years	Proposed (mgd) 15 years	Proposed (mgd) 20 years
Average Daily Use					
Maximum Daily Use					

*mgd - million gallons per day

E. LIVESTOCK WATER USE (including dairy)

Type of Livestock	Average # of Stock/Year		GPD/ animal
	Existing	Proposed	

LIVESTOCK WATER NEEDS

Animal	Use Per Animal (gpd)
Beef Cattle	12
Dairy Cattle	150
Horses	12
Chickens	.10

gpd = gallons per day

1. Do you utilize additional water for livestock cooling? YES ○ NO ○

2. If YES to Question 1, please describe your cooling methods and how much is used:
____
____
____

3. Dairy, Hogs, and Poultry Use (processing) - please complete the following chart:

AVERAGE GALLONS USED PER DAY

	Existing (gals)	Proposed (gals)
Livestock cleaning		
Equipment washing		
Product cooling		

4. Describe the methods used in product cooling. ____________________________
____

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5. Requested Water Use:

	Existing (mgd)	Proposed (mgd) 5 years	Proposed (mgd) 10 years	Proposed (mgd) 15 years	Proposed (mgd) 20 years
Average Daily Use					
Maximum Daily Use					

*mgd - million gallons per day

7. Please submit annual water use records for your use for the previous 3 years.

F. AQUACULTURAL WATER USE

1. Type of Aquaculture:

- O fish or eels
- O shellfish
- O plants
- O alligators
- O other

2. Attach map showing location of all on-site facilities, elevations of all overflow structures, all pumps and wells, volume of each containment structure, which ponds are lined and unlined and routing of water use.

3. Requested Water Use:

	Existing (mgd)	Proposed (mgd) 5 years	Proposed (mgd) 10 years	Proposed (mgd) 15 years	Proposed (mgd) 20 years
Average Daily Use					
Maximum Daily Use					
Average Off-Site Discharge					

*mgd - million gallons per day

4. Where does overflow water discharge to: ______________________________

5. On average, how many times per year are the ponds emptied: ___________

6. What is the criteria for emptying a pond?: ______________________________

7. Is pond aerated?: ____

8. Please complete the following table:

SUMMARY OF AGRICULTURAL USES
AVERAGE DAILY USES

Type Use	Existing Use (mgd)	Proposed Use	Proposed Use	Proposed Use	Proposed Use
		5 years	10 years	15 years	20 years
A. Citrus & Blueberries					
B. Vegetables					
C. Pasture Irrigation					
D. Sod Irrigation					
E. Livestock					
F. Aquaculture					
Total					

Form: 40C-2-1082-1; Effective February 2012
Incorporated by reference in 40C-2.900(1), F.A.C.

* Not Applicable *

G. NURSERY / FERN USES

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

I. FERN USE

1. Complete the following table:

Requested Use (by source)	Existing (mgy)	Proposed (mgy) 5 years	Proposed (mgy) 10 years	Proposed (mgy) 15 years	Proposed (mgy) 20 years
Groundwater					
Surface Water					
Other: _______________					

*mgy - million gallons per year

2. Provide total project acreage for each of the next 15 years.

Year	Acres	Year	Acres	Year	Acres	Year	Acres

3. Include a map of the project area, delineating any shade structure, hammocks, ponds, lakes, well and pump locations. Include depth and acreage of each impoundment.

4. WATER FOR FREEZE PROTECTION (PROPOSED ACREAGE)

The District will presume that the criteria established in Subsection 40C-2.301(2), F.A.C., will be met if you agree to construct either a tailwater recovery pond capable of retaining the volume necessary to freeze protect the proposed acreage during the first 48 hours of freezing temperature, or construct a well which withdraws water from the shallow aquifer, or a District approved alternative which does not utilize the Floridan aquifer as the source for freeze protection.

a) If proposed tailwater pond is wholly owned:

Provide construction drawings, including depth to water table (from soil borings), and calculations to determine the volume of water capable of being stored in the pond.

b) If proposed withdrawals are from a lake or non-wholly owned pond:

Contact a District environmental specialist to determine the environmental data needed to support this application.

c) If proposed withdrawals are from shallow aquifer:

Provide hydrologic data to support groundwater for new freeze protection.

d) Please complete Table 4(d) - (attached)

II. OTHER NURSERY USE (other than fern use)

1.

Requested Use (by source)	Existing (mgy)	Proposed (mgy) 5 years	Proposed (mgy) 10 years	Proposed (mgy) 15 years	Proposed (mgy) 20 years
Groundwater					
Surface Water					
Other: ______________					

*mgy - million gallons per year

2. Provide total project acreage for each of the next 15 years.

Year	Acres	Year	Acres	Year	Acres	Year	Acres

3. Please Complete

Nursery Worksheet:

Vegetation Type (foliage, woody ornamentals, trees)*	Number Acres	Number of Containers if applicable	Container Spacing **	Irrigation method (drip, overhead, etc.)	Type of Cover (shade, hammock, saran, greenhouse, uncovered)	Freeze protection? Yes or No If yes, list method	Mgals/y Ground water	Mgals/y Surface Water

4. Provide methodology (IFAS, meters, etc.) used to calculate requested ground and surface water amounts.

5. Include a map of the project area, delineating the layout of all beds, ponds, lakes, and well and pump locations. Include depth and acreage of each impoundment.

*Type vegetation (trees, shrubs, indoor foliage, woody ornamentals)
**Container Spacing (number of containers per acre)

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Incorporated by reference in 40C-2.900(1), F.A.C.

6. Complete the following table.

Fernery Worksheet:

EXISTING AND PROPOSED ACREAGE

Type of Fern or Vegetation	Total Acres	# Acres of		Sprinkler Head Spacing	Nozzle Size (gals/min)	Irrigation Source	Irrigation Pressure	Freeze Protection Source	Acres Freeze protected	Existing (E) or Proposed (P)
		Hammock	Shade							

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Incorporated by reference in 40C-2.900(1), F.A.C.

* Not applicable *

LANDSCAPE/RECREATION/AESTHETIC USE TYPE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

A. GOLF COURSE USE

I. BREAKDOWN OF ACREAGE:

	Existing (acres)	Proposed (acres)
Tees/greens		
Fairways		
Roughs		
Landscape areas		
TOTAL # ACRES IRRIGATED		

II. RECLAIMED WASTEWATER USAGE:

1. Average amount of reclaimed wastewater currently being used for irrigation _____ million gallons per day (mgd)

2. Name of treatment plant supplying golf course: ______________________

3. Complete the following table:

Annual Water Use Summary

	Present (mgals/yr)	Proposed (mgals/yr)
Groundwater		
Surface water (natural)		
Surface water (manmade)		
Reclaimed water		
TOTAL		

III. NEW GOLF COURSE:

For new golf course areas, provide the following information regarding the grow-in period:

1. Number of months _________________

2. Date irrigation to commence ________________

3. Amount requested for grow-in ______________ mgd

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Incorporated by reference in 40C-2.900(1), F.A.C.

IV. ADDITIONAL INFORMATION:

1. Map delineating locations of all lakes, ponds, weirs, control structures (include elevations for each), well(s), surface water pumps and location of meters. Include acreage and depth (National Geodetic Vertical Data) of each lake or impoundment.

2. Detailed description for existing irrigation system including a description of the timer system. Provide proposed layout if not yet built.

3. Methodology (IFAS, meters etc.) used to calculate requested ground and surface water amounts. Please provide a detailed description of any methodology used if other than IFAS.

4. List of all pesticides and herbicides used within the last 5 years if there is an off-site discharge location. Provide a copy of any pesticide management plan you may have for the course.

5. List of all wastewater treatment plants within a 5 mile radius of project. Provide the name and address of a contact person design capacity, current wastewater flows, and level of treatment.

1. Complete this chart if water is requested for irrigation of lawns, common areas, aesthetic or recreational areas.

TYPE OF VEGETATION	NO. OF ACRES	IRRIGATION METHOD	AMOUNT REQUESTED (Mgals/Year)*	SOURCE NAME (lake, or well ID)

2. Attach 2 copies of the following:

___ a. Map (including scale) showing outline of irrigated areas according to vegetation type.

___ b. List of all surface water bodies on or adjacent to the property boundary. Include lakes, ponds, rivers, canals etc.

___ c. List of all wastewater treatment plants within a 5 mile radius of project. Provide the name and address of a contact person design capacity, current wastewater flows, and level of treatment.

* Not Applicable *

MINING/DEWATERING USE TYPE

(Submit 2 copies of application, supplemental information, drawings, calculations, etc.)

1. Attach a description of the activity with the following information:

___ a. General project description and proposed duration of dewatering.

___ b. A description of dewatering methods proposed, including locations of withdrawal points and depth of dewatering.

___ c. Specify aquifer being dewatered.

___ d. A description of disposal of water and methods of controlling water quality of discharges.

___ e. Attach site map with scale no greater than 1 inch = 2000 feet, showing the following:
1) location of all wellpoints, underdrains or shallow vacuum wells;
2) location of all turbidity barriers,
3) route of discharged waters; and,
4) location of all wetlands within 1/4 mile of property boundary

___ f. Map showing the extent of the projected drawdown due to dewatering.

___ g. If this is a mining activity, provide the following:
1) Site plans showing annual progression of the mining
2) Geologic cross sections of the mining area to depth exceeding maximum mine depth
3) location of any wells on the property

___ h. Description of processing facilities on site. A commercial/industrial type use package must also be completed if there are processing facilities on site.

2. WATER QUANITY INFORMATION:

Requested Use by Source	Existing (mgy)	Proposed (mgy) 5 years	Proposed (mgy) 10 years	Proposed (mgy) 15 years	Proposed (mgy) 20 years
Groundwater					
Surface Water					
Other: ________					

*mgd - million gallons per day

Form: 40C-2-1082-1; Effective February 2012
Incorporated by reference in 40C-2.900(1), F.A.C.

GRU Section 2

POTABLE WATER SUPPLY

The Potable Water Section includes the following:

- [Requested Water Withdrawal]
- [Summary of Groundwater Sources]
- [Property Deeds for MWTP & Wellfield]
- [Murphree Wellfield map]
- [Service area maps]
- [Local Government Franchise Agreement]
- [Historic Water Use]
- [Projected Water Use]

Figure 1 - Gainesville Regional Utilities Location Map

PLOTTED: 5/14/2013 BY C.A.O.
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FIG 1 OVERVIEW MAP 8X11

Table 1. Requested Water Withdrawal

Year of Amount Requested	Million Gallons Per Day (Ave)	Million Gallons Per Day (Peak)	Million Gallons Per Year
2013	30	45.9	10,950
2014	30	45.9	10,950
2015	30	45.9	10,950
2016	30	45.9	10,950
2017	30	45.9	10,950
2018	30	45.9	10,950
2019	30	45.9	10,950
2020	30	45.9	10,950
2021	30	45.9	10,950
2022	30	45.9	10,950
2023	30	45.9	10,950
2024	30	45.9	10,950
2025	30	45.9	10,950
2026	30	45.9	10,950
2027	30	45.9	10,950
2028	30	45.9	10,950
2029	30	45.9	10,950
2030	30	45.9	10,950
2031	30	45.9	10,950
2032	30	45.9	10,950

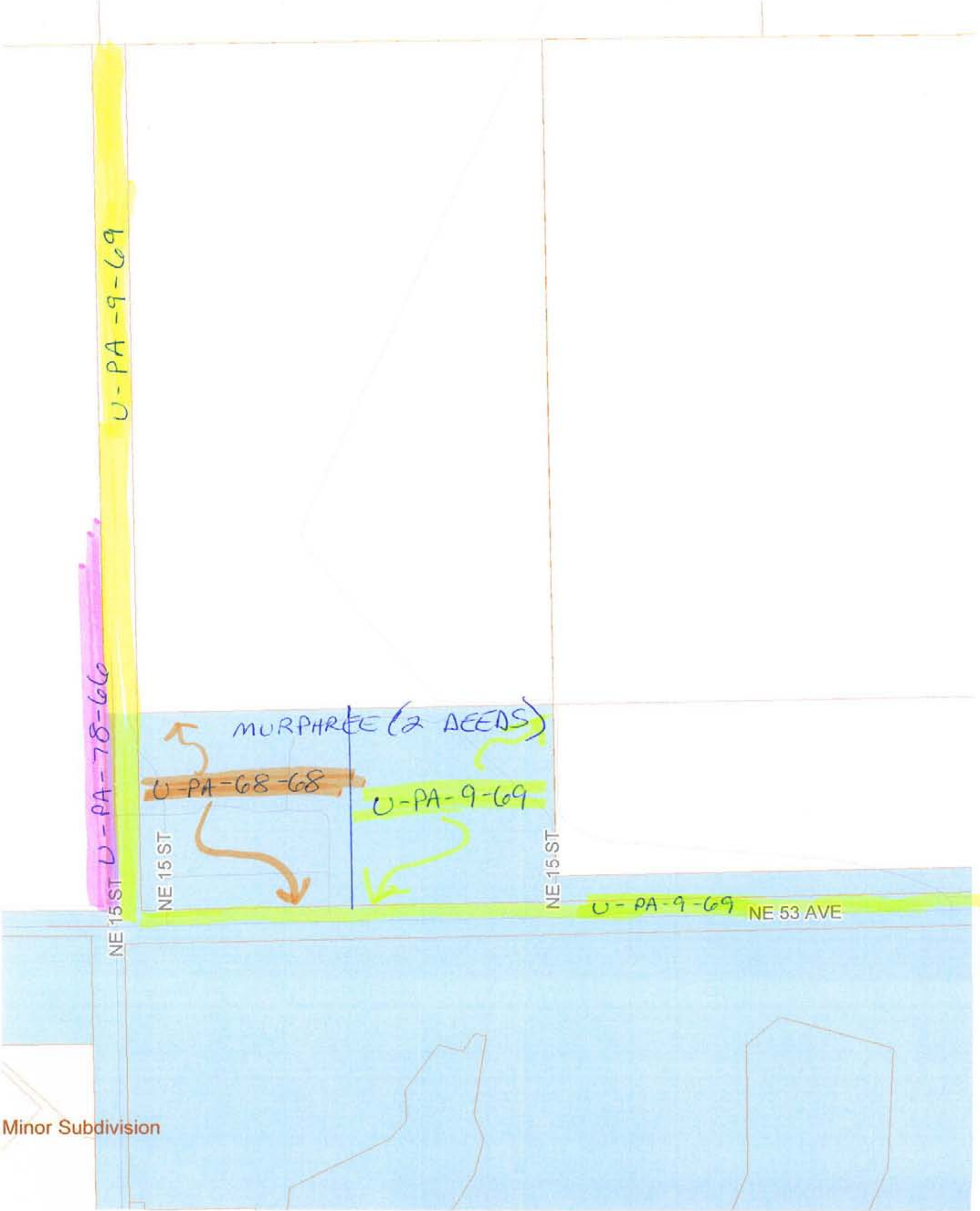
Table 2. Summary of Groundwater Sources

Well of Pump Number	Wellfield or Facility Name	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)	Operation Hrs/wk[1]	Pump Capacity[2] (gpm)	Date Drilled	Existing or Proposed (date)	Type of Use
A1	Murphree WTP	24	173	530	12.7	3400	6/27/1968	Existing	Public Water Utility
B2	Murphree WTP	24	185	475	12.2	3400	8/8/1968	Existing	Public Water Utility
C3	Murphree WTP	24	217	540	0.1	5625	9/23/1968	Existing	Public Water Utility
D4	Murphree WTP	24	190	545	7.6	3800	10/24/1968	Existing	Public Water Utility
E5	Murphree WTP	24	190	500	6.5	4900	12/9/1968	Existing	Public Water Utility
F6	Murphree WTP	24	189	521	9.6	2000	2/18/1969	Existing	Public Water Utility
G7	Murphree WTP	24	181	534	11.7	2200	5/22/1969	Existing	Public Water Utility
H8	Murphree WTP	24	180	538	12.8	3750	8/7/1969	Existing	Public Water Utility
I9	Murphree WTP	24	180	365	17.0	3500	9/7/1990	Existing	Public Water Utility
J10	Murphree WTP	16	180	275	0	2100	10/10/1990	Existing	Public Water Utility
K11	Murphree WTP	20	180	460	0.3	4860	11/29/1990	Existing	Public Water Utility
L12	Murphree WTP	24	167	466	7.8	2400	2/24/2001	Existing	Public Water Utility
M13	Murphree WTP	24	209	499	3.2	4200	3/16/2001	Existing	Public Water Utility
N14	Murphree WTP	24	180	470	6.9	4200	5/3/2002	Existing	Public Water Utility
O15	Murphree WTP	24	177	470	12.9	4200	8/26/2002	Existing	Public Water Utility
P16	Murphree WTP	24	180	470	0.3	4200	1/29/2007	Existing	Public Water Utility

[1] Based on monthly operating reports from 1/2011 to 12/2011
[2] Values reflect production capacity of well operating alone.

Property Deeds:

Murphree Water Treatment Plant and Wellfield



U-PA-9-69
U-PA-78-66
MURPHREE (2 DEEDS)
U-PA-68-68
U-PA-9-69
NE 15 ST
NE 15 ST
NE 15 ST
U-PA-9-69
NE 53 AVE
Minor Subdivision

U-PA-9-69

SPECIAL WARRANTY DEED

THIS INDENTURE, made this 26th day of May, 1967, between CONTAINER CORPORATION OF AMERICA, a Delaware corporation, as Grantor, and CITY OF GAINESVILLE, a municipal corporation, chartered under the laws of Florida, as Grantee,

WITNESSETH: That the said Grantor, for and in consideration of the sum of Ten ($10.00) Dollars to it in hand paid, the receipt of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell and convey, subject to the exception and reversion hereinafter mentioned, unto the said Grantee, its successors and assigns forever, all those certain parcels of land, lying and being in the County of Alachua and State of Florida, more particularly described as follows:

"B"

Parcel A
The SE¼ of the SW¼ of Section 15, Township 9 South, Range 20 East, containing 40.59 acres, more or less.

"C"

Parcel B
The West 150 feet of the North ¾ of Section 15, Township 9 South, Range 20 East, containing 13.9 acres, more or less.

"C"

Parcel C
The South 150 feet of the SE¼ of Section 15, Township 9 South, Range 20 East, less the South 100 feet of the East 100 feet thereof, containing 8.9 acres, more or less.

"C"

Parcel D
The North 50 feet of the South 150 feet of that part of Section 14, Township 9 South, Range 20 East, lying west of State Road No. 225, containing 4.1 acres, more or less.

TO HAVE AND TO HOLD said lands in fee simple, SUBJECT HOWEVER, to all taxes and assessments subsequent to December 31, 1967, and subject to right of reverter retained by Grantor as follows: This conveyance is specifically subject to the condition that Grantee shall have, within 18 months from the date hereof, substantially commenced construction of a water treatment plant on Parcel A above described and artesian wells on Parcels B, C and D above described for use in Grantee's municipal water system

OR REC. 446 Page 115

completion thereof to be fully accomplished within 30 months from date of this conveyance, and Grantee's failure to either substantially commence construction within 18 months as aforesaid or to fully complete construction within 30 months as aforesaid, shall cause the fee simple title to the above described lands to revert to Grantor effective upon the date of any such failure of Grantee, and Grantor shall, in either of such events, have the right to immediately enter upon said lands and re-take possession thereof.

AND said Grantor, for itself, its successors and assigns, does covenant, promise and agree to and with said Grantee, its successors and assigns, that said Grantor has not made, done committed, executed or suffered any act or acts, thing or things, whatsoever whereby title to the lands hereinabove described and hereby conveyed, or any part thereof, now or at any time hereafter shall or may be impeached, charged or encumbered in any manner whatsoever; and said Grantor will specially warrant and defend the title to said lands against the lawful claims of all persons claiming by, through or under said Grantor.

IN WITNESS whereof said Grantor has caused this deed to be executed in its corporate name, signed by its duly authorized corporate officers, and sealed with its corporate seal, all as of the day and year first above written.

Signed, sealed and delivered in the presence of:

CONTAINER CORPORATION OF AMERIC.

By

As its Vice President

ATTEST:

As its Secretary

STATE OF FLORIDA DOCUMENTARY STAMP TAX

440 PAGE 118

STATE OF ILLINOIS

COUNTY OF COOK

Before me personally appeared ______________________ and ______________________ to me well known and known to me to be the individuals described in and who executed the foregoing instruments as Vice President and ______________________, ~~Secretary~~ of the above named CONTAINER CORPORATION OF AMERICA, and severally acknowledged to and before me that they executed such instrument as such Vice President and ______________ Secretary, respectively, of said corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that it was affixed to said instrument by due and regular corporate authority, and that said instrument is the free act and deed of said corporation.

WITNESS my hand and official seal this ____ day of May, A.D., 1967.

____
Notary Public
My Commission expires:

WARRANTY DEED

U-PA-68-68

KNOW ALL MEN BY THESE PRESENTS, That ANNE BERNARD DOSWELL JONES, a widow, and JOSEPH M. JONES, SR., a single person,

hereinafter called Grantors, for good and valuable consideration, the receipt of which is hereby acknowledged from THE CITY OF GAINESVILLE, a municipal corporation of the State of Florida,

hereinafter called Grantee, mailing address Gainesville, Alachua County, State of Florida have granted, bargained, sold, aliened and conveyed, and by these presents do grant, bargain, sell, alien and convey to the said Grantee and to its ~~heirs~~ successors and assigns, in fee simple absolute forever, all the following described land lying in Alachua County, State of Florida being more particularly described as follows, to-wit:

> The Southwest Quarter (SW$\frac{1}{4}$) of the Southwest Quarter (SW$\frac{1}{4}$) of Section 15, Township 9 South, Range 20 East, Alachua County, Florida; LESS AND EXCEPT the right of way of the T & J Railroad.

> This deed is given and accepted by and between the parties subject to property taxes after the year 1966; applicable zoning regulations and rights of way for roads and existing easements.

ALACHUA COUNTY

STATE OF FLORIDA DOCUMENTARY STAMP TAX NOV-3'67 52.50

TO HAVE AND TO HOLD the above granted and described property, together with all and singular the rights, tenements, hereditaments and appurtenances, to the same belonging or in anywise appertaining, unto the said Grantee, and its ~~heirs~~ successors and assigns forever, in fee simple absolute. And the Grantors do herein and hereby fully warrant the title to said property and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said Grantors have caused this deed to be executed and hereto affixed their seals this 22nd day of August 19 67.

Signed, sealed and delivered in our presence as witnesses:

Bonnie Jones Darling	Anne Bernard Doswell Jones (SEAL)
[illegible] C. [illegible] Jr.	Anne Bernard Doswell Jones
As to ABDJ	Joseph M. Jones, Jr. (SEAL)
[illegible]	Joseph M. Jones, Sr.
[illegible] B. [illegible]	(SEAL)
As to JMJSr	(SEAL)

ATTEST (with corporate seal)

Its (Asst.) Secretary

By

Its (Vice) President

BOOK 473 PAGE 127

95-2-20
35-2

617,16 - 9-20

13-9-19

SPECIAL WARRANTY DEED

THIS INDENTURE made this 7th day of December, A. D., 1967, between Owens-Illinois, Inc., a corporation organized and existing under the laws of the State of Ohio, having its principal place of business in the City of Toledo, County of Lucas, State of Ohio (hereinafter called "Grantor"), and CITY OF GAINESVILLE, a municipal corporation organized and existing under the laws of the State of Florida (hereinafter called "Grantee").

WITNESSETH: That Grantor, for and in consideration of the sum of One Dollar ($1.00) and other valuable considerations paid, receipt of which is hereby acknowledged, and upon the terms and conditions hereinafter set out, has granted, bargained, sold and conveyed and does hereby grant, bargain, sell and convey to Grantee, its successors and assigns forever, the following described land, situate, lying and being in the County of Alachua, State of Florida, to-wit:

TOWNSHIP 9 SOUTH - RANGE 20 EAST UPA-78-66 283

outside city Section 16: The East 50 feet of Section and the South 150 feet of said Section, less the East 50 feet. 332, 333

UPA-79-66

outside city Section 21: The East 50 feet of that part of Section lying north of NE 39th Avenue (State Road No. 232). 433, 3[illegible]

Containing 30.18 acres, more or less.

FILED
1968 JAN 12 PM 4:25
"RECORD VERIFIED"
CLERK CIRCUIT COURT
ALACHUA COUNTY, FLA.

STATE OF FLORIDA DOCUMENTARY STAMP TAX 9570

TOWNSHIP 9 SOUTH - RANGE 20 EAST

Section 17: outside city Commence at southeast corner of Section for POINT OF BEGINNING; thence N89°20'19"W along South line of said Section 3,186.67 feet; thence N45°07'51"W, parallel with A.C.L. Railroad, 215.13 feet; thence S89°20'19"E, parallel to said south line of said Section, 3,339 feet to the east line of said Section; thence South along said east line 150 feet to the southeast corner of said Section, the P.O.B. UPA-77-66 330-331 Tax 710. 1877

Containing 11.24 acres, more or less.

STATE OF FLORIDA DOCUMENTARY SUR TAX $1.10

STATE OF FLORIDA DOCUMENTARY SUR TAX $1.10

STATE OF FLORIDA DOCUMENTARY SUR TAX $11.00

STATE OF FLORIDA DOCUMENTARY SUR TAX $11.00

STATE OF FLORIDA DOCUMENTARY SUR TAX $11.00

TOWNSHIP 9 SOUTH - RANGE 19 EAST

Section 13: The South 150 feet of Section less the West 50 feet thereof and less right of way for State Road No. S-23. UPA-75-66 326-327

This instrument was prepared by:
FAGAN, CROUCH & ANDERSON
Attorneys at Law
212 S.E. 1st Street, Gainesville, Florida

By

189923

OFF REC BK 485 PAGE 275

UPA-75 to 79-66 page 1 390

TOWNSHIP 9 SOUTH - RANGE 20 EAST

Section 18: The South 150 feet of that part of Section lying West of Paradise-Strickland graded road. UPA-76-66 328

Containing in the aggregate 18.93 acres.

Subject to (a) any and all restrictions, encumbrances, easements and rights-of-way, visible and of record, and (b) the reservation by Grantor, its successors and assigns, of full right of ingress and egress into, over, upon and from the above described premises so long as the exercise of such right shall not unreasonably obstruct or interfere with the then use of such premises by Grantee, its successors and assigns.

Grantee, by acceptance hereof, covenants and agrees to make available and to convey for no consideration, upon appropriate request, to the State of Florida or to Alachua County, for use as a state or county highway right-of-way, that portion of the above-described premises which lies within fifty (50) feet of any section line.

TO HAVE AND TO HOLD THE SAME, together with all and singular the appurtenances thereto belonging or in anywise incident or appertaining, forever; and Grantor will defend the title thereto against all persons claiming by, through, or under Grantor.

IN WITNESS WHEREOF, Grantor has caused these presents to be duly executed in its name by its Vice-President, Forest Products Division, and its corporate seal to be hereto affixed, attested by its Assistant Secretary, the date first above written.

Signed, sealed and delivered in the presence of:

OWENS-ILLINOIS, INC.

By W. R. Winters
Vice-President
Forest Products Division

ATTEST A. C. Boyd
Assistant Secretary

(Corporate Seal)

STATE OF OHIO)
) SS:
COUNTY OF LUCAS)

Before me, the undersigned authority, this day personally appeared W. R. Winters and A. C. Boyd, to me well known and known to me to be the individuals described in and who executed the foregoing instrument as Vice-President, Forest Products Division and Assistant Secretary, respectively, of the Corporation named in the foregoing instrument, and they severally acknowledged to and before me that they executed said instrument on behalf of and in the name of said corporation as such officers; that the seal

OFF REC BK 485 PAGE 276

UPA-75 to 79-66 page 2

affixed to said instrument is the corporate seal of said corporation and that it was affixed thereto by due and regular corporate authority; that they are duly authorized by said corporation to execute said instrument and that said instrument is the free act and deed of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal this 7th day of December, A. D. 1967.

Notary Public in and for the County and State aforesaid.

My Commission Expires

BEVERLY FACON
Notary Public, Lucas County, Ohio
My Commission Expires May 9, 1968

COUNTY, OHIO

-3-

OFF REC BK 485 PAGE 277

UPA-75 to 79-66 page 3

RECORDED IN OFFICIAL RECORDS
INSTRUMENT # 1929243 9 PGS
2003 APR 23 02:42 PM BK 2651 PG 690
J. K. "BUDDY" IRBY
CLERK OF CIRCUIT COURT
ALACHUA COUNTY, FLORIDA
CLERK2 Receipt#136149
Doc Stamp-Deed: 0.70
By: D.C.

RECORDED IN OFFICIAL RECORDS
INSTRUMENT # 1929566 9 PGS
2003 APR 24 01:41 PM BK 2652 PG 418
J. K. "BUDDY" IRBY
CLERK OF CIRCUIT COURT
ALACHUA COUNTY, FLORIDA
CLERK12 Receipt#136337
Doc Stamp-Deed: 65.80
By: D.C.

THIS INSTRUMENT PREPARED BY:
Elizabeth U. Fee, Division Counsel
Plum Creek Timberlands, L.P.
100 Peachtree Street, N.E., Suite 2650
Atlanta, Georgia 30303
File No. 560-5.03-1000
GRU File No. U-PA-2-03
Page 1 of 9

AFTER RECORDING RETURN TO:
Gainesville Regional Utilities
Post Office Box 147117, Station A-130
Gainesville, Florida 32614-7117
Attn: Real Estate Division

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED, made effective the 15th day of April, 2003, by and between **PLUM CREEK TIMBERLANDS, L.P.,** a Delaware limited partnership, whose address is 999 Third Avenue, Suite 2300, Seattle, Washington 98104 ("Grantor"), to and in favor of **CITY OF GAINESVILLE, FLORIDA,** a municipal corporation, whose address is Post Office Box 490, Gainesville, Florida 32601 ("Grantee"):

WITNESSETH:

That the Grantor, for and in consideration of the sum of $10.00 and other valuable considerations to said Grantor in hand paid by said Grantee, the receipt and sufficiency of which are hereby acknowledged, has granted, bargained and sold to the said Grantee, and Grantee's successors and assigns forever, land situate, lying and being in Alachua County, Florida, being more particularly described on Exhibits "A" through "E" attached hereto and by this reference made a part hereof (the "Real Property").

This conveyance is subject to the following (hereinafter collectively the "Permitted Exceptions"):

1. Taxes and assessment for the year 2003 and subsequent years.

2. Restrictions and easements of record, if any.

3. Zoning regulations and ordinances of the municipality or county in which the property lies.

4. Conservation Easement between Nekoosa Packaging Corporation, St. Johns River Water Management District, Suwannee River Water Management District, and City of Gainesville, dated December 15, 1999, and recorded as Official Records Instrument #1651188 with 35 pages, and amended by an instrument dated December 15, 1999, and recorded as Official Records Instrument #1784465 with 10 pages, all of the Public Records of Alachua County, Florida, which Conservation Easement is by this reference incorporated herein.

N.B. This document was re-recorded to correct documentary stamp amount.

TOGETHER with all the tenements, hereditaments and appurtenances thereto belonging or in anywise appertaining.

TO HAVE AND TO HOLD, the same in fee simple forever.

AND the Grantor hereby covenants with said Grantee that Grantor is lawfully seized of said Real Property in fee simple; that Grantor has good right and lawful authority to sell and convey said Real Property; that Grantor hereby warrants the title to said Real Property and will defend the same against the lawful claims of all persons claiming by, through, or under the said Grantor; and that said Real Property is free of all encumbrances made by Grantor; provided, however, that there are hereby excepted from the covenants and the warranties hereinabove set forth the "Permitted Exceptions".

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal the day and year first above written.

Signed, sealed and delivered in the presence of:

PLUM CREEK TIMBERLANDS, L.P., a Delaware limited partnership

BY: Plum Creek Timber I, L.L.C., Its General Partner

By: [signature]
James A. Kilberg
Vice President – Real Estate

Elizabeth U. Fee
Print Name: Elizabeth U. Fee

Annette W. Jones
Print Name: Annette W. Jones

STATE OF GEORGIA
COUNTY OF FULTON

The foregoing instrument was sworn to, subscribed and acknowledged before me this 15th day of April, 2003, by JAMES A. KILBERG, Vice President – Real Estate of Plum Creek Timber I, L.L.C., a Delaware limited liability company, the general partner of PLUM CREEK TIMBERLANDS, L.P., a Delaware limited liability partnership, on behalf of the partnership, who is personally known to me or who produced ______________________ as identification.

Approved as to Form and Legality:

By: [signature]
Raymond O. Manasco, Jr.
Utilities Attorney
City of Gainesville, Florida

[signature]
Notary Public
Print Name: Loris A. Jakielski
My Commission Expires: 2/8/05

GRU File No. U-PA-2 OFFICIAL RECORDS INSTRUMENT # 0001929243 9 PGS
Page 3 of 9

Receipt #: 136149
Doc Stamp-Deed: 0.70
J. K. "BUDDY" IRBY
ALACHUA COUNTY, FLORIDA
By: rdm D.C.

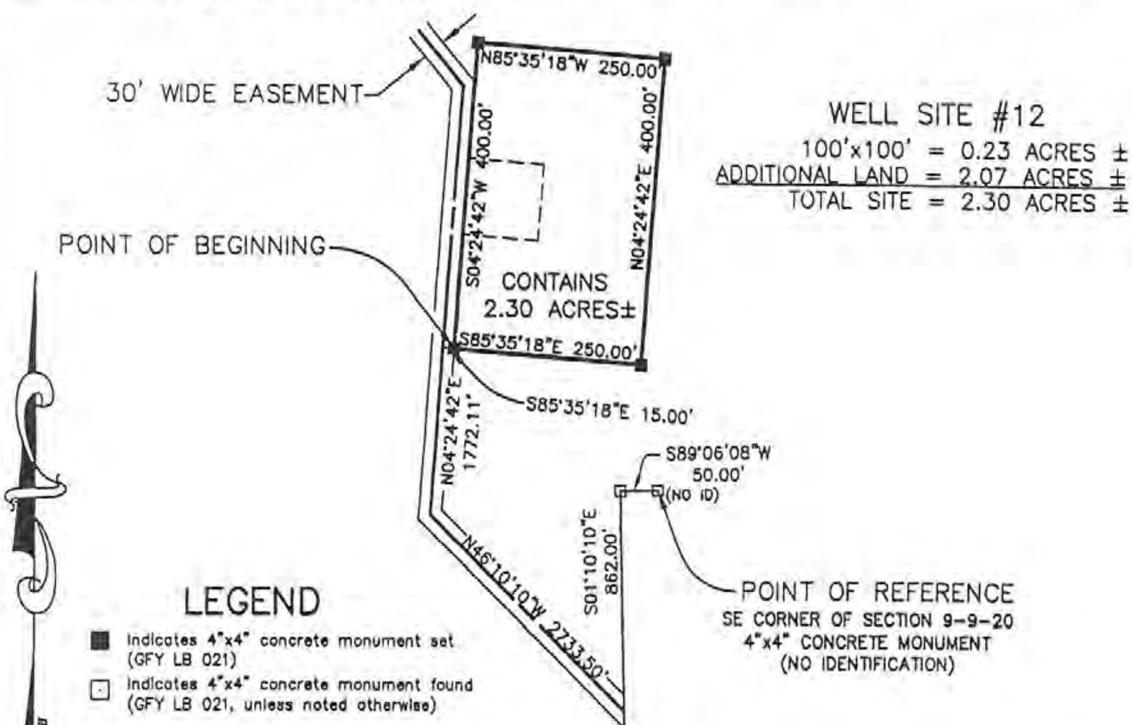
EXHIBIT "A"

BOUNDARY SURVEY

IN SECTION 9, TOWNSHIP 9 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA

LEGAL DESCRIPTION (by this surveyor)

A parcel of land situated in Section 9, Township 9 South, Range 20 East, Alachua County, Florida being more particularly described as follows: Commence at a 4"x4" concrete monument (no identification) marking the Southeast corner of Section 9, Township 9 South, Range 20 East for a Point of Reference; thence South 89°06'08" West, along the South line of said Section 9, a distance of 50.00 feet to a 4"x4" concrete monument (LB 021); thence South 01°10'10" East parallel with the East line of Section 16, Township 9 South, Range 20 East, a distance of 862.00 feet to the intersection with the centerline of a 30 foot wide easement; thence North 46°10'10" West, along said centerline, a distance of 2733.50 feet; thence North 04°24'42" East, continuing along said centerline, a distance of 1772.11 feet to a point; thence South 85°35'18" East, perpendicular to said centerline, a distance of 15.00 feet to a 4"x4" concrete monument (LB 021) marking the Southwest corner of Well Site #12, a point on the East line of said 30 foot wide easement, and the Point of Beginning; thence continue South 85°35'18" East perpendicular to the East line of said easement, a distance of 250.00 feet to a concrete monument (LB 021) at the Southeast corner of said Well Site #12; thence North 04°24'42" East, parallel with the East line of said easement, a distance of 400.00 feet to a concrete monument (LB 021) at the Northeast corner of said Well Site #12; thence North 85°35'18" West, perpendicular to the East line of said easement, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) at the Northwest corner of Well Site #12 and a point on the Northerly extenuation of the East line of said easement; thence South 04°24'42" West, along the East line and the Northerly extension of the East line of said easement, a distance of 400.00 feet to the Point of Beginning.
Containing 2.30 acres, more or less.



LEGEND

- ■ Indicates 4"x4" concrete monument set (GFY LB 021)
- □ Indicates 4"x4" concrete monument found (GFY LB 021, unless noted otherwise)

(SEE SHEET 2 OF 2 FOR INTERIOR LOCATIONS)

SURVEYOR'S NOTES

1. The bearings hereon are Grid North Bearings (Florida North Zone Lambert Projection) projected from the Alachua County Control Densification & Identification of Land Corners Project of 1988. Primary Control Stations A099, A101, A113, and A115 along with their corresponding Azimuth Marks A100, A102, A114, and A116 of the 1988 Project were recovered and utilized for control. The 1988 Project is North American Datum 1983.

2. Underground utilities, Structures and/or foundations, if any, are not located and are not shown.

3. Recorded easements and/or adjoent deeds not furnished to the surveyor are not shown.

4. Jurisdictional wetlands, if any, were not located and are not shown.

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S CERTIFICATION

I hereby certify to GAINESVILLE REGIONAL UTILITIES and PLUM CREEK TIMBER LANDS, L.L.P. that the sketch hereon is an accurate representation of the lands described hereon, is in compliance with the Minimum Technical Standards in Chapter 61G17-6 of the Florida Administrative Code as set forth by the Florida Board of Professional Surveyors and Mappers pursuant to Section 472.027 Florida Statutes, as surveyed under my direct supervision and is true and correct to the best of my knowledge and belief.

George F. Young, Inc.
CERTIFICATE OF AUTHORIZATION # LB021

8/19/02

Michael L. Herbert — Dated
Professional Surveyor and Mapper
Certificate of Registration No. 4998

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

George F. Young, Inc.
A Subsidiary of George F. Young of Florida, Inc.
ST. PETERSBURG ■ TAMPA ■ SARASOTA ■ BRADENTON ■ GAINESVILLE
ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ PLANNING ■ SURVEYING
1338 N.W. 13th Street
Gainesville, Florida 32601
PHONE (352) 378-1444 FAX (352)372-8002

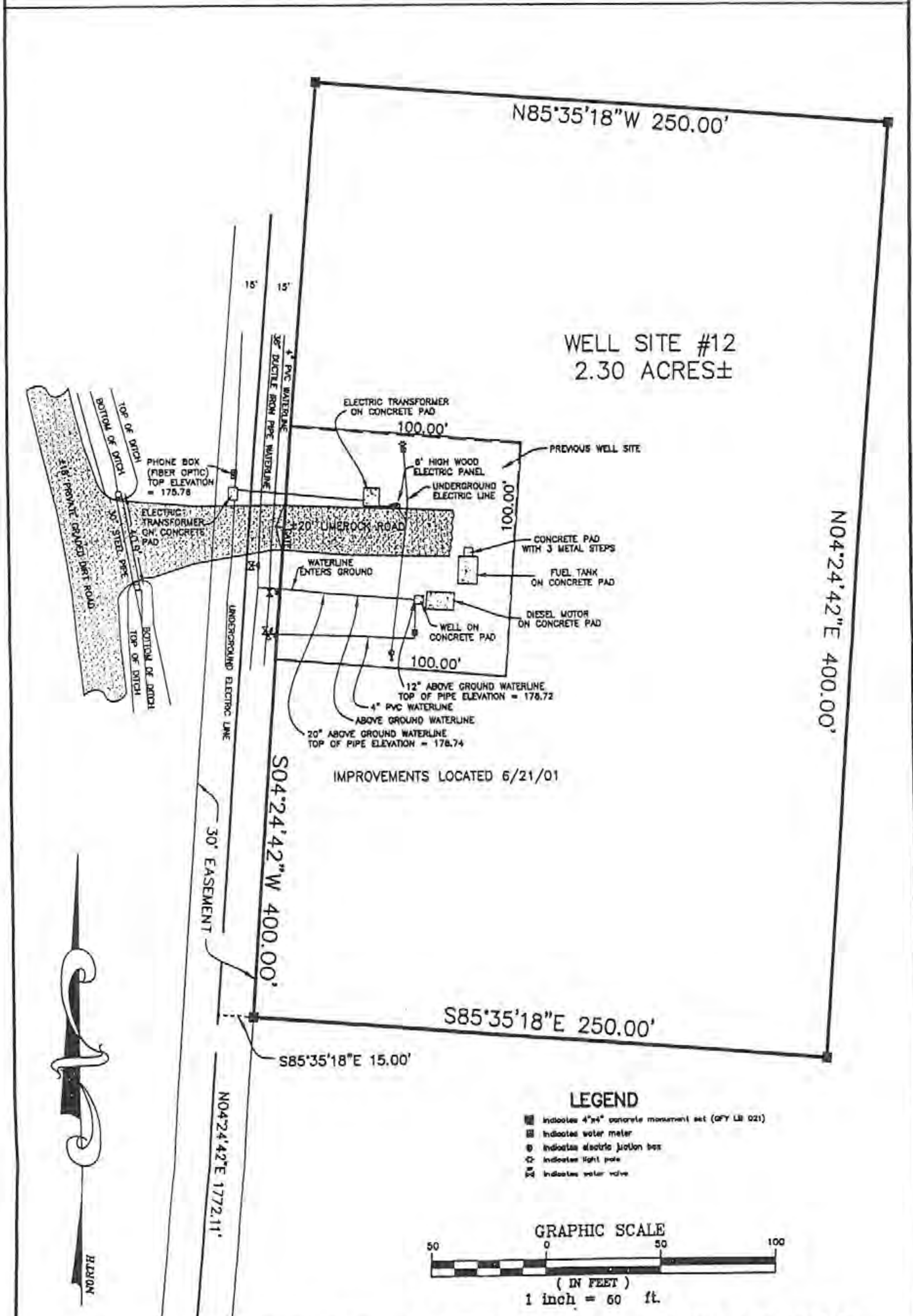
DRAWN	LAS		SCALE	~~1" = 200'~~ NTS
CHECKED			MAP FILE	FLAT FILE
REVISED			PROJECT #	01530077.10
DRAWING #	010077-10LEGALS.dwg	WELLSITE #12		SHEET 1 OF 2

OFFICIAL RECORDS INSTRUMENT # 0001929243 9 PGS

EXHIBIT "A" CONTINUED

BOUNDARY SURVEY

IN SECTION 9, TOWNSHIP 9 SOUTH, RANGE 20 EAST,
ALACHUA COUNTY, FLORIDA



SEE SHEET 1 OF 2 FOR LEGAL DESCRIPTION AND SURVEYORS CERTIFICATE

George F. Young, Inc. A Subsidiary of George F. Young of Florida, Inc. ST. PETERSBURG ■ TAMPA ■ SARASOTA ■ BRADENTON ■ GAINESVILLE ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ PLANNING ■ SURVEYING 1336 N.W. 13th Street Gainesville, Florida 32601 PHONE (352) 378-1444 FAX (352)372-2002	DRAWN	LAS	SCALE	1" = 60' N.T.S
	CHECKED		MAP FILE	FLAT FILE
	REVISED		PROJECT #	01530077.10
	DRAWING #	010077-10LEGALS.dwg	WELLSITE #12	SHEET 2 OF 2

OFFICIAL RECORDS INSTRUMENT # 0001929243 9 pgs

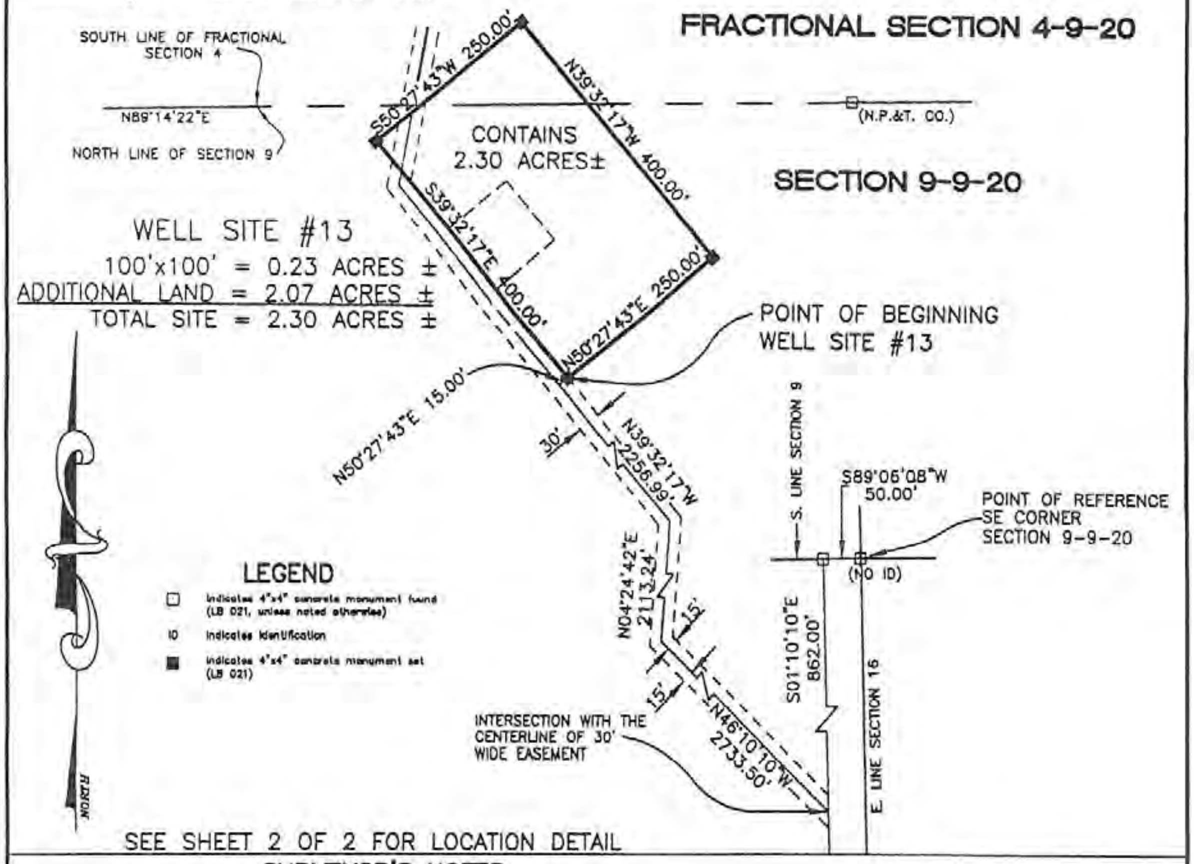
EXHIBIT "B"

BOUNDARY SURVEY

IN SECTION 9 & FRACTIONAL SECTION 4, TOWNSHIP 9 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA

LEGAL DESCRIPTION (by this surveyor)

A parcel of land situated in Section 9 & Fractional Section 4 inside the Arredondo Grant, Township 9 South, Range 20 East, Alachua County, Florida being more particularly described as follows: Commence at a 4"x4" concrete monument (no identification) marking the Southeast corner of Section 9, Township 9 South, Range 20 East for a Point of Reference; thence South 89°06'08" West, along the South line of said Section 9, a distance of 50.00 feet to a 4"x4" concrete monument (LB 021); thence South 01°10'10" East, parallel with the East line of Section 16, Township 9 South, Range 20 East, a distance of 862.00 feet to the intersection with the centerline of a 30 foot wide easement; thence North 46°10'10" West, along said easement centerline, a distance of 2733.50 feet; thence North 04°24'42" East, continuing along said centerline, a distance of 2113.24 feet; thence North 39°32'17" West, along the centerline, a distance of 2256.99 feet to a point; thence North 50°27'43" East, perpendicular to the said easement centerline and along said projection, a distance of 15.00 feet to a 4"x4" concrete monument (LB 021) marking the Southwesterly corner of Well Site #13, said monument being also on the Easterly line of said easement and the Point of Beginning; thence continue North 50°27'43" East, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) at the Southeasterly corner of Well Site #13; thence North 39°32'17" West, parallel with the Easterly line of said easement, a distance of 400.00 feet to a 4"x4" concrete monument (LB 021) at the Northeasterly corner of Well Site #13; thence South 50°27'43" West, perpendicular to said Easterly line of easement, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) marking the Northwesterly corner of Well Site #13, thence South 39°32'17" East a distance of 400.00 feet to the Point of Beginning.
Containing 2.30 acres, more or less.



SEE SHEET 2 OF 2 FOR LOCATION DETAIL

SURVEYOR'S NOTES

1. The bearings hereon are Grid North Bearings (Florida North Zone Lambert Projection) projected from the Alachua County Control Densification & Identification of Land Corners Project of 1988. Primary Control Stations A099, A101, A113, and A115 along with their corresponding Azimuth Marks A100, A102, A114, and A116 of the 1988 Project were recovered and utilized for control. The 1988 Project is North American Datum 1983.
2. Underground utilities, Structures and/or foundations, if any, are not located and are not shown.
3. Recorded easements and/or adjacent deeds not furnished to the surveyor are not shown.
4. Jurisdictional wetlands, if any, were not located and are not shown.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S CERTIFICATION

I hereby certify to GAINESVILLE REGIONAL UTILITIES and PLUM CREEK TIMBER LANDS, L.L.P. that the sketch hereon is an accurate representation of the lands described hereon, is in compliance with the Minimum Technical Standards in Chapter 61G17-6 of the Florida Administrative Code as set forth by the Florida Board of Professional Surveyors and Mappers pursuant to Section 472.027 Florida Statutes, as surveyed under my direct supervision and is true and correct to the best of my knowledge and belief.

George F. Young, Inc.
CERTIFICATE OF AUTHORIZATION # LB021

8/19/02
Michael L. Herbert — Dated
Professional Surveyor and Mapper
Certificate of Registration No. 4095

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

George F. Young, Inc.
A Subsidiary of George F. Young of Florida, Inc.
ST. PETERSBURG ■ TAMPA ■ SARASOTA ■ BRADENTON ■ GAINESVILLE
ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ PLANNING ■ SURVEYING
1338 N.W. 13th Street
Gainesville, Florida 32601
PHONE (352) 378-1444 FAX (352)378-2503

DRAWN	LAS/WMc		SCALE	~~1" = 200'~~ NTS
CHECKED	MLH		MAP FILE	FLAT FILE
REVISED			PROJECT #	01530077.10
DRAWING #	010077-10LEGALS.dwg	WELL SITE #13		SHEET 1 OF 2

EXHIBIT "B" CONTINUED

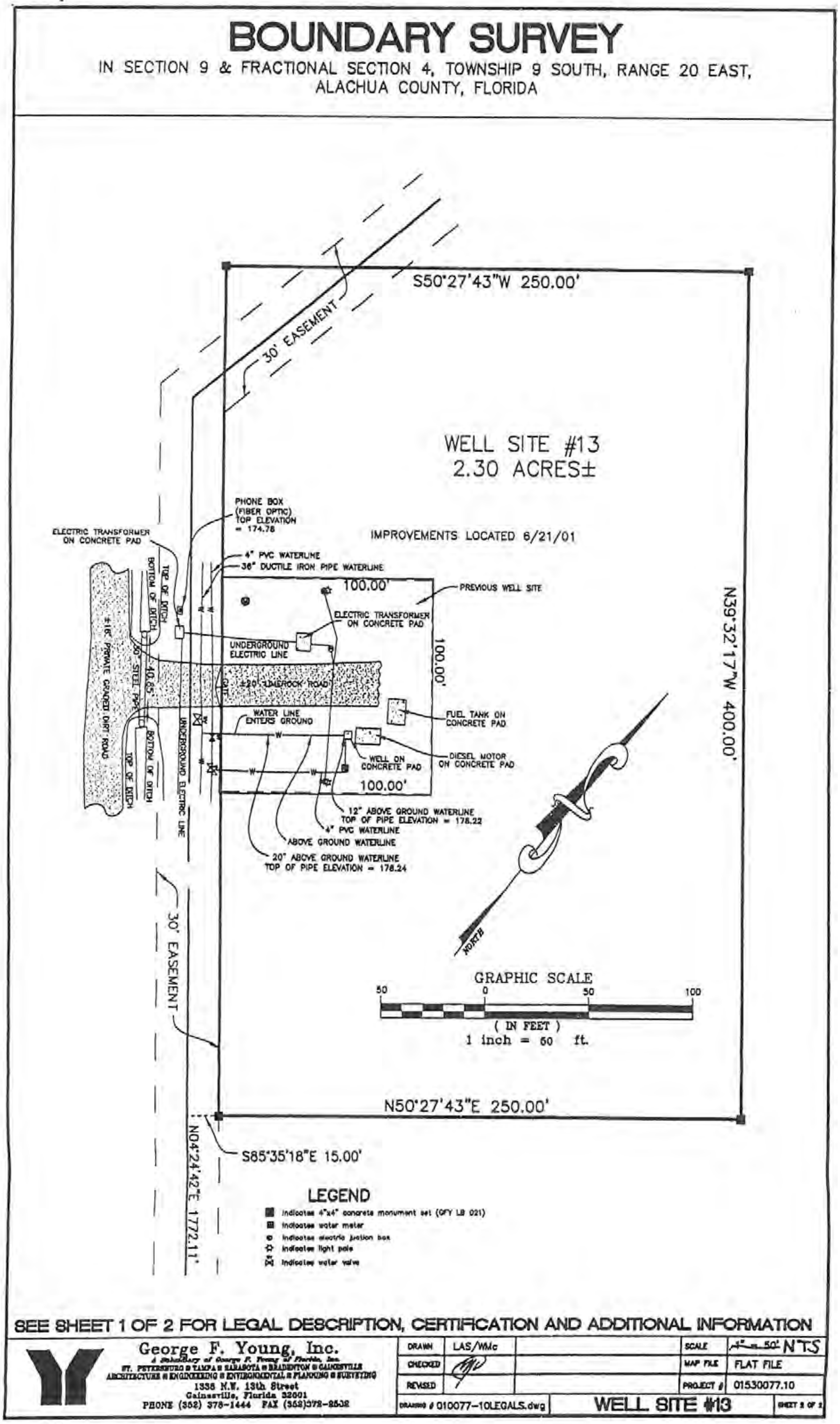


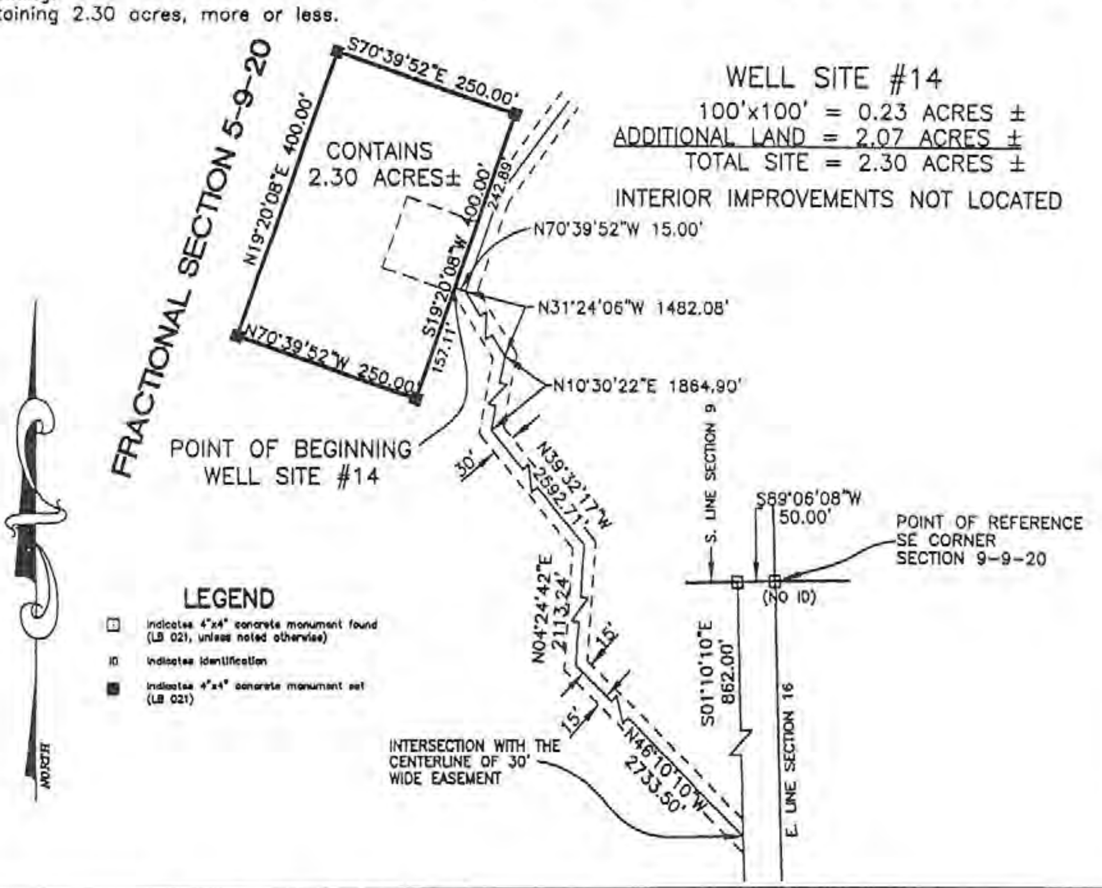
EXHIBIT "C"

BOUNDARY SURVEY

IN GOVERNMENT LOTS 1 & 2 OF FRACTIONAL SECTION 5 OUTSIDE THE ARREDONDO GRANT, TOWNSHIP 9 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA

LEGAL DESCRIPTION (by this surveyor)

A parcel of land situated in Government Lots 1 and 2 of Fractional Section 5 outside the Arredondo Grant, Township 9 South, Range 20 East, Alachua County, Florida being more particularly described as follows: Commence at a 4"x4" concrete monument (no identification) marking the Southeast corner of Section 9, Township 9 South, Range 20 East for a Point of Reference; thence South 89°06'08" West, along the South line of said Section 9, a distance of 50.00 feet to a 4"x4" concrete monument (LB 021); thence South 01°10'10" East, parallel with the East line of Section 16, Township 9 South, Range 20 East, a distance of 862.00 feet to the intersection with the centerline of a 30 foot wide easement; thence along said centerline the following five (5) courses; (1) North 46°10'10" West, a distance of 2733.50 feet; (2) North 04°24'42" East, a distance of 2113.24 feet; (3) North 39°32'17" West, a distance of 2592.71 feet; (4) North 10°30'22" East, a distance of 1864.90 feet; (5) North 31°24'06" West, a distance of 1482.08 feet; thence North 70°39'52" West, perpendicular to the East line of the herein described Well Site #14, a distance of 15.00 feet to the intersection with said East line of Well Site #14 and the Westerly line of said easement and the POINT OF BEGINNING; thence South 19°20'08" West, a distance of 157.11 feet to a 4"x4" concrete monument (LB 021) marking the Southeast corner of Well Site #14; thence North 70°39'52" West, perpendicular to said East line, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) at the Southwest corner of Well Site #14; thence North 19°20'08" East, parallel with the East line, a distance of 400.00 feet to a 4"x4" concrete monument (LB 021) at the Northwest corner of Well Site #14; thence South 70°39'52" East, parallel with the South line of Well Site #14, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) at the Northeast corner of Well Site #14; thence South 19°20'08" West, a distance of 242.89 feet to the Point of Beginning.
Containing 2.30 acres, more or less.



SURVEYOR'S NOTES

1. The bearings hereon are Grid North Bearings (Florida North Zone Lambert Projection) projected from the Alachua County Control Densification & Identification of Land Corners Project of 1988. Primary Control Stations A099, A101, A113, and A115 along with their corresponding Azimuth Marks A100, A102, A114, and A116 of the 1988 Project were recovered and utilized for control. The 1988 Project is North American Datum 1983.
2. Underground utilities, Structures and/or foundations, if any, are not located and are not shown.
3. Recorded easements and/or adjacent deeds not furnished to the surveyor are not shown.
4. Jurisdictional wetlands, if any, were not located and are not shown.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S CERTIFICATION

I hereby certify to GAINESVILLE REGIONAL UTILITIES and PLUM CREEK TIMBER LANDS, L.L.P. that the sketch hereon is an accurate representation of the lands described hereon, is in compliance with the Minimum Technical Standards in Chapter 61G17-6 of the Florida Administrative Code as set forth by the Florida Board of Professional Surveyors and Mappers pursuant to Section 472.027 Florida Statutes, as surveyed under my direct supervision and is true and correct to the best of my knowledge and belief.

George F. Young, Inc.
CERTIFICATE OF AUTHORIZATION # LB021

8/9/02
Michael L. Herbert Dated
Professional Surveyor and Mapper
Certificate of Registration No. 4995

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

George F. Young, Inc.
A Subsidiary of George F. Young of Florida, Inc.
ST. PETERSBURG ■ TAMPA ■ SARASOTA ■ BRADENTON ■ GAINESVILLE
ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ PLANNING ■ SURVEYING
1336 N.W. 13th Street
Gainesville, Florida 32601
PHONE (352) 378-1444 FAX (352)378-2602

DRAWN	LAS/WMc		SCALE	~~1" = 200'~~ NTS
CHECKED			MAP FILE	FLAT FILE
REVISED			PROJECT #	01530077.10
DRAWING #	010077-10LEGALS.dwg	WELL SITE #14		SHEET 1 OF 1

EXHIBIT "D"

BOUNDARY SURVEY

IN SECTION 9, TOWNSHIP 9 SOUTH, RANGE 20 EAST,
ALACHUA COUNTY, FLORIDA

LEGAL DESCRIPTION (by this surveyor)

A parcel of land situated in Section 9, Township 9 South, Range 20 East, Alachua County, Florida being more particularly described as follows: Commence at a 4"x4" concrete monument (no identification) marking the Southeast corner of Section 9, Township 9 South, Range 20 East for a Point of Reference; thence South 89°06'08" West, along the South line of said Section 9, a distance of 50.00 feet to a 4"x4" concrete monument (LB 021); thence South 01°10'10" East, parallel with the East line of Section 16, Township 9 South, Range 20 East, a distance of 862.00 feet to the intersection with the centerline of a 30 foot wide easement; thence North 46°10'10" West, along said easement centerline, a distance of 1758.47 feet to the intersection with the Southwesterly projection of the Easterly line of the herein described Well Site #15, thence North 43°49'50" East, perpendicular to said centerline and along said projection, a distance of 15.00 feet to a 4"x4" concrete monument (LB 021) marking the Southeasterly corner of Well Site #15, said monument being also on the Northerly line of said 30 foot wide easement and the Point of Beginning; thence continue North 43°49'50" East, a distance of 250.00 feet to a 4"x4" concrete monument (LB021) at the Northeasterly corner of Well Site #15; thence North 46°10'10" West, parallel with the Northerly line of said easement, a distance of 400.00 feet to a 4"x4" concrete monument (LB 021) at the Northwesterly corner of Well Site #15; thence South 43°49'50" West, perpendicular to the Northerly line of said easement, a distance of 250.00 feet to a 4"x4" concrete monument (LB 021) at the intersection with the Northerly line of said easement and marking the Southwesterly corner of Well Site #15; thence South 46°10'10" East, along said Northerly easement line, a distance of 400.00 feet to the Point of Beginning.
Containing 2.30 acres, more or less.

LEGEND

- ⊡ Indicates 4"x4" concrete monument found (LB 021, unless noted otherwise)
- ID Indicates Identification
- ■ Indicates 4"x4" concrete monument set (LB 021)

SURVEYOR'S NOTES

1. The bearings hereon are Grid North Bearings (Florida North Zone Lambert Projection) projected from the Alachua County Control Densification & Identification of Land Corners Project of 1988. Primary Control Stations A099, A101, A113, and A115 along with their corresponding Azimuth Marks A100, A102, A114, and A116 of the 1988 Project were recovered and utilized for control. The 1988 Project is North American Datum 1983.
2. Underground utilities, Structures and/or foundations, if any, are not located and are not shown.
3. Recorded easements and/or adjacent deeds not furnished to the surveyor are not shown.
4. Jurisdictional wetlands, if any, were not located and are not shown.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S CERTIFICATION

I hereby certify to GAINESVILLE REGIONAL UTILITIES and PLUM CREEK TIMBER LANDS, L.L.P. that the sketch hereon is an accurate representation of the lands described hereon, is in compliance with the Minimum Technical Standards in Chapter 61G17-6 of the Florida Administrative Code as set forth by the Florida Board of Professional Surveyors and Mappers pursuant to Section 472.027 Florida Statutes, as surveyed under my direct supervision and is true and correct to the best of my knowledge and belief.

George F. Young, Inc.
CERTIFICATE OF AUTHORIZATION # LB021

9/19/02

Michael L. Norbert — Dated
Professional Surveyor and Mapper
Certificate of Registration No. 4995

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

George F. Young, Inc.
A Subsidiary of George F. Young of Florida, Inc.
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1535 N.W. 13th Street
Gainesville, Florida 32601
PHONE (352) 376-1444 FAX (352)372-2602

DRAWN	LAS/WMc	SCALE	~~1" = 200'~~ NTS
CHECKED	MN	MAP FILE	FLAT FILE
REVISED		PROJECT #	01530077.10
DRAWING #	010077-10LEGALS.dwg	WELL SITE #15	SHEET 1 OF 1

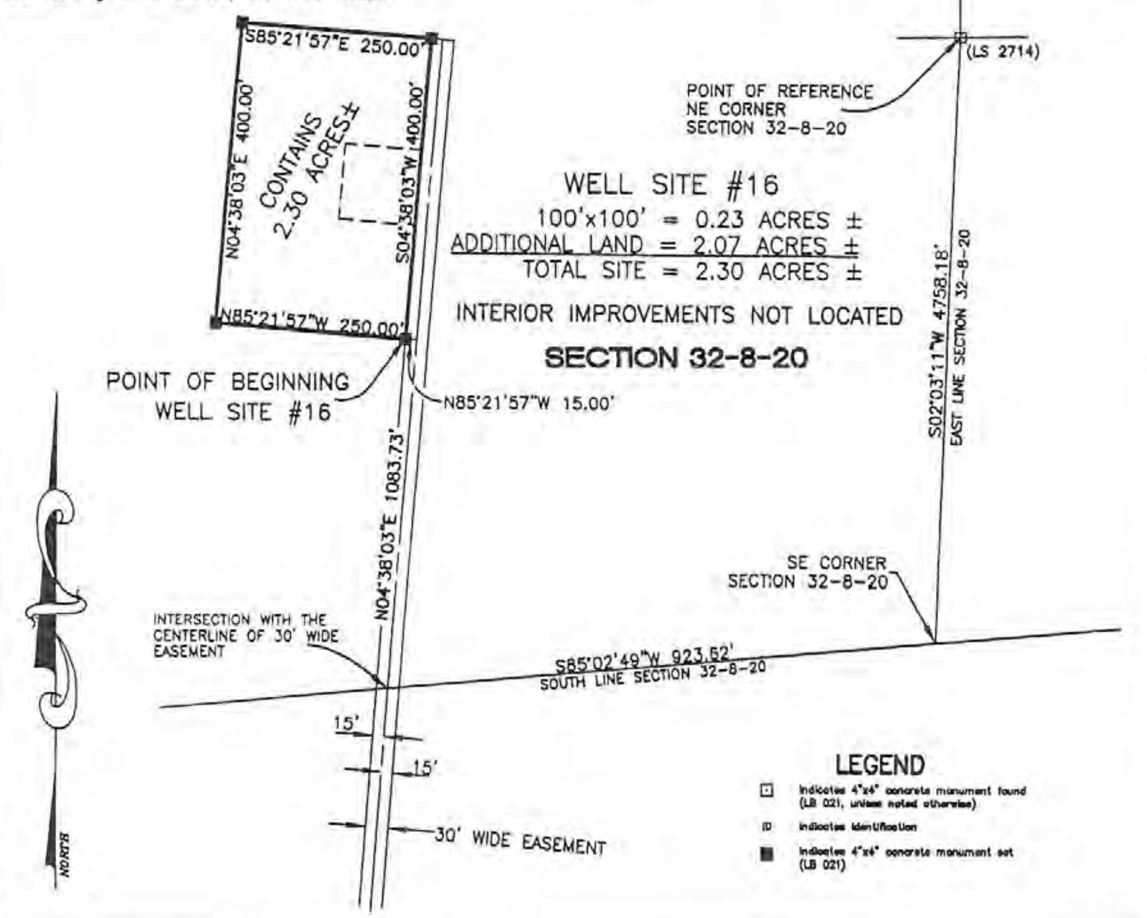
EXHIBIT "E"

BOUNDARY SURVEY

IN SECTION 32, TOWNSHIP 8 SOUTH, RANGE 20 EAST,
ALACHUA COUNTY, FLORIDA

LEGAL DESCRIPTION (by this surveyor)

A parcel of land situated in Section 32, Township 8 South, Range 20 East, Alachua County, Florida, being more particularly described as follows: Commence at a 4"x4" concrete monument (LS 2714) marking the Northeast corner of Section 32, Township 8 South, Range 20 East for a Point of Reference; thence South 02°03'11" West, along the East line of said Section 32, a distance of 4758.18 feet to the Southeast corner of Section 32; thence South 85°02'49" West, along the South line of Section 32, a distance of 923.62 feet to the intersection with the centerline of a 30 foot wide easement; thence North 04°38'03" East, along said easement centerline, a distance of 1083.73 feet to the intersection with the Easterly projection of the South line of the herein described Well Site #16; thence North 85°21'57" West, perpendicular to the easement centerline and along said Easterly projection of the South line, a distance of 15.00 feet to a 4"x4" concrete monument marking the Southeast corner of Well Site #16 and the Point of Beginning; thence continue North 85°21'57" West, a distance of 250.00 feet to a 4"x4" concrete monument marking the Southwest corner of Well Site #16; thence North 04°38'03" East, parallel with the West line of said 30 foot wide easement, a distance of 400.00 feet to a 4"x4" concrete monument marking the Northwest corner of Well Site #16; thence South 85°21'57" East, perpendicular to said West line of easement, a distance of 250.00 feet to a 4"x4" concrete monument marking the Northeast corner of Well Site #16 and the intersection with the West line of said easement; thence South 04°38'03" West, along the said West line, a distance of 400.00 feet to the Point of Beginning.
Containing 2.30 acres, more or less.



SURVEYOR'S NOTES

1. The bearings hereon are Grid North Bearings (Florida North Zone Lambert Projection) projected from the Alachua County Control Densification & Identification of Land Corners Project of 1988. Primary Control Stations A099, A101, A113, and A115 along with their corresponding Azimuth Marks A100, A102, A114, and A116 of the 1988 Project were recovered and utilized for control. The 1988 Project is North American Datum 1983.
2. Underground utilities, Structures and/or foundations, if any, are not located and are not shown.
3. Recorded easements and/or adjacent deeds not furnished to the surveyor are not shown.
4. Jurisdictional wetlands, if any, were not located and are not shown.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

SURVEYOR'S CERTIFICATION

I hereby certify to GAINESVILLE REGIONAL UTILITIES and PLUM CREEK TIMBER LANDS, L.L.P. that the sketch hereon is an accurate representation of the lands described hereon, is in compliance with the Minimum Technical Standards in Chapter 61G17-6 of the Florida Administrative Code as set forth by the Florida Board of Professional Surveyors and Mappers pursuant to Section 472.027 Florida Statutes, as surveyed under my direct supervision and is true and correct to the best of my knowledge and belief.

George F. Young, Inc.
CERTIFICATE OF AUTHORIZATION # LB021

8/19/02
Michael L. Harbert Dated
Professional Surveyor and Mapper
Certificate of Registration No. 4895

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

George F. Young, Inc.
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ST. PETERSBURG ▪ TAMPA ▪ SARASOTA ▪ BRADENTON ▪ GAINESVILLE
ARCHITECTURE ▪ ENGINEERING ▪ ENVIRONMENTAL ▪ PLANNING ▪ SURVEYING
1336 N.W. 13th Street
Gainesville, Florida 32601
PHONE (352) 378-1444 FAX (352)372-2602

DRAWN	LAS/WMc		SCALE	~~1" = 200'~~ NTS
CHECKED			MAP FILE	FLAT FILE
REVISED			PROJECT #	01530077.10
DRAWING #	010077-10LEGALS.dwg	WELL SITE #16		SHEET 1 OF 1

RECORDED IN OFFICIAL RECORDS
INSTRUMENT # 1929242 5 PGS
2003 APR 23 02:42 PM BK 2651 PG 685
J. K. "BUDDY" IRBY
CLERK OF CIRCUIT COURT
ALACHUA COUNTY, FLORIDA
CLERK2 Receipt#136149
Doc Stamp-Deed: 0.70
By: [signature] D.C.

This Instrument Prepared By:
Ann M. Mullins, Land Rights Coordinator
Real Estate Division
Gainesville Regional Utilities
P.O. Box 147117, Sta. A130
Gainesville, FL 32614-7117

Tax Parcel Nos. 7876, 7816, 7811, 7812, 7786
S/T/R: 16/9/20, 9/9/20, 5/9/20, 4/9/20, 32/8/20

GRU File No. U-E-41-03

EASEMENT

THIS EASEMENT, made this 15[TH] day of April, 2003, by PLUM CREEK TIMBERLANDS, L.P., a Delaware limited partnership, whose post office address is P.O. Box 157, Gulf Hammock, FL 32639 and CITY OF GAINESVILLE, Florida, a municipal corporation, whose post office address is P.O. Box 490, Gainesville, Florida 32602, GRANTEE,

WITNESSETH:

That the said GRANTOR, for and in consideration of the sum of One ($1.00) Dollar, and other good and valuable consideration, to it in hand paid by GRANTEE, receipt of which is hereby acknowledged, has given and granted, and by these presents does give and grant unto the GRANTEE, its successors and assigns, a perpetual easement for the purpose of constructing, operating and maintaining municipal electric and water utility facilities and telecommunications utility facilities for GRANTEE'S internal use only and related appurtenances over, under, upon and through the following described property in Alachua County, Florida, to wit:

AS DESCRIBED IN EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

SPECIAL CONDITION:

This easement is subject to the terms and conditions of a Conservation Easement executed on December 15, 1999, by Nekoosa Packaging Corporation, Grantor, to the City of Gainesville, Suwannee River Water Management District, and St. Johns River Water Management District, collectively as Grantee, and recorded in Official Record Book 2267, Page 2479 of the public records of Alachua County, Florida, and as amended thereafter.

The rights herein granted to GRANTEE by GRANTOR specifically include: (a) the right to construct, locate, operate, inspect, patrol, alter, improve, repair, rebuild, relocate, and remove said facilities; (b) the right of ingress and egress to and from the Easement Area at all times; (c) the right to upgrade the quantity and type of facilities; (d) the right to clear the Easement area and keep it cleared of trees, limbs, undergrowth and other obstructions which, in the opinion of GRANTEE, endanger or interfere with the safe and efficient installation, operation or maintenance of said facilities; and (e) the right to trim and cut and keep trimmed and cut any trees and undergrowth on GRANTOR's land adjacent to but outside the Easement Area which, in the opinion of GRANTEE, endanger or interfere with the safe and efficient installation, operation or maintenance of said facilities.

GRANTEE shall have quiet and peaceful possession, use and enjoyment of this easement. GRANTOR shall not utilize or permit to be utilized the Easement area in any way which will interfere with GRANTEE's facilities and the safe operation and maintenance thereof.

GRANTOR hereby warrants and covenants that GRANTOR is the owner of the fee simple title to the premises in which the above described Easement Area is located and has full right and lawful authority to grant and convey this easement.

{AL002706.DOC}

GRANTOR expressly reserves the right of use of the Easement Area for purposes which are not inconsistent with the easement privileges granted herein, including, but not limited to, the right to cross the right-of-way at will in the management of its properties.

TO HAVE AND TO HOLD the same unto the said GRANTEE, its successors and assigns, forever.

IN WITNESS WHEREOF, the said GRANTOR has caused these presents to be executed under seal on the day and year aforesaid.

Signed, sealed and delivered
in the presence of:

Elizabeth U. Fee
Witness Signature
Print Name: Elizabeth U. Fee

Annette W. Jones
Witness Signature
Print Name: Annette W. Jones

PLUM CREEK TIMBERLANDS, L.P.,
a Delaware limited partnership

By: Plum Creek Timber I, L.L.C.,
its general partner

By: James A. Kilberg
James A. Kilberg
Vice President - Real Estate

STATE OF GEORGIA

COUNTY OF FULTON

The foregoing instrument was acknowledged before me this 15th day of April, 2003, by James A. Kilberg, Vice President - Real Estate, of Plum Creek Timber I, L.L.C., a Florida limited liability company and general partner of Plum Creek Timberlands, L.P., on behalf of the limited partnership. He is personally known to me or has produced ______________ as identification.

Loris A. Jakielski
Signature of Notary
Print Name: Loris A. Jakielski
Notary Public, State of Georgia
My Commission Expires: 2/8/05

Approved as to Form and Legality:

By: Raymond O. Manasco, Jr.
Raymond O. Manasco, Jr.
Utilities Attorney
City of Gainesville, Florida

{AL002706.DOC}

AFFIDAVIT OF LIMITED PARTNERSHIP

STATE OF GEORGIA

COUNTY OF FULTON

BEFORE ME, the undersigned authority, personally appeared James A. Kilberg, whom deposes and says:

1. Affiant's name is James A. Kilberg, he is the Vice President - Real Estate of Plum Creek Timber I, L.L.C., a limited liability company authorized to do business in the State of Florida, as the General Partner of Plum Creek Timberlands, L.P., Limited Partnership authorized to do business in the State of Florida, and he has personal knowledge of the facts stated herein.

2. The partnership is currently in existence under a valid partnership agreement.

3. The names of all the existing General Partners are as follows:

   Plum Creek Timber I, L.L.C.

4. Affiant is authorized under the terms of the partnership agreement to convey or encumber property rights on behalf of the partnership.

5. That neither the partnership nor any of the partners have been debtors in any bankruptcy proceeding during the existence of the partnership.

6. That any corporate general partners have not been dissolved.

7. Affiant further states that he is familiar with the nature of an oath; and with the penalties as provided by the laws of the State aforesaid for falsely swearing to statements made in an instrument of this nature.

Signed, sealed and delivered
in our presence as witnesses:
(Print or Type Name Beneath Each Signature)

Name: Elizabeth U. Fee

Name: Annette W. Jones

James A. Kilberg

The foregoing instrument was acknowledged before me this 15th day of April, 2003, by the above mentioned, who is personally known to me or who have produced ____________ as identification.

Notary Public, State of Georgia
Print Name: Loris A. Jakielski
My commission expires: 2/8/05

(SEAL)

EXHIBIT "A"

1338 N.W. 13th Street
Gainesville, Florida 32601
(352) 378-1444 FAX (352) 372-2302

George F. Young, Inc.
Turning Vision Into Reality

Since 1919

ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ LANDSCAPE ARCHITECTURE ■ PLANNING ■ SURVEYING ■ UTILITIES

LEGAL DESCRIPTION
30' WIDE EASEMENT
8/19/2002
WORK ORDER NUMBER 01530077.10

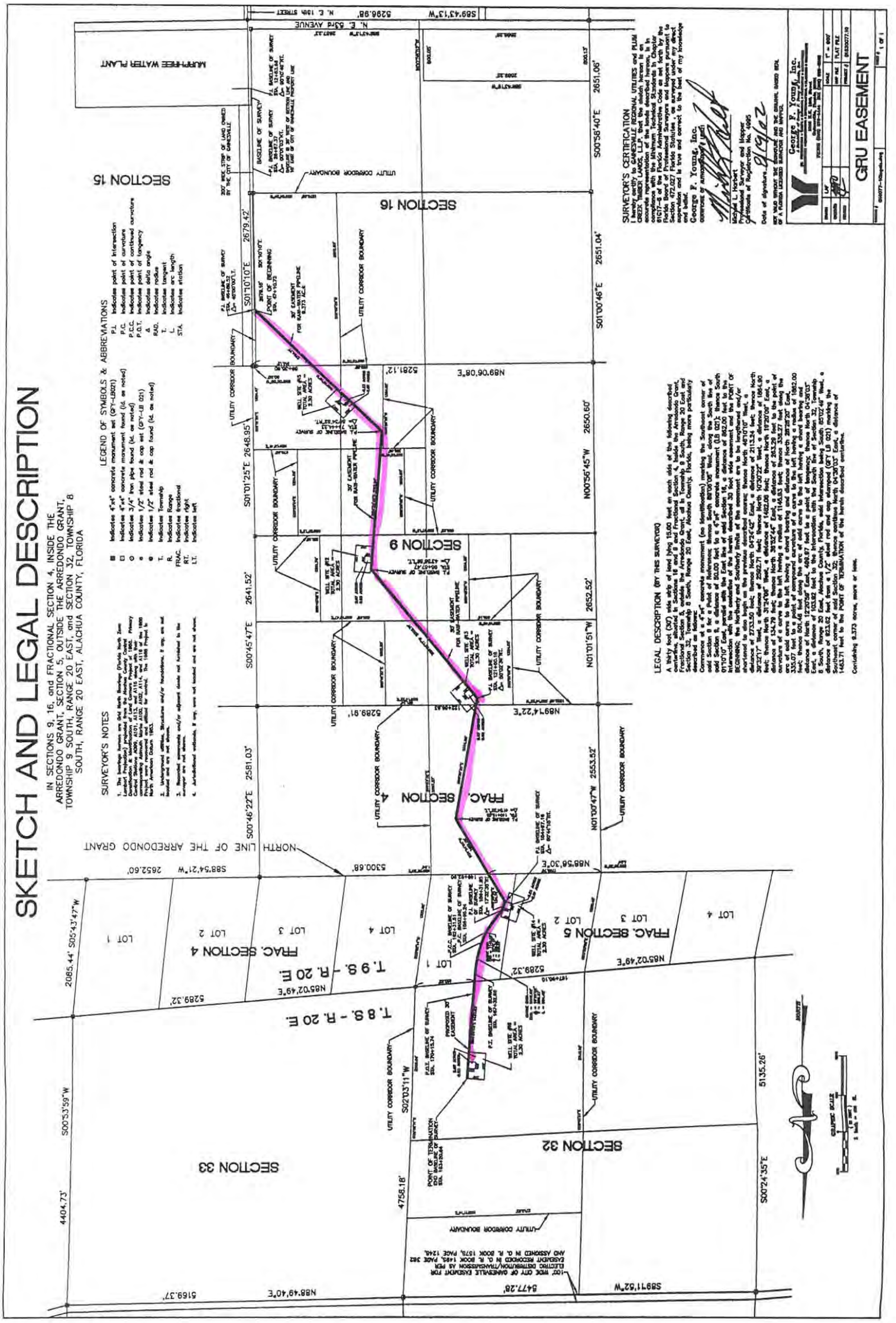
A thirty foot (30') wide strip of land lying 15.00 feet on each side of the following described centerline, situated in Sections 16 and 9 and Fractional Section 4, inside the Arredondo Grant, Fractional Section 5, outside the Arredondo Grant, all in Township 9 South, Range 20 East and Section 32, Township 8 South, Range 20 East, Alachua County, Florida, being more particularly described as follows:

Commence at a 4"x4" concrete monument (no identification) marking the Southeast corner of said Section 9 for a Point of Reference; thence South 89°06'08" West, along the South line of said Section 9, a distance of 50.00 feet to a 4"x4" concrete monument (LB 021); thence South 01°10'10" East, parallel with the East line of said Section 16, a distance of 862.00 feet to the intersection with the centerline of the herein described 30 foot wide easement and the POINT OF BEGINNING; the Northerly and Southerly limits of the easement are to be lengthened and/or shortened to also begin on the previous described course; thence North 46°10'10" West, a distance of 2733.50 feet; thence North 04°24'42" East, a distance of 2113.24 feet; thence North 39°32'17" West, a distance of 2592.71 feet; thence North 10°30'22" West, a distance of 1864.90 feet; thence North 31°24'06" West, a distance of 1482.08 feet; thence North 19°20'09" East, a distance of 134.79 feet; thence North 36°52'44" East, a distance of 263.29 feet to the point of curvature of a curve to the left having a radius of 1145.93 feet; thence 336.27 feet along the arc of said curve to the left having a chord bearing and distance of North 28°28'20" East, 335.07 feet to a point of compound curvature of a curve to the left having a radius of 1862.00 feet; thence 501.48 feet along the arc of said curve to the left having a chord bearing and distance of North 12°20'59" East, 499.97 feet to a point of tangency; thence North 04°38'03" East, a distance of 103.92 feet to the intersection with the South line of Section 32, Township 8 South, Range 20 East, Alachua County, Florida, said intersection being South 85°02'49" West, a distance of 923.62 feet from a 1/2" steel rod and cap stamped (GFY LB 021) marking the Southeast corner of said Section 32; thence continue North 04°38'03" East, a distance of 1483.71 feet to the POINT OF TERMINATION of the herein described centerline.

Containing 9.373 acres, more or less.

GRU File No. U-E-41-03
Page 5 of 5

EXHIBIT "A" CONTINUED



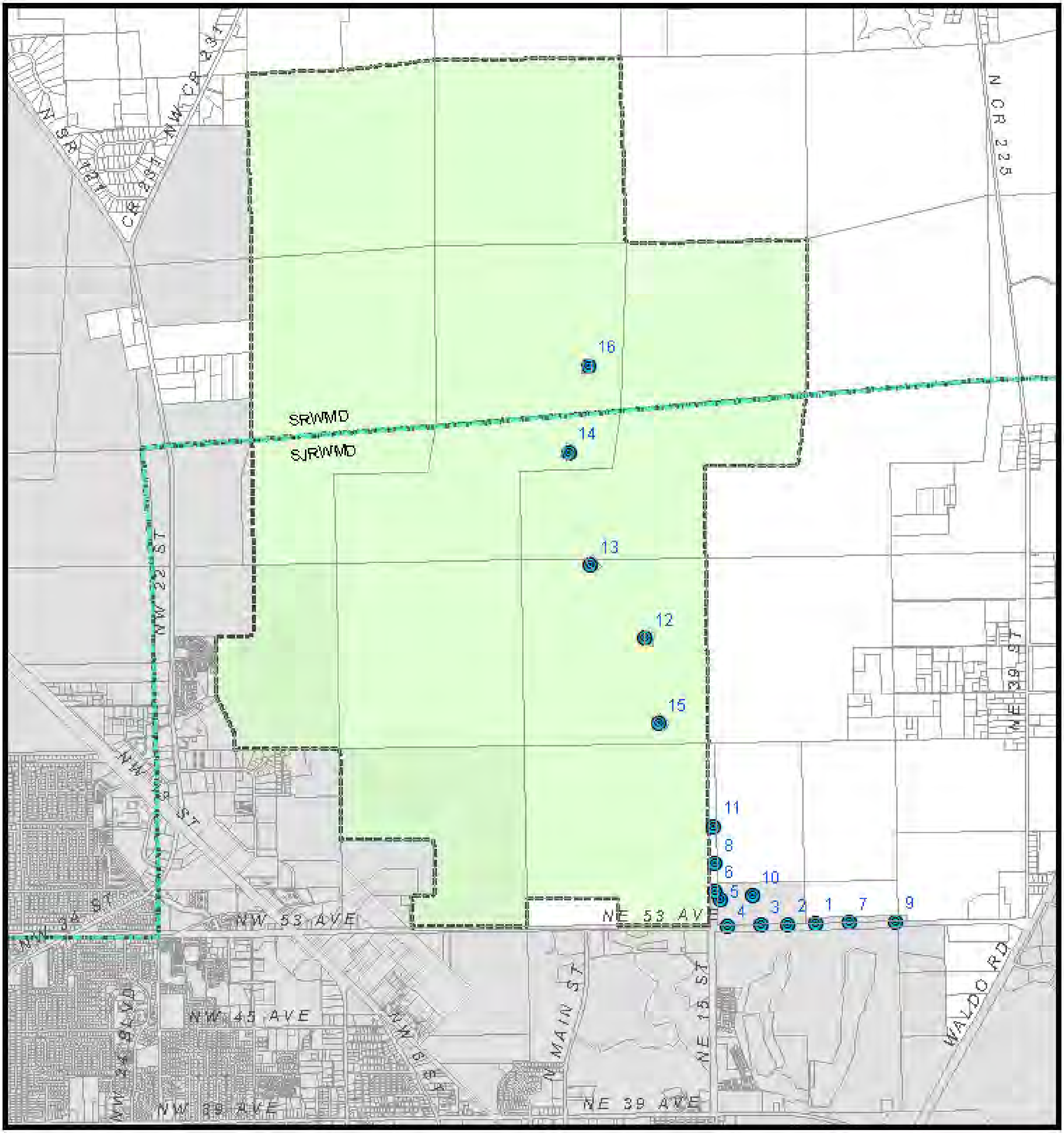


Figure 2 - Murphree Wellfield

Legend

GRU Production Wells

WMD Boundary

Conservation Easement

City Limits

N W E S

0 2,000 4,000

Feet

GRU100

100 YEARS of SERVICE | 1912-2012

Gainesville Regional Utilities has prepared the information depicted on this map for its own use. It is not intended to be, nor should it be relied upon by others for any other purpose. Gainesville Regional Utilities assumes no responsibility for errors or omissions in the information on this map. Further information may be obtained by contacting the Strategic Planning Department by calling (352) 393-1286.

D:\ARCDATA\MURPHREE\CUP 2013\FIGURE 2 WELLS 8X11.MXD PLOTTED: 4/4/2013 BY C.A.O.

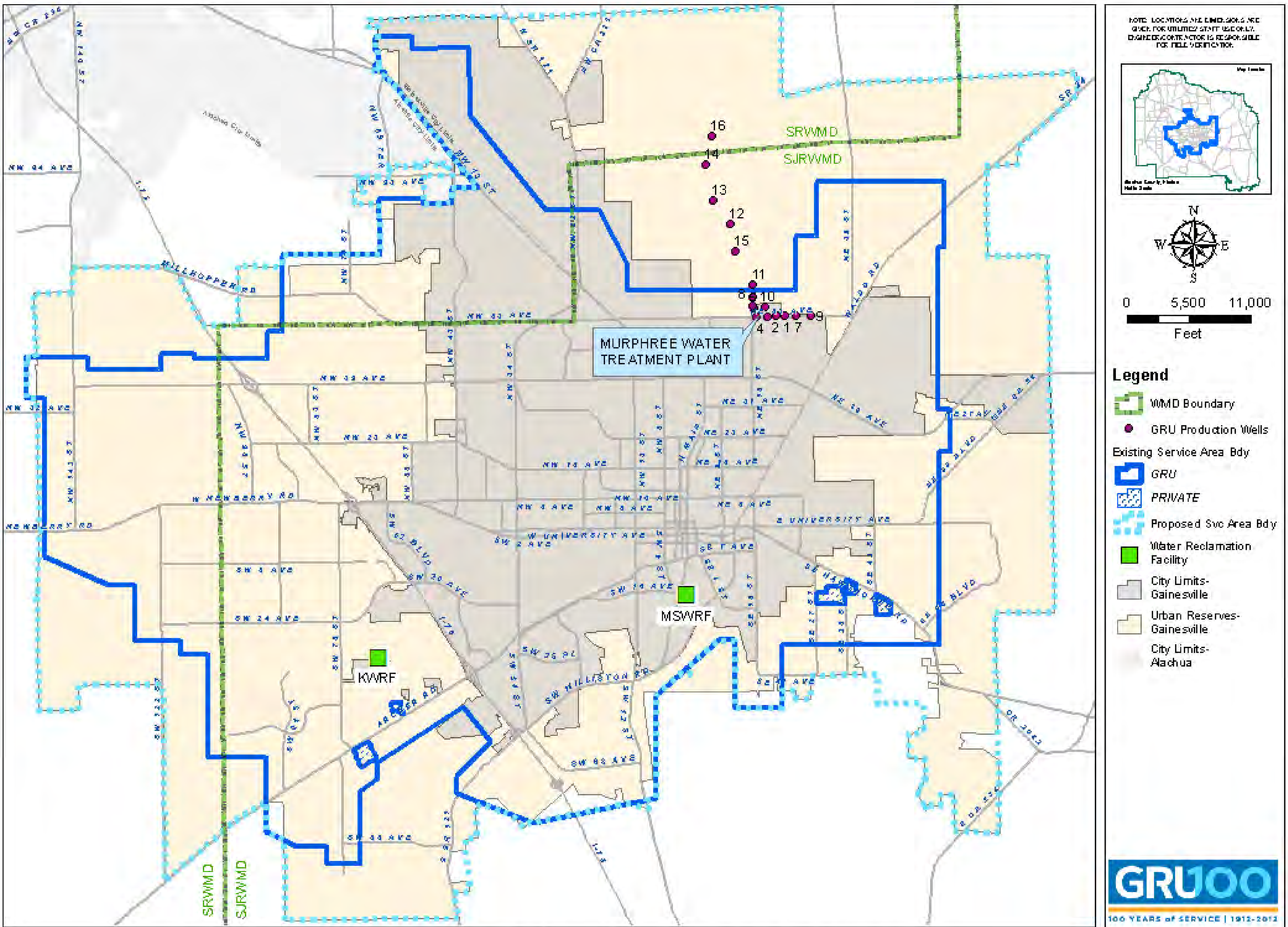


Figure 3 - G.R.U. Potable Water Service Area

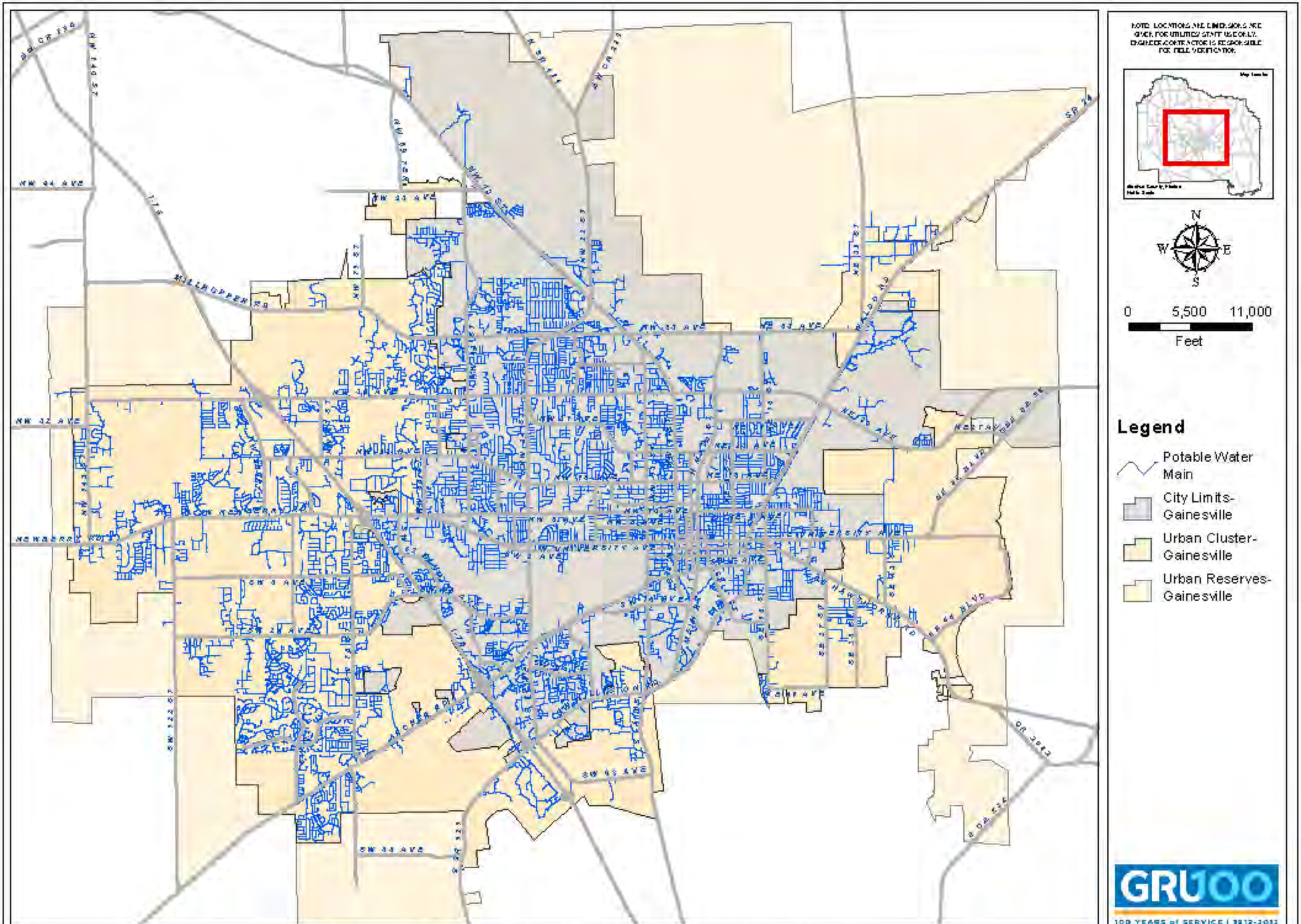


Figure 4 - Existing Potable Water Distribution System

Copy of Local Government Franchise Agreement

Please submit any of the following that apply:

a) *Copy of Public Service Commission (PSC) certification describing service area;*
b) *Copy of local government franchise agreement; or,*
c) *Documentation that the utility is not regulated by PSC or local government*

Gainesville Regional Utilities is owned by the City of Gainesville. Because GRU is a municipal utility, it is not regulated by the Public Service Commission.

Table 3. Historic Water Use (Form 40C-2-1082-1 Table 1)

Past Years notes ->	Population (1)	Units (2)	Household Per Capita Use (gpcd) (3)	Household Avg. Day (mgd) (4)	Commercial/ Industrial Avg Day w/o UF (mgd) (5)	UF Avg. Day (mgd) (6)	Commercial/ Industrial Avg. day (mgd) (7)	Power Plant Avg. Day (mgd) (8)	Water Utility (mgd) (9)	Unaccounted for Water (mgd) (10)	Total Avg. Day + Reclaimed Potable Offset (mgd) (11)	Reclaimed Potable Offset Avg. day (mgd) (12)	Total Avg. day (mgd) (13)
2007	187,911	80,787	88	16.55	6.76	2.51	9.26	0.02	0.90	1.92	28.65	0.90	27.75
2008	192,203	82,703	76	14.55	6.74	2.82	9.56	0.00	0.86	1.83	26.80	0.90	25.90
2009	191,189	82,338	71	13.64	6.33	2.71	9.04	0.00	0.72	2.53	25.93	0.90	25.03
2010	189,495	81,679	68	12.97	5.73	2.39	8.12	0.05	0.70	2.43	24.27	0.90	23.37
2011	189,715	81,842	74	14.13	5.96	2.28	8.24	0.03	1.37	1.99	25.76	0.90	24.86

(1) The population estimates are for the population served by GRU water. They are estimated by multiplying the number of residential units (item 2) from GRU's billing data by the estimated household size from the Bureau of Economic and Business Research (BEBR).

(2) The estimated number of dwelling units is for those served by GRU water. They are estimated by multiplying the number of water connections by a "master meter factor," which is the number of dwelling units served per meter. GRU tracks the number of units associated with multi-family master meters as they connect, so they are able to accurately convert water connections to residential dwelling units.

(3) The household per capita usage (gallons used per day per capita) is calculated by dividing the household average daily use (4) by the population served (1).

(4) The household averaged daily use is the total of GRU residential water billings, plus estimated flows to stopped meters and the reclaimed potable offset for residential irrigation.

(5) The commercial/industrial average daily use (without UF) is the total of GRU water billings to commercial/industrial accounts (including Public Use Irrigation), plus estimated flows to stopped meters and the reclaimed potable offset for commercial/industrial use.

(6) The University of Florida average daily use is determined from billing information gathered through large master meters serving the campus.

(7) The commercial/industrial average daily use is the total of GRU water billings to commercial/industrial accounts (including Public Use Irrigation), plus estimated flows to stopped meters and the reclaimed potable offset for commercial/industrial use, plus the University of Florida average daily use (6).

(8) The power plant average daily use is determined from power plant billings from GRU water meters, plus the reclaimed water potable offset for power plant use.

(9) The water utility average daily use is an estimated of water used to operate the water utility. The Water Utility Category consists of well lubrication, leak detection program, lime sludge, unmetered uses (fire protection, public works, parks, street dept., flow testing, inspections operation, maintenance, new pipe projects). The higher value in 2011 is due to extensive maintenance on the MWTP reactor clarifier #1 that used additional in-plant water. Maintenance of all facilities at MWTP is an ongoing effort that is increasing due to an aging water plant that was placed online in 1975. It is anticipated that in-plant water use will continue to increase due to this increased maintenance and lube water at the production wells.

(10) The average daily unaccounted for water use is equal to the total average daily use plus reclaimed water potable offset (11) minus all accounted for uses: (4), (7), (8), and (9).

(11) The total average daily use plus reclaimed water potable offset is the total raw water pumped with GRU production wells based on plant flow records, plus historical potable offsets to household, commercial/industrial, and power plant use.

(12) The reclaimed water potable offset average day includes the potable offsets to household, commercial/industrial, and power plant use. There is much more reclaimed water used by GRU, but this is the portion that is the offset to potable use.

(13) The Total average daily water use is the total raw water pumped with GRU production wells based on plant flow records.

Table 4a. Projected Water Use (Part 1 of 2)
(Form 40C-2-1082-1 Table 2)

Future Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day w/o UF (mgd)	UF Avg. Day (mgd)	Innovation District Avg. Day (mgd)	Total Commercial/ Industrial Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility Avg. Day (mgd)
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2013	193,833	83,619	76	16.87	6.89	2.84	0.05	9.78	0.1	1.39
2014	195,892	84,507	76	17.02	6.96	2.84	0.09	9.89	0.11	1.4
2015	197,951	85,395	76	17.18	7.03	2.84	0.14	10	0.12	1.41
2016	200,061	86,305	76	17.34	7.1	2.84	0.18	10.12	0.12	1.42
2017	202,170	87,215	76	17.5	7.17	2.84	0.23	10.23	0.13	1.43
2018	204,280	88,125	76	17.66	7.24	2.84	0.27	10.35	0.13	1.44
2019	206,389	89,035	76	17.82	7.31	2.84	0.32	10.46	0.15	1.45
2020	208,499	89,945	76	17.97	7.38	2.84	0.36	10.58	0.16	1.46
2021	210,624	90,862	76	18.14	7.45	2.84	0.41	10.7	0.17	1.47
2022	212,748	91,778	76	18.3	7.52	2.84	0.45	10.81	0.19	1.48
2023	214,873	92,695	76	18.46	7.59	2.84	0.45	10.88	0.2	1.49
2024	216,997	93,612	76	18.62	7.66	2.84	0.45	10.95	0.21	1.5
2025	219,122	94,528	76	18.78	7.73	2.84	0.45	11.02	0.23	1.51
2026	220,932	95,309	76	18.91	7.79	2.84	0.45	11.08	0.24	1.52
2027	222,741	96,089	76	19.05	7.85	2.84	0.45	11.14	0.25	1.53
2028	224,551	96,870	76	19.19	7.91	2.86	0.45	11.22	0.27	1.54
2029	226,361	97,651	76	19.33	7.97	2.89	0.45	11.31	0.28	1.55
2030	228,170	98,431	76	19.46	8.03	2.91	0.45	11.39	0.29	1.56
2031	229,838	99,151	76	19.59	8.09	2.93	0.45	11.47	0.31	1.57
2032	231,507	99,871	76	19.71	8.14	2.95	0.45	11.54	0.32	1.57
2033	233,175	100,590	76	19.84	8.2	2.97	0.45	11.62	0.33	1.58

(1) This is the forecast of population served by GRU water. This was projected by adding growth from SJRWMD projections to historic served customers, adding 0.68% seasonal population (per 2010 Census), and 1% per year conversion of current self-supplied population (per SJRWMD's estimate).

(2) The forecasted number of dwelling units are those projected to be served by GRU water. It was calculated by dividing the projected population by the 2011 household size (in Table 3. Historic Water Use).

(3) The household per capita usage (gallons per day per capita) was calculated by taking the five-year average of the household per capitas in Table 3. Historic Water Use**.**

(4) The household average daily use was calculated by multiplying population growth by the household per capita (3), and adding that the historic peak water use (from Table 3. Historic Water Use).

(5) The historical component of the commercial/industrial average daily use (including public use irrigation, but excluding UF) was forecasted by increasing the historic peak water use Table 3. Historic Water Use in proportion to population growth (1).

(6) The University of Florida average daily use was held to the currently permitted allocation of 2.84 mgd through the year 2027. Thereafter it was increased in direct proportion to the increase in population. This approach was vetted by Chuck Hogan, with UF Facilities Planning (352-294-0608).

(7) The Innovation District average daily use was projected at 75% of build out (0.6 mgd) in the year 2022 and flat-lined thereafter. The 0.6 mgd buildout forecast is based on iDistrict consultant studies:

   a. Innovation Square Development Framework (Perkins & Will, 2011),

   b. Innovation District Infrastructure Study (Brown & Cullen, 2011), and

   c. GRU's evaluation of likely future densities of commercial zoned properties immediately surrounding the iDistrict.

   This is an unprecedented commercial development that is not reflected in the historic water use. GRU's reduction of the forecasted average daily use (from 0.6 mgd to 0.45 mgd) takes into account flows from existing development in the area, implementation of conservation measures, and the potential for building densities to be lower than projected.

(8) The total commercial/industrial average daily use was calculated by adding Columns (5), (6) and (7).

(9) The power plant average daily potable use was forecasted to increase in proportion to population growth from its 5-year historical average (the 2007 value in *Table 1-B*), plus GRU's forecast for the reclaimed potable offset used in the South Energy Center.

(10) The water utility average daily use was forecasted by increasing the potable historic peak water use (from *Table 1-B*) in proportion to population growth (1). The 2011 peak value represents the "new normal", as in-plant water use will continue to increase due to increased maintenance and lube water at the production wells.

Table 4b. Projected Water Use (Part 2 of 2)

Future Years	Unaccounted for Water (mgd)	Total Avg. Day + Historical Reclaimed Potable Offset (mgd)	Historical Reclaimed Potable Offset Avg. Day (mgd)	New Reclaimed Potable Offset Avg. Day (mgd)	Total Reclaimed Potable Offset Avg. Day (mgd)	New Conservation Avg. Day (mgd)	Total Avg. Day (mgd)	Difference between Forecasted Demand and Requested Groundwater Allocation Avg. Day (mgd)	Requested Groundwater Allocation Avg. Day (mgd)
Notes ->	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
2013	2.64	30.78	0.91	0.16	1.08	0.03	29.67	-0.33	30
2014	2.66	31.08	0.91	0.23	1.14	0.05	29.89	-0.11	30
2015	2.68	31.39	0.91	0.26	1.18	0.08	30.13	0.13	30
2016	2.70	31.70	0.91	0.30	1.22	0.11	30.38	0.38	30
2017	2.72	32.02	0.91	0.35	1.26	0.14	30.62	0.62	30
2018	2.75	32.33	0.91	0.39	1.30	0.17	30.86	0.86	30
2019	2.77	32.65	0.91	0.44	1.36	0.19	31.10	1.10	30
2020	2.79	32.97	0.91	0.49	1.41	0.22	31.34	1.34	30
2021	2.81	33.29	0.91	0.54	1.45	0.25	31.58	1.58	30
2022	2.83	33.61	0.91	0.59	1.50	0.28	31.83	1.83	30
2023	2.85	33.88	0.91	0.64	1.55	0.31	32.03	2.03	30
2024	2.87	34.15	0.91	0.69	1.61	0.33	32.21	2.21	30
2025	2.88	34.42	0.91	0.73	1.65	0.36	32.42	2.42	30
2026	2.90	34.66	0.91	0.77	1.69	0.39	32.59	2.59	30
2027	2.91	34.89	0.91	0.81	1.73	0.41	32.76	2.76	30
2028	2.93	35.15	0.91	0.85	1.77	0.43	32.95	2.95	30
2029	2.95	35.41	0.91	0.89	1.81	0.46	33.15	3.15	30
2030	2.97	35.67	0.91	0.93	1.85	0.48	33.34	3.34	30
2031	2.98	35.91	0.91	0.97	1.88	0.50	33.53	3.53	30
2032	3.00	36.15	0.91	1.00	1.91	0.52	33.71	3.71	30
2033	3.34	36.72	0.91	1.03	1.95	0.55	34.22	4.22	30

(11) The average daily unaccounted for water use was forecasted by applying the historic ratio of unaccounted for water to the sum of known potable uses, including (4), (8), (9), and (10). The historic period of record used was 2009-2011, as the 2007 and 2008 ratios are not as accurate due to anomalies associated with an old billing system.

(12) The total average daily use (including the historical RCW offset) is the sum of (4), (8), (9), (10), and (11).

(13) The historical reclaimed potable offset average daily use is the 5-year historical average of the total RCW potable offset (from Table 1).

(14) The new reclaimed potable offset average daily use was based on the forecasted increase in irrigation within its Kanapaha and Main Street reuse service areas, the South Energy Center, and within the Innovation District.

(15) The total reclaimed potable offset average daily use was calculated by adding (13) and (15).

(16) The new conservation average daily use was forecasted by Liquid Solutions Group based on the Conserve Florida EZ Guide. It was calculated to be 1.57% of the 2033 groundwater average day, and indexed to population growth prior to 2033.

(17) The total average daily use was calculated by subtracting (15) and (16) from (12).

(18) This reflects the difference between total average daily use (or Forecasted Demand) in (17) and the requested groundwater allocation in (19).

(19) The requested average daily groundwater allocation is the base allocation GRU intends to request in this permit application.

WASTEWATER DISPOSAL

The Wastewater Disposal Section includes the following:

- **Present and projected amounts of wastewater**
- **Percentage of each type of wastewater disposal/reuse**

Table 5. Present and Projected Amounts of Wastewater

Disposal Type	Present (mgd)	Projected (5 YEARS) (2018) (mgd)	Projected (10 YEARS) (2023) (mgd)	Projected (15 YEARS) (2028) (mgd)	Projected (20 YEARS) (2033) (mgd)
Kanapaha WRF ADF	9.02	10.99	12.00	12.98	13.91
Main Street WRF ADF	7.13	6.08	6.26	6.43	6.60
Total average daily disposal	16.15	17.08	18.26	19.41	20.51
Kanapaha WRF capacity	14.90	14.90	14.90	14.90	14.90
Main Street WRF capacity	7.50	7.50	7.50	7.50	7.50
Combined plant capacity	22.40	22.40	22.40	22.40	22.40

Table 6. Percentage Each Type of Wastewater Disposal

Disposal Type	Present %	Projected % (5 YEARS)	Projected % (10 YEARS)	Projected % (15 YEARS)	Projected % (20 YEARS)
Kanapaha WRF					
Public Access Irrigation	9.9%	12.0%	12.5%	12.9%	13.0%
Recharge Wetlands	15.3%	15.7%	14.6%	13.9%	13.0%
Aquifer Recharge (Deep Wells)	74.8%	72.2%	72.9%	73.2%	74.0%
Total RCW from KWRF	100.0%	100.0%	100.0%	100.0%	100.0%
Main Street WRF					
Public Access Irrigation	0.4%	0.8%	1.1%	1.3%	1.6%
I-District Chilled Water	0.0%	0.4%	1.0%	1.1%	1.2%
SEC Power Plant	1.5%	1.8%	2.8%	3.7%	4.6%
Industrial Use at MSWRF	4.2%	4.0%	4.0%	4.0%	4.0%
Surface Water Discharge	93.9%				
PPSRP	0.0%	92.9%	91.2%	89.9%	88.7%
Total RCW from MSWRF	100.0%	100.0%	100.0%	100.0%	100.0%

Disposal Type	Present (mgd)	Projected (5 YEARS) (mgd)	Projected (10 YEARS) (mgd)	Projected (15 YEARS) (mgd)	Projected (20 YEARS) (mgd)
Kanapaha WRF					
Public Access Irrigation	0.91	1.08	1.20	1.32	1.41
Recharge Wetlands	1.41	1.41	1.41	1.41	1.41
Aquifer Recharge (Deep Wells)	6.88	6.47	7.03	7.44	8.03
Total RCW from KWRF	9.20	8.96	9.64	10.16	10.85
Main Street WRF					
Public Access Irrigation	0.03	0.06	0.08	0.10	0.11
I-District Chilled Water	0.00	0.03	0.07	0.08	0.09
SEC Power Plant	0.10	0.13	0.20	0.27	0.33
Industrial Use at MSWRF	0.29	0.29	0.29	0.29	0.29
Surface Water Discharge	6.42				
PPSRP		6.74	6.61	6.52	6.43
Total RCW from MSWRF	6.84	7.25	7.25	7.25	7.25

GRU Section 4

RECLAIMED WATER

The Reclaimed Water Section includes the following:

- **Reclaimed Water Master Plan Summary**
- **Existing Reclaimed Water & Service Area – KWRF**
- **Existing Reclaimed Water & Service - MSWRF**

GRU Reclaimed Water Master Plan Summary

Table 6 summarizes present and projected future reuse flows from GRU's two water reclamation facilities, Kanapaha Water Reclamation Facility (KWRF) and Main Street Water Reclamation Facility (MSWRF). All of the flow from both water reclamation facilities is beneficially reused to either offset potable demands or to recharge the aquifer. The flows in Table 6 were estimated based on the projected potable water demands and the relationship between reclaimed water production and potable water use.

GRU currently provides 2.4 mgd of Public Access Reuse (PAR), which includes golf course, residential and common area irrigation and groundwater recharge water features. RCW is also used for industrial cooling for the Innovation District chilled water plant and the GRU South Energy Center. The remaining flow is recharged to the aquifer via GRU's KWRF recharge wells or is supplied to the Paynes Prairie Sheetflow Restoration Project (PPSRP). The PPSRP is a $28 million environmental restoration project which is currently under construction and is expected to be complete in 2014. GRU has committed to significant expansion of its reuse program over the next 20 years.

The primary components of GRU's reclaimed water master plan include:

1. KWRF Public Access Irrigation
2. KWRF Recharge Wetlands
3. KWRF Deep Well Aquifer Recharge
4. MSWRF Public Access and Industrial Reuse Expansion
5. Paynes Prairie Restoration

Each of the components of GRU's reclaimed water program are discussed below:

1. KWRF Public Access Irrigation

RCW from KWRF is used for residential and commercial irrigation and groundwater recharge water features. Figure 5 shows the existing RCW system and the Reclaimed Water Service Area (RCWSA) for the KWRF.

Within the KWRF RCWSA GRU will continue to extend RCW facilities to serve future development. This RCWSA was defined based on irrigation patterns of existing and anticipated future new development. GRU's water/wastewater policies and Alachua County ULDC require new development within the RCWSA to connect to reclaimed water where feasible. GRU will continue to expand RCW transmission lines to serve new developments connecting to RCW service. In addition, under GRU's extension policy, GRU reimburses developers for the cost of RCW distribution systems.

Developments are evaluated for economic feasibility based on anticipated potable offset, and cost and timing of extension of RCW transmission mains and distribution lines. It will not be economically feasible to connect all new development within the KWRF RCWSA to RCW. GRU's overall approach to RCW is to extend RCW for irrigation or industrial uses where it will provide the most benefit in terms of potable offset, to utilize the remaining RCW for aquifer recharge, and to promote efficient use of both potable water and reclaimed water.

Figure 5 shows both the current KWRF RCWSA and potential future RCWSA boundaries. The current RCWSA boundaries are within the current Alachua County Urban Cluster boundary. The Urban Cluster boundary, which is mandated in the Alachua County Comprehensive Plan, is intended to minimize sprawl and provides a temporary boundary beyond which development and extension of utility services is restricted. The location of the boundary is subject to change when the Alachua County Comprehensive Plan is amended or updated. Figure 5 shows future RCW service areas which are outside of the current Urban Cluster, but are expected to develop within the next 10 to 20 years as the Alachua County Comprehensive Plan is updated.

In order to continue expansion of irrigation reuse from KWRF and meet peak reclaimed water demands, GRU will need to construct additional pumping and storage facilities. At this time, planned improvements include a remote reclaimed water storage and repumping facility, and additional storage and pumping improvements at the KWRF. The timing of these improvements will depend on development patterns and timing.

2. KWRF Recharge Wetlands

As part of its reuse portfolio GRU utilizes groundwater recharge wetlands, Groundwater Recharge wetlands are constructed wetlands which receive RCW and achieve simultaneous nitrogen removal and aquifer recharge. GRU is currently achieving 1.4 mgd of aquifer recharge with its existing recharge wetlands. GRU has demonstrated the nutrient removal capabilities of vegetated recharge wetlands through demonstration studies at the KWRF wetland site and at the Kanapaha Middle School wetland site.

GRU is currently working with SJRWMD in permitting a hybrid stormwater/reclaimed water recharge wetland as a demonstration project. The project will utilize an existing stormwater retention basin, which will be planted with wetland vegetation. Under dry conditions RCW will be discharged into the basin to maintain a constant water level in order to support the wetland vegetation and provide simultaneous nutrient removal and recharge of the RCW. During storm events, the RCW flow will be curtailed and the basin will function to retain, remove nutrients, and achieve aquifer recharge from stormwater entering the basin. Modeling and design calculations have been performed as part of the permitting process to ensure that the wetland will continue to have adequate retention capacity to handle design storm events. Hybrid stormwater/reclaimed water recharge wetlands have the potential to be applied for future development projects to cost effectively achieve improved stormwater treatment and aquifer recharge of RCW.

3. KWRF Deep Well Aquifer Recharge

GRU operates 4 aquifer recharge wells which recharge RCW to the lower Floridan and Upper Floridan Aquifer. These wells are permitted for 10 mgd annual average daily flow (ADF), and GRU is required to achieve primary and secondary drinking water MCLs for RCW discharged to the wells. The remaining RCW from KWRF which is not used for irrigation or recharge wetlands, recharges the Floridan aquifer via these wells.

4. MSWRF Public Access and Industrial Reuse Expansion

Most of the RCW flow from MSWRF will continue to be dedicated to the PPSRP, where it provides habitat restoration and aquifer recharge. However, GRU also has a RCWSA for the MSWRF facility, which is shown in Figure 6. RCW extensions will be made within this area where beneficial and economically feasible. The MSWRF includes high level disinfection of RCW for public access reuse. Currently, RCW is used for public access irrigation and for supplementing stormwater ponds at the Depot Park, and for irrigation at UF Health (formerly Shands) hospital facilities. RCW is used for industrial cooling at the GRU South Energy Center, which provides chilled water, steam and electric power to the UF Health Cancer Center.

GRU is extending RCW into the Gainesville Innovation District ("iDistrict") for landscape irrigation, industrial cooling, and other uses. The iDistrict is an area that is being redeveloped as a high density urban live, work, play environment. The development is particularly directed towards bringing in high tech companies that will benefit from locating in Gainesville near University of Florida, in order to collaborate with UF and/or employ UF students and graduates. This development has the potential to bring in a significant amount of growth to Gainesville, beyond what has been forecasted. RCW will be used to irrigate common areas and to provide cooling water for the current and future GRU chilled water plants that provide chilled water for energy efficient cooling in the iDistrict area. SJRWMD awarded GRU construction cost share grant funding in order to assist in constructing the pipeline.

It is also anticipated that additional users will connect to RCW along the existing pipeline corridor. However, much of the MSWRF RCWSA is already developed so the extent that RCW will be expanded will depend on the extent and type of redevelopment.

5. Paynes Prairie Sheetflow Restoration Project

The PPPSRP is a $28 million environmental restoration project that is being constructed jointly by Gainesville Regional Utilities (GRU) and City of Gainesville Public Works Department (GPWD). Project partners include the SJRWMD, Florida Department of Environmental Protection (FDEP), Florida Department of Transportation (FDOT), Alachua County, Florida Fish and Wildlife Conservation Commission, and others.

The project will meet regulatory nutrient reduction requirements and improve water quality in Alachua Sink, restore approximately 1,300 acres of wetlands with the state park, protect the Floridan Aquifer, and provide a public park with hiking trails, boardwalks and other facilities. Figure 7 shows the conceptual plan for the project. The project is currently under construction and is expected to be complete in the summer of 2014.

As a result of GRU's investment, essentially all of GRU's reclaimed water is currently utilized to offset potable demands or recharge the aquifer. This commitment to beneficial reuse will continue for the duration of this permit.

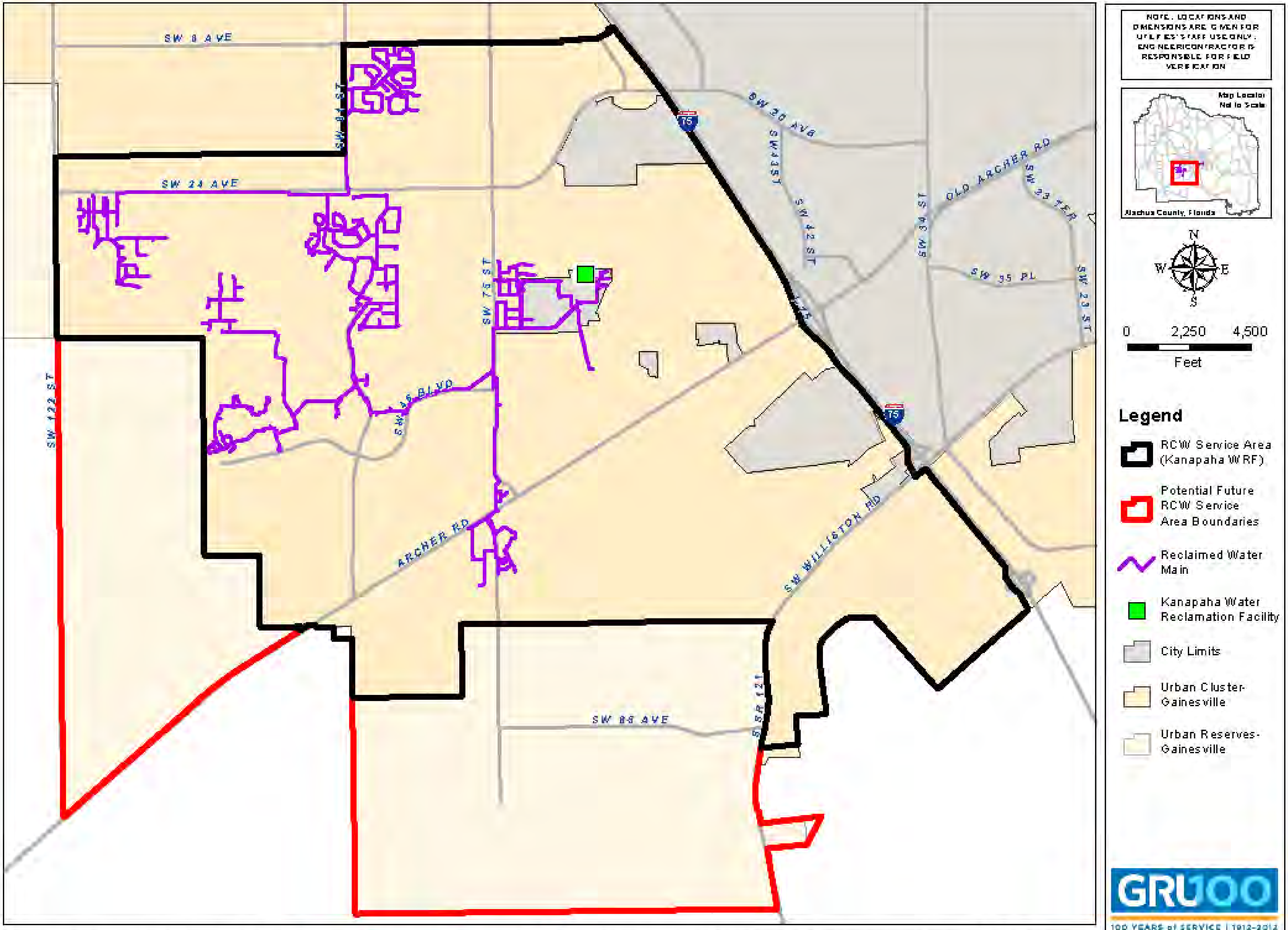


Figure 5 - Existing Reclaimed Water System - Kanapaha WRF

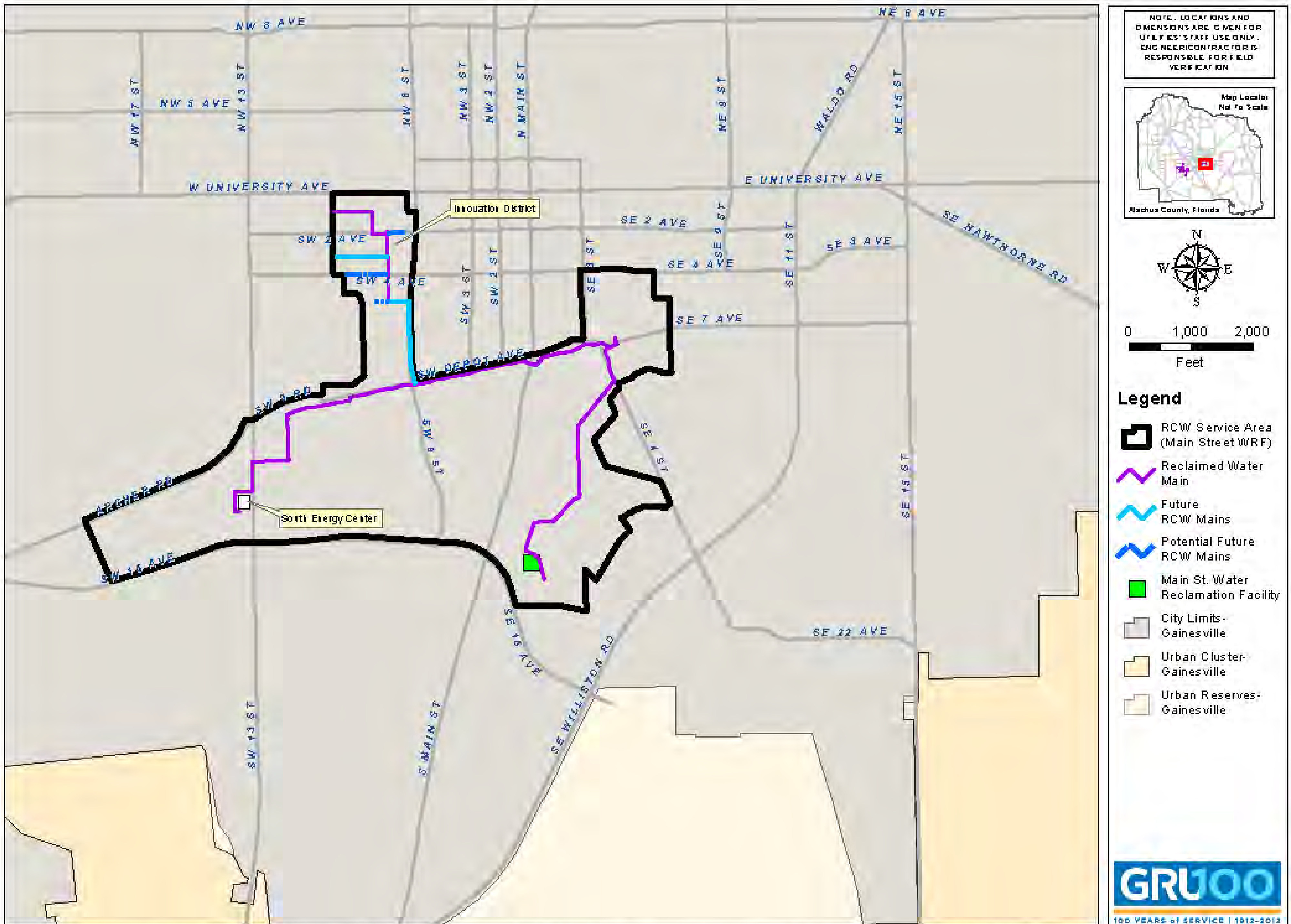


Figure 6 - Existing Reclaimed Water System - Main Street WRF

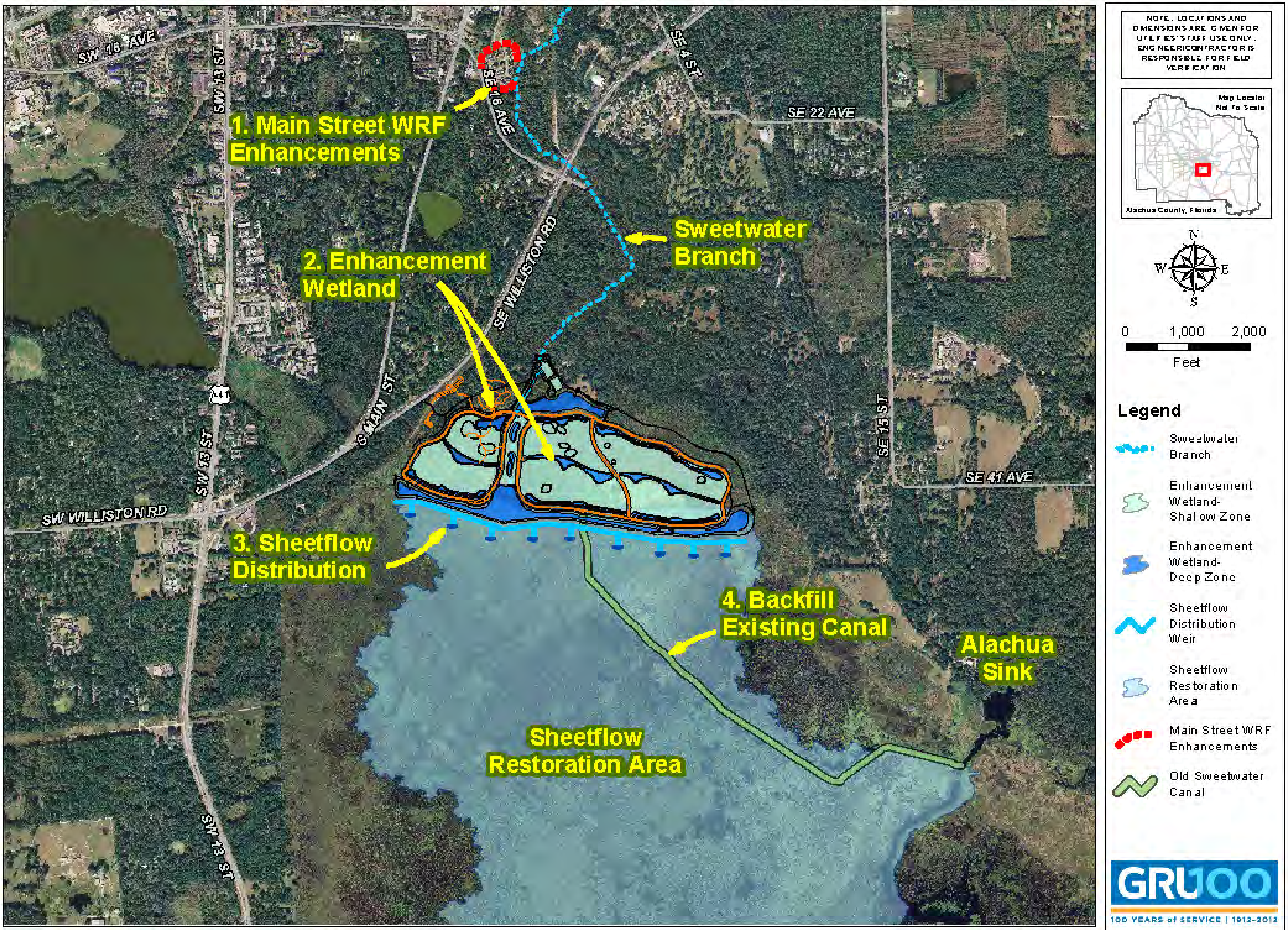


Figure 7 - Paynes Prairie Sheetflow Restoration Project

GRU Section 5

WATER CONSERVATION

The Water Conservation Section includes the following:

- **2012 Water Audit**
- **Description of Meter Changeout Program**
- **Description of Leak Detection Program**
- **2012 Water Rates**
- **Analysis of Water Conservation Potential**
- **Quantification of Water Conservation Efforts**
- **Water Conservation Plan Elements**

-

2012 Water Audit

WATER AUDIT FORM

Utility Name:	Gainesville Regional Utilities
Audit Study Period: Fiscal Year 2011:	10/2010 - 9/2011
CUP Application No:	11339

TASK 1: Treatment System

1A	Raw water produced	9,073.58	Mgals
1B	Raw water purchased	-	Mgals
1C	Finished water purchased	-	Mgals
1D	Total Water Produced and Purchased (Sum of lines 1A - 1C)	9,073.58	Mgals
1E	Metered uses in treatment	101.57	Mgals
1F	Unmetered but known uses in treatment	10.29	Mgals
1G	Total Water used in treatment (line 1E plus line 1F)	111.86	Mgals
1H	Total water produced and purchased for distribution (line 1D minus line 1G)	8,961.72	Mgals
1I	Metered Finished Water entering distribution system (from plant master meter)	8,812.36	Mgals
1J	Change in reservoir and tank storage	-	Mgals
1K	**Total water unaccounted for in the treatment process** (line 1H minus line 1I, plus/minus line 1J)	**149.36**	**Mgals**

TASK 2: Distribution System - Metered Uses*

2A	Small and Medium Meter Use	6,629.60	Mgals
2B	Large Meter Use	1,145.51	Mgals
2C	Adjustments due to meter lag time	6.61	Mgals
2D	**Sum of lines 2A - 2C**	**7,781.72**	**Mgals**

TASK 3: Distribution System - Metered uses not covered in TASK 2 and unmetered uses

3A	Irrigation	0.28	Mgals
3B	Swimming Pools	-	Mgals
3C	Sewer Cleaning	1.27	Mgals
3D	Water Quality Flushing	26.69	Mgals
3E	Fire Fighting	7.15	Mgals
3F	Construction Flushing	1.17	Mgals
3G	Main Breaks	29.16	Mgals
3H	Schools	-	Mgals
3I	Decorative Fountains	-	Mgals
3J	Allowable Line Loss	297.36	Mgals
3K	Other Uses (Attach list):	115.48	Mgals
3L	**Total** (sum of lines 3A - 3K)	**478.56**	**Mgals**

3K	**Other Uses**		
	Deerhaven Power Plant	0.92	Mgals
	Alachua County Public Works	0.13	Mgals
	MWTP Lube Water	109.81	Mgals
	Billing Adjustments	-	Mgals
	Stopped Meters	4.62	Mgals
	Sum	115.48	Mgals

TASK 4: Summary of Water Use

4A	Total water from distribution system (line 2D plus line 3L)	8,260.28	Mgals
4B	Total finished water pumped into distribution system (line 1I)	8,812.36	Mgals
4C	Finished water purchased after WTP Master Meter (i.e. not previously accounted for in TASK 1)	-	Mgals
4D	Sum of finished water going into the distribution system (sum of 4B and 4C)	8,812.36	Mgals
4E	Total unaccounted water for water loss from distribution (line 4D minus line 4A)	552.08	Mgals
4F	**Total unaccounted for water from treatment and**	701.44	Mgals

	distribution systems (sum of lines 1K plus line 4E)		
4G	**Percentage total unaccounted for loss from treatment and distribution systems** (divided line 4F by the sum of lines 4C plus 1H)	**7.8%**	**Mgals**

TASK 5: Meter Survey

A correction to account for meter error is required if the initial unaccounted for water result (in line 4F) is greater than 10% (see attached water audit form).

The unaccounted for water result is < 10%, so a meter survey is not required.

TASK 6: Leak Detection Evaluation

(determination required if final unaccounted for water is < 10% as listed in line 4F)

The unaccounted for water result is < 10%, so a meter survey is not required.

Meter Change-Out Program

<u>Residential Meters</u>

Gainesville Regional Utilities (GRU) has consistently maintained unaccounted for water below 10%, therefore has not been required to conduct a water meter study or implement a water meter changeout program. GRU voluntarily and proactively has implemented a 90% accuracy standard for residential water meters used in the water distribution system. GRU conducted a cost analysis study to determine the appropriate change-out period for residential meters. Using the water rate structure at the time of the study, GRU determined replacing residential meters having less than 90% accuracy was more cost-effective than not billing for the unaccounted water.

To determine the appropriate change-out period GRU randomly pulled residential meters from the field with lifetimes ranging from 15 to 20 years. For each meter age (ex: 16 year old meters) approximately 40-60 meters were pulled and tested for accuracy with a Ford Indianapolis Type Test Bench (spec sheet attached). The study concluded the appropriate residential water meter change-out period was 18 years.

After the study was completed the meter change-out program commenced. GRU began to replace residential meters 20 years and older with SENSYS SR-EBII water meters. Additionally, GRU replaced all other meters not SENSYS SR-EBII with SENSYS SR-EBII water meters. From field experience GRU determined SENSYS SR-EBII water meters to be the most accurate, durable, and long lasting water meters available. Currently GRU is up-to-date with the residential water meter change-out program and continues to replace meters 18 years or older. Recently, we updated to replacing older meters with smart meters called iPERLs. The benefits of these meters are the following:

1) Greater low-end reading capabilities (as low as 0.25 gallons)
2) Broader range of flows because there are no mechanical parts to break down, therefore fewer stopped meters
3) Ability to data log hourly flow data

At this time GRU is not evaluating the program to reassess the change-out period. However, GRU is considering conducting a study to reassess the program for various reasons. First, the water rate structure has been revised therefore the break-even point for the meter change-out period is different. Second, GRU started using the SENSYS SR-EBII water meters in 1985. Therefore, the water meters used in the initial study did not include aged SENSYS SR-EBII water meters. The accuracy for SENSYS SR-EBII or iPERL water meters may be different than what the original study revealed.

<u>Changeout Pilot Study</u>

GRU is conducting an AMI/AMR changeout study with joint funding from SJRWMD. The study is to replace 1000- 2000 existing analog style meters with digital style 'smart' meters and ERT devices for an Automatic Meter Infrastructure program. We have secured a $40,000 grant (40% of cost) from SJRWMD. 'SMART' meters are capable of reading lower flow rates, detecting leaks, and providing hourly flow data that existing analog meters do not. The SMART meters can reduce lost revenue and unaccounted for water loss.

<u>Large Meter Changeout/Replacement</u>

GRU's water distribution department conducts annual testing of large meters and repairs/replaces meters when accuracy is below 95%. GRU is now installing Omni meters (C2, T2, F2) for larger residential or commercial meters. The Omni meters have similar benefits as the iPERL meters discussed above:

1) Greater low-end reading capabilities

2) Broader range of flows because there are no mechanical parts to break down, therefore fewer stopped meters

3) Ability to data log hourly flow data

Gainesville Regional Utilities (GRU) has consistently maintained unaccounted for water below 10%, therefore has not been required to implement a leak detection program. GRU voluntarily and proactively has conducted leak detection surveys since 2002.

GRU's Leak Detection Program has maintained a multi-year contract (5 years total) with Utility Services Associates, a Hughes Supply Company that has been renewed and continued several times. Hughes conducts water distribution leak detection surveys for GRU on a quarterly basis producing quarterly reports. It is anticipated that GRU will continue the leak detection program, but the best approach is currently being evaluated.

GRU has more than 1,100 miles of pipes in the water distribution system. Over Sixty-two percent of the system has been surveyed with over 163 million gallons of water recovered. Accounting for a 2% growth per year of the mile of piping in the GRU water distribution system, it will take approximately six years to complete the survey of the system in its entirety.

Gainesville Regional Utilities has spent over $26,000 annually for the quarterly contract fees with Hughes and for the in-house preparation costs. In addition, the leak detection survey often results in repair or replacement of water mains or water services. In 2012 and 2013, GRU evaluated the leak detection program and conducted a pilot study with Echologics (a division of Mueller Co.). The evaluation included identifying and evaluating various approaches to leak detection. In March 2013, GRU engaged Echologics to perform a leak detection survey of approximately 6000 feet of cast iron water mains ranging from 3 to 12 inches in diameter. Echologics used acoustic data loggers followed by a correlation analysis using over 100 main line and fire hydrant service valves to identify leaks. GRU is committed to continue to evaluate the most effective leak detection methodology and continue to implement leak detection. At this point it is anticipated to continue a practice similar to that outlined below:

Surveying Procedure:

Hughes Field Technicians uses advanced equipment for surveying and pinpointing leaks. Their extensive experience and in-depth equipment knowledge allows Hughes to cover greater distances with a high degree of accuracy.

Selection criteria for the study area included factors such as the older portions of GRU's water distribution system, areas with a history of leaks, areas with significant amounts of galvanized pipe, etc.

The quarterly surveys are broken down into a Survey Phase and a Pinpointing Phase. The Survey Phase includes sounding of appurtenances (valves, hydrants, etc) and recording leak type noises that are detected. The Pinpointing Phase includes pinpointing noises that are detected during the Survey Phase.

Survey Phase:

Locating leaks through the use of acoustic equipment is the most common method. With the use of sound amplification equipment, Hughes utilizes contact points to listen for leaks. Contact points include: main line valves, hydrant valves, hydrants, shut-offs, etc.

- Main Line Valves are the most effective contact points, as leak sounds can be detected readily with a sound amplification device.
- Hydrant valves are useful in both the survey and pinpointing phases. Hydrant valves help determine if the hydrant seal leaks or leaks between the valve and the hydrant.
- Service Shut-offs are used when frequent contact points are needed, such as areas where PVC mains, large diameter pipe and/or when mainline valves and hydrant valves do not provide adequate access to conduct a thorough survey. Hughes utilizes shut-off's to determine which side of a service valve is leaking.

Sonic ground listening devices are used when normal contact points are not available or cannot be created within a reasonable distance. Physical contact with the ground at intervals of no greater than 6 feet directly over the pipe are performed with the listening equipment.   Ground listening devices are employed when ground cover is pavement, cement or similar hard surfaces.

When ground cover is not a hard surface and normal contact points are not available, probe rods or specially designed sounding plates are used at 6-foot intervals. In conjunction with this equipment, a sound amplification instrument with 3VG or greater transducers will be employed directly over the pipe to detect any leaks.

Pinpointing Phase:

The leak locations reported from the Survey Phase are re-investigated to verify leaks and eliminate false leak sounds. The leaks are pinpointed with a computer based sound correlator. Ground listening devices are used to double check pinpointed leaks.

The leaks are categorized in three different classes.

- **Class I**   Any leak which is hazardous in terms of potential undermining, possibly resulting in surface collapse, encroachment and/or damage to nearby utilities, commercial or private properties or leaks sever enough to warrant immediate repair.

- **Class II** All leaks that display water losses significantly enough to be monitored on a regular repair schedule.

- **Class III** Relatively small leaks that should be repaired as workloads permits.

The decibel levels at suspect leak sound locations and observations are compiled into a detailed report. If conditions do not allow for pinpointing the exact leak location by contact points, sonic ground listening devices, or excavating it is labeled as undefined and is expanded upon in the final quarterly report.

There are several benefits of GRU's Leak Detection Program including: conservation of a valuable resource, revenue, preventive maintenance, enhancing system integrity by visually inspecting valves, hydrants, and selected customer water services that may not be possible during routine water system maintenance performed by GRU, and improving public relations since leak detection is an excellent customer service tool. The continued success in identifying leakage (coupled with subsequent corrective action by GRU) validates the importance of an on-going leak detection survey program.

Leak Detection Program

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WATER RATES

FY 2014 Rates, Effective October 1, 2013

Rate Classifications

Residential Service

Customer Charge	$9.00	per month
Rate per 1,000 gallons, 1,000 to 6,000 gallons	$2.30	per kGal
Rate per 1,000 gallons, 7,000 to 20,000 gallons	$3.75	per kGal
Rate per 1,000 gallons, 21,000 or more gallons	$6.00	per kGal

Nonresidential Service

Customer Charge	$9.00	per month
Rate per 1,000 gallons	$3.80	per kGal

Irrigation Service

Residential Irrigation:

Customer Charge	$9.00	per month
Rate per 1,000 gallons, 1,000 to 14,000 gallons	$3.75	per kGal
Rate per 1,000 gallons, 15,000 or more gallons	$6.00	per kGal

Non-Residential Irrigation

Customer Charge	$9.00	per month
Rate per 1,000 gallons	$4.50	per kGal

University of Florida (by contract)

Customer Charge	$9.00	per month
Rate per 1,000 gallons, on-campus facilities	$2.18	per kGal
Rate per 1,000 gallons, off-campus facilities	$2.77	per kGal

City of Alachua

Customer Charge	$9.00	per month
Rate per 1,000 gallons	$1.62	per kGal

City Utility Tax	*10% of base rate charges*
Surcharge	*25% of base rate charges*
County Utility Tax	*10% of the sum of base rate charges and water surcharge*

Water Connection Charges [1]

Meter Size	Meter Assembly & Service Lateral	Transmission & Distribution	Treatment Plant	Total Meter, T&D, Plant
5/8"	$500	$410	$640	$1,550
3/4"	$570	$1,190	$1,870	$3,630
1"	$690	$1,300	$2,120	$4,110
1 1/2"	$2,090	$3,020	$4,870	$9,980
2"	$2,330	$5,610	$9,700	$17,640
3"	$7,570	> 2", greater of	> 2", greater of	
4"	$8,530	$1.4714 GPD-ADF	$2.1941 GPD-ADF	
6"	$15,630	or	or	
8"	$18,560	$5,610	$9,700	
> 8"	site specific			

[1] For additional detail on water connection fees, inspection fees, and water main tapping charges, please refer to the Gainesville Code of Ordinances.

This rate overview is based on GRU rates in the Gainesville Code of Ordinances.
Should there be a discrepancy between this representation and the ordinance, the ordinance shall prevail.

TECHNICAL MEMORANDUM

To:	Tony Cunningham, P.E.	**Date:**	March 26, 2013
From:	Roberto Denis, P.E.	**Reference:**	GRU Water Supply

Subject: **Gainesville Regional Utilities Consumptive Use Permit Renewal Analysis of Water Conservation Potential**

INTRODUCTION

For several years, Gainesville Regional Utilities (GRU) has implemented a comprehensive water conservation program designed to reduce water use. This program has resulted in quantifiable reductions in water use rates as evidenced by continued reductions in GRU's permitted residential and gross per capita water use rates.

In conjunction with the upcoming renewal of GRU's consumptive use permit (CUP), Liquid Solutions Group, LLC (LSG) was retained to evaluate additional opportunities for water conservation and to quantify the associated potential water use reduction. In order to perform these evaluations, the Conserve Water Florida Clearinghouse (CFWC) EZ Guide online tool was used (http://ezguide.conservefloridawater.org). This technical memorandum documents the methods and results of this evaluation. Furthermore, a process for applying these results to GRU's future water use is also documented.

METHODOLOGY

This section is intended to provide an outline of the modeling performed using the CFWC EZ Guide to produce an estimate of water conservation potential for GRU. Changes to the EZ Guide were kept to a minimum to retain the integrity of the model and were limited to areas where the EZ Guide is incomplete or uses inadequate assumptions. As such, the majority of this section is focused on the modifications and adjustments made to the EZ Guide and not the EZ Guide itself.

There were two types of modifications: 1) changes to the EZ Guide configurable parameters and 2) adjustments to the EZ Guide output. For changes to the EZ Guide configurable parameters, a detailed description of the changes is provided below organized by EZ Guide module and tab.

Change to EZ Guide Configurable Parameters

Changes to the parameters are highlighted below and a brief discussion is included regarding the change. For ease of reference, the specific module and tab are also noted.

Water Supply Analysis Module>>Other Water Supply Data

Water Production Cost

Water Production Cost ($/kgallon)
$3.00

This change causes the EZ Guide to display a $3/kgal cost effectiveness limit in the solutions graphics. However, this value is not actually used in EZ Guide calculations.

BMP Analysis Module>>Single Family BMPs

Attributes of Single Family Residential Indoor Fixtures

Fixture Level	Toilets gal/flush	Clothes Washers gal/load	Showerheads gal/min	Faucets gal/min
Conventional	1.60	36.0	1.85	1.5
Better	1.59	35.9	1.84	1.5
Best	1.28	25.2	1.70	1.5

Total Utility Cost per Fixture

Fixture Level	Toilets	Clothes Washer	Showerheads	Faucets
Conventional	200	500	20	15
Better	1,000	1,000	100	100
Best	250	625	22.50	17.50

These changes effectively eliminate some unrealistic fixture assumptions from being considered as options in the EZ Guide. Changing the "Better" fixtures to be only slightly more efficient than the "Conventional" fixtures and use of inflated costs for the "Better" fixtures result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly.

The "Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

BMP Analysis Module>>Single Family Outdoor BMPs

Attributes of SF Outdoor Devices

Device or Practice	Average Savings Rate (gal/1,000 ft^2/day)
Soil Moisture Sensors	24.19
Non Potable Irrigation System (e.g. Reuse)	0.0
Irrigation Audit	5.69

Total Device Cost per Implementation

Device or Practice	Device Cost ($/$ft^2$)
Soil Moisture Sensors	0.10
Non Potable Irrigation System (e.g. Reuse)	1,000
Irrigation Audit	0.06

Reuse Offset Credit

Non Potable Offset Credit (%)	Reuse Accessibility (%)
0	0

These changes effectively eliminate Reuse from being considered as an option in the EZ Guide. Reclaimed water reuse and the associated offset is being incorporated into GRU's permit application package separately from the EZ Guide.

BMP Analysis Module>>Multi-Family BMPs

Attributes of Multi Family Residential Indoor Fixtures

Fixture Level	Toilets gal/flush	Clothes Washers gal/load	Showerheads gal/min	Faucets gal/min
Conventional	1.60	36.0	1.85	1.5
Better	1.59	35.9	1.80	1.5
Best	1.28	25.2	1.70	1.5

Total Utility Cost per Fixture ($)

Fixture Level	Toilets	Clothes Washer	Showerheads	Faucets
Conventional	200	500	20	15
Better	1,000	1,000	100	100
Best	250	625	22.50	17.50

These proposed changes result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly. The

"Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

BMP Analysis Module>>CII BMPs

Attributes of CII BMPs

Fixture Level	Toilets gal/flush	Urinals gal/flush	Faucets gal/min	Showerhead gal/min	Pre-rinse spray valves gal/min	Water audit
Conventional	1.60	1.00	0.5	2.20	1.60	0.15
Better	1.59	0.90	0.5	2.19	1.59	0.15
Best	1.28	0.50	0.5	2.00	1.25	0.15

Total Utility Cost per Fixture ($)

Fixture Level	Toilets	Urinals	Faucets	Showerheads	Pre-rinse spray valves	Water Audit $/ft^2
Conventional	150	320	45	30	50	0.27
Better	1,000	1,000	100	100	50	0.27
Best	180	375	55	31	60	0.27

These proposed changes result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly. The "Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

EZ Guide Output

After completing the input changes described above, the EZ Guide executed an algorithm to compute maximum potential water savings. The results were presented as two curves of cumulative BMP water savings (kgal/day) and a summary table. Detailed tables for each BMP are also developed. Complete documentation of the EZ Guide model run including screenshots is included in Appendix A.

The raw EZ Guide results were then adjusted to account for the fact that the EZ Guide calculates the total potential water conservation given four main assumptions:

1) No cost effectiveness limitation
2) Savings are based on EZ Guide population and demand estimates
3) A 100% participation rate is assumed
4) No existing water conservation practices are incorporated

These assumptions drive the EZ Guide towards calculation of maximum water conservation levels with minimal regard for feasibility. Adjustments to the EZ Guide results must be made to allow for the water conservation savings to be feasible as discussed below.

Cost Effectiveness Limitation

The EZ Guide was adjusted such that only programs below an acceptable cost effectiveness limitation are included in the water conservation calculations. In line with SWFWMD Regional Water Supply Plans and work for the Central Florida Water Initiative (CFWI), a limit of $3.00/kgal was used. This value is also a reasonable feasibility limit for GRU at this time.

Population/Demand Adjustment

For residential indoor BMPs, the estimated water conservation potential was adjusted by the ratio of the estimated 2011 population to the EZ Guide estimated population as follows:

$$Adjusted\ SF/MF\ Indoor\ Potential = EZGuide\ SF/MF\ Indoor\ Potential * \frac{2011\ population}{EZGuide\ population}$$

For other BMPs, the estimated water conservation potential was adjusted by the ratio of the actual 2011 demand/flow shown in the EZ Guide to the EZ Guide estimated demand as follows:

$$Adjusted\ Outdoor/CII\ \ Potential = EZGuide\ Outdoor/CII\ Potential * \frac{2011\ actual\ flow}{EZGuide\ 2011\ flow}$$

These adjustments proportionally adjust the calculated water conservation estimates to account for the actual populations and flow.

Participation Rate

The adjusted water conservation potential is subject to an achievable participation rate. The SWFWMD and CFWI have previously used 23% for fixture replacement programs, 12.5% for programs that require a site visit, and 40% for water budgets. These values were also considered reasonable feasibility limits for GRU at this time. Most BMPs would be subject to the 23% rate, but the CII audit and Irrigation Audit programs utilized the 12.5% rate.

Previous Water Conservation

The EZ Guide currently does not factor in existing water conservation programs or passive replacement that may have occurred faster than their estimates. Though GRU has previously performed over 1,000 combined fixture replacements and audits, these previous efforts were not subtracted from the estimated BMP potential, and therefore, these estimates are conservative.

Evaluation Results

As described above, the adjustment of EZ Guide results led to an estimated potential water savings in MGD for 2011 as presented in Table 1.

Table 1. Estimated Feasible Water Savings for GRU Based on 2011 Population and Demand

Program	Feasible Water Savings Based on 2011 (gpd)	Cost
Toilet		
Residential	0	$ -
Commercial	23,280	$ 199,182
Urinal	43,048	$ 325,571
Clothes Washer	0	$ -
Showerhead		
Residential	158,856	$ 592,107
Commercial	0	$ -
Faucet		
Residential	0	$ -
Commercial	0	$ -
Pre-rinse Spray Valve	0	$ -
Water Audit	6,735	$ 30,394
Soil Moisture Sensor	82,869	$ 160,573
Non Potable Irrigation System (eg. Reuse)	0	$ -
Irrigation Audit	71,093	$ 344,088
Total	**385,882**	**$ 1,651,916**

The estimated savings in MGD can be divided by actual flows to calculate a savings rate as follows:

$$Percent\ savings\ = \frac{Adjusted\ EZGuide\ Potential\ (MGD)}{2011\ Demand\ (MGD)}$$

For GRU, this calculation yielded a potential savings rate of 1.57 percent. Therefore, a conservative estimate of future potential savings would be to apply this percent savings to future GRU demand projections. Please note that though this is a reasonable reduction rate, due to the dynamic nature of water use patterns, the actual programs that allow GRU to achieve this rate may change, even dramatically, from the program described in Table 1. GRU should be given the flexibility to implement a program that meets or exceeds this level of water conservation.

Appendix A

EZ Guide Model Run Documentation

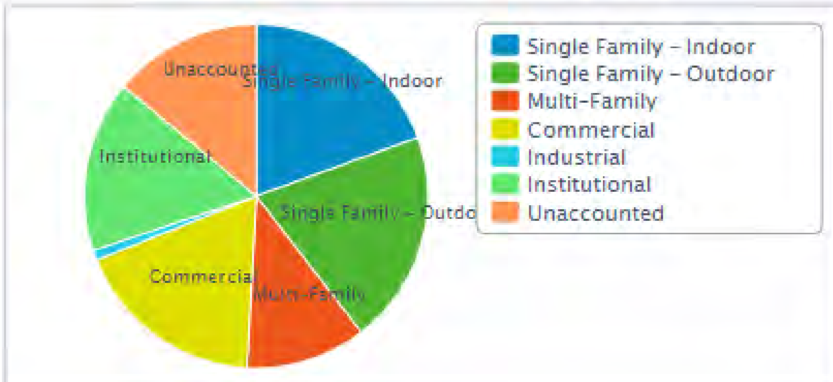
Gainesville Regional Utilities

- Historical Conservation Programs (BMPs)
- Historical Conservation Programs (Measures)
- Calibration
- Summary

Water Budget Configurables

Analysis Year: 2011 - To change the Analysis Year return to Water Supply Analysis page

Calibrated Water Budget By Sector



Difference Between FDEP and CFWC Estimate

	FDEP Data	CFWC Estimate	% Difference
Population Served	178,344	197,971	11.01%
Total Water Use (MGY)	8,976.72	7,552.79	-15.86%
GPCD	138	104	-25%

Water Use Summary By Sector

Sector	% Water Use	Residential GPCD	Gross GPCD	Population	% Total Population	Average Gallons Per Heated Square Foot Per Month	Links
Single Family	39.5%	69	41	117,946	60%	2.93	
Single Family - Indoor	19.5 %	34	20	---	---	1.47	Details
Single Family - Outdoor	20.1 %	35	21	---	---	1.47	Details
Multi-Family	11.3%	29	12	80,025	40%	2.04	Details
CII	35.2%	--	37	---	---	4.37	Details
Commercial	18.1 %	--	19	---	---	5.18	Details
Industrial	1.0 %	--	1	---	---	0.87	Details
Institutional	16.1 %	--	17	---	---	4.66	Details
Unaccounted	14.0%	--	15	---	---	--	
Total	100.0%	--	104	197,971	100%	3.69	

Note:*changing a configurable value will cause the page to be reloaded since the summary data will be recalculated and may change as a result.*

The FDEP reports total number of connections which can be assumed equivalent to number of accounts. For CII sectors, the user can change the accounts by changing the number of parcels.

CII Parcel Counts - Click on column header to sort the column

Sector	Number Of Parcels	Data Source	Action
Commercial	2,493	CFWC	
Industrial	595	CFWC	
Institutional	1,044	CFWC	

Toggle Defaults

The FDEP reports average people per house for each parcel. The average of these numbers is used to calculate population.

Average Household Size - Click on column header to sort the column

Sector	Average Household Size	Data Source	Action
Single Family	2.4	DEP	
Multi-Family	1.9	DEP	

Toggle Defaults

The next two tables are related to single family outdoor irrigation calibration

Single Family Outdoor Configurables (Irrigation Application Rates)

Water Restrictions	Mean Irrigable Application Rate With Sprinkler (Inches/Month)	Mean Irrigable Application Rate Without Sprinkler (Inches/Month)	Max Irrigable Area Cutoff (acres/parcel)	% of Irrigable Area Irrigated	Data Source	Action
Twice Per Week	2.00	1.25	1.00	100.00	CFWC	

Toggle Defaults

Single Family Irrigation Configurables

Effective Home Build Date	Total Accounts	% w/Automatic Sprinklers	Number of Residences w/Automatic Sprinklers	% w/Sprinklers Using Potable Water	Number of Residences w/Sprinklers usin	% wo/Automatic Sprinkers Using Potable Water	Number of Residences wo/Sprinklers Using Potable Water
<1983	22142	9	1993	50	996	25	503
1983-1994	12850	23	2958	50	1478	25	247
>1994	13222	61	8065	80	6452	25	128
Totals Or Weighted Average	48214	26	13014	68	8926	25	880

Toggle Defaults

Fixture Service Lives

If you charge a fixture's service life, then all parcel data for the utility needs to be re-examined. After making all the desired changes, please click the Reanalyze button. Once any service life has changed, you cannot "Continue" until the Reanalyze operation has been completed. This operation may take several minutes to complete.

Service Life for Residential Fixtures

Fixture Type	Service Life (Years)	Data Source	Action
Toilet	25	CFWC	
Clothes Washer	10	CFWC	
Showerhead	8	CFWC	
Faucet	15	CFWC	

Toggle Defaults

Service Life for Residential Outdoor

Fixture Type	Service Life (Years)	Data Source	Action
Soil Moisture Sensor	5	CFWC	
Non Potable Irrigation System (eg. Reuse)	25	CFWC	
Irrigation Audit	5	CFWC	

Toggle Defaults

Service Life for Commercial Fixtures

Fixture Type	Service Life (Years)	Data Source	Action
Toilet	25	CFWC	
Urinal	25	CFWC	
Faucet	15	CFWC	
Pre-rinse Spray Valve	5	CFWC	
Showerhead	8	CFWC	
Water Audit	5	CFWC	

Toggle Defaults

< Previous | Continue

Conserve Florida Water Clearinghouse

Promoting Conservation in Our Public Water Supplies

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Gainesville Regional Utilities

- Historical Conservation Programs (BMPs)
- Historical Conservation Programs (Measures)
- Calibration
- **Summary**

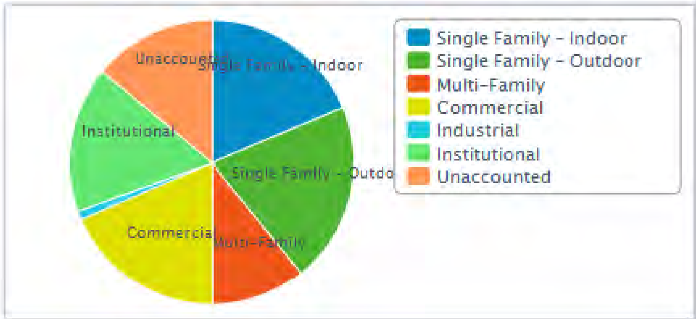
Summary

Congratulations!

You have completed all the sections in the 'Water Budget' module. Click 'Continue' to begin the next module....

Analysis Year: 2011 - To change the Analysis Year return to Water Supply Analysis page

Calibrated Water Budget By Sector



Difference Between FDEP and CFWC Estimate

	FDEP Data	CFWC Estimate	% Difference
Population Served	178,344	197,971	11.01%
Total Water Use (MGY)	8,976.72	7,373.25	-17.86%
GPCD	138	102	-26%

Water Use Summary By Sector

Sector	% Water Use	Residential GPCD	Gross GPCD	Population	% Total Population	Average Gallons Per Heated Square Foot Per Month	Links
Single Family	39.1%	67	40	117,946	60%	2.83	
Single Family - Indoor	18.7 %	32	19	---	---	1.35	Details
Single Family - Outdoor	20.4 %	35	21	---	---	1.49	Details
Multi-Family	10.9%	27	11	80,025	40%	1.91	Details
CII	36.0%	--	37	---	---	4.37	Details
Commercial	18.5 %	--	19	---	---	5.18	Details
Industrial	1.0 %	--	1	---	---	0.87	Details
Institutional	16.5 %	--	17	---	---	4.66	Details
Unaccounted	14.0%	--	14	---	---	--	
Total	100.0%	--	102	197,971	100%	3.60	

Initial Water Budget - *Property Information*

Sector	Number Of Parcels	Number of Residential Units	Average Effective Area, square feet	Average People Per Residence	Heated Area To Effective Area Ratio	Population Served	Total Heated Area, square feet	Average Irrigable Area, square feet
Single Family	48,214	48,719	2,023	2.42	0.87	117,946	84,857,122	9,742
Multi-Family	2,669	42,163	953	1.90	0.87	30,025	34,957,765	25,000
CII	4,132	--	44,857	--	0.92	--	50,662,136	--
Commercial	2,493	--	9,313	--	0.95	--	21,978,288	--
Industrial	595	--	13,136	--	0.88	--	6,909,140	--
Institutional	1,044	--	22,408	--	0.93	--	21,774,708	--
Total	**55,015**	**90,882**	**47,833**	**2.16**	**0.75**	**196,256**	**170,477,023**	**34,742**

Initial Water Budget - *Water Use*

Sector	Residential Indoor (gpcd)	CII (gallons/heated square foot/month)	Mean Irrigable Application Rate (inches/month)	Weighted % of Accounts That Irrigate From Potable	Outdoor (MGY)	Estimated Water Use (MGY)	% of Total Accounts	% of Total Water Demand
Single Family	31.6	--	1.32	0.00 %	1,523.25	2,885.41	87.64%	39.1%
Multi-Family	27.4	--	--	--	--	800.56	4.85%	10.9%
CII	--	3.57	--	--	--	2,655.03	7.51%	36.0%
Commercial	--	5.18	--	--	--	1,366.15	4.53%	18.5%
Industrial	--	0.87	--	--	--	71.90	1.08%	1.0%
Institutional	--	4.66	--	--	--	1,216.98	1.90%	16.5%
Sub-Total	16,211.4	3.57	1.32	--	1,523.25	6,341.00	100.00%	86.0%
Unaccounted	--	--	--	--	--	1,032.26	--%	14.0%
Total	**16,211.4**	**3.57**	**1.32**	**--**	**1,523.25**	**7,373.25**	**100.00%**	**100.0%**

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Single Family Indoor BMPs

The goal of this page is to determine fixtures to retrofit for maximum net benefits ($/day). Net benefits are calculated for up to three possible fixture states with varying water production savings from the retrofits summarized in the "Net benefits" detail page.

Attributes of Single Family Residential Indoor Fixtures

Fixture Level	Toilets gallons/flush	Clothes Washers gallons/load	Showerheads gallons/minute	Faucets gallons/minute	Data Source	Action
Conventional	1.60	36.00	1.85	1.50	User	Restore CFWC
Better	1.59	35.90	1.84	1.50	User	Restore CFWC
Best	1.28	25.20	1.70	1.50	User	Restore CFWC

Toggle Defaults

Total Utility Cost per Fixture

Fixture Level	Toilets	Clothes Washers	Showerheads	Faucets	Data Source	Action
Conventional	200.00	500.00	20.00	15.00	User	Restore CFWC
Better	1,000.00	1,000.00	100.00	100.00	User	Restore CFWC
Best	250.00	625.00	22.50	17.50	User	Restore CFWC

Toggle Defaults

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- Details - Toilet Retrofit Benefits
- Details - Clothes Washer Retrofit Benefits
- Details - Showerhead Retrofit Benefits
- Details - Faucet Retrofit Benefits

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Single Family Outdoor BMPs

The goal of this page is to determine devices to retrofit for maximum net benefits ($/day).

Market Potential of Single Family Outdoor BMPs

Device or Practice	Target market description	SFR customers in target market	% of total SFR customers
Soil Moisture Sensor	Number of SFR Residencies who have a sprinkler, irrigate from the potable system, and irrigate above baseline irrig.	2410	5%
Non Potable Source Rebate (Reuse)	Number of SFR Residencies who have a sprinkler and irrigate from the potable system	8926	18.51%
Irrigation Audit	Number of SFR Residencies who have a sprinkler and irrigate from the potable system	8926	18.51%

Attributes of Single Family Outdoor Devices

Device or Practice	Average Savings Rate (gal/1,000 ft2/day)	Data Source	Action
Soil Moisture Sensor	24.19	CFWC	
Non Potable Irrigation System (eg. Reuse)	0.00	User	Restore CFWC
Irrigation Audit	5.69	CFWC	

Toggle Defaults

Total Device Cost per Implementation

Device or Practice	Device Cost ($/ft2)	Data Source	Action
Soil Moisture Sensor	0.10	CFWC	
Non Potable Irrigation System (eg. Reuse)	1,000.00	User	Restore CFWC
Irrigation Audit	0.06	CFWC	

Toggle Defaults

Reuse Attributes

Non Potable Offset Credit(%) (eg. Reuse)	Reuse Accessibility(%)	Data Source	Action
0.00	0.00	CFWC	

Toggle Defaults

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Multi-Family Indoor BMPs

The goal of this page is to determine fixtures to retrofit for maximum net benefits ($/day). Net benefits are calculated for up to three possible fixture states with varying water production savings from the retrofits summarized in the "Net benefits" detail page.

Attributes of Multi Family Residential Indoor Fixtures

Fixture Level	Toilets gallons/flush	Clothes Washers gallons/load	Showerheads gallons/minute	Faucets gallons/minute	Data Source	Action
Conventional	1.60	36.00	1.85	1.50	User	Restore CFWC
Better	1.59	35.90	1.80	1.50	User	Restore CFWC
Best	1.28	25.20	1.70	1.50	User	Restore CFWC

Toggle Defaults

Total Utility Cost per Fixture

Fixture Level	Toilets	Clothes Washers	Showerheads	Faucets	Data Source	Action
Conventional	200.00	500.00	20.00	15.00	User	Restore CFWC
Better	1,000.00	1,000.00	100.00	100.00	User	Restore CFWC
Best	250.00	625.00	22.50	17.50	User	Restore CFWC

Toggle Defaults

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- Details - Toilet Retrofit Benefits
- Details - Clothes Washer Retrofit Benefits
- Details - Showerhead Retrofit Benefits
- Details - Faucet Retrofit Benefits

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CII BMPs

The goal of this page is to determine fixtures to retrofit for maximum net benefits ($/day). Net benefits are calculated for up to three possible fixture states with varying water production savings from the retrofits summarized in the "Net benefits" detail page.

Attributes of CII BMPs

Fixture Level	Toilets gallons/flush	Urinals gallons/flush	Faucets gallons/minute	Showerheads gallons/minute	Pre-rinse Spray Valves gallons/minute	Water Audit	Data Source
Conventional	1.60	1.00	0.50	2.20	1.60	0.15	User
Better	1.59	0.90	0.50	2.19	1.59	0.15	User
Best	1.28	0.50	0.50	2.00	1.25	0.15	User

Toggle Defaults

Total Utility Cost per Fixture

Fixture Level	Toilets	Urinals	Faucets	Showerheads	Pre-rinse Spray Valves	Water Audit $/sq. ft.	Data Source
Conventional	150.00	320.00	45.00	30.00	50.00	0.27	User
Better	1,000.00	1,000.00	100.00	100.00	100.00	0.27	User
Best	180.00	375.00	56.00	31.00	60.00	0.27	User

Toggle Defaults

Detail Links

A detail page shows the net benefits of a retrofit program for the various options for each type of fixture.

- Details - Single-use Toilet Retrofit Benefits
- Details - Mixed-use Toilet Retrofit Benefits
- Details - Urinal Retrofit Benefits
- Details - Faucet Retrofit Benefits
- Details - Showerhead Retrofit Benefits
- Details - Pre-rinse Spray Valve Retrofit Benefits
- Details - Water Audit Retrofit Benefits

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BMP Goals

The BMP goals page requires that you select the Optimization type: By Target Gross GPCD or By Program Budget (i.e. how much water do you want to save or how many dollars do you want to save). The target gross GPCD represents the GPCD to be achieved after conservation BMPs have been implemented. The target gross GPCD must be less than the current gross GPCD from the water budget but cannot exceed the maximum possible savings. Program budget represents the total budget allocated for single and multi family indoor fixture retrofit programs.

If you change the Goal type and save the record, the system will optimize the BMP options to meet the new type of goal (Total GPCD or Program Budget). The optimized options are kept separately for each type. Thus if you change a selected option or the planned number of fixtures to retrofit, the change will only be applied the options that were created to meet that particular goal type. Once a set of options is created and optimized, user change values will not be affected by changing the optimization type.

Current Gross GPCD: 102

Max Possible GPCD Savings: 13

BMP Goal Type: Program Budget

Target Budget: 7800000

Click on the link below to view the marginal cost and total cost information for the most cost effective BMP options. Note that generating these charts may take several minutes, however the charts will be displayed in a new tab in your web browser, so you may switch back to this web page to continue work while the charts are generated.

View all BMP Options

< Previous | Save & Continue

For support, contact us at Conserve Florida Water Clearinghouse or call 1-866-640-9732.

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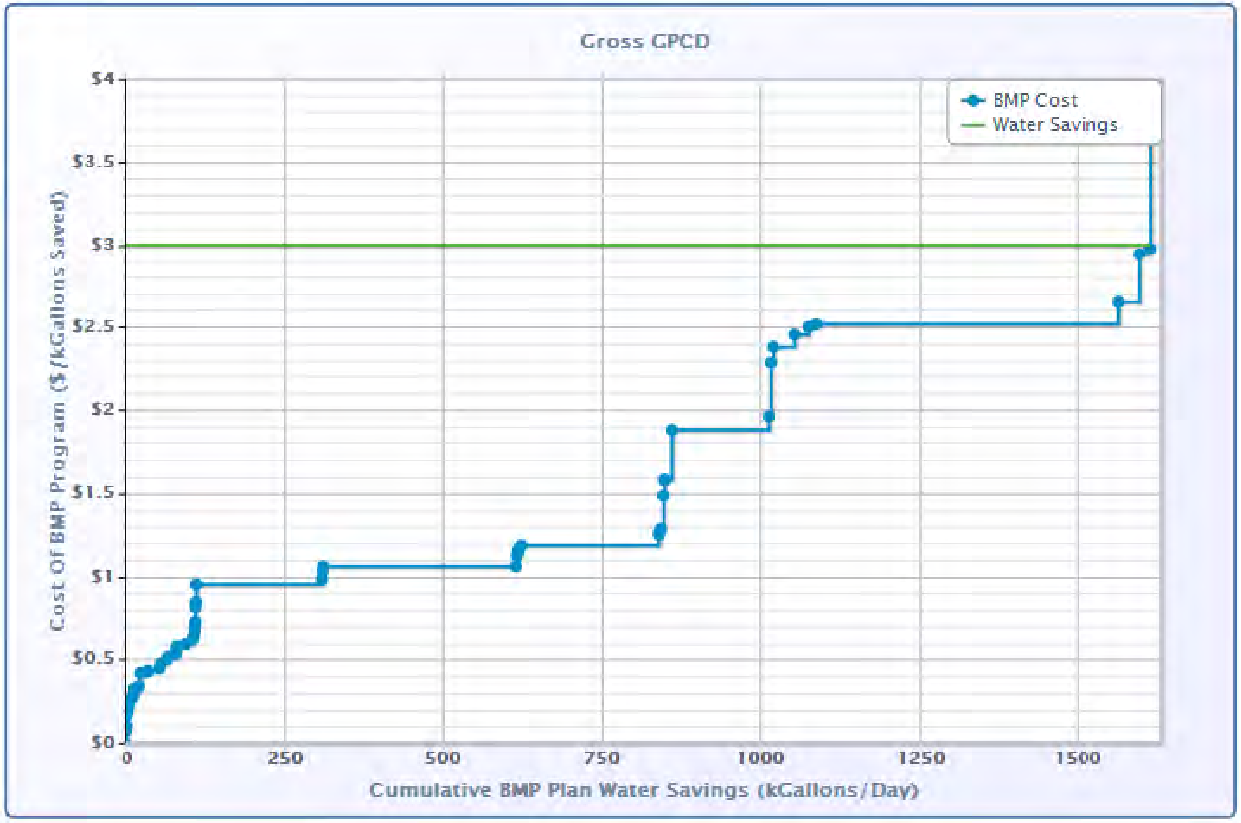
BMP Summary

Congratulations! You have completed all the sections in the 'BMP Analysis' module. Please review the summary information and click "Continue" to proceed to the next module

Hover over a point and the BMP Option name and the value of the coordinates will be displayed. Click on a point and more detailed information regarding the point will be displayed.




Gross GPCD
BMP Total Cost
Savings in Water Production
Total Cost Of BMP Program ($/day)
$6000
$5000
$4000
$3000
$2000
$1000
$0
0
250
500
750
1000
1250
1500
Cumulative BMP Plan Water Savings (kGallons/Day)

BMP Optimization is based on: Program Budget
Target Budget: $7,800,000.00
Actual Budget: $7,803,694.17

BMP Summary Information

BMP Type	Optimum Number Of Implementations	Cost Of Implementation	Total Savings Gallons/Day	Total Savings Gross GPCD	Subgroup Detail Links
Toilet	---	---	---	---	---
Residential	0	0.00	0.00	0.00	Details
Commercial	4048	728,640.00	85,162.56	0.43	Details
Urinal	3562	1,190,990.00	NaN	NaN	Details
Clothes Washer	0	0.00	0.00	0.00	Details
Showerhead	---	---	---	---	---
Residential	119396	2,686,410.00	622,497.64	3.14	Details
Commercial	0	0.00	0.00	0.00	Details
Faucet	---	---	---	---	---
Residential	0	0.00	0.00	0.00	Details
Commercial	0	0.00	0.00	0.00	Details
Pre-rinse Spray Valve	0	0.00	0.00	0.00	Details
Water Audit	-13494	294,194.17	61,823.85	0.31	Details
Soil Moisture Sensor	5874	587,400.00	303,147.32	1.53	Details
Non Potable Irrigation System (eg. Reuse)	0	0.00	0.00	0.00	Details
Irrigation Audit	38601	2,316,060.00	478,528.94	2.42	Details
Total	**157,987.00**	**7,803,694.17**	**NaN**	**NaN**	

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TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO:	Tony Cunningham, PE, and Rick Hutton, PE
FROM:	Fatih Gordu, PE
XC:	Brett Goodman, PE
DATE:	June 17, 2013
SUBJECT:	Quantification of Water Conservation Efforts – Water Use and Climate Analysis

1 INTRODUCTION

Water demands from Gainesville Regional Utilities (GRU) customers have decreased significantly over the past 5 years. During this time, GRU invested heavily in water conservation, but climate (specifically rainfall and temperature) also influences water use. To better quantify how much water use reduction is attributable to climate and non-climate factors, Jones Edmunds & Associates, Inc. analyzed climate data and GRU's water use trends from 1993 to 2012. Our analysis is intended to help GRU better understand its customers' water use behavior changes based on climate, water conservation efforts, reclaimed water use, etc.

2 METHODOLOGY

GRU provided monthly single-family residential water use data and the number of residential connections from 1993 to 2012, and Jones Edmunds obtained rainfall and maximum-temperature data (Figure 1) for Gainesville's airport station from the National Oceanic Atmosphere Administration's website. We analyzed these data using a multi-linear regression with the following variables:

- Monthly single-family residential water use per connection.
- Monthly average rainfall.
- Monthly average maximum temperature.

After testing periods of varying durations, we achieved the best correlation between water use and climate variables using a 2-month monthly average water use per connection. We selected the period from 1993 to 1998 as the correlation period because we believed that climate was the main driver for water-use changes during this period. Figure 2 shows the correlation between climate variables and 2-month monthly average water use per connection, and Figure 3 shows the simulated and actual water use per connection for the correlation period.

Figure 1 Rainfall and Maximum Temperature Data

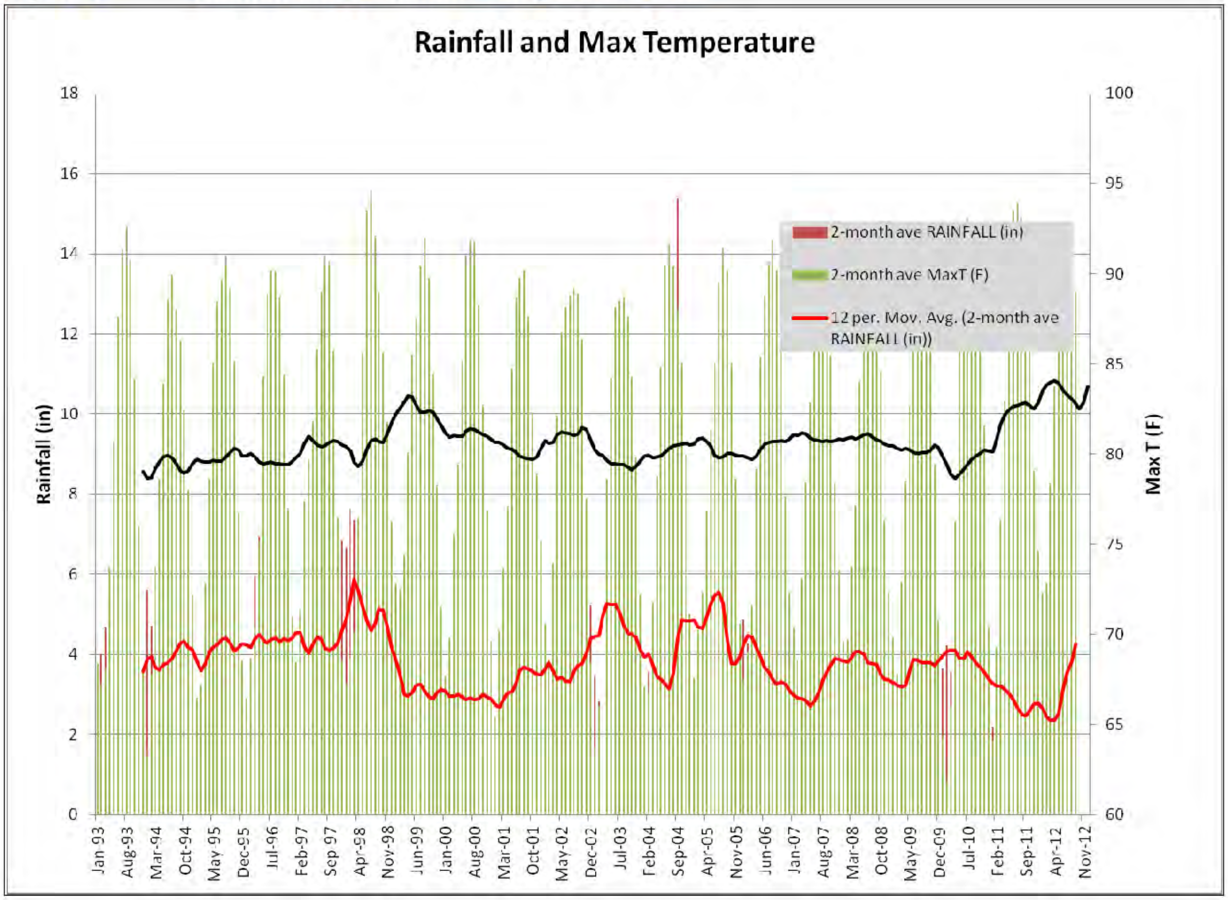


Figure 2 Correlation Between Climate Variables and 2-Month Monthly Average Water Use Per Connection

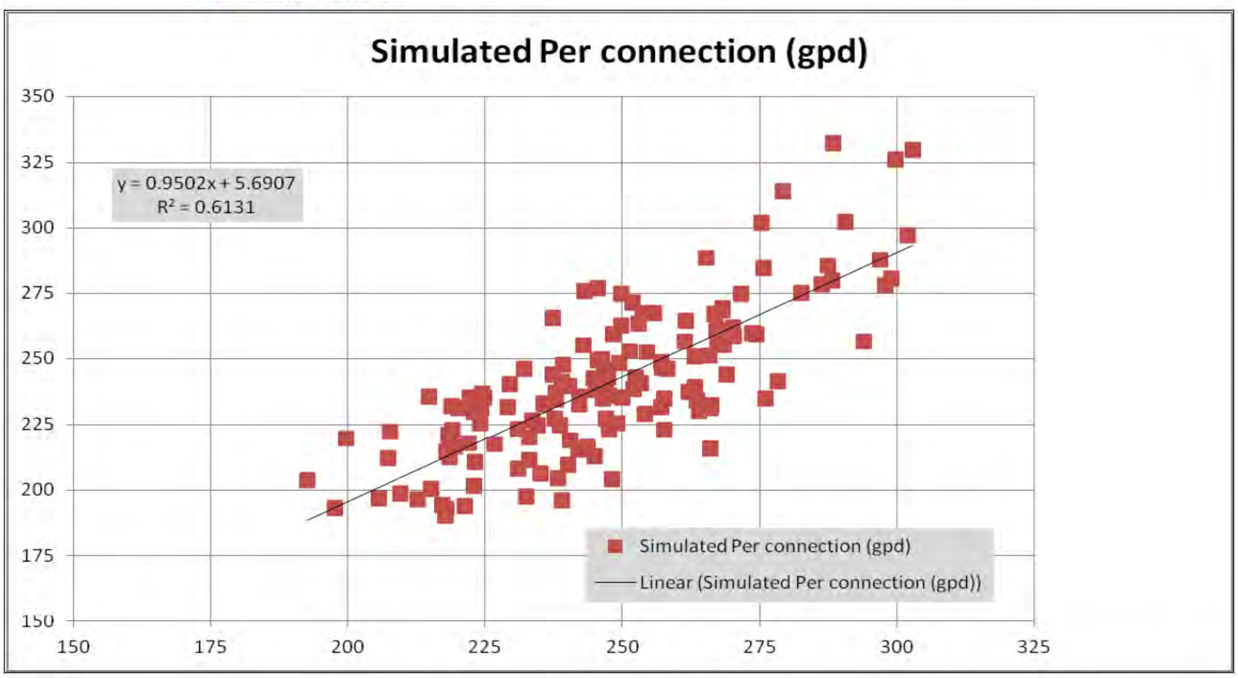
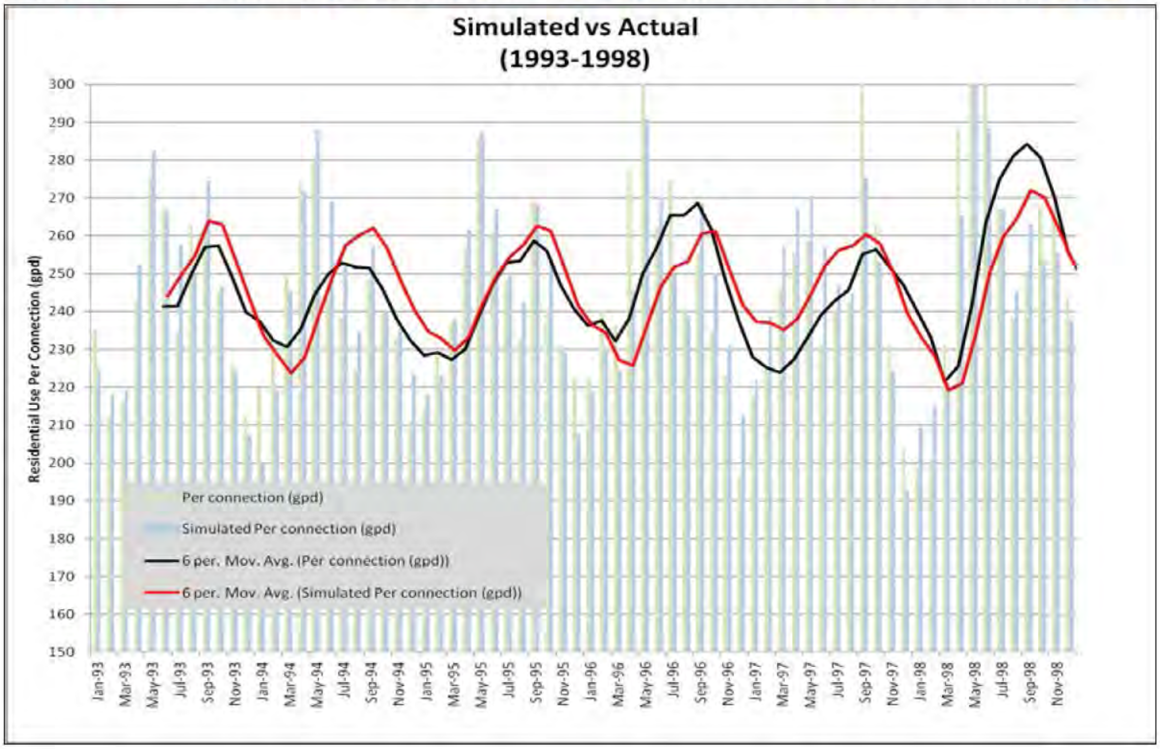


Figure 3 Simulated vs. Actual Water Use Per Connection for the Correlation Period



2.1 PREDICTED WATER USE

Once we achieved a good correlation between the water use per connection and climate variables, we ran the model to predict the water use per connection from 1999 to 2012 (Figures 4 and 5). The simulated water use per connection shows what the water use per connection for GRU would be from 1999 to 2012 if no factors (i.e., rate changes, water-conservation efforts) other than climate were implemented. The simulated water use per connection follows GRU's actual water use per connection until 2001, when it starts to deviate. According to GRU, 2001 is the year when it began implementing an aggressive tiered-rate structure.

Figure 4 Predicted Monthly Single-Family Residential Water Use

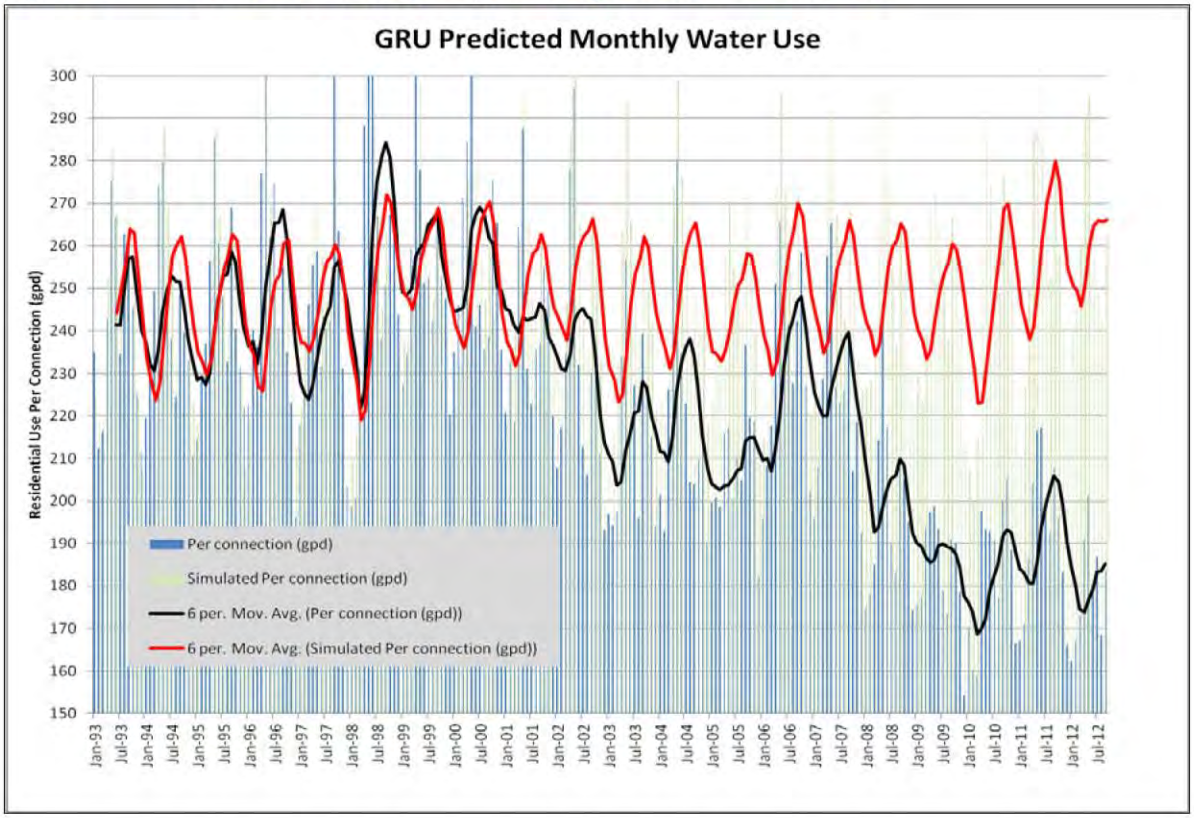
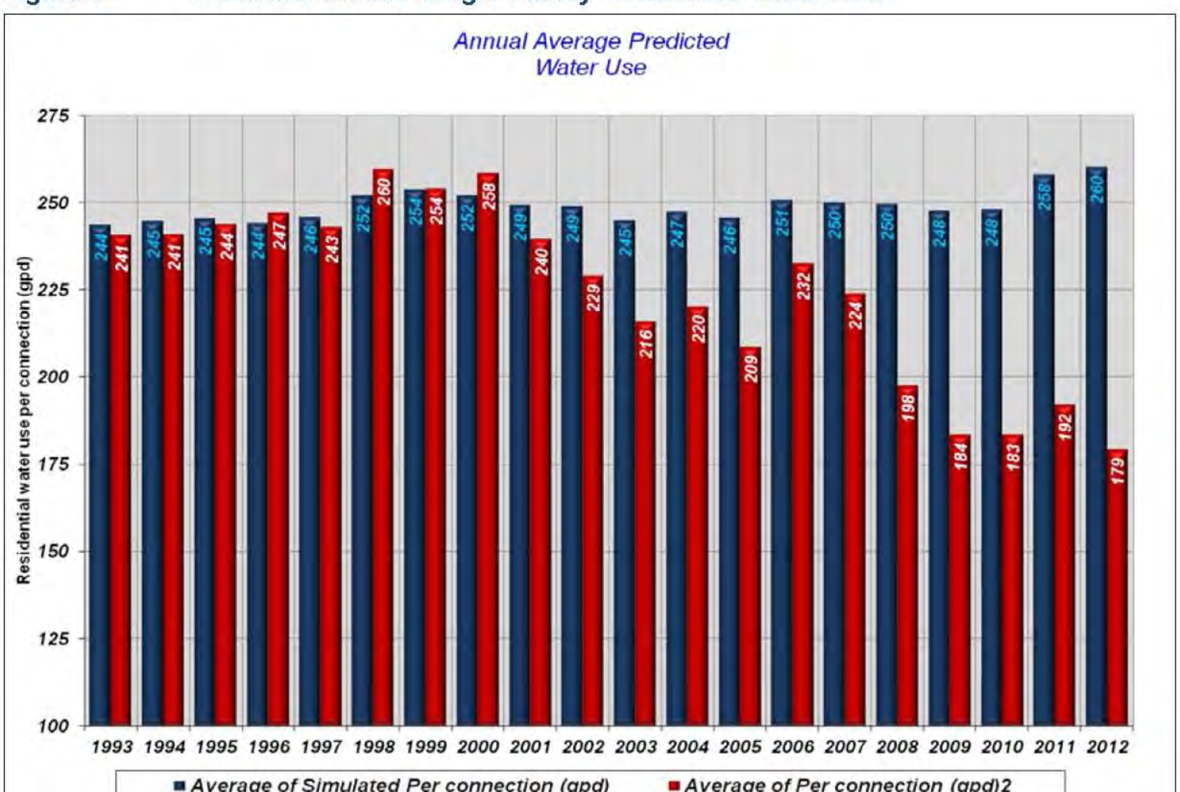


Figure 5 Predicted Annual Single-Family Residential Water Use



3 CONCLUSION

Using the average of the past 2 years' simulated and actual residential water use per connection, Jones Edmunds determined that GRU's single-family residential customers' water use has reduced by 28% due to factors other than climate change. In addition, we observed three distinct water-use-behavior periods:

- Pre-2001.
- 2001 to 2007.
- 2008 to 2012.

We cannot attribute the sharp declines in water use after 2007 to the economic downturn without additional analysis.

Water Conservation Plan Elements (per applicant's handbook)

A customer and employee water conservation education program which includes all of the elements listed below as nos. 1 through 10 must be implemented. The frequency and extent to which each of the elements must be implemented will depend upon the size of the applicant's utility, the financial means of the applicant, the degree to which excess water use is identified as a problem, the particular types of uses which are identified as responsible for the excess water use, and any other relevant factors. Implementation of these may be achieved through collaboration with other entities, including the District.

1) Televise water conservation public service announcements.
    a) GRU has made public press releases regarding cold weather precautions, the Paynes Prairie Resotration Project, water conservation and creative water conservation competitions.
        i) 12/2010 GRU Advises Customers to Take Precautions for Cold Weather
        ii) 10/2012 Work to begin on Paynes Prairie Sheetflow Restoration Project with help from Grants
        iii) 04/2013 Information about water conservation month
        iv) 04/2013 Students Earn Awards for Creative Water Conservation Ideas
2) Provide water conservation videos to local schools and community organizations.
    a) GRU has provided a number of water- and conservation-related videos to the schools and the public library system. Titles include: Home Energy Survey, The Water Cycle of Alachua County, Boulware Springs, and The Rehabilitation of the Boulware Springs Water Works Building.
    b) A number of YouTube videos have been posted for the public to view on GRU's YouTube account. Titles include:
        i) "Energy and Water Savings Tips"
        ii) Start Saving Today: It's About More Than Just Energy
        iii) Start Saving Today: Protecting the Environment
3) Construct, maintain, and publicize water efficient landscape demonstration projects.
    a) In progress –
        i) A set of demonstration plantings around main admin building to comply with the principles of the Florida Yards and Neighbors Program. Plantings will include mostly native and non-invasive drought-tolerant species with minimal irrigation needs post-establishment.
        ii) Sweetwater Branch/Payne's Prairie Sheet Flow Restoration Project – Phase I is a 251 acre project to establish a 125 acre man-made enhancement wetland to improve surface water quality, three miles of berms surrounding the wetland, hiking trails, interpretive materials/signage and public park facilities. There are also long-term plans for an interpretive center.
    b) Existing –
        i) The buildings and landscaping at the new Eastside Operations Center were designed to follow LEED standards in order to have minimal impact on the inclusive and surrounding wetlands. There is a demonstration project on the roof of the Safety & Training building near the entrance where tours and signage are offered to explore the green roofing system that is now well established.
        ii) Kanapaha Botanical Gardens **–** Reclaimed water demonstration project***.*** *GRU also regularly participates in the annual Spring Garden Festival at which GRU presents various water-related information.*
4) Provide water conservation exhibits in public places such as trade shows, festivals, shopping malls, utility offices, and government buildings.
    a) Exhibits and speakers are also ongoing through the Speaker's Bureau
        i) Water/irrigation specific speakers bureau events - FY11 (6 of 27), FY12 (5 of 25), FY13 (3 of 35)

ii) Water-related informational booths - FY11 (4 of 5), FY12 (1 of 2), FY13 (1 of 2)

b) Additional information on the Speaker's Bureau is available on the GRU website at https://www.gru.com/TabID/3852/Default.aspx.

c) Cooperative exhibit with the Florida Museum of Natural History and Florida's Eden on the water conservation efforts and the spring systems in Alachua County. The exhibit ran from August through November of 2010.

5) Provide/Sponsor water conservation speakers to local schools and community organizations.

a) See 4a

b) 11 of the speaker's bureau events from FY11-now and 3 of the informational booths were for schools

c) Additional information on GRU's school support at https://www.gru.com/TabID/3853/Default.aspx.

6) Provide water conservation articles and/or reports to local news media. 12-8

a) GRU has released articles through the monthly newsletter, A&I, regarding pertinent energy and conservation information and GRU efforts to provide and conserve environmental resources. Topics include the Paynes Prairie Restoration Project, water conservation tips, irrigation rules, landscaping tips and community events regarding water conservation and information.

b) 2010
(1) Restoring Paynes Prairie
(2) Sparking an Interest in Energy
(3) Keep Grass Green for Less Green
(4) Balancing Water Supply with Demand
(5) What is Reclaimed Water?
(6) Overwatering can Dry up your Wallet
(7) Reaching out to Customers
(8) $500,000 Grant to Fund GRU Water Projects
(9) Save with GRU Partnering Contactors
(10) Water Rules Change with the Season
(11) Water is too Precious to Use Only Once
(12) Save Water Now, Save Money All Year
(13) Museum Exhibit Notes GRU's Environmental Efforts

c) 2011
(1) Change in Time= Change in Water Rules
(2) Get Help with Irrigation Systems
(3) Water Smart Landscaping
(4) Paynes Prairie Project Will Purify Water
(5) How Water Conservation Affects Price
(6) The Rising Costs to Provide Water and Wastewater Service
(7) 2011 Annual Community Meeting

d) 2012
(1) Free Irrigation Workshop Coming in April
(2) Adding Water/Top Ten Jobs
(3) Keep Landscaping Green While Saving Some Green!
(4) Drinking Water Week
(5) Reclaimed Water Helps Ensure Water for the Future
(6) How GRU Helps Customers Conserve Water
(7) Saving Water Through Reuse
(8) Irrigation Rules are Changing
(9) Irrigation Rules Changing
(10) Restoring the Prairie

e) 2013
(1) Keep your Lawn and Wallet Green

(2) Keeping Water Bills in Check
(3) Paynes Prairie Sheetflow Restoration Project Update
(4) Dry Season Irrigation Tips
(5) Nothing is More Important than Reliable Water
(6) Drinking Water Week
(7) Paynes Prairie Sheetflow Project Groundbreaking

7) Display water conservation posters and distribute literature.

   a) See 4a

   b) Water-related and water conservation posters and other media are regularly displayed and made available in our lobby.

8) Provide landscape irrigation audits and irrigation system operating instructions to local small businesses and residents.

   a) On-site Residential and Commercial Energy & Water Surveys are available free to all GRU customers. During these surveys trained staff inspects the home or business and checks windows, doors, ductwork, insulation, appliances and other equipment, and then offers customized tips for making the home or business more efficient. Customers also have the option to perform a video-guided Home Survey and an online survey available through the GRU website. Additional information available at: https://www.gru.com/TabID/3641/Default.aspx.

   b) Commercial – FY11 through April 2013

      i) Energy & Water Surveys - FY11 (155), FY12 (181), FY13 (66)

      ii) Water/irrigation specific - FY11 (9), FY12 (18), FY13 (?)

   c) Residential – FY11 through April 2013

      i) Energy & Water Surveys - FY11 (1135), FY12 (601), FY13 (570)

      ii) Water/irrigation specific - FY11 (29), FY12 (37), FY13 (20)

9) Establish a water audit customer assistance program which addresses both indoor and outdoor water use.

   a) Existing as current Energy & Water Surveys provided for free to all customers – see 8a, 8bii, 8cii

   b) Established a monthly review of top 50 high water users of both the residential and non-residential customers and a quarterly review of the top 100 customers. Any customer that is found to have statistically abnormal water consumption is reviewed and, if needed, approached for an energy & water survey to reduce their water consumption. This has been reduced to only the quarterly review with this fiscal year – starting October 2012.

10) Provide water conservation information to customers regarding landscape irrigation, including the requirements contained within Rule 40C-2.042, F.A.C.

   a) Existing as current Energy & Water Surveys provided for free to all customers – see 8a, 8bii, 8cii

   b) Began working cooperatively with the Alachua County Environmental Protection Department's Water Conservation Coordinator on their irrigation enforcement program in May 2011.

Additional water conservation measures:

- Local Government Ordinances
  - County Irrigation Ordinance 09-08 was adopted by the City
  - Additional information available at http://www.alachuacounty.us/Depts/BOCC/Ordinances/2009/09-08.pdf.
- Conservation Rate Structure
  - https://www.gru.com/Portals/0/Legacy/Pdf/calculatingWater.pdf
  - https://www.gru.com/Portals/0/Legacy/Pdf/RatesCharges.pdf

- https://www.gru.com/Portals/0/Legacy/Pdf/busRatesCharges.pdf

- Water Conservation Programs
    - SMS Program – Installation of Soil Moisture Sensors in 100 residential properties to evaluate the performance, water savings and customer satisfaction with the technology. Installations are completed and the program is in the final monitoring phase.
    - Toilet retrofit program – Designed for replacement of 400 pre-1994 apartment complex toilets with .8 gpf UHE toilets. As of May 2013, approximately 75% of the toilets are installed and in use, monitoring on those installed has begun. Preliminary feedback from the installers/maintenance staff as well as the unit occupants is very positive.
    - Commercial kitchen sprayer nozzle program – Replacement of pre-existing nozzles with .65 gpm units to evaluate the performance, water savings and customer satisfaction with lower flow nozzles.
    - Coordination with other agencies - water management district pilot studies, conservation potential, SMS, Alachua County training of staff, DSS study, Conserve Florida, Florida Friendly Landscaping, FSAWWA policy.
    - Florida Friendly landscaping at GRU Administration Building including public access demonstration garden.

More than Energy™

NEWS RELEASE

DATE: December 1, 2010
MEDIA LINE: 352-334-2677

FOR IMMEDIATE RELEASE

GRU Advises Customers to Take Precautions for Cold Weather

GRU customers woke up to freezing temperatures this morning that are forecasted to continue throughout the rest of the week. During the winter season, utility safety and energy efficiency become even more important. GRU urges customers to observe the following precautions for the comfort and safety of their families:

Water Pipe Safety

- To prevent flooding from frozen pipes, cover all exposed outside pipes with insulation, thermal tape, cloth or several layers of newspaper
- Run a very slow but steady stream of running water
- Disconnect and drain all hoses from outside faucets

Natural Gas Safety

- If customers smell a strong odor of gas in the home, gather everyone up and go outside to a safe location and call 911. Do not operate any electrical switches, and leave the door open on the way out.
- Purchase and install a carbon monoxide detector that meets UL standards. If the detector sounds an alarm, go outside immediately and call 911
- Never use a gas oven to heat a home

Electric Safety

- Check cords on space heaters to make sure they are not frayed, and check the heaters to make sure they are operating properly
- Never operate a space heater near curtains or anything that is flammable
- Do not overload power strips beyond their ratings

GRU also advises customers to implement the following energy efficiency measures to keep heating costs down:

- Set thermostats at 68 degrees or lower when heating. Bills increase up to 4 percent for each degree above the recommended setting of 68 degrees.
- With a furnace or standard electric heating, turn the system off or down when away from home for longer than 2-3 hours
- Customers with heat pumps should set thermostat at 68 degrees and leave it there to avoid using the emergency heat setting
- Dress for the weather. Shorts and T-shirts inside are for summer, sweaters, slippers and afghans can keep customers comfortable while keeping the home at 68 degrees
- Check heating system's filters once a month and clean or replace as needed
- Weatherize homes. Heating bills can be reduced by 10 to 25 percent by simply caulking, sealing and weather-stripping around all windows, outside doors or where plumbing, duct work and electrical wiring penetrate exterior walls, floors or ceilings

Visit www.gru.com throughout the heating season for tips, online energy tools and rebate information.

###

GRU is a community-owned, multi-service utility in Gainesville, Florida, providing electric, natural gas, water, wastewater and telecommunications services to approximately 92,000 retail and wholesale customers. GRU's combined services make it the most comprehensive utility service provider in the state. As an engaged participant in a progressive community, GRU is committed to becoming a national leader in energy efficiency. GRU is Florida's leading utility in establishing long term energy efficiency goals and in helping their customers reduce energy consumption.

Gainesville Regional Utilities
Media Line: 325-334-2677

Work to begin on Paynes Prairie Sheetflow Restoration project with help from grants

FOR IMMEDIATE RELEASE:

Gainesville, Fla. (October 9, 2012) – Gainesville Regional Utilities (GRU), in conjunction with local and state agencies, has begun work on the Paynes Prairie Sheetflow Restoration project, after receiving a grant of $200,000 from the Florida Department of Environmental Protection's Recreational Trails Program (Federal Highway Administration) as well as an award of $500,000 from the Fish and Wildlife Conservation Commission, Aquatic Habitat and Restoration Section fund.

The awards were received because of the environmental restoration and public recreation benefits of the sheetflow project. The award will specifically help supplement the cost of removing a 2-mile long canal that currently runs through the prairie, and the grant will be applied toward installing hiking trails.

Removing the canal will facilitate the restoration of 1,300 acres of wetlands by allowing the water to return to its original sheetflow pattern of dispersion, which will then filter naturally as it moves through the prairie.

"Our customers' drinking water source will be better protected and wastewater processing costs will be managed efficiently because of the Sheetflow Restoration project," Alice Rankeillor, an Engineer with GRU's water and wastewater department said. "Working to secure grants is important to reduce capital expenditures and save money for customers."

The trail around the 125-acre wetland will create a 3.5 mile walking path with eight viewpoint shelters. Renderings of the trail are available online.

"The public will be able to observe the wildlife and habitats that we've restored at the prairie," Rankeillor said. "They can expect alligators, many birds, and Paynes Prairie's wild bison and cracker horses."

The completion of the sheetflow project is anticipated in fall 2014. To find out more information about the Paynes Prairie Sheetflow Restoration project, visit the programs and services section of the City of Gainesville's website.

###

GRU100
100 YEARS of SERVICE | 1912-2012

GRU is a community-owned, multi-service utility in Gainesville, Fla., proudly celebrating in 2012 its 100th anniversary of providing public power to Gainesville and the surrounding community. The utility has around 93,000 retail and wholesale customers and provides electric, natural gas, water, wastewater and telecommunications services. As an engaged participant in an innovative community, GRU offers a robust selection of energy-efficiency programs to help customers save money, and the utility has a proven commitment to renewable energy.

Website: www.gru.com **YouTube**:www.youtube.com/gru4u **Twitter**: @GRUStormCentral

Gainesville Regional Utilities
Media Line: 352-334-2677

FOR IMMEDIATE RELEASE:

The City of Gainesville joined communities throughout Florida in proclaiming April as "Water Conservation Month". Because April is one of Gainesville's driest months, recognizing the importance of groundwater and the need to preserve it is crucial.

Because April is a common month for heavy landscaping and therefore increased water use, GRU is now offering customers a $50 rebate for irrigation system maintenance and a $25 rebate for replacing broken rain shut-off devices to help conserve water.

Customers should be aware that landscaping accounts for up to 50 percent of residential water use. Planning your landscaping, using native and drought tolerant plants, and limiting grass areas are just a few Florida-Friendly landscaping techniques can reduce the amount of water needed to keep your landscape beautiful and healthy.

"Conserving water is something that we can all be a part of," said David Richardson, GRU's assistant general manager for Water and Wastewater systems. "It does not matter how large or small the effort, every drop counts."

###

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Website: www.gru.com **YouTube**: www.youtube.com/gru4u **Twitter**: @GRUStormCentral

Gainesville Regional Utilities
Media Line: 352-334-2677

Students Earn Awards for Creative Water Conservation Ideas

FOR IMMEDIATE RELEASE:

Local youth learned about the importance of water conservation by participating in the Florida Section of the American Water Works Association's (FSAWWA) Drop Savers Contest. The poster contest, sponsored locally by Gainesville Regional Utilities, recognized five winners in North Central Florida to represent Region XI in the state-wide FSAWWA competition.

Of the five, eighth-grade Lincoln Middle School student Svea Cheng took home first place for the middle school division of the state-wide competition. FSAWWA will showcase Svea's poster on their website at fsawwa.org.

To celebrate Water Conservation Month, GRU is displaying the winning posters in the lobby of its downtown administration building throughout April. The winners also received awards presented by Mayor Craig Lowe in addition to pizza parties for their respective classes.

"We were amazed by the creativity of the participating students," said Jennifer McElroy, GRU water/wastewater engineer and FSAWWA Region XI chair. "It was challenging for the GRU judges to select a winner."

Region XI first place winners: Alvaro Munoz-Gonzalez, 1st grade, J.J. Finley Elementary School; Kendall Brown, 2nd grade, J.J. Finley Elementary School; Heather Agnew, 4th grade, Meadowbrook Elementary School; Svea Cheng, 8th grade, Lincoln Middle School; McKayla Nelson, 10th grade, Buchholtz High School.

###

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Website: www.gru.com **YouTube**: www.youtube.com/gru4u **Twitter**: @GRUStormCentral

Restoring Payne's Prairie

[Stewardship]

A new video produced by the City of Gainesville offers residents a glimpse at the future of local natural treasure. "Payne's Prairie Sheetflow Restoration Project" walks viewers through the evolution of an ambitious wetlands treatment plan that GRU is working on with the Gainesville Public Works Department.

The project, which is scheduled to begin in fall 2011, will improve water quality in the Alachua Sink, protect the Floridan Aquifer and restore more than 1,300 acres of wetlands in Payne's Prairie Preserve State Park. View the video on the Channel 12 [insert dates] or anytime on www.gru.com.

Sparking an Interest in Energy

[Education]

It's never too early to start learning good habits! That's why GRU provides local elementary and middle schools with classroom materials to help children develop energy- and water-efficient lifestyles.

So far this academic year, 11 schools have taken advantage of GRU's free and loaned educational library. Resources include books, DVDs and interactive kits that provide hands-on lessons.

"GRU has a strong interest in helping kids become energy-conscious adults," said Robin Baxley, who manages GRU's education library. "We hope that our education initiatives prove beneficial in that effort."

Keep Grass Green for Less Green

[Tips]

Photo: n/a

Placement: TBD

During the dry months of April and May, it is tempting to irrigate more often. To save money, avoid over-watering and maintain a healthy lawn, follow the St. John's River Water Management District's rules:

- Water before 10 AM or after 4 PM: 65 percent of water applied midday evaporates
- Water on scheduled days: Odd-numbered addresses can only irrigate on Wednesdays and Saturdays, even-numbered addresses on Thursdays and Sundays, and businesses on Tuesdays and Fridays
- Water for one hour or less per zone, up to 3/4 inch: Set a timer and place shallow cans in the yard to monitor volume

These mandatory rules also apply to water from wells, but not to reclaimed water. Visit www.gru.com for more ways to save money and water, including rebates for irrigation system maintenance and rain sensors.

Balancing Water Supply with Demand
[Planning]
Photo: n/a
Placement: TBD

The Suwannee and St. John's River Water Management Districts recently declared north central Florida a Potential Priority Water Resource Caution Area. If the districts make this temporary designation permanent, they could limit the amount of water GRU and other utilities in the area are allowed to pump from the Floridan aquifer. Such limits will eventually raise water costs.

GRU is committed to holding prices down for customers. The utility is working with districts on updating its plan to ensure the community has an adequate supply of clean drinking water. Efforts already underway include GRU's education and rebate programs, which help customers save water and money. GRU also plans to continue expansion of the reclaimed water program it established in 1993. Reclaimed water provides an alternate source of water for uses such as irrigation, water features and industrial cooling.

Together these programs lower demand on the drinking water supply and help keep long-term costs down by avoiding expensive alternatives, such as desalination plants.

Reaching out to Customers

[Community]

Photo: n/a

Placement: TBD

Two spring events offered GRU the chance to reach out to customers and offer tips to save energy, water and money.

GRU's booth at the 2010 North Central Florida Home Show, themed "Everything for the Home, Inside and Out," allowed customers to learn about the utility's programs to lower bills and improve comfort. At the Kanapaha Spring Garden Festival, GRU focused on renewable energy, reclaimed water and its projects at the Kanapaha Botanical Gardens.

"Connecting with members of the community is important to GRU employees," said Dan Jesse, who helped at both events. "We value the opportunity to volunteer our time and discuss issues that are important to our customers."

Overwatering Can Dry Up Your Wallet

[Tips]

Photo: Table below

Placement: TBD

May is one of this area's driest months, but don't forget that overwatering can damage your lawn and waste money. Avoid these pitfalls by following St. John's River Water Management District's rules. Water the lawn for one hour or less per zone up to 3/4 inch, before 10 AM or after 4 PM, and only on scheduled days.

Location	**Scheduled Days**
Odd-numbered addresses	Wednesdays and Saturdays
Even-numbered addresses	Thursdays and Sundays
Businesses	Tuesdays and Fridays

These mandatory rules also apply to water from wells, but not to reclaimed water. Visit www.gru.com for more irrigation tips and rebates.

What is Reclaimed water?

[Innovation]

Photo: Kanapaha picture

Placement: TBD

Reclaimed water is wastewater that has been treated to very high standards to remove harmful organisms and substances so that it can be safely reused. Using it helps conserve drinking water – a precious and limited resource.

When used for irrigation it provides the added benefit of nutrients, reducing the need for fertilizers. It is a great tool for environmental restoration and beautification projects, such the Payne's Prairie Sheetflow Restoration Project and the Kanapaha Botanical Gardens. It can also be used for industrial cooling, which is the case at the new energy center that powers the cancer hospital.

$500,000 Grant to Fund GRU Water Projects

[Innovation]

Photo: n/a

Placement: TBD

The St. Johns River Water Management District has awarded GRU more than $500,000 for two innovative water conservation studies. The programs will test new technologies to determine how they could help customers save water and lower their bills.

A soil-moisture sensor study, which is already underway, seeks to prevent overwatering of lawns. The grant money will allow GRU to expand the study to an additional 250 homes.

The other study involves installing ultra-low flush toilets in selected customers' homes to measure the amount of water conserved. Converter kits that provide two flush options, a light and a heavy-duty flush, will also be installed in selected homes.

"GRU is making great strides in water conservation," said Strategic Planning Engineer Jennifer McElroy. "We believe these programs will really benefit customers in the long haul."

Researchers will select participants based on predetermined criteria. An estimated 150,000 gallons of water a day will be saved during the course of these studies.

Save with GRU Partnering Contractors

[Rebates]

Photo: n/a

Placement: tbd

The next time you are in the market for home improvements, consider using a GRU Partnering Contactor and save up to $1,435 in upfront costs. GRU offers numerous rebates to help customers lower their bills by investing in energy- and water-efficiency upgrades. However, many rebates, such as those for in-ground irrigation systems, are available only to customers who hire a GRU Partnering Contractor. For a complete list contractors and details about the rebate programs, visit www.gru.com.

Water is too Precious to Use Only Once

[Environment]

Photo: HOUSE_3B.jpg

Placement: tbd

What do Kanapaha Botanical Gardens, a local golf course, soccer fields, Veteran's Memorial Park, Chapman's Pond and Nature Trails, and a handful of neighborhoods with especially dry soil have in common? They all are working with GRU to help conserve the community's drinking water by using reclaimed water for irrigation.

Reclaimed water is wastewater that has been highly treated to be clean and safe for irrigation.

David Richardson, GRU's assistant general manager for water and wastewater systems, said, "Using reclaimed water reduces the amount of water pumped out of the ground— and that ensures our community will continue to have clean, safe, high-quality drinking water for future generations."

Wherever available, reclaimed water is Gainesville's best choice for irrigation, aesthetic water features and for industrial uses. For example, it is used in the cooling towers for GRU's South Energy Center, which powers Shands Cancer Hospital at the University of Florida.

Water Rules Change with the Season

Photo: n/a

Placement: tbd

Come October, the summer rains are gone. The change of season also marks the beginning of fall water restrictions from the St. Johns River Water Management District:

- Water on scheduled days: Businesses can irrigate on Tuesday, odd-numbered homes on Saturday and even-numbered homes on Sunday
- Water for no more than one hour per zone
- Water only when needed and not between 10 AM and 4 PM

These restrictions apply to water from wells but not to reclaimed water.

Save Water now, Save Money all Year

[Budget]

Photo: n/a

Placement: tbd

Customers can save on next year's wastewater bills by using less water this winter.

That is because wastewater is not a metered service. Instead, wastewater charges are based on the amount of water used – the lesser of either actual water use during a particular month or a customer's "winter max."

Winter max is determined by the amount of water used in December and January, which appears on the January and February bills. Limiting water use during this time by fixing leaks, watering the lawn less or not washing cars can keep a home's winter max low and provide substantial year-round savings.

Museum Exhibit Notes GRU's Environmental Efforts

[Environment]

Photo: tbd

Placement: tbd

Go to the Florida Museum of Natural History between now and December 21 to learn about two GRU water preservation projects.

"The Blue Path: Protecting Florida's Springs" is a collection of artwork that explores the state's spring system and water cycle. Sponsored by Florida's Eden, the exhibit highlights GRU's relationship with Kanapaha Botanical Gardens and the utility's infiltrating wetland project.

The opening of the exhibit was the launch of "The Blue Path" grassroots campaign, which aims to encourage protection of Florida's water resources through individual responsibility. Several GRU employees assisted Florida's Eden with the exhibit by providing facts and tips on water.

"Environmental protection is a part of GRU's mission, and we frequently collaborate with groups that have the same goal," said Jennifer McElroy, GRU water/wastewater engineer.

Change in Time=Change in Water Rules

[Tips]

Photo: n/a

Placement: any

The switch to Daylight Saving Time in mid-March also marks a change in the St. Johns River Water Management District's restrictions, which are in effect until November. Following them will keep a lawn healthy while preventing irrigation from taking over your water budget:

- Water before 10 AM or after 4 PM: 65 percent of water applied midday evaporates
- Water on scheduled days: Homes with odd-numbered addresses can irrigate only on Wednesdays and Saturdays, even-numbered addresses on Thursdays and Sundays, and businesses on Tuesdays and Fridays
- Water for one hour or less per zone, up to 3/4 inch: Set a timer and place shallow cans in the yard to monitor volume

These mandatory rules also apply to water from wells but not to reclaimed water.

Get Help with Irrigation Systems

[Rebates]

Photo: Box inset

Placement:

Watering lawns during drier months can get expensive. GRU offers rebates for in-ground irrigation systems that can help.

Customers can get $25 for installing a sensor to prevent their system from running when it is raining. They can also receive $50 toward annual inspection and maintenance of their system, which can prevent overwatering and identify wasteful leaks and line breaks.

"When an irrigation system is spraying into the street or driveway it's obvious that it needs adjusting, but having systems inspected by a professional each year will fix these and other issues that are less noticeable but just as costly," said Jennifer McElroy, water and wastewater planning engineer.

Visit www.gru.com or call 352-393-1460 for more information.

[box inset]

St. Johns River Water Management District Water Restrictions

- Odd-numbered residences: Wednesday and Saturday
- Even-numbered residences: Thursday and Sunday
- Business properties: Tuesday and Friday
- No irrigation any day from 10 AM to 4 PM

Water Smart Landscaping

[Tips]

Photo:

Placement:

With proper planning, it is possible to have a beautifully landscaped yard that does not require a lot of water.

Begin by having soil analyzed to identify which plants will grow efficiently in your yard. Then classify the areas of the property by drainage and the amount of sunlight received. Select native plants that match those conditions and thrive in north central Florida's climate without the need for special care or excessive irrigation.

"If you do want plants that need more water, group them together to limit the area of your yard that will require additional irrigation," said Amy Carpus, conservation analyst. "Grass uses the most water, so it's best to leave that for areas where children and pets play."

For more landscaping and irrigation tips, visit www.gru.com or call 352-393-1460.

Paynes Prairie Project Will Purify Water

[Environment]

Photo: Dan will provide

Placement: TBD

GRU and the City of Gainesville are embarking on a wetlands project that will help the environment while saving money for wastewater customers.

Wastewater from the downtown area is treated and reclaimed through GRU's Main Street Water Reclamation Facility and flows into Sweetwater Branch, which ultimately flows onto Paynes Prairie. Although it is treated to safe irrigation standards, the reclaimed water still contains nitrate levels that are higher than the natural levels in Paynes Prairie.

The Paynes Prairie Sheetflow Restoration Project provides a solution by constructing a wetland where naturally occurring plants and bacteria will transform nitrate into harmless nitrogen gas, the main component of air. Water leaving the wetland will support the growth of healthy native plants.

"In addition to the environmental benefits, this wetlands project will be less expensive to construct and operate than other water treatment systems, providing savings for customers," said Alice Rankeillor, GRU project manager.

How Water Conservation Affects Price

[Planning]

Photo: Box inset

Placement:

As the manager of GRU's water system, a question I often get from customers is: "Why should be bother using less water if you're just going to raise rates?" The answer, while complex, can be boiled down to two basic factors.

First, there is a limited water supply. Second, the primary costs to provide water – including the water treatment plant, pipes and other infrastruture – are fixed. They do not go down with lower water use and if total water sales go down, those fixed costs must be spread across fewer units. This can , causing the price per unit to go up. This is true if the decline in sales is due to conservation efforts or fewer customers due to a slowed economy; both have been factors in recent price increases.

Of course, this begs the question: if lower sales can raise the price, why should customers use less? That is where the limited supply comes into play. GRU customers get their water from the Floridan Aquifer, which is an underground source of freshwater that also feeds local lakes, rivers and streams. To withdraw that water, GRU must get a permit from the St. Johns River Water Management District.

We have prepared for this by helping customers reduce water use and by investing in the reclaimed water system over the last few years. Taking these proactive steps will save customers over the long term by avoiding more expensive alternatives, such as a large-scale expansion of the reclaimed water system, building infrastructre to draw water from another freshwater body or construction of a desalination plant.

Getting Your Money's Worth

If you drink 8 glasses of GRU water every day for an entire year, the cost is 36 cents – not 37 cents per glass, but 37 cents for all 2,920 glasses of water.

Cost-effectively meeting the community's need for clean drinking water is one of the biggest challenges we face. By working together with customers to reduce individual water use, we will be able to meet that challenge well into the future.

Sincerely,

David Richardson

Assistant General Manager of Water/Wastewater

The Rising Costs to Provide Water and Wastewater Service

[Price]

Photo:

Placement: Front, left, below budget story

While there are many factors driving recent price increases for water and wastewater, most can be tied to increased regulatory requirements and reduced revenues to cover rising costs.

Unlike the electric and natural gas systems, whose prices have a large variable-cost component associated with fuel, costs in the water and wastewater systems are largely fixed: treatment plants, pipes and other infrastructure. When sales decline, those fixed costs have to be spread across fewer units.

The slowed economy has played a major role over the past few years. It has decreased the rate of growth in new customers, which has reduced both water sales and revenues associated with connection fees. It has also caused many customers to fundamentally change the way they use water – for example, deciding not to water their lawns.

Efforts to meet conservation guidelines established by regional water management districts to manage the limited water supply and prevent negative environmental effects have also reduced water use. Meanwhile, costs continue to rise.

Some of the projects underway to meet changing regulations and safety requirements include:

- Ongoing efforts with the Cabot/Koppers Superfund Site to ensure the water supply remains free from contamination
- The Paynes Prairie Sheetflow Restoration Project to meet new wastewater treatment standards and restore natural flow through the prairie
- Expanding the reclaimed water system to reduce the amount of drinking water used for irrigation

The costs for these and other major projects to meet regulatory requirements will be about $28 million over the next three years.

“Cities across Florida and the nation are facing similar issues and price pressures,” said David Richardson, who oversees GRU’s water and wastewater systems. “GRU remains committed to finding cost-effective solutions to meet our customers’ need for clean drinking water in an environmentally responsible and affordable manner.”

2011 Annual Community Meeting

[Event]

Photo:

Placement: Any

Customers had an opportunity in October to get an update directly from GRU's leadership team about what the utility is doing to meet the community's immediate and future energy and water needs. GRU's Annual Community Meeting included formal presentations and employees and local vendors were on hand to answer questions and provide tips about ways to manage their utility usage and bill.

Free Irrigation Workshop Coming in April
[Tips]
Photo:
Placement: TBD

Discover ways to keep your yard looking great for less at a free irrigation workshop sponsored by GRU. The event will be held on April 12 from 6:30 to 8:30 p.m. and will feature Steven King, a certified irrigation contractor who will provide water-saving tips, including how to keep landscapes healthy, maintain automatic irrigation systems and detect and fix leaks.

The workshop will be in the Millhopper Branch Library located at 3145 N.W. 43rd St. Seating is limited, and interest attendees must register at 352-264-6829 or sgreco@alachuacounty.us. For more information, visit www.aclib.us/millhopper or the Millhopper Branch Library.

Adding Water/Top Ten Jobs

Before the City provided electric services to its citizens, it provided water. Prior to 1981, citizens obtained their water from individual and public wells, which was difficult to pump for drinking water and even more difficult to obtain quickly for fire protection. In 1981, Gainesville purchased Boulware Springs, a natural spring-fed watercourse that flowed across Alachua prairies, to serve as the City's water source.

The purchase of the springs became more beneficial to the community than City leaders had even imagined. While many Florida communities were suffering from water-borne illnesses, Gainesville citizens were enjoying some of the cleanest water in the state. Later, in 1905, the City's promise of free water became the deciding factor that led University of Florida to call Gainesville its home.

In later years, GRU continued to provide water to the community in the most convenient, affordable and beneficial way. In 1949, Gainesville became the first city in Florida and 11th in the nation to fluoridate its water supply to promote strong and healthy teeth, giving citizen's more bang for their water bucks.

Today, citizens continue to recognize the importance of a safe and reliable water supply. A survey by Reader's Digest listed water and wastewater operators second in the top ten jobs that the American population can't live without. Also on the Reader's Digest list are telecommunications equipment installers and repairers, ranked fifth, and electrical power line repairers, ranked ninth. Water/wastewater, telecommunications and electric service are just three of the services that GRU employees proudly provide to Gainesville citizens every day.

Keep Landscaping Green While Saving Some Green!
Photo:
Placement: TBD

May is usually Gainesville's driest month, but don't overcompensate by overwatering. Roughly 50 percent of all residential water consumption is for landscaping, so it's easy to waste a lot of money through excess irrigation. But wasting money is only half of the story— Florida has a limited fresh water supply and the future depends on preserving it.

"The good news is that having a beautiful landscape and saving money is not hard," said Rick Hutton, Supervisor in Water/Wastewater Planning. "A little extra care can make a huge difference in protecting our water supply."

Follow these tips to save water and money— and to keep within the law:

- Only irrigate when your yard needs it - Unnecessary irrigation wastes water and can damage your landscaping. Grass should be watered only when it does not spring back when stepped on
- Follow the St. Johns River Water Management District watering rules – When you do irrigate, make sure you are only doing so on designated irrigation days. Also, it is illegal to irrigate between the hours of 10 AM and 4 PM because up to 65 percent of the water will evaporate. That is a huge waste of water and money
- Limit grass areas, which require the most water
- Choose Florida-Friendly landscaping techniques such as planting native drought-tolerant plants. Call 811 to have the ground marked for utilities before you dig
- Visit www.GRU.com/YourHome/Conservation/Water/ to find out more about how to keep your landscape and your wallet green while ensuring the availability of water for today and future generations

[Pull out box] Legal Irrigation Days

- Odd numbered addresses irrigate only on Wednesdays and Saturdays
- Even numbered addresses irrigate only on Thursdays and Sundays
- Business addresses irrigate only on Tuesdays and Fridays

Drinking Water Week

Each May, the American Water Works Association celebrates Drinking Water Week to recognize the importance of water in our everyday lives.

As the temperatures rise this summer, here are a few reasons to enjoy a refreshing glass of tap water right from the faucet:

- It's safe – GRU's water supply is drawn from the protected and naturally filtered Floridan Aquifer and treated at the award-winning Murphree Water Treatment Plant, giving you access to some of the purest drinking water in the nation. "It is a rare privilege to be able to pull our water from such a pristine source," said Utility Engineer Jennifer McElroy.
- It's affordable – Tap water costs a fraction of the price of bottled water. In fact, you can get 1,000 gallons of water from GRU for about the cost of one gallon of bottled water from the store. A 2010 study estimates that 48 percent of "bottled" water is actually just tap water in a bottle.
- It's good for your teeth – GRU's water supply is fluoridated to help promote oral health in children. Research shows that fluoridated water can reduce dental problems by as much as 40 percent.

Reclaimed water helps ensure water for the future

Photo:
Placement: TBD

As Florida's most important natural resource, water is too precious to be used only once. GRU has developed innovative ways to treat wastewater to extremely high standards, turning it into reclaimed water that can be reused beneficially. Using reclaimed water for purposes such as irrigation means saving groundwater needed for human uses such as drinking and bathing, helping ensure a safe and reliable supply of potable water for future needs.

GRU has been supplying reclaimed water since 1993, when it upgraded the Kanapaha Water Reclamation Facility treat water to such high standards that it can be used for beneficial purposes throughout the community.

Later, GRU also brought the Main Street facility's treated water up to the high standards of reclaimed water so that both facilities could be used to provide reclaimed water to be used for recharging the Floridan Aquifer, supplying to local homes, businesses and institutions for low-cost, high-quality irrigation or helping restore natural areas.

GRU's first water reuse project, the Kanapaha Botanical Gardens, uses reclaimed water to irrigate 62 acres of gardens that feature waterfalls, streams and bog gardens that are homes for plants, trees and a wildlife sanctuary.

"The Kanapaha Botanical Garden represents one of Gainesville's most notable displays of reclaimed water's safety and beauty," said Rick Hutton, Supervising Engineer Utility Designer.

The Paynes Prairie Sheetflow Restoration Project is another such initiative being conducted by GRU and its local and state project partners. This project intends to restore the natural sheetflow of water onto more than 1,300 acres of wetlands using reclaimed water from the Main Street facility, not only serving as a way to meet the city's wastewater needs, but also helping preserve and restore the environment.

GRU also supplies reclaimed water to Haile Plantation for low-cost, high-quality irrigation of common grounds and existing golf courses, Alachua County Kanapaha Veteran's Park, Chapman's Pond and Nature Trails, TREEO Water Gardens and Kanapaha Middle School.

Timeline:

- 1977- GRU completed the Kanapaha WRF
- 1993- GRU began its Water Reuse Program with the first site being the nearby Kanapaha Botanical Gardens
- YEAR- Main Street becomes a Water Reclamation Facility in order to supply beneficial reclaimed water to the city

How GRU Helps Customers Conserve Water

GRU strives to be good stewards of water by engaging customers to preserve our resources for the future with water conservation programs and the use of reclaimed water.

GRU's water reclamation facilities save water by reusing and recycling it. Reclaimed water is used for irrigation, cooling systems and to recharge the aquifer. Seventy percent of the water that customers use is reclaimed and recharged to the aquifer.

"Because we are reusing water through water reclamation, we end up taking less water from the aquifer," said Tony Cunningham, senior environmental engineer.

GRU also has many programs to help our customers use water efficiently. GRU, in conjunction with the St. Johns River Water Management District, is starting two pilot programs, an ultra low-flow toilet and high-efficiency commercial kitchen spray nozzle programs.

Five hundred local businesses with commercial kitchens will receive free high-efficiency kitchen spray nozzles that will drastically reduce the amount of water used to clean dishes. These nozzles spray water at 0.65 gallons per minute (gpm) versus 1-3 gpm.

The ultra low-flow toilet pilot program will test 400 toilets at several commercial properties in the area over three years. These toilets are considered ultra low-flow toilets because they take only 0.8 gallons/flush versus a traditional low-flow toilet, 1.2 gallons/flush. If the pilot program proves both feasible and effective, then it could be extended to more properties and customers could be eligible for possible rebates toward their toilet purchase.

"This is brand new technology, and we are doing this because it is an innovative way to save water," said Rick Hutton, supervising utility engineer.

In next month's issue, look for a follow-up article on how GRU can help you money on your water bill through rebates, GRU's rate structure and a free water survey. For more information about GRU's water conservation, please visit https://www.gru.com/OurCommunity/Environment/WaterQuality/waterGRU.jsp.

Saving Water Through Reuse - Sam
July 10, 2012

Reusing water conserves it, so one of GRU's newest water reclamation projects will supply the Innovation District with chilled water for industrial cooling at GRU's chilled water plant. Reclaimed water will be used instead of drinking water for the plant and also for irrigating green places. Currently, chilled water air conditions the Shands at UF Cancer Hospital and the Innovation Hub (I-Hub).

"Chilled water will be a much more efficient way to meet the District's energy needs than if each building had its own A/C unit," said Chuck Heidt, project manager for the chilled water system.

GRU will build a pipeline that will provide reclaimed water to the I-Hub's chilled water plant from GRU's Main Street Water Reclamation Facility. Currently, the District's chilled water plant uses 3,000 gallons/day but is expected to jump to 86,000 gallons/day within the next 20 years.

"By using reclaimed water, we are minimizing the amount of drinking water used to cool and irrigate the District," said Rick Hutton, supervising utility engineer.

Irrigation Rules Are Changing-Deirdre

Gainesville typically experiences a seasonal drought in October, making this a good time to review new irrigation rules. GRU customers are divided between two districts, the St. Johns River Water Management District (SJRWMD) and the Suwannee River Water Management District (SRWMD). Due to the drought conditions, the rules for the SRWMD have changed.

To find a map of the districts and information about the specific restrictions that apply to you, visit www.gru.com

Irrigation Rules Changing

The return to standard time on Sunday, November 4 will mark a change in local irrigation rules, reducing watering to one day a week. GRU's customers are already one of the best in the state at conserving water, and GRU helps by reclaiming wastewater and returning 70 percent of the water taken from the ground back into the aquifer. The irrigation rules are yet another tool to help preserve this vital resource.

Alachua County is divided between two water management districts, The St. Johns River Water Management District and the Suwannee River Water Management District. Currently, there are variations in irrigation rules between the two districts. GRU is working with the districts and the Alachua County Environmental Protection Agency to achieve a consolidation of the rules to make it easier for water customers.

Visit www.gru.com to find the most current irrigation rules for your residence or business. Tips for saving water and money can also be found on GRU's web site.

Restoring the Prairie
Photo: paynesprairie.jpg
Placement: Front, Top, Left

Construction on the Paynes Prairie Sheetflow Restoration Project begins this month. GRU, in partnership with other agencies such as Public Works, will build a 225 acre enhancement wetland and restore 1,300 acres of prairie wetlands located southeast of the intersection of South Main Street and Williston Road.

The Sheetflow Restoration Project is a GRU reclaimed water initiative that will revitalize wetlands and wildlife habitat, purify water, remove trash, provide public education and recreational opportunities, and fulfill GRU's regulatory requirements cost-effectively.

The project will restore the natural flow of water onto the prairie, which was interrupted by a man-made canal built in the 1930s for cattle ranching. Public amenities will include trails, a boardwalk, educational signposts and observation structures. Future plans include a visitors' center and two viewing towers.

"This is a beneficial way to use reclaimed water because it will help protect our water resources and also restore wetland habitat on Paynes Prairie," said Alice Rankeillor, water and wastewater engineer. "It is a win-win situation for everyone."

Keep your Lawn and Wallet Green
Photo:
Placement:

Irrigation can account for half of your monthly water use, especially in the dry months of April and May. Please follow these St. Johns River Water Management District rules, which are in effect until November:

- Water on scheduled days: Odd-numbered addresses can irrigate only on Wednesdays and Saturdays, even-numbered addresses on Thursdays and Sundays, and businesses on Tuesdays and Fridays
- Water only before 10 AM or after 4 PM
- Water only when needed and for one hour or less per zone

These restrictions also apply to water from wells, but not to reclaimed water. Visit www.gru.com for water rebates and other money and water-saving tips.

Keeping Water Bills in Check
Photo:
Placement:

GRU rewards for water conservation. Thanks to its tiered water rates, customers can save money by controlling their water use.

GRU's billing tiers charge a different price depending on consumption. This encourages water conservation and helps recover extra costs associated with higher-use customers.

If a customer uses 7,000 gallons or less per month, they will pay the lowest price per gallon. Tier 2 is for customers who use between 7,0000 and 20,000 gallons per month, and Tier 3 for those using above 20,000 gallons.

Below is an example using 12,000 gallons:

Customer charge = $8.65 per month
Tier 1: 7,000 x $2.05 per 1,000 gal. = $14.25
Tier 2: 5,000 x $3.65 per 1,000 gal. = $18.25
Tier 3: 0 x $6.00 per 1,000 gal. = $0.00
Total: $41.15

The average household in Gainesville uses 6,000 gallons per month, but the dry months of spring can drastically increase water use through irrigation. Roughly 50 percent of all residential water consumption is for landscaping.

Follow these tips to save water and money:

- Irrigate only when your grass does not spring back when stepped on.
- Follow your water management district guideline. It is illegal to irrigate between 10 AM and 4 PM as 65 percent of water will evaporate.
- Limit grass areas in your landscape.
- Use "Florida–Friendly" landscaping techniques, such as using native drought-tolerant plants.
- Visit www.gru.com for more landscaping tips.

Paynes Prairie Sheetflow Restoration Project Update
Graphic: Paynes Prairie Sheetflow Restoration Site Plan
Caption: Diagram depicting the completed Sheetfow project.
Placement:

The Paynes Prairie Sheetflow Restoration Project serves the dual purpose of recycling treated wastewater and helping to restore the prairie to its natural state. Construction is progressing on schedule. The project will restore 1,300 acres of wetlands by reestablishing the natural sheetflow of water onto the prairie from Sweetwater Branch.

The initiative will not only improve the prairie environment, but will provide a very cost-effective means of recycling the highly treated effluent from GRU's Main Street Wastewater Treatment Facility, which will save money for the utility and its customers.

The natural sheetflow was disrupted in the 1930s by a two-mile long canal built through the prairie by cattle ranching operations. The project will remove the canal and help rehydrate the prairie naturally by constructing a 125-acre water enhancement wetland to filter and clean the water before it flows onto the prairie. Construction is progressing well, with completion of the water enhancement wetlands projected for the fall of 2014.

Alice Rankeillor, project manager said, "Field conditions have presented some challenges to our contractors, but we are continuing to move forward on schedule."

When finished, the project will revitalize wetlands and wildlife habitat, purify water, remove trash, provide public education and recreational opportunities, and fulfill GRU's regulatory requirements cost-effectively.

Dry Season Irrigation Tips
Photo:
Caption
Placement:

April and May are the driest months of the year, but be careful not to overwater. The following tips regarding irrigation are also the law:

- Odd-numbered addresses should irrigate only on Wednesdays and Saturdays.
- Even-numbered addresses should irrigate only on Thursdays and Sundays.
- Businesses should irrigate only on Tuesdays and Fridays.
- Never irrigate between the hours of 10 AM and 4 PM. This is a common sense rule, because most of the water would be lost to evaporation.

Visit www.gru.com for water rebates and other money and water-saving tips.

Nothing Is More Important than Reliable Water

The reliability of your water system is perhaps the most vital aspect of utility service. People can remain in their homes much longer after losing electric service than they can without water. GRU is proud to have offered unfailing water service to this community throughout its history. To see how well your water system is managed, please read GRU's annual water quality report, which will be delivered to all customers during the month of June.

Gainesville's water system:

- has continuously delivered water without a system-wide failure since 1957
- has never been required to issue a system-wide "boil water" notice
- has never had a health-related water contaminant violation

Drinking Water Week occurs in May, making it a good to time to reflect on the importance of reliable, safe water. A reliable water system is essential to maintaining public health, delivering fire protection, promoting economic development and supporting the quality of life.

Water users in this community are already very good at recognizing how important water is by reducing water consumption and reusing reclaimed wastewater for irrigation where available. GRU then recycles 70 percent of all water drawn from the ground back into the aquifer. Working together to reduce, reuse and recycle, we can make sure that clean, safe water is always available.

Drinking Water Week
Graphic: little girl with water cup
Caption: The best water available comes straight from the tap
Placement: side bar to reliable water

The American Water Works Association has designated May 5-11 as Drinking Water Week—an opportunity for communities and their drinking water providers to celebrate the vital importance of clean drinking water to our lives.

GRU's water supply is drawn from the protected and naturally filtered Floridan Aquifer and treated at the award-winning Murphree Water Treatment Plant to the highest of safety standards. In 1948, Gainesville's water supply became the first in the state and the third in the nation to fluoridate its water supply to promote dental health.

As for value, drinking water from the faucet is far less expensive than bottled water. In fact, you can get 1,000 gallons of water from GRU for the cost of one gallon of bottled water. As temperatures rise this summer, enjoy a refreshing glass of tap water!

Paynes Prairie Sheetflow Project Groundbreaking
Graphic:
Caption:
Placement:

Supporters of the Paynes Prairie Sheetflow Restoration Project enjoyed a groundbreaking ceremony on May 8. GRU and the City's General Government invited public officials, environmental groups, representatives from the Florida Department of Environmental Protection, and regional water management districts to celebrate the beginning of the construction phase.

Guests received the opportunity to tour the project site Members of the design team served as tour guides, explaining how water treatment and reestablishing the natural sheetflow of water onto the prairie will be accomplished.

Construction of the enhancement wetlands and recreational facilities is projected to be complete by the fall of 2014. When finished, the project will meet several community objectives; improve water quality, restore 1,300 acres of natural wetlands that were previously drained, provide a new recreational amenity, and fulfill GRU's and Gainesville's Stormwater Management Utility regulatory requirements cost-effectively.

"Our customers' drinking water source will be better protected and wastewater and stormwater utility processing costs will be managed efficiently because of the Sheetflow Restoration project," Alice Rankeillor, Project Manager with GRU's Water and Wastewater Department said.

Speakers included Mayor Craig Lowe, Florida Senator Rob Bradley, Florida Department of Environmental Protection Secretary Herschel Vinyard Jr., Executive Director of the Suwannee River Water Management District Dr. Ann Shortelle, and St. Johns River Water Management District Director of the Division of Operations and Land Resources Robert Christianson.

GRU Section 6

EXISTING LEGAL USERS

Interference with Existing Legal Uses Of Water

A consumptive use must not cause an interference with a legal use of water that existed at the time of the application for the CUP. Staff reviewed the application to determine if the proposed use meets this criterion. GRU's current permitted allocation is 30.0 mgd on a yearly average basis. Since GRU is requesting no increase in groundwater withdrawals, there are no additional withdrawals that could cause interference to existing legal users on an average basis.

Furthermore, as part of its previous CUP application, GRU performed an existing legal user evaluation that incorporated a withdrawal rate of 40 mgd to simulate a higher pumping period. GRU performed an inventory of wells and identified 11 well sites within proximity of GRU's withdrawals. During a field survey, GRU discovered that some of these identified wells did not exist, and for some of the wells that did exist, GRU was unable to locate pump curve information. However, a pump curve for a well located at the Ironwood golf course was located. This well is one of the Floridan wells located closest to GRU's well field. Based on pump curve information for this well, it was determined that an approximately 2 percent loss in pumping capacity could occur, which is not considered harmful. Therefore, GRU's drawdown, even at higher than permitted rates, are not predicted to cause interference with existing legal uses. In addition, historically, there have been no reports of impacts to existing legal uses due to GRU's withdrawals.
However, GRU is willing to continue to implement the Claim Investigation, Mitigation, and Reporting provisions of the Well Interference Mitigation Procedure submitted to the District as part of the CUP approved in 2009.

Table 7. Adjacent Property Owners

Name	Address	City	State	Zip Code
City Of Gainesville	PO BOX 490 MS 58	GAINESVILLE	FL	32602-0490
PLUM CREEK TIMBERLANDS L P	100 PROFESSIONAL CENTER DR	BRUNSWICK	GA	31525
RAYONIER FOREST RESOURCES LP	PO BOX 728	FERNANDINA BEACH	FL	32035-0728
GAINESVILLE LAND HOLDINGS LLC & MILLER	1430 AVONDALE AVE	JACKSONVILLE	FL	32205
COX & MOORE	1316 PARKWAY CIR	BOSSIER CITY	LA	71112-3740
TERRAPOINTE LLC	1901 ISLAND WALKWAY PO BOX 1188	FERNANDINA BEACH	FL	32034
MURPHREE LAND HOLDINGS LLC	4759 DRANE FIELD ROAD	LAKELAND	FL	33811

BRITTANY OF MICHIGAN LLC	6230 ORCHARD LAKE RD STE 100	WEST BLOOMFIELD	MI	48322
KING KING & KING INVESTMENTS LLC & OAK POND LLC	8 BILTMORE EST #112	PHOENIX	AZ	85016-2832
DAVID PAUL LLC	2912 SW 91ST TER	GAINESVILLE	FL	32608
EAST GAINESVILLE DEVELOPMENT PARTNERS LLC	51 KATONAH'S WOOD RD	KATONAH	NY	10536
HAWES LAND TRUST CONSERVATION EASEMENT ASSOCIATION INC	3501 SOUTH MAIN ST STE 1	GAINESVILLE	FL	32601
SIMMONS, TANDRA LAMIKIA	1648 NE 47TH PL	GAINESVILLE	FL	32609
WELSH, CINDY RAE	4729 NE 16TH TER	GAINESVILLE	FL	32609
NEIGHBORHOOD HOUSING & DEV CORP	633 NW 8TH AVE	GAINESVILLE	FL	32601
CREW, SHEILA M	1506 NE 47TH PL	GAINESVILLE	FL	32609
KIRKUP, KIM	1532 NE 47TH PL	GAINESVILLE	FL	32609
KNOX, CARRSELLSA J	1564 NE 47TH PL	GAINESVILLE	FL	32609
SHEPPARD, ROBERT JR	1588 NE 47TH PL	GAINESVILLE	FL	32609
ALSTON, ROSALEE	4707 NE 15TH TER	GAINESVILLE	FL	32609
AYUBAN, ELA MAY	4622 NE 16TH TER	GAINESVILLE	FL	32609
ELLIOTT W, NAJAH N	4634 NE 16TH TER	GAINESVILLE	FL	32609
STUBBS, JAMIE N, KRISTINA A	4646 NE 16TH TER	GAINESVILLE	FL	32609
POLANCO & VERDOTE	4658 NE 16TH TER	GAINESVILLE	FL	32609
VALENCIA, JAIRO P, MARTHA L	4664 NE 16TH TER	GAINESVILLE	FL	32609
MONLYN, GINA	4672 NE 16TH TER	GAINESVILLE	FL	32609
BRYANT, RAYMOND HILDEGARD	4686 NE 16TH TER	GAINESVILLE	FL	32609
AVILES, BEATA R	4708 NE 16TH TER	GAINESVILLE	FL	32609
CAMPBELL BENJAMIN K, DANA JANELLE	1971 ANDRAYA LN	DE TERE	WI	54115
DRESSEL, JASON K, KATHERINE G	4635 NE 15TH TER	GAINESVILLE	FL	32609
GREENLAND, PAULINE	4647 NE 15TH TER	GAINESVILLE	FL	32609
NICHOLS, HELEN RENEE	4659 NE 15TH TER	GAINESVILLE	FL	32609
BRIGHT EARLENE	4665 NE 15TH TER	GAINESVILLE	FL	32609
CACCIABEVE, KYLA	4671 NE 15TH TER	GAINESVILLE	FL	32609
TIBBS, BOBBY R	4683 NE 15TH TER	GAINESVILLE	FL	32609
CIEGO, ESPEDITO S, GRACE P	4719 NE 15TH TER	GAINESVILLE	FL	32609

THOMAS, ANTHONY C, PATRICIA A	4650 NE 15TH TER	GAINESVILLE	FL	32609
JAVILLONAR, LOIDA ELENA D	4662 NE 15TH TER	GAINESVILLE	FL	32609
DELEON, SHARON P, VINCENT	4674 NE 15TH TER	GAINESVILLE	FL	32609
ROLLE, ANNIE JONES	4686 NE 15TH TER	GAINESVILLE	FL	32609
LANTERI, LOIS M	4702 NE 15TH TER	GAINESVILLE	FL	32609
DAO, YEN M	83-989 KAOHIA PL	CAPTAIN COOK	HI	96704
FLANAGAN COMPANIES INC	4118 NW 69TH ST	GAINESVILLE	FL	32606
HARRIS, MICHAEL C, ANGELA M	4611 NE 16TH TER	GAINESVILLE	FL	32609
WELCH, TIMOTHY J, TRACEY P	4625 NE 16TH TER	GAINESVILLE	FL	32609
JORDAN, KIRBY W JR	4637 NE 16TH TER	GAINESVILLE	FL	32609
SANTOS, JOSE MARIA DELOS	4649 NE 16TH TER	GAINESVILLE	FL	32609
MCINTYRE, CHERYL	4655 NE 16TH TER	GAINESVILLE	FL	32609
IBARRIENTOS, WILGEA	4661 NE 16TH TER	GAINESVILLE	FL	32609
GALLAGHER, PATRICK	4673 NE 16TH TER	GAINESVILLE	FL	32609
QUE, EMERSON O	4687 NE 16TH TER	GAINESVILLE	FL	32609
MALLONGA, ALAN, CYNTHIA L	4705 NE 16TH TER	GAINESVILLE	FL	32609
GRAHAM, TRAVONTE A, LORETH	4717 NE 16TH TER	GAINESVILLE	FL	32609

SOURCE: Alachua County Property Appraiser: http://www.acpafl.org

Well Interference Mitigation Plan

Claim Investigation, Mitigation, and Reporting

Upon notification to GRU by an impacted well owner of possible impacts, GRU will send a representative to investigate the claim. If GRU determines that GRU operations have caused interference with the private Floridan well, GRU will pay the cost of the modification of the private well to restore the capacity of the well. Well modifications include, but are not limited to construction to deepen the well and/or the installation of piping and pumps. GRU will not be responsible for wells or pumps damaged by the well owner through improper operation and/or inadequate maintenance of the system. For each claim investigation, GRU will provide the District with an e-mail that documents the resolution of the claim.

WATER QUALITY

TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO: Tony Cunningham, PE, Rick Hutton, PE, Rae Hafer, PE (GRU)

FROM: Brett Goodman, PE, Fatih Gordu, PE, Jason Icerman, PE (Jones Edmunds)

XC: File

DATE: October 8, 2013

SUBJECT: Sulfate Monitoring at Murphree Wellfield

1 BACKGROUND

Gainesville Regional Utilities (GRU) is authorized by the St. Johns River Water Management District (SJRWMD) to withdraw 10,950 million gallons per year (MGY) (30 million gallons per day [MGD] on average) of groundwater from the Floridan aquifer for public supply. GRU's consumptive use permit (CUP) with SJRWMD was renewed in 2009 and expires in 2014. Jones Edmunds & Associates, Inc. is assisting GRU with their CUP renewal process for the 2014 expiration.

During the 2009 renewal process, SJRWMD staff reviewed water quality analyses submitted by GRU. At that time, although sulfates in the production wells were not above the secondary (non-health related) drinking water standard of 250 milligrams per liter (mg/L), some wells had increasing trends and some were nearing a 200-mg/L level. Accordingly, SJRWMD required GRU to monitor production wells for sulfates quarterly and submit a trend analysis based on these results yearly. The trend analyses examined if sulfates were increasing in production wells and, if so, whether the upward trend was due to increased well withdrawals. These analyses have been performed by GRU since 2009, and no correlation between pumpage and sulfates has been documented.

Jones Edmunds reviewed the sulfate data provided by GRU for the Murphree wellfield and investigated potential trends within this dataset and relative to pumping at the wellfield. The results of our analysis are documented in this memorandum.

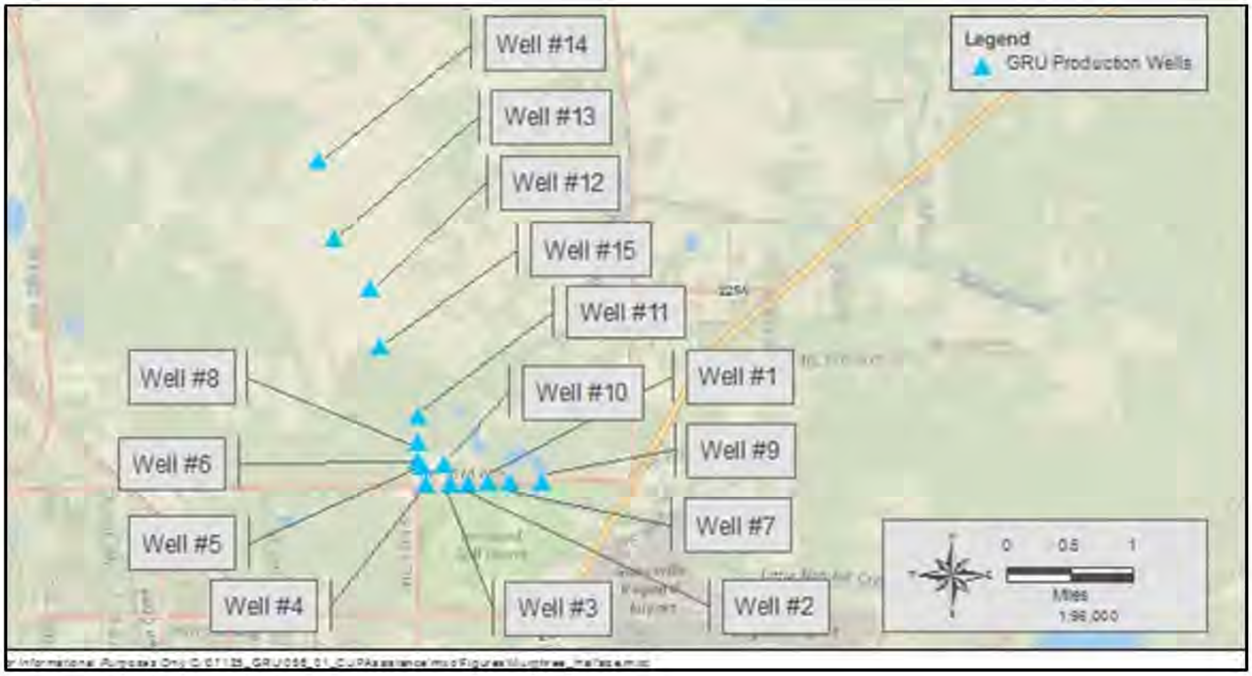
2 DATA ANALYSIS

GRU has 16 production wells; however, Well No. 16 has not been placed into permanent production since its completion in 2008 and was therefore not included in this analysis. Jones Edmunds reviewed sulfate-related data provided by GRU and investigated the following:

- Trends in collected sulfate data at each well over time.
- Trends in collected sulfate data at all wells over time.
- Trends in collected sulfate data relative to pumpage at each well.
- Trends in collected sulfate data relative to pumpage at all wells across the wellfield.

We also compared our results to GRU's previous observations based on a similar dataset. Figure 1 shows the 15 production wells included in this analysis (Well Nos. 1 through 15).

Figure 1 GRU Murphree Wells



2.1 Previous Observations

GRU's annual reports to SJRWMD document that there does not appear to be a correlation between GRU production well withdrawals and sulfate levels. The analyses over the past 4 years concluded the following;

- No statistical trend fits all wells.
- Individual wells have upward trends.
- Individual wells have downward trends.
- Individual wells have wide variations.
- The production wells with the highest withdrawals are not the wells with the highest sulfate concentrations.

GRU observed the highest sulfate levels in Well Nos. 5 and 6, which are close to each other compared to the distances between the other production wells. They also noted that upconing of deeper aquifer water is likely a site-specific mechanism based on individual well stress and hydrogeologic factors (e.g., permeability, fractures), so each well could have different rates of change and mixture with overlaying water.

Finally, GRU observed a distinct difference in sulfate data from historical measurements (1975 to 1993) compared to more recent measurements (2009 to present). However, the differences in sampling and analysis protocols between the two periods make cross-period data comparisons difficult. Historical sulfate analyses were collected from wells installed as part of the original plant (Well Nos. 1 through 8) and analyzed in the Murphree Water Treatment Plant (WTP) Laboratory for process control, which may not have been in compliance with current Florida Department of Environmental Protection (FDEP) standards. Samples collected since 2009 (Well Nos. 1 through 15) were collected in accordance with FDEP standard operating procedures (DEP SOP001/01), FDEP Quality Assurance Rule Chapter 62160, FAC.

2.2 AVAILABLE DATA

Jones Edmunds obtained daily flows for individual wells at the Murphree wellfield from 2000 to 2012. Flow data were available before 2000 but not on a well-by-well basis.

Sulfate levels have been recorded at GRU's Murphree wellfield periodically since 1975. Data were mainly collected during three periods: 1975 to 1993, 2002 to 2004, and 2009 to present. Quarterly monitoring commenced in 2009 as required by the 2009 CUP. Jones Edmunds obtained sulfate monitoring results for these periods from GRU. As discussed above, samples collected before 2009 were analyzed at the Murphree WTP Laboratory for process control and may not have met current FDEP compliance standards.

2.3 ANALYSIS AND DISCUSSION

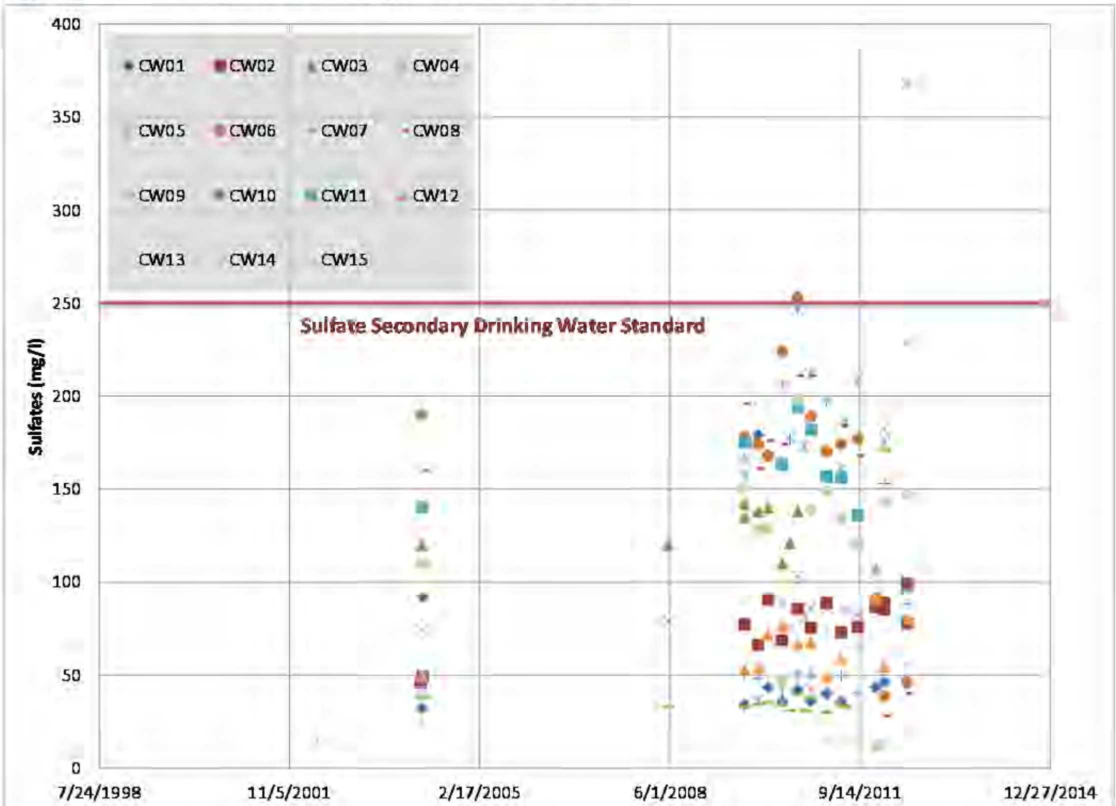
Jones Edmunds created trend lines for data collected after 2000. We also compared sulfate data at each well to total withdrawal from the Murphree wellfield and withdrawals at the sampled well. Well No. 10 had one sulfate data point, so no trend analyses were performed for this location. Our analyses focused on the more recent sulfate dataset for multiple reasons:

- GRU and SJRWMD have already reviewed in-detail sulfate data collected before 2009.
- Sulfate data collected between 1975 and 1993 are difficult to compare to data collected post-2000 and likely do not meet current FDEP collection standards.
- Pumpage data for the Murphree wellfield are only readily available on a well-by-well basis after 2000.

Figure 2 shows the sulfate data for all wells post-2000. All temporal trend analyses are provided in Attachment 1. We did not observe any consistent temporal trends in the data across the different well locations. However, some individual wells displayed slightly increasing temporal trends (such as Well Nos. 2, 4, 5, and 12), others displayed slightly decreasing trends (such as Well Nos. 6 and 8), and some displayed no trend at all (such as Well No. 1). Most observed trends are biased by one or two data points, without which a given well would exhibit limited or opposite trends.

Well Nos. 5 and 6 each had one data point over the secondary drinking water standard of 250 mg/L. Secondary drinking water standards are non-health-related criteria and are set to maintain aesthetic water quality. Well Nos. 4, 5, 6, and 8 had data points over 200 mg/L. The remaining wells did not have any data records nearing the secondary drinking water standard.

Figure 2 Sulfate Data Collected Post-2000



Similarly, we investigated sulfate data relative to combined pumpage at the wellfield and, as Figure 3 shows, did not observe any consistent trends in the data relative to pumpage at the wellfield. While the higher-than-average results observed in August 2010 and July 2012 coincide with relative peaks in pumping over the previous 90 days, other relative peaks in pumping such as December 2010 and June 2011 did not induce a similar response in the sulfate records. Although the data are not provided here, we also performed trend analyses for average pumping rates over the previous 1 day, 30 days, 180 days, 360 days, and 720 days.

Figure 4 further illustrates the lack of a relationship across the wellfield by comparing the difference from the mean sulfate concentration at each well to the average pumpage over the previous 90 days. The difference from mean (mean residual) was calculated by subtracting the mean value for the sampled well from each sulfate data point. The mean residuals characterize the increase or decrease in sulfate for the measurement date relative to the mean for that well. No trend was observed in Figure 4, meaning no relationship exists between the sulfate data variance at a given well and the average wellfield pumpage over the previous 90 days. In short, we observed no correlation between sulfate concentrations and wellfield pumpage.

Finally, we compared sulfate concentrations at each well to the pumpage associated with only that well. Similar to the temporal analyses previously presented, we did not observe any consistent correlation between datasets across the different well locations. Some individual wells displayed increasing temporal trends (such as Well No. 1), while others displayed decreasing trends (such as Well Nos. 2, 11, and 12). The majority of the wells displayed no discernible linear trend. Attachment 1 provides all pumpage trend analyses.

Figure 3 Sulfate Data with Murphree Wellfield Pumpage

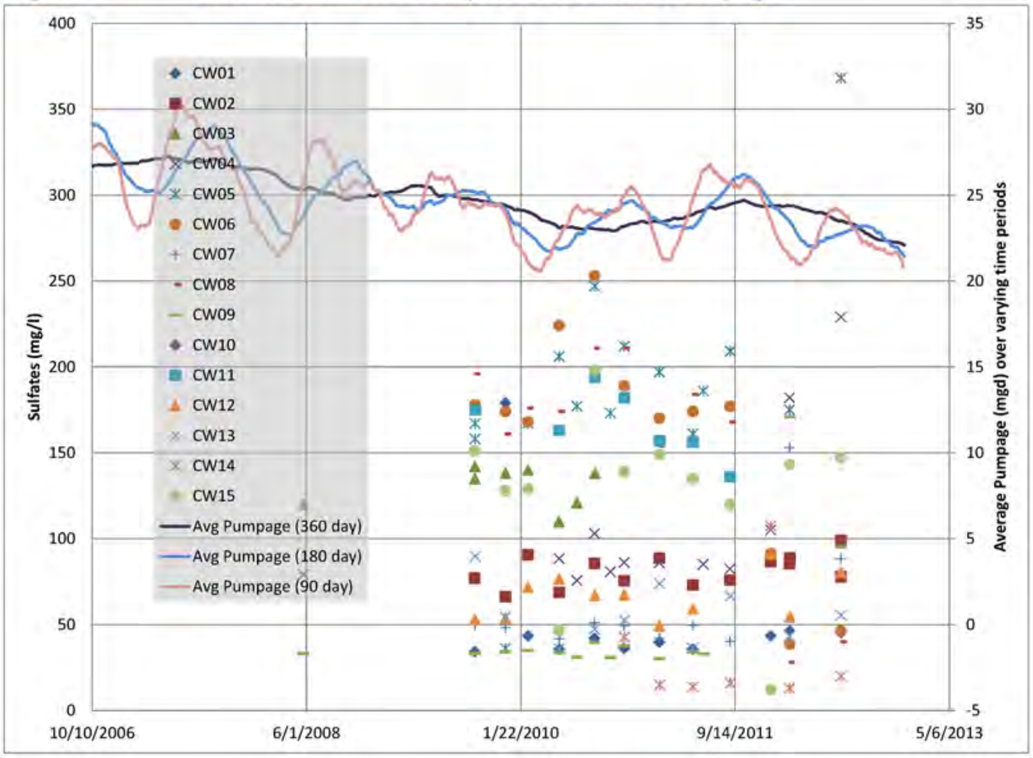
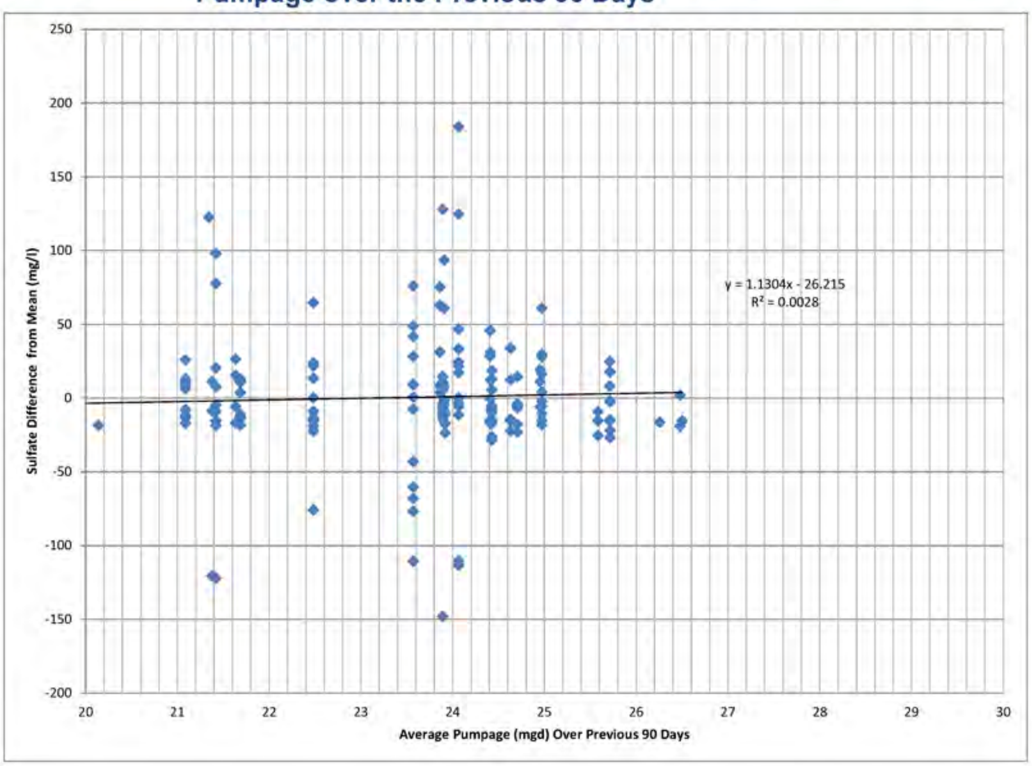


Figure 4 Difference from Mean Sulfate Data Compared to Average Murphree Wellfield Pumpage over the Previous 90 Days



Jones Edmunds aimed all the analyses presented in this section at investigating if a relationship exists between pumpage at the Murphree wellfield and sulfate concentrations measured at the supply wells. We observed no temporal trends in the sulfate data strong enough to suggest that conducting additional statistical analyses was required. We observed no correlation between sulfate data and pumpage at the wellfield or at individual wells strong enough to suggest that conducting additional statistical analyses was required. As previously noted, we observed some individual wells to present increasing trends relative to time or pumpage and some individual wells to present decreasing trends relative to time or pumpage. No consistent trends were observed across the wellfield. Furthermore, wells with increasing temporal trends typically did not display increasing trends with pumpage (e.g., Well Nos. 2, 5, 11, and 13). We also observed that wells with the highest sulfate concentrations (Well Nos. 1, 3, 5, and 9) showed little to no correlation with pumpage. These observations agree with observations previously reported by GRU to SJRWMD.

3 POTENTIAL SOURCES OF SULFATES

In Florida, particularly in coastal areas, Upper Floridan aquifer sulfate concentrations are commonly above the 250-mg/L secondary drinking water standard, mainly due to saltwater intrusion. However, observing high sulfate concentrations in inland areas such as Alachua County is rare. The most likely source of these elevated sulfate concentrations is gypsum that originates in the deepest parts of the Upper Floridan aquifer – most likely near its base. A US Geological Survey study (Sacks, 1996) concluded that the main source of sulfate in inland areas of northwest-central Florida is gypsum observed in deeper intervals of the Upper Floridan aquifer.

While upward flows from the Lower Floridan aquifer could also be a source of elevated sulfate, no local data suggest that the Lower Floridan aquifer is a source. The closest Lower Floridan aquifer water quality monitoring well is near the Alachua County Fairgrounds (SJRWMD Station No. 00264257); sampling records from this station, while limited, indicate that sulfate concentrations are generally near 20 mg/L at depths over 1,000 feet below the land surface.

4 SUMMARY OF REASONABLE ASSURANCE

Sulfate levels have been recorded at GRU's Murphree wellfield periodically since 1975, resulting in data records for three periods: 1975 to 1993, 2002 to 2004, and 2009 to present. However, the sulfate data collected before 2000 may not meet FDEP collection standards and are therefore not comparable with more recently collected data. Jones Edmunds reviewed the sulfate data collected from 2000 to present by investigating the following:

- Trends in collected sulfate data at each well over time.
- Trends in collected sulfate data at all wells over time.
- Trends in collected sulfate data relative to pumpage at each well.
- Trends in collected sulfate data relative to pumpage at all wells across the wellfield.

Our analyses yielded the following observations:

- We observed no consistent temporal trends in the sulfate data.
- We observed no consistent correlation between sulfate data and pumpage at the wellfield or at individual wells.

- Our results agree with observations previously reported by GRU.

The variability in sulfate concentrations observed at individual wells is likely the result of each well's connectivity to the larger aquifer system. We found no evidence of cause-effect relationships that describe multiple wells within the wellfield. While we observed that some wells exhibit trends, most observed trends were biased by one or two data points without which a given well would exhibit limited or opposite trends. We also found no evidence to suggest a more robust analysis would yield different conclusions.

In our opinion, the requested allocation over the next 20 years is not likely to substantially degrade water quality in the Floridan Aquifer System for the following reasons:

- Sulfates have not been a significant issue for the past 40 years of operations at the Murphree wellfield.
- Groundwater monitoring of the Lower Floridan aquifer near the wellfield indicates good water quality in lower zones.
- The expansion of the wellfield and the flattening of withdrawal are dispersing the same withdrawal over a large region, which mitigates the effects of upconing – if any exist.

Based on these conclusions, we recommend improving the monitoring as follows:

- Reduce monitoring to annual at each production well.
- Submit sampling results annually to SJRWMD.
- Review statistical trends for sulfates and withdrawals at the end of the 10-year compliance period.

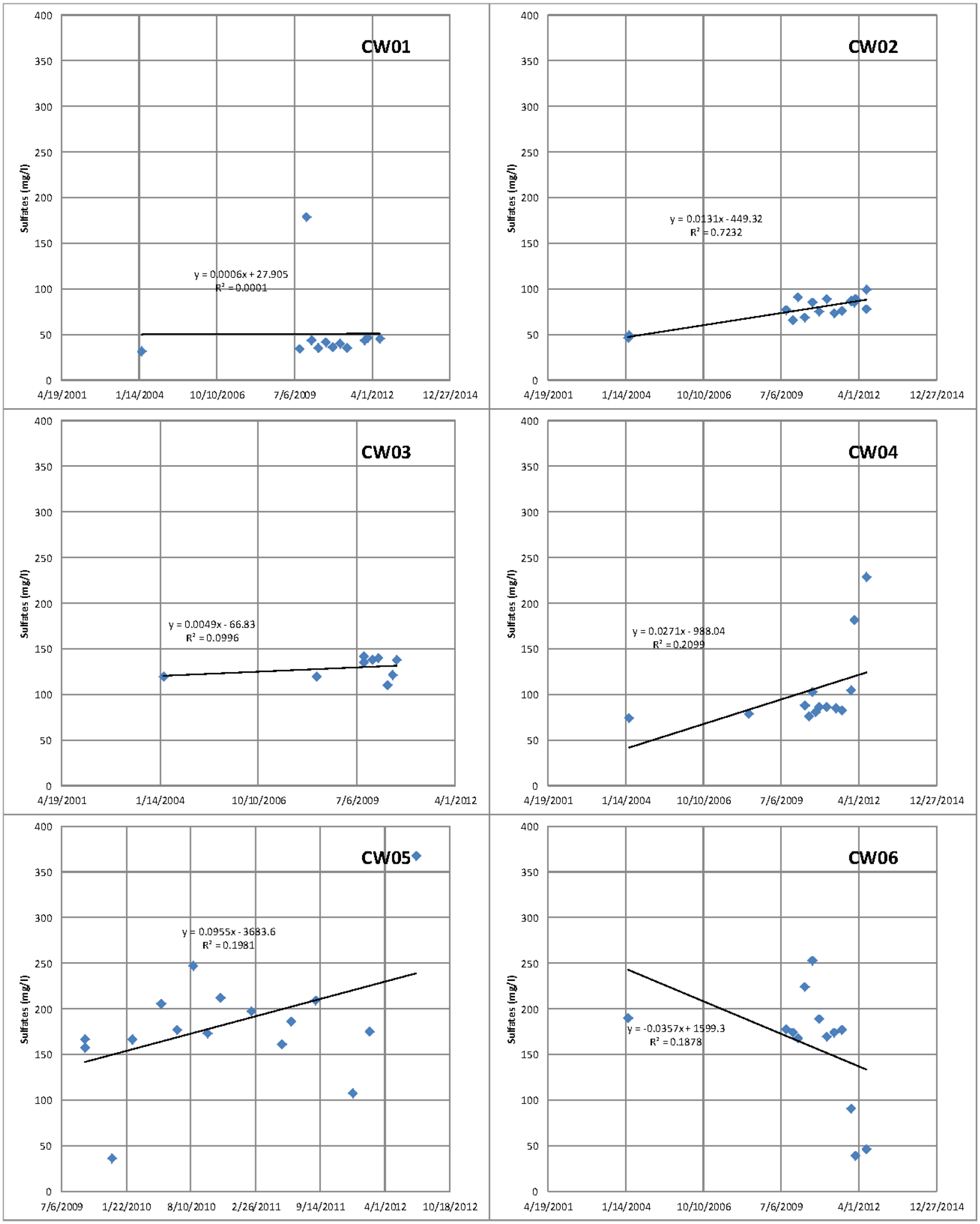
5 REFERENCES

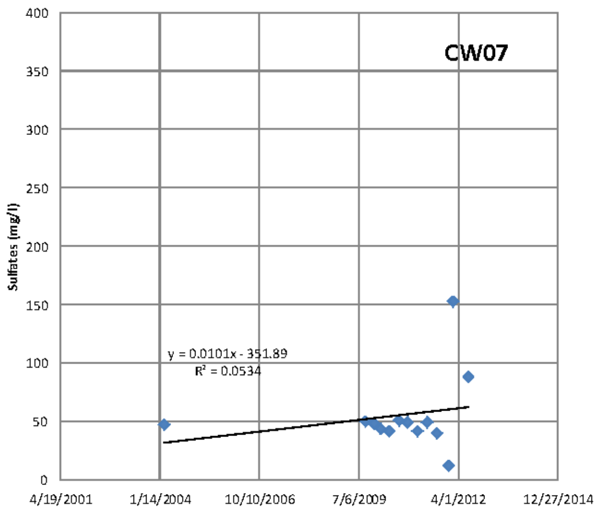
Sacks, L.A. 1996. *Geochemical and isotopic composition of ground water with emphasis on sources of sulfate in the Upper Floridan aquifer in parts of Marion, Sumter, and Citrus Counties, Florida*. U.S. Geological Survey Water-Resources Investigations Report. 47 pp.

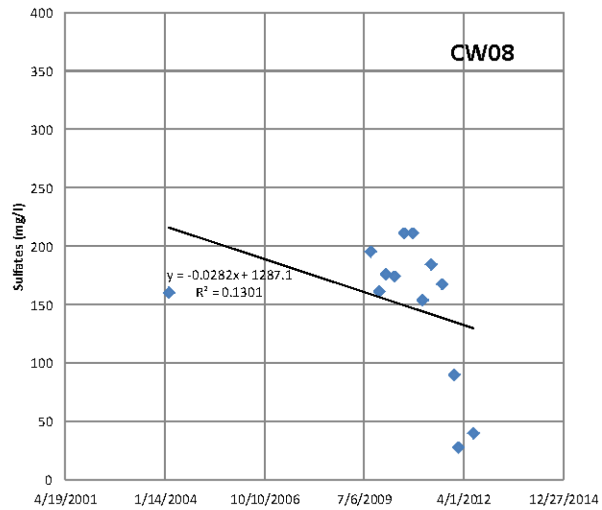
Attachment 1

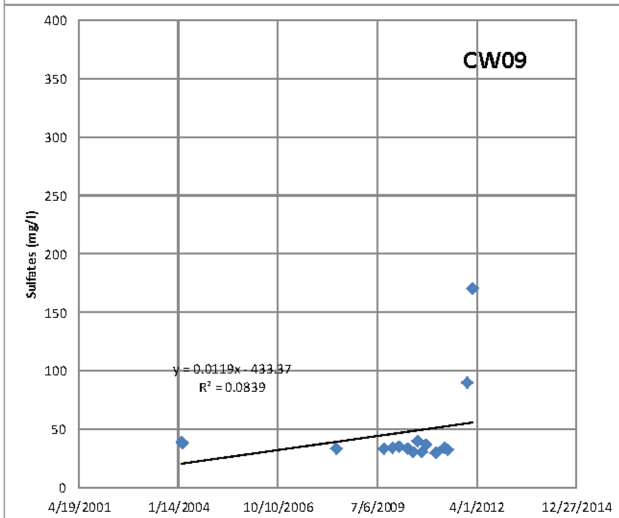
Trend Analyses Results

Temporal Trend Analysis

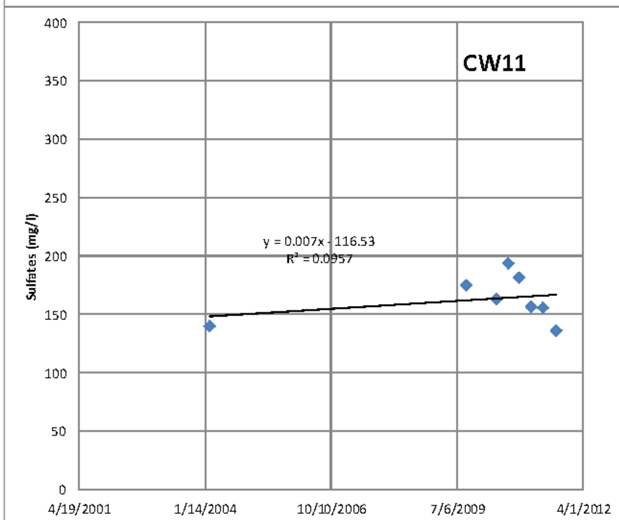


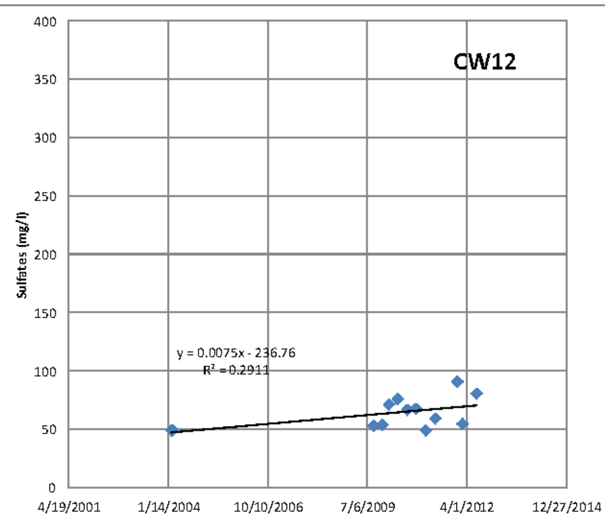


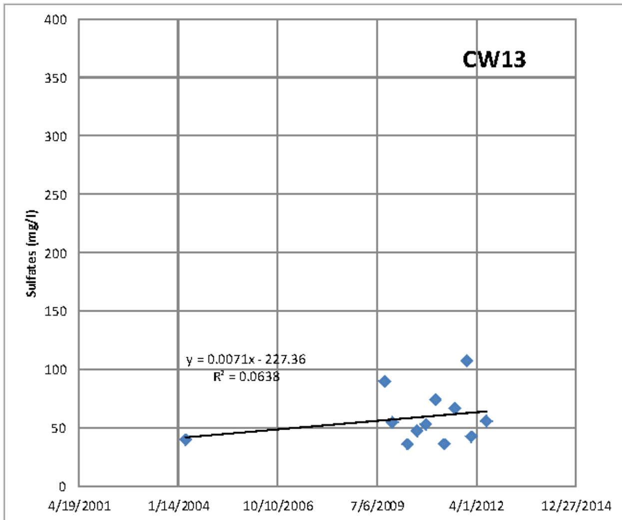


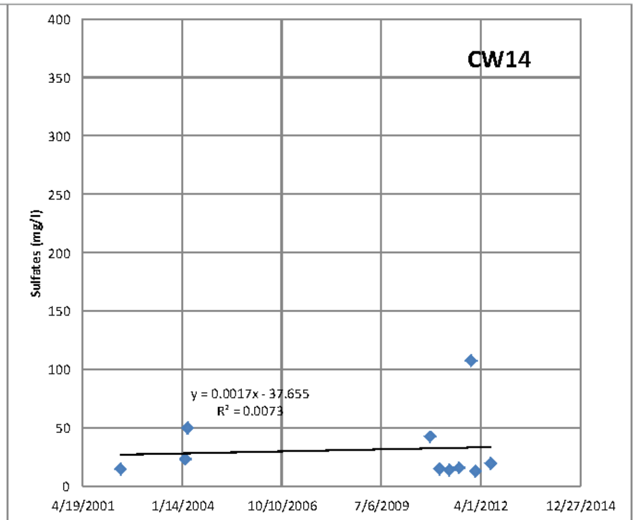


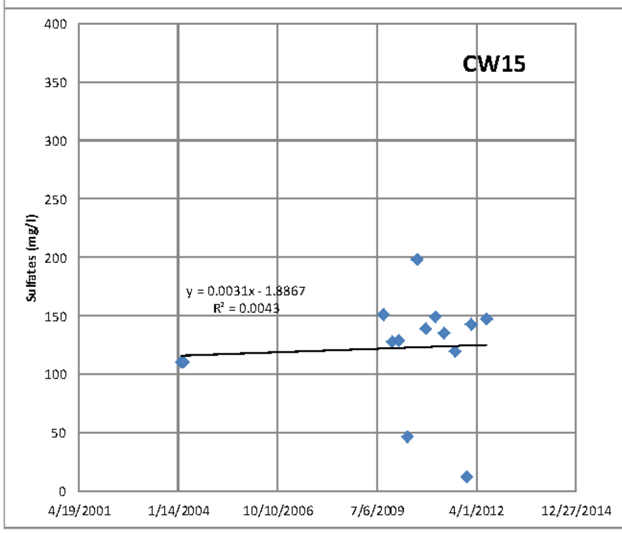
Trend Analysis Not Performed for Well #10











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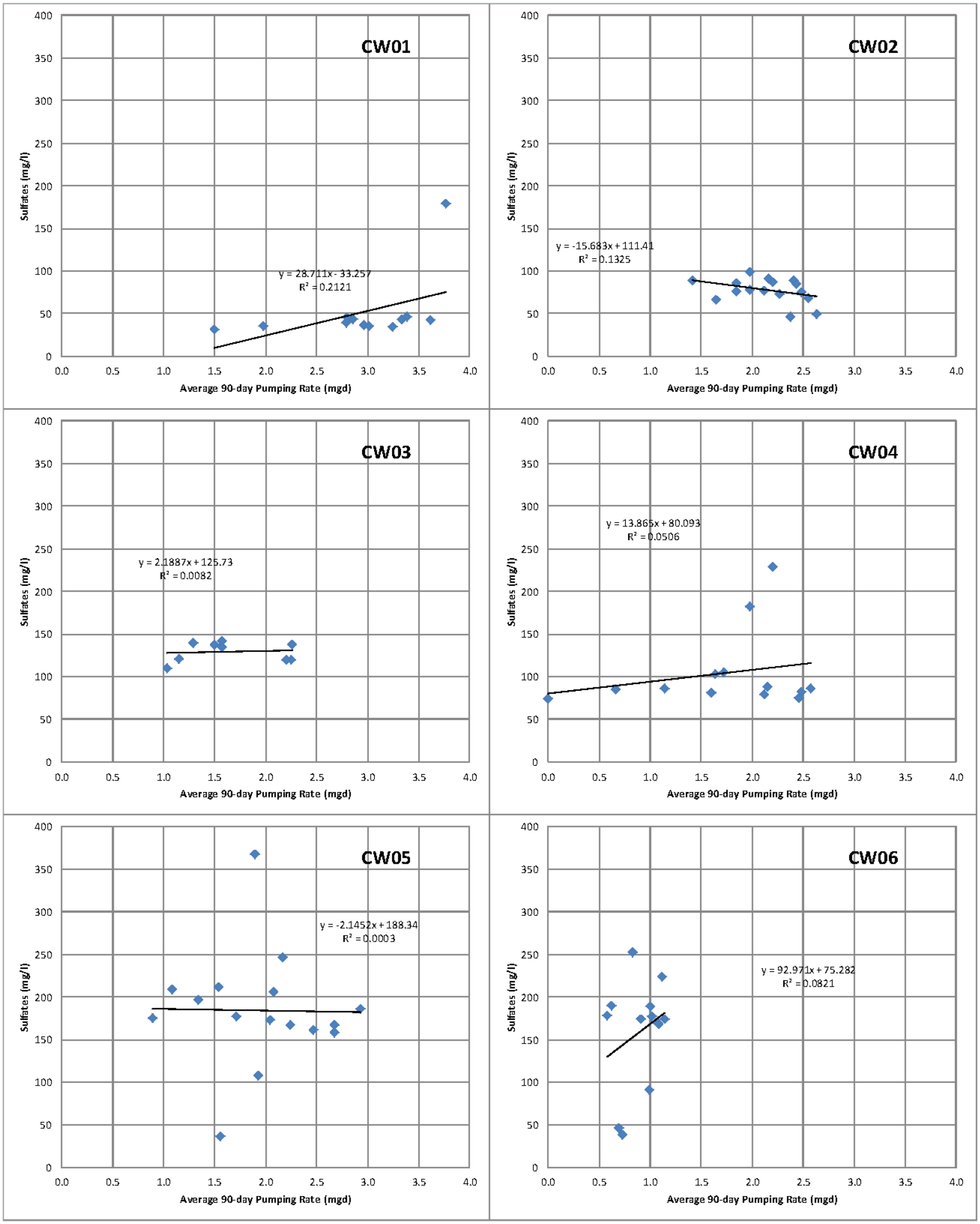
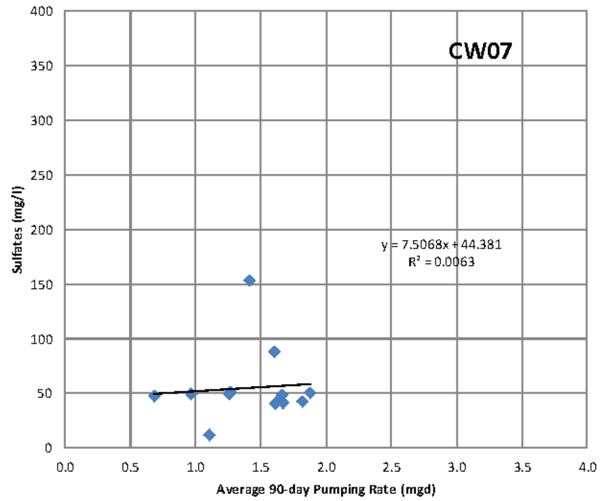
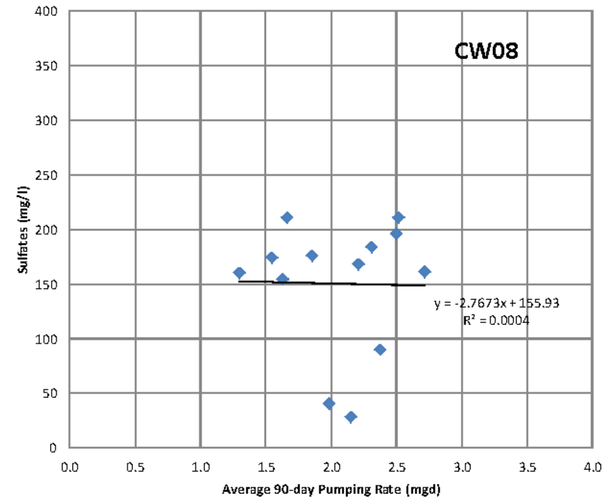
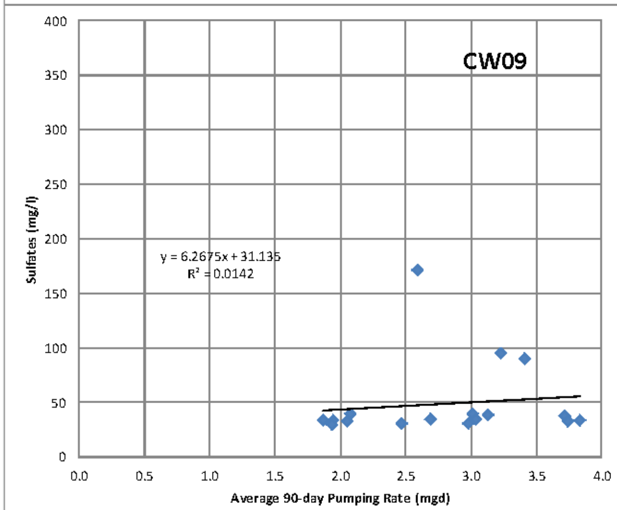
Withdrawal Trend Analysis

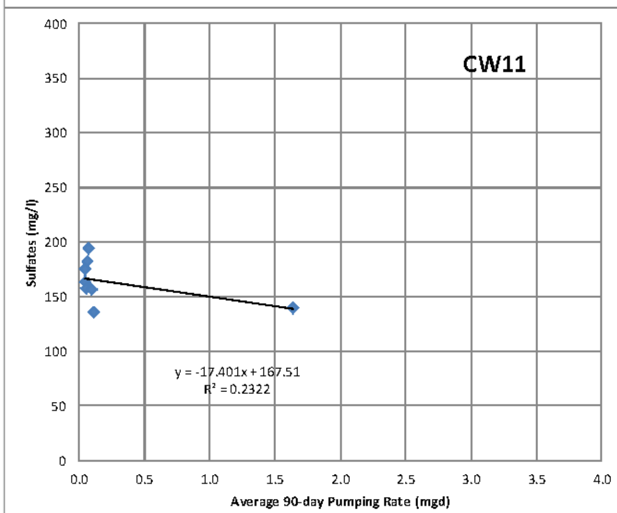


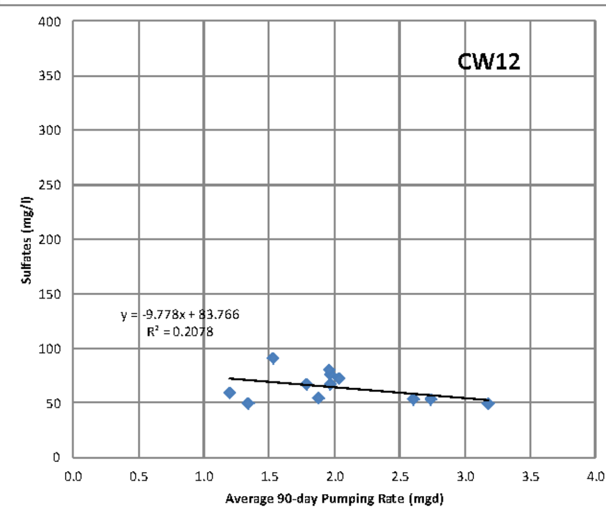


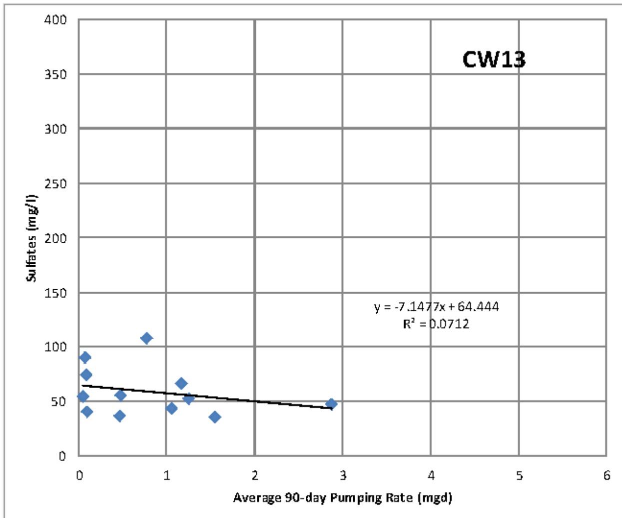


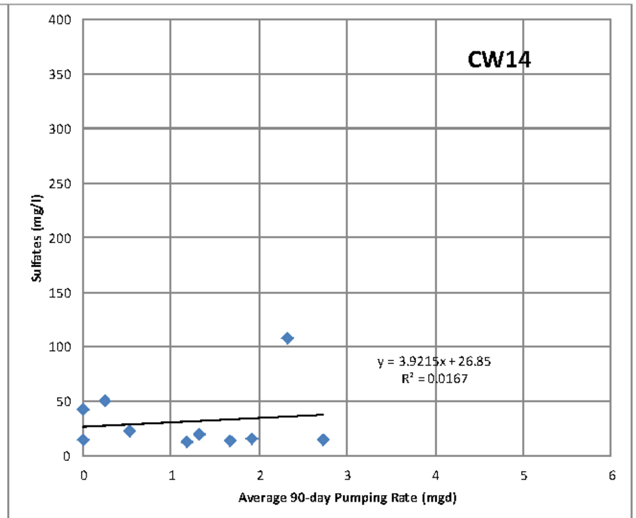


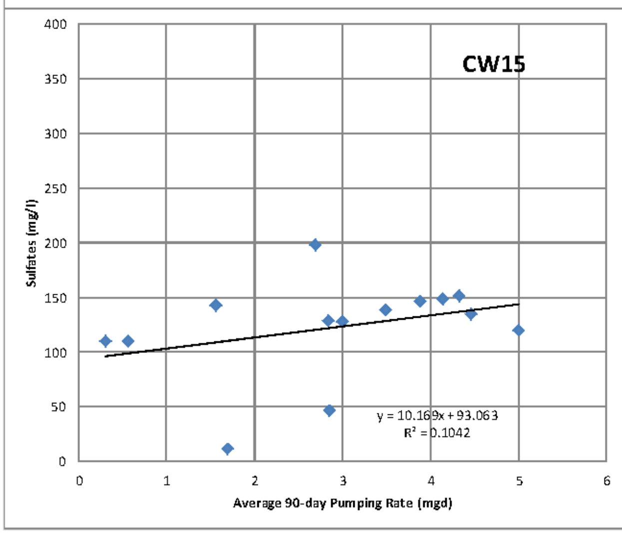
Trend Analysis Not Performed for Well #10











Trend Analysis Not Performed for Well #16

Summary of Koppers Site Status

The Cabot Carbon/Koppers superfund site is located along Northwest 23rd Avenue west of Main Street in Gainesville. The site was listed on the EPA National Priorities List (NPL) in 1984. Although they are considered as one superfund site, the Cabot Carbon (Cabot) and Koppers properties are actually two separate properties. The Cabot Carbon site is located at the corner of Main Street and 23rd Avenue and is currently occupied by a shopping plaza and various commercial businesses. The Cabot Carbon site had been used to produce charcoal, turpentine and other products from pine stumps from the early 1900s until 1967. The Koppers site is located just west of the Cabot site and was operated as a wood treating facility from 1916 to 2009. Both sites have been contaminated due to historical operations, which included the use of unlined lagoons for storing waste products.

The US Environmental Protection Agency (EPA) has regulatory authority and is primarily responsible for all cleanup activities at the site. This includes clean up actions on the Cabot-Carbon and Koppers properties, as well as the cleanup efforts off-site at neighboring properties. This site has been a particular concern to GRU because of its location approximately 2 miles from the GRU Murphree Wellfield. GRU has no responsibility for the cleanup of the site, nor does GRU or the City or Alachua County have regulatory authority for the site cleanup. However, GRU as well as Alachua County has been active as a stakeholder for many years. GRU became particularly engaged starting 2004, when it was discovered that there is contamination in the Floridan Aquifer below the Koppers site.

Prior to 2001 remedial actions at the site focused on the surficial aquifer, as it was believed by EPA that the Hawthorn Group clay layers beneath the site would prevent contamination. These actions included limited removal of surface soils and installation of surficial aquifer collection trench at the Cabot site, and surficial aquifer extraction wells at Koppers. Based on concerns raised by GRU, Alachua County, and locals citizens, EPA required additional site investigations to further delineate the depth and horizontal extent of contamination. These investigations revealed much deeper contamination at Koppers than had been believed. Contamination in the Floridan Aquifer was discovered in 2004. In response to this, GRU assembled a team of consultants with specialized expertise in the assessment and cleanup of wood treating and other sites with dense non-aqueous phase liquid (DNAPL) contamination. The purpose of the team is to provide an assessment of the site, to identify additional actions needed to protect the water supply and to assist GRU in pushing for actions needed at the site.

Actions taken at the site since that time include:

1. Further delineation of dissolved phase and DNAPL plumes;
2. Installation of an extensive Floridan Aquifer monitoring well network consisting of multi-level wells both on-site and downgradient of the Koppers site;
3. Limited hydraulic containment of Floridan Aquifer contamination; and
4. Installation of additional surficial aquifer hydraulic containment trenches on the Koppers site.

GRU and its consultant team have provided a significant amount of technical input into this process. Additionally, GRU has worked very closely with other divisions of the City of Gainesville, Alachua County, and Alachua County Health Department as part of a "Local Intergovernmental Team (LIT) to provide a coordinated effort in pushing for cleanup of the site to protect the community's drinking water and public health. The LIT has also been active in interfacing with citizens who have also been very engaged in pushing for site cleanup.

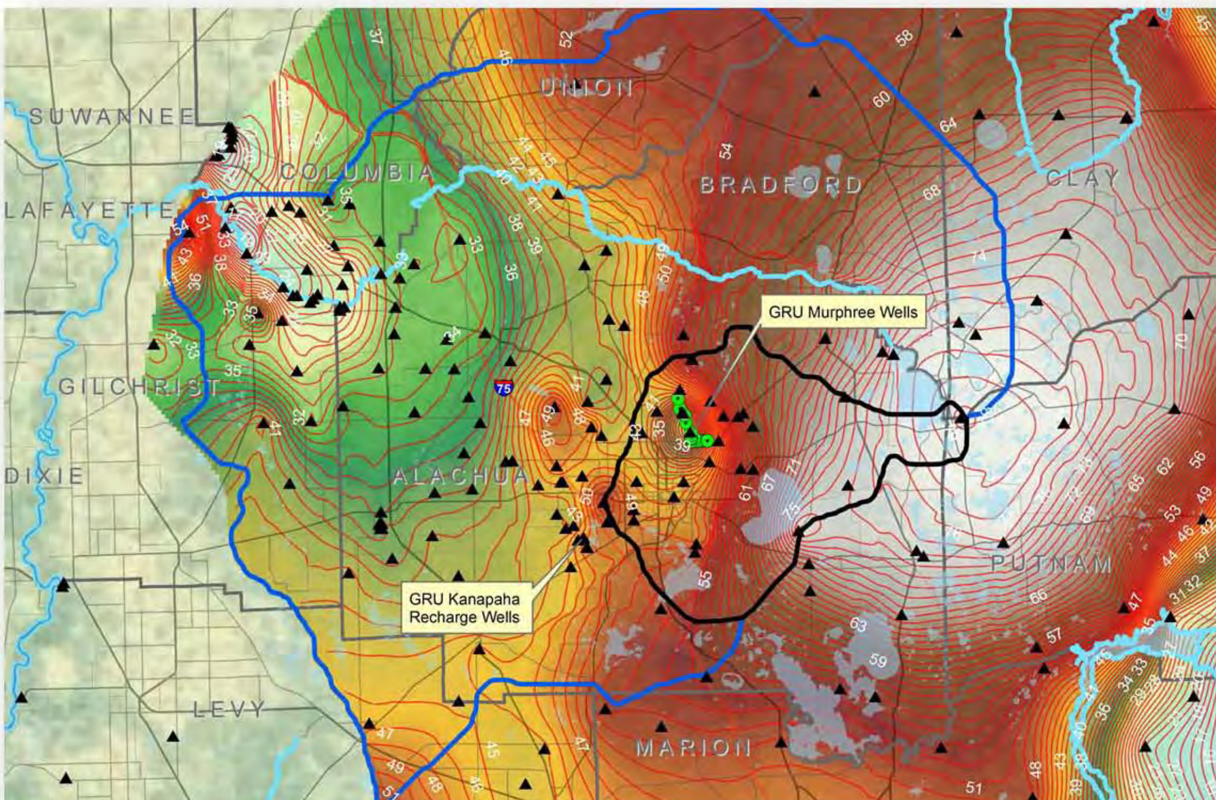
The EPA issued a Record of Decision (ROD) for the Cabot Carbon/Koppers site in February 2011, which describes the EPA's decision on how the site will be cleaned up. A consent decree was executed between EPA and the Potentially Responsible Party (PRP) for the Koppers site, Beazer East, Inc., and was approved by the federal district court in July 2013. The approval of the consent decree allows Beazer and EPA to move forward with the design and construction of the remedial measures required in the ROD. It is anticipated that the construction and implementation of the remedial measures will take approximately 5 to 6 years to complete.

At this time remedial design is underway. In addition, Beazer is conducting pilot testing of In Situ Geo-Chemical Stabilization (ISGS) for two of the DNAPL source areas on the Koppers site. Cabot and Koppers are also continuing to further delineate NAPL and dissolved phase plumes in the surficial and Hawthorn Group at both sites. It is anticipated that additional remedial actions will be required at the Cabot site also.

GRU will continue to be engaged with the site to ensure that contamination is fully delineated, appropriate remedial actions are implemented and are effective, and that contamination from the site does not threaten the Muprhree Wellfield.

GRU Section 8

Water Resources Assessment



Water Resources Assessment

Gainesville Regional Utilities | October 2013

Water Resources Assessment

Prepared for:

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Gainesville, FL 32601

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October 2013

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APPENDICES

1 INTRODUCTION

Jones Edmunds & Associates, Inc. prepared this document on behalf of the applicant, Gainesville Regional Utilities (GRU), to evaluate the potential impacts of GRU withdrawals on water-resource constraints within the St. Johns River Water Management District (SJRWMD) and Suwannee River Water Management District (SRWMD). This document describes the methods and analyses used to provide reasonable assurance for the requested allocation and for the additional allocation if needed.

GRU is not requesting an increase in its permitted allocation but has identified various Alternative Water Supply (AWS) projects that may provide beneficial recharge and could be implemented during the permit period to offset additional allocation if needed.

To facilitate an understanding of the analyses being performed to evaluate the potential impacts to wetlands, lakes, and minimum flows and levels (MFLs), several meetings have been held with SJRWMD and SRWMD staff to outline an approach, present methods, and discuss the findings.

The proposed withdrawals were evaluated for compliance with SJRWMD MFLs using guidelines developed by SJRWMD. In addition, we performed a separate assessment of the potential impact of proposed withdrawals on applicable SRWMD water resource constraints.

Jones Edmunds used SJRWMD Northeast Florida Regional groundwater flow model version 3 (NEFv3) and SRWMD North Florida groundwater flow model version 1.02 (NFv1) for groundwater modeling analyses. Because of uncertainties in the existing regional groundwater models, Jones Edmunds also performed a hydrologic data analysis including spatial and temporal analysis of the observed Upper Floridan Aquifer (UFA) water levels in Alachua County and adjacent counties. The details of the analysis are presented in the appendices. The following summarizes the overall methodology and results and provides reasonable assurance for the requested allocation of 30 million gallons per day (MGD) and for the additional allocation of 2 and 4 MGD.

2 METHODOLOGY AND ANALYSIS

2.1 GROUNDWATER MODELING

Jones Edmunds performed groundwater flow model simulations to evaluate the potential impact of the GRU withdrawals from the UFA on water resource constraints and the potential benefit of possible AWS projects that can be implemented by GRU to obtain additional allocation. Jones Edmunds ran model scenarios for each AWS project and compared the benefit to potential impacts from additional allocation scenarios. We used NEFv3 and NFv1 groundwater models to evaluate water resource constraints within SJRWMD and SRWMD, respectively. The details of the model development and results of NEFv3 and NFv1 simulations are presented in Appendices A and B, respectively.

2.2 HYDROLOGIC DATA ANALYSIS

To better understand and evaluate the influence of GRU's withdrawals and the impact of natural and manmade recharge features on regional water resources, Jones Edmunds performed a spatial and temporal analysis of the UFA water levels in Alachua County and adjacent counties.

The spatial analysis focused on creating a high-resolution UFA potentiometric surface that is broad enough to delineate the Lower Santa Fe River groundwatershed (i.e., contributing to river-bed springs) and detailed enough to accurately distinguish between areas influenced by withdrawals versus areas with significant percolation and recharge. Although many broader-scale potentiometric maps for this area were developed by the US Geological Survey (USGS) and Alachua County Environmental Protection Department (ACEPD) and illustrate the potentiometric surface of the UFA, none of them includes enough detail to adequately analyze groundwater flow paths and capture zones and distinguish among all source-water constraints on this portion of the aquifer. The details of this analysis are presented in Appendix C.

The temporal analysis included hydrograph analyses of the UFA levels near the GRU wellfield and far outside the area of influence of the wellfield. The details of this analysis are presented in Appendix D.

Jones Edmunds also reviewed the information about the areas where natural direct recharge occurs in Alachua County. A significant amount of natural recharge occurs in the vicinity of the GRU wellfield. These recharge features are summarized in Table 2-1 and include Alachua Sink, Haile Sink, and watersheds contributing to the San Felasco Hammock. We estimate that 65 MGD of natural direct recharge is occurring annually in the vicinity of the GRU wellfield.

Table 2-1 Natural Recharge Features

Recharge Feature	Dates Available	Average Annual Flow (MGD)
Haile Sink	1971-2012	15.5
Alachua Sink (Payne's Prairie)*	1997-2012	40.9
Blues Creek	1998-2011	0.9
Turkey Creek	1999-2012	1.7
Cellon Creek	2002-2011	0.6
Mill Creek	2001-2010	4.5
Pareners Branch	1998-2012	0.7
Total	NA	64.8

*Includes some flows from GRU Main Street Water Reclamation Facility.

2.3 GRU Recharge Wells

GRU owns and operates the Kanapaha Water Reclamation Facility (KWRF), which opened in 1982. Most of KWRF wastewater effluent has been sent to deep Lower Floridan Aquifer (LFA) recharge wells. Jones Edmunds reviewed the local hydrogeology of the area, KWRF flows, and water level data provided by GRU. We also reviewed regional groundwater level data available from SJRWMD, SRWMD, Florida Department of Environmental Protection (FDEP), and USGS. Our goal was to investigate potential trends in and among the datasets and to understand the connection between the UFA and LFA to better quantify potential impacts of KWRF injection flows on regional UFA levels. The details of our analysis are documented in Appendix E.

2.4 Wetland Assessment

GRU has been monitoring isolated herbaceous, shrub, and forested wetlands at its Murphree Wellfield and submitting annual reports to SJRWMD since 2000. Four wetlands were monitored from 2000 to 2003, two more wetlands were added in 2003, and two other wetlands were added in 2008 at the recommendation of SJRWMD. Shallow piezometers with continuous water level recorders were installed in all wetlands. In 2004, several monitoring-well clusters were installed by SJRWMD and equipped with continuous water-level recorders by GRU that provide daily water-level measurements. The clusters contain separate wells that monitor the surficial aquifer, intermediate aquifers within the Hawthorn Group, and UFA.

Jones Edmunds reviewed annual wetland monitoring report conclusions to assess wetland health, reviewed monitoring well data available within the wellfield, and conducted a wetland field assessment on

March 26, 2013, to qualitatively determine if the eight wetlands exhibit evidence of hydrologic impact from groundwater withdrawals. Appendix F presents the methods, results, and discussion for these assessments/analyses.

3 AVOIDANCE OF HARM TO WETLANDS AND NON-MFL LAKES

3.1 WETLANDS

Our analysis of previous monitoring reports, groundwater level data, field assessments, and groundwater modeling is summarized as follows:

- GRU has been monitoring wetlands since 2000.
- No correlations between wetland water levels and pumpage have been documented.
- The wetlands' water levels and surficial aquifer levels are highly correlated with rainfall.
- Many of the forested wetlands have moss lines at ground surface that indicate a lack of inundation.
- The moss lines at ground surface may indicate dehydration that is likely the result of the significant rainfall deficit that has occurred since 2000.

The requested allocation of 30 MGD is not likely to degrade local or regional wetlands for the following reasons:

- GRU's pumpage has reached levels that are similar to the requested allocation without observable impacts to the nearby wetland communities.
- Over 100 feet of head difference exists between the surficial aquifer and the UFA, which indicates a significant hydraulic separation between the withdrawals and the wetland communities.
- Boring logs show significant and multiple confining layers in the Hawthorn Group between the surficial aquifer and the UFA.
- SJRWMD NEF groundwater model results confirm that GRU's requested allocation will not cause significant drawdown in the surficial aquifer (see Appendix A).

To continue to provide reasonable assurance through the duration of the permit, we recommend that wetland monitoring be continued with the modifications discussed in Section 6 of this report.

3.2 NON-MFL LAKES

None of the non-MFL lakes is significantly connected to the UFA. Because SJRWMD NEFv3 groundwater model results do not show a significant drawdown in the surficial aquifer system (Appendix A), non-MFL lakes within SJRWMD will not likely to be adversely impacted by the proposed GRU withdrawals.

4 AVOIDANCE OF HARM TO MFL WATER BODIES

4.1 SJRWMD LAKE MFLS

The impacts to lakes with adopted MFLs within SJRWMD are evaluated based on the drawdown in the UFA rather than the drawdown in the surficial aquifer system (SAS). SJRWMD uses a modeling approach to define the available freeboard in the UFA below lakes with adopted MFLs. For this purpose, Jones Edmunds performed groundwater model simulations using NEFv3, as described in Appendix A. In addition, because of uncertainties in groundwater models, we performed a spatial and temporal analysis of the UFA water levels in the vicinity of GRU wellfield.

Based on our analysis, we do not believe the requested allocation of 30 MGD would harm any MFL lake for the following reasons:

- According to modeling results, no MFL lakes are directly influenced by the UFA within the GRU-only modeled drawdown greater than 0.1 foot.
- Our UFA potentiometric surface analysis indicated that the capture zone of the GRU's wellfield does not reach any MFL lake (See Appendix C).
- Our UFA potentiometric surface analysis revealed that most of the groundwater that GRU withdraws is coming from nearby natural recharge features.
- Our temporal and spatial analysis of UFA water levels indicated that pumping at the requested allocation would have a small or immeasurable change on local groundwater levels within 2 miles of the wellfield.

However, to provide more assurance, we evaluated the MFL lakes of most concern to ensure that the expected drawdown would not violate an established lake MFL. Table 4-1 summarizes the MFL analyses. In addition, we evaluated MFLs for Lakes Stella, Swan, Tuscawilla, and Magnolia and we do not expect GRU's requested allocation to violate these MFLs.

Cumulative drawdown in the UFA below each lake is shown in Table 4-1 in the column titled 2034 DD (cumulative modeled drawdown in 2034). This projected drawdown is compared to the column titled 1995 FB (freeboard in 1995), and the difference is calculated in the column title 2034 FB (expected freeboard in 2034). When the freeboard in 2034 exceeds zero, we expect that the cumulative effects of pumping will not exceed the modeled freeboard in the UFA based on the necessary magnitude, duration, and frequencies of lakes levels defined by the MFL in Chapter 40C-8 Florida Administrative Code (FAC).

Based on this analysis, Cowpen Lake is the only lake that is not projected to meet its current MFL. The cumulative modeled drawdown under Lake Cowpen is 0.795 foot, and the current MFL allows approximately only 0.4 foot of drawdown from 1995 conditions.

Recently, SJRWMD reevaluated the Lake Cowpen MFL based on its new Sandhill Lakes methodology. A report indicating that the new 1995 freeboard for Lake Cowpen is 1.9 feet has already been drafted (Robison, 2009). When adopted, the projected drawdown on the lake will be well within the new MFL.

Even if the currently adopted MFL is found to be applicable to GRU's requested allocation, reasonable assurance of compliance with SJRWMD's conditions for issuance still exists. According to Section 373.0421, Florida Statutes, increased groundwater allocations may be permitted, even if they cause or contribute to an MFL violation provided that SJRWMD has implemented a prevention strategy. The first step of SJRWMD's prevention strategy for MFL lakes is to revaluate the MFLs based on the new scientific methodology. Based on the reevaluation of Lake Cowpen, the new MFL proposed by SJRWMD staff will not be violated by GRU-only or cumulative withdrawals through 2034. Therefore, an effective prevention strategy is in place for Lake Cowpen.

Table 4-1 Lakes of Concern with Adopted MFLs

No.	Lake	County	GW Final	SW Model	Inter-mediate	Cumulative 2034	Inter-mediate	1995	2034
			Year	Year	FB	DD	DD	FB	FB
1	Brooklyn	Clay	2034	1995	2.8	1.367	0	2.8	1.433
2	Geneva	Clay	2034	1995	1.5	1.197	0	1.5	0.303
	Geneva (Reeval)	Clay	2034	2008	0.8	1.197	0.399	1.199	0.002
3	Cowpen	Putnam	2034	2000	0.3	0.795	0.102	0.402	-0.393
	Cowpen (Reeval)	Putnam	2034	2009	1.9	0.795	0.102	2.002	1.207
4	Grandin	Putnam	2034	2002	1.6	1.128	0.202	1.802	0.674

4.2 SRWMD RIVERS AND SPRINGS

According to the UFA potentiometric surface analysis (see Appendix C), the estimated GRU capture zone does not reach the Santa Fe River. Most of the groundwater that GRU withdraws appears to be coming from nearby natural recharge features. However, GRU withdrawals may be indirectly affecting the Lower Santa Fe River by limiting a portion of its groundwater reserve (i.e., groundwatershed). The analysis also shows that GRU's recharge wells at the KWRF and leaky wetlands are within the groundwatershed of the Lower Santa Fe River and therefore benefit the river's baseflow. More importantly, as Table 4-2 shows, GRU would be returning about 95% of its groundwater withdrawals to the ground within Santa Fe River groundwatershed through recharge wells, recharge water features, and irrigation. All of GRU's water withdrawn from the aquifer would be beneficially used, and water loss would be only through evapotranspiration and human consumption.

Table 4-2 GRU Recharge Features

Potential Recharge Features	2034 (mgd)
KWRF recharge (Recharge Wells)	8.0
MSWRF recharge (SWB Flows)	6.1
UF recharge wells	0.8
Septic Tanks	1.3
Reclaimed Water Irrigation Recharge	1.9
Potable Water Irrigation Recharge (est. 20%)	6.0
Recharge Water Features	4.4
Total	28.4

In addition, according to Tables 3-3 and 3-4 of the SRWMD Water Supply Assessment Report 2010 (SRWSAR), the earliest planning period that the minimum flow constraint of one or more river or spring is estimated to be violated is 2010 to 2015. Table 2-3 of the SRWSAR includes the low-range demand projections for water supply utilities. The demand projections in Table 2-3 of the SRWSAR were used in the SRWMD's NFv1 model to assess the water resource constraints and subsequently to produce Tables 3-3 and 3-4 of the SRWSAR. The GRU demand for 2010 through 2015 was projected to be more than 30.8 MGD in that table. Therefore, the SRWSAR indicated that none of the rivers and springs of concern within SRWMD will be adversely impacted by GRU's requested allocation of 30 MGD. The tools used in the SRWMD water supply assessment in 2010 are still the best available.

As a result, we believe that GRU's requested allocation would not harm any springs or rivers within SRWMD.

5 ALTERNATIVE WATER SUPPLY PROJECT EVALUATION FOR ADDITIONAL ALLOCATION

5.1 SJRWMD

Jones Edmunds ran NEFv3 groundwater model simulations to estimate the drawdown in the UFA that would be required from AWS projects to offset additional allocations of 2 and 4 MGD (Appendix A).

Based on our conversation with the SJRWMD staff and according to Table 4-1, Lake Geneva would be the most restrictive MFL after reevaluations are completed. Therefore, we used the Lake Geneva reevaluated MFLs to evaluate the GRU AWS model scenarios.

As Table 5-1 shows, even under the 4-MGD additional allocation scenario, the re-evaluated Lake Geneva MFL would not be violated because the amount of cumulative drawdown exceeding freeboard in the UFA at Lake Geneva would be insignificant: 0.017 foot. The 0.017 foot is well within the modeling error of the current NEFv3, and the additional allocations of 2 and 4 MGD are permittable without the need for additional offsets from AWS projects.

However, to provide further reasonable assurance, GRU will implement an AWS project to receive the additional allocation in the future. Since the additional allocations of 2 and 4 MGD are permittable, GRU requests a one-to-one credit for each AWS project regardless of the benefit the project provides.

Table 5-1 Lake Geneva Reevaluated MFL Evaluation for AWS Scenarios

AWS Scenario	GW Final	SW Model	Inter-mediate	Cumulative 2034	Inter-mediate	1995	2034
	Year	Year	FB	DD	DD	FB	FB
2-MGD Additional Allocation	2034	2008	0.8	1.211	0.404	1.204	-0.007
4-MGD Additional Allocation	2034	2008	0.8	1.225	0.408	1.208	-0.017

5.2 SRWMD

Jones Edmunds ran NFv1 groundwater model simulations to estimate the change in river and spring fluxes along the Santa Fe River that would be required from AWS projects to offset for additional allocations of 2 and 4 MGD.

Jones Edmunds then ran 21 AWS model scenarios using NFv1 groundwater model to evaluate the potential benefits of possible AWS projects. Thirteen of the scenarios evaluated the benefits of offsetting existing permitted consumptive groundwater uses. Four of the scenarios evaluated the beneficial recharge to the UFA from leaky wetlands and recharge wells. The remaining four scenarios evaluate the benefits of making improvements to agriculture irrigation and changing silviculture land use practices.

To quantify the recharge benefit for each scenario, we calculated flux changes in river and drain cells along the Upper and Lower Santa Fe Rivers.

The analysis demonstrates that GRU is able to offset the impact of withdrawal above 30 MGD with various AWS scenarios (Appendix B).

6 PROPOSED MONITORING PLAN

GRU has monitored wetlands within the wellfield over the past 13 years. During the July 2013 wellfield site visits with SJRWMD and SRWMD, SJRWMD proposed revising the GRU wetland-monitoring program. While SJRWMD and GRU will develop the details of the revised monitoring program after the CUP application package is submitted, the basic elements of the proposed monitoring plan are as follows:

- Remove Wetland A from the monitoring program.
- Within 6 months of permit issuance, instrument and maintain water level monitoring equipment at the following locations:
  - Wetlands B through H.
  - Well clusters 2, 3, 6 (S, H, F). SJRWMD is monitoring F-3 remotely, and we assume that they will continue to conduct this monitoring.
- Report water level monitoring data to SJRWMD annually.
- In March through May following permit issuance and every 5 years (2018, 2023, 2028), conduct the following:
  - Establish an elevation profile along a belt transect at least 150 feet in length so that 50 feet of adjacent upland is included.
  - Monument the jurisdictional wetland line and distinct vegetation community breaks along the transect with PVC or other material.
  - Record soil elevations at 5-foot intervals and wherever the plant community changes.
  - Prepare a cross-section diagram of elevations, plant communities, hydric soils, and biotic hydrologic indicators (e.g., moss collars, adventitious roots) located along the transect.
  - Describe plant communities present and dominant tree, shrub, and herbaceous species within 10 feet of one side of the transect line within each plant community along the transect.
  - Describe soil color, texture, and hydric soil indicators in the top 24 inches of soil at 25-foot intervals along the transect or intervals that allow a minimum of three soil characterizations per each unique vegetation community type.
  - Provide a summary report on or before July 1.

7 SUMMARY OF REASONABLE ASSURANCE

7.1 30-MGD SCENARIO

Reasonable assurance for the requested allocation of 30 MGD is demonstrated by the following elements documented in this report:

7.1.1 SJRWMD

- No MFL lakes have GRU-only modeled drawdown greater than 0.1 foot.
- The capture zone of GRU's wellfield does not reach any MFL lake.
- Most of the groundwater that GRU withdraws is coming from nearby natural recharge features.
- Pumping at the requested allocation would have a small or immeasurable change on local groundwater levels within 2 miles of the wellfield
- Cowpen Lake is the only lake that is not projected to meet its current MFL under the cumulative withdrawal scenario. SJRWMD has recently re-evaluated the Lake Cowpen MFL based on its new Sandhill Lakes methodology. Lake Cowpen will comply with the reevaluated MFL under both the GRU-only and cumulative withdrawal scenarios.
- GRU would be returning about 95% of its groundwater withdrawals to the ground through recharge wells, recharge water features, and irrigation. All of the GRU's water withdrawn from the aquifer would be beneficially used, and water loss would only be through evapotranspiration and human consumption.
- No sign of adverse impact on wetlands due to GRU withdrawals was observed as a result of the analyses of wetland monitoring data and field assessments.
- The groundwater model results indicated no drawdown in the wetlands as a result of requested allocation of 30 MGD.
- A comprehensive monitoring plan will be developed to detect early signs of wetland impacts.

7.1.2 SRWMD

- The GRU capture zone does not reach the Santa Fe River.
- Most of the groundwater that GRU withdraws is coming from nearby natural recharge features.
- GRU would be returning about 95% of its groundwater withdrawals to the ground within the Santa Fe River groundwatershed through recharge wells, recharge water features, and irrigation. In other words, all of the GRU's water withdrawn from the aquifer would be beneficially used and water loss would only be through evapotranspiration and human consumption.
- The SRWSAR indicated that none of the rivers or springs of concern within SRWMD will be adversely impacted by the GRU's requested permitted allocation of 30 MGD.

7.2 2- AND 4-MGD SCENARIOS

Reasonable assurance for the additional allocation of 2 and 4 MGD is demonstrated by the following elements documented in this report:

7.2.1 SJRWMD

- No MFL lakes have GRU-only modeled drawdown greater than 0.1 foot under the additional 2- and 4-MGD withdrawal scenarios.
- Lake Geneva, the most restrictive MFL lake, will still comply with the reevaluated MFL under the additional 2- and 4-MGD withdrawal scenarios.
- GRU will implement an AWS project to receive the additional allocation in the future. Since the additional allocations of 2 and 4 MGD are permittable.

7.2.2 SRWMD

- GRU will continue returning about 95% of its groundwater withdrawals to the ground within the Santa Fe River groundwatershed through recharge wells, recharge water features, and irrigation.
- GRU will implement AWS projects to offset any potential adverse impact under additional 2- and 4-MGD withdrawal scenarios.

8 REFERENCES

Robison, PR. 2009. *Appendix B – Implementation of MFLs for Cowpen Lake. In:* St. Johns River Water Management District Technical Publication SJ2010-XX, Minimum Levels Reevaluation for Cowpen Lake, Putnam County, Florida. October 10, 2010.

Suwannee River Water Management District (SRWMD). 2010. *Water Supply Assessment Report 2010* (SRWSAR).

Figures

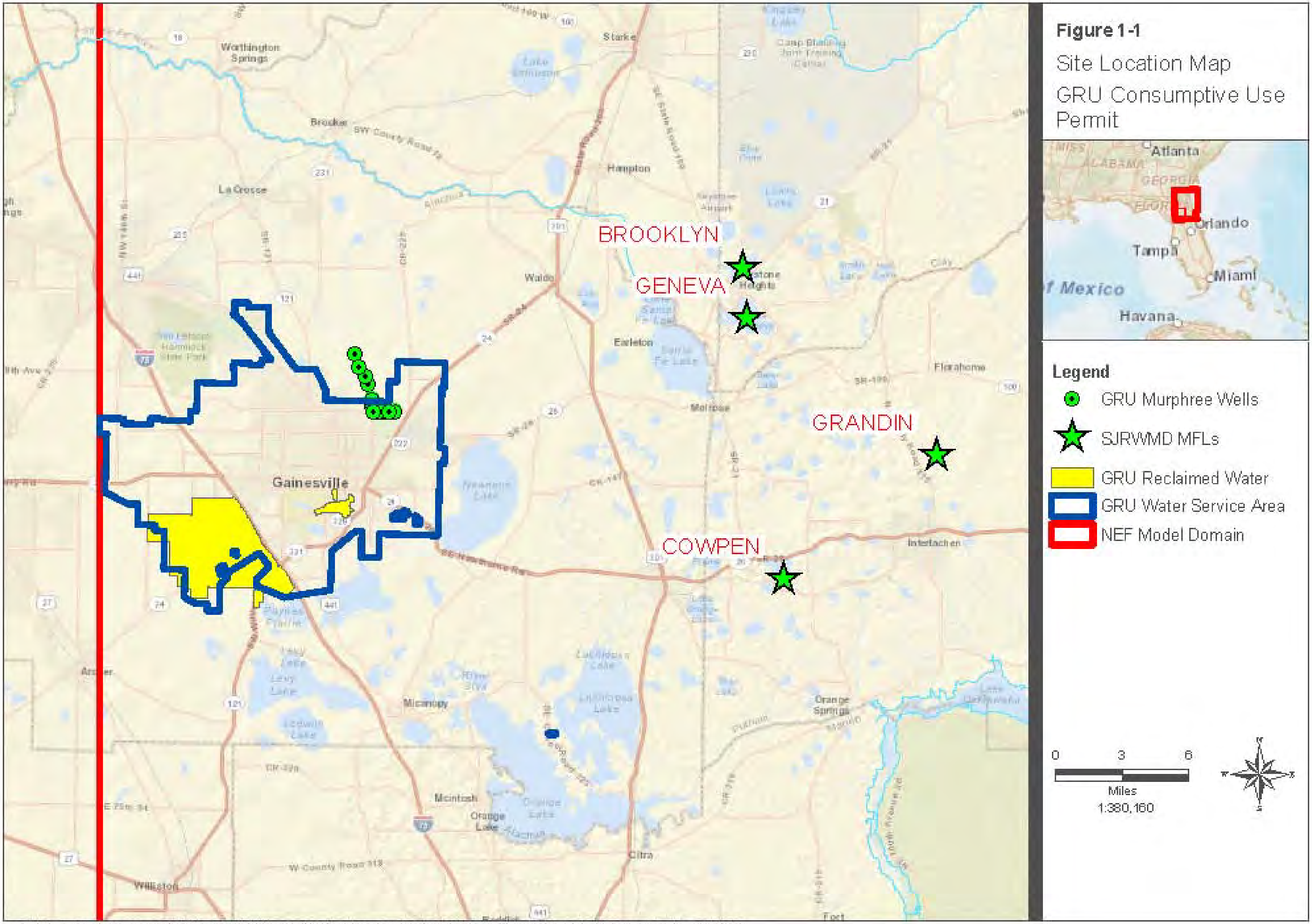


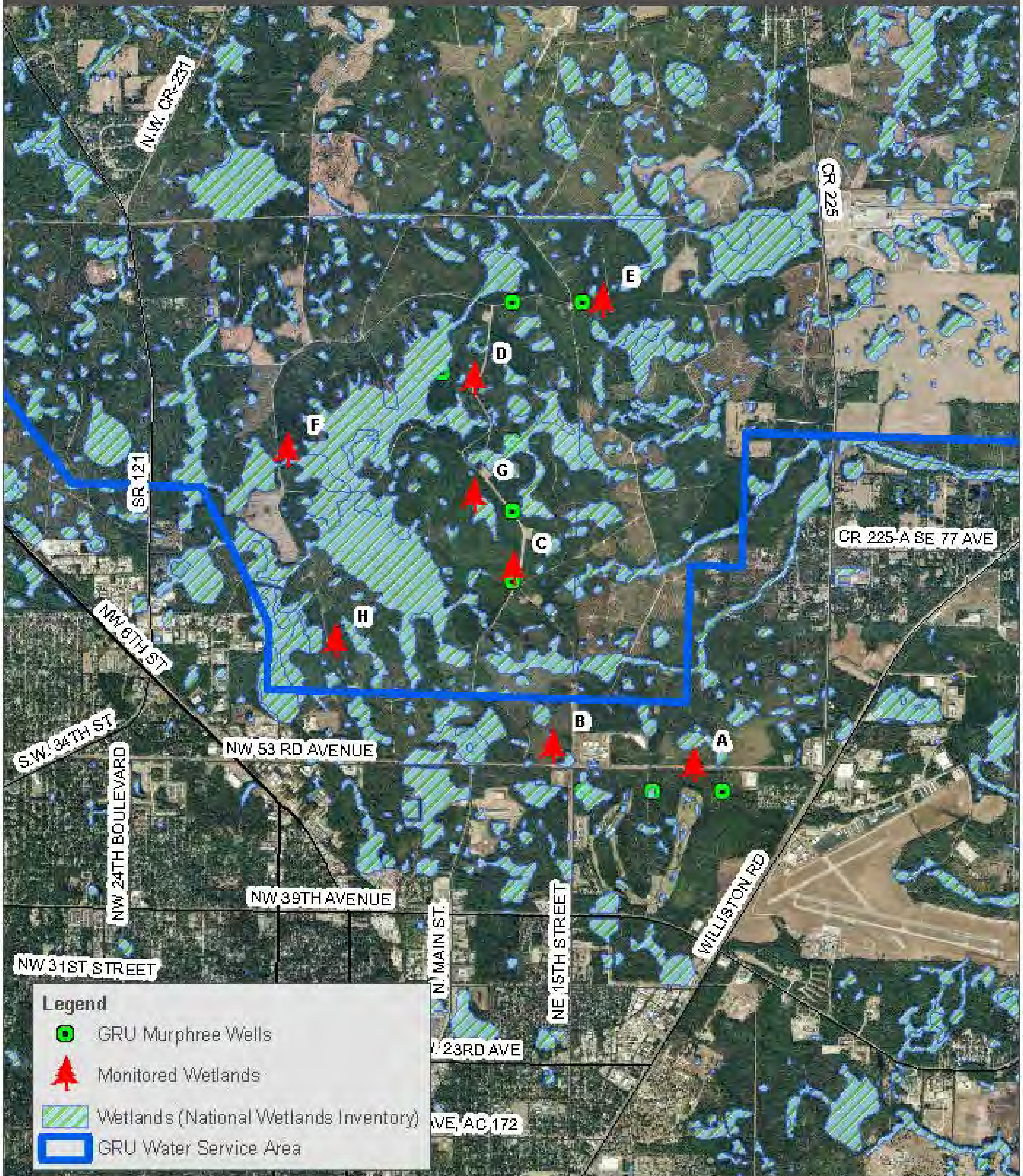
Figure 1-1
Site Location Map
GRU Consumptive Use Permit

For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\NEF_TechMemo\Figure1-1_SiteMap.mxd MHays 6/10/2013

Figure 1-2

Wetland Monitoring Locations

GRU Consumptive Use Permit



0 0.5 1

Miles

1:63,360

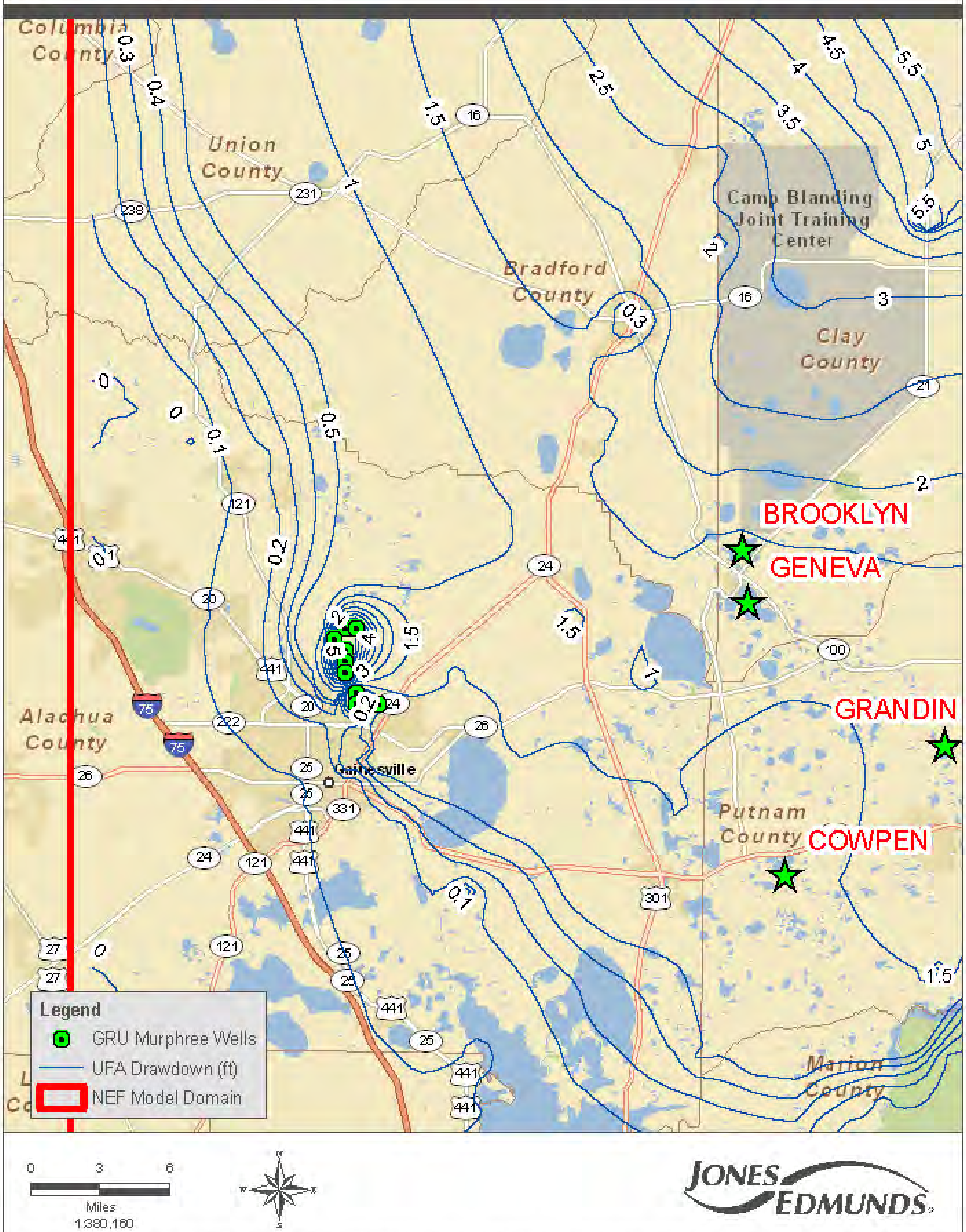
JONES EDMUNDS

For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\NEF_TechMemo\Figure1-2_WetlandLocations.mxd MHays 6/5/2013

Figure 3-1

Cumulative EOP UFA Drawdown

GRU Consumptive Use Permit

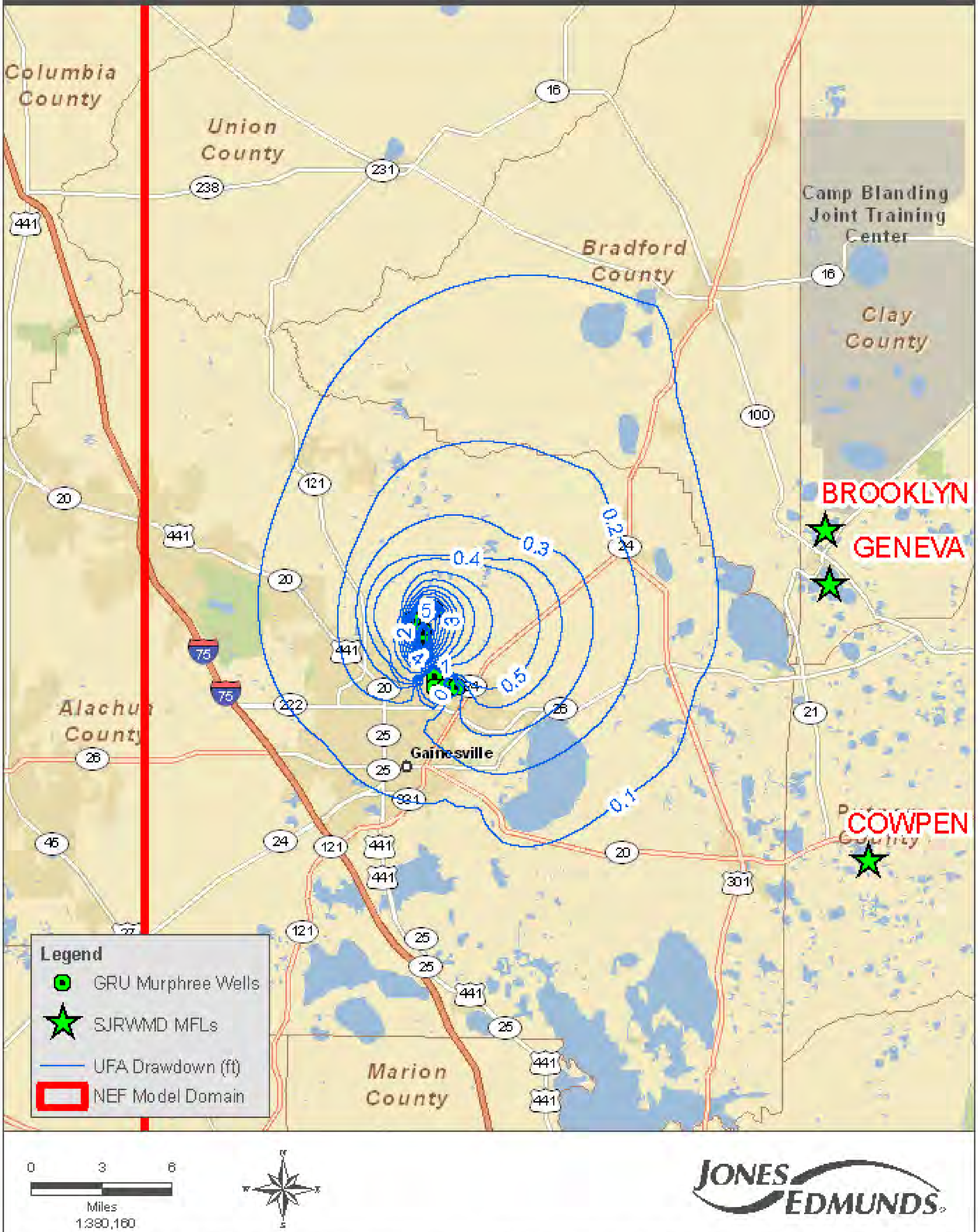


For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\NEF_TechMemo\Figure3-1_CumulativeEOP_UFA_DD.mxd MHays 6/5/2013

Figure 3-2

GRU's Current Permitted Drawdown

GRU Consumptive Use Permit



For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\NEF_TechMemo\Figure3-2_GRU_BOP_UFA_DD.mxd MHays 6/5/2013

Figure 3-3

Cumulative UFA Drawdown, Additional 2 mgd Allocation

GRU Consumptive Use Permit

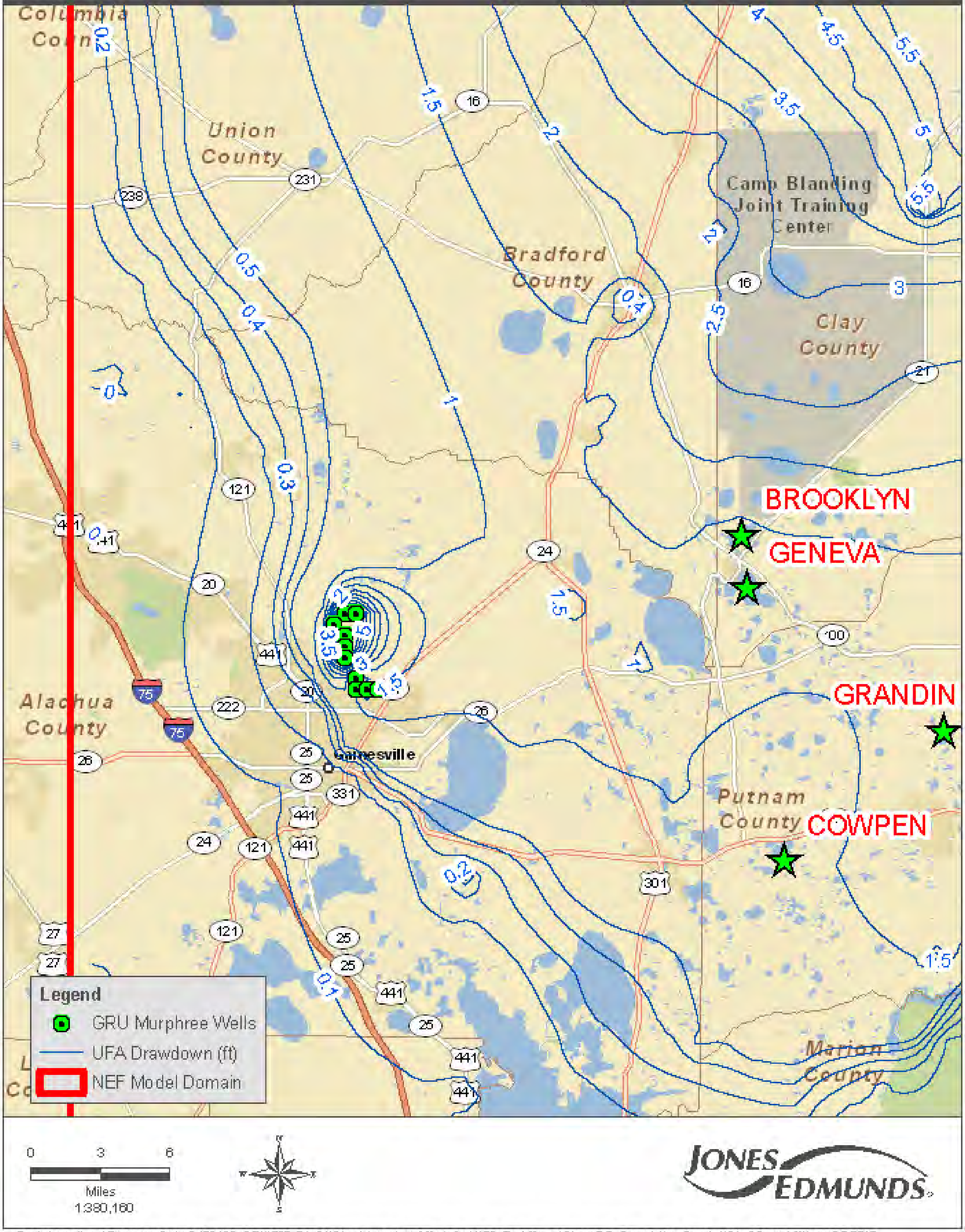


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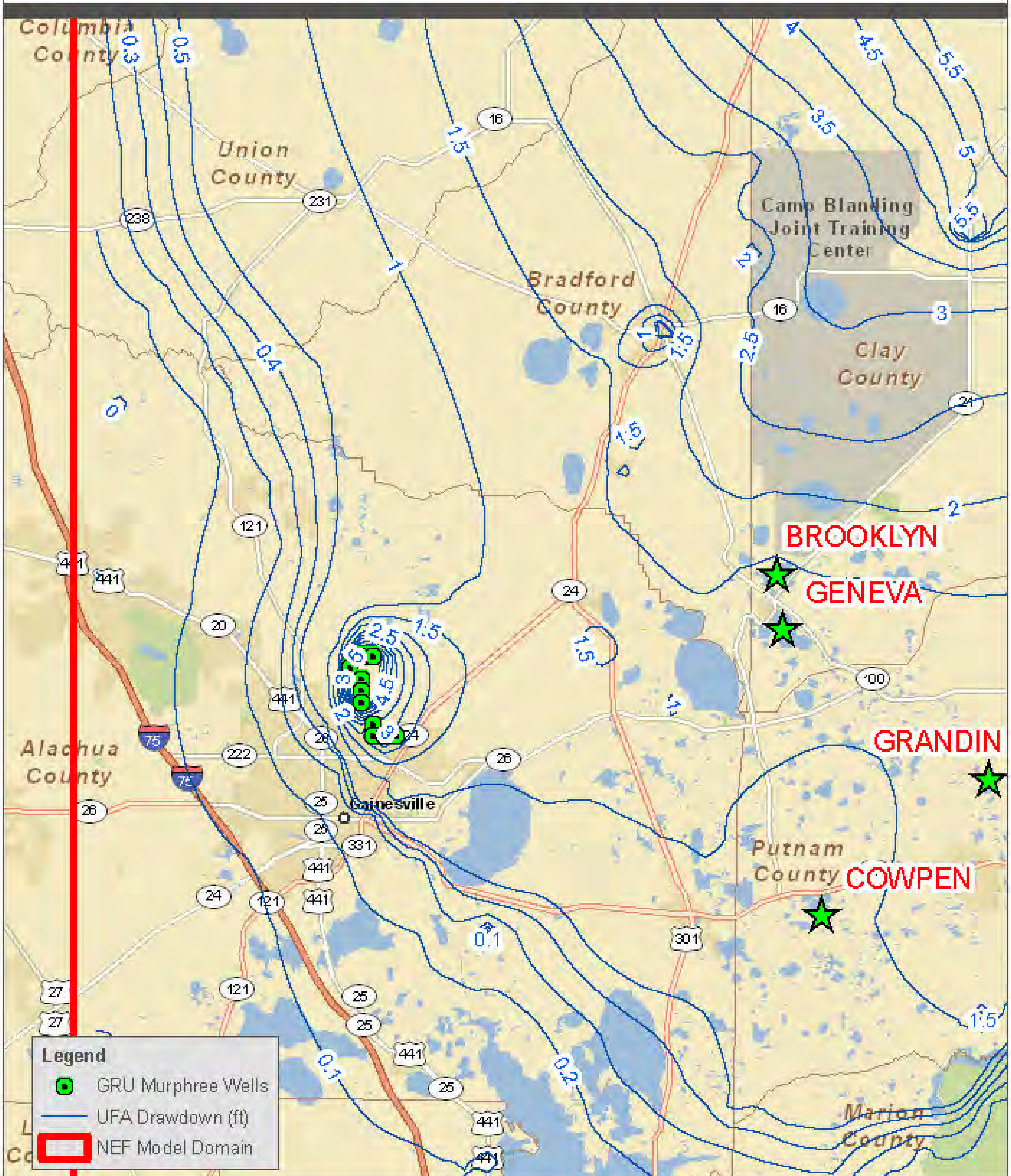
Figure 3-4

Cumulative UFA Drawdown, Additional 4 mgd Allocation

GRU Consumptive Use Permit



JONES EDMUNDS

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Figure 3-5

GRU's Drawdown, 2 mgd Additional Allocation

GRU Consumptive Use Permit

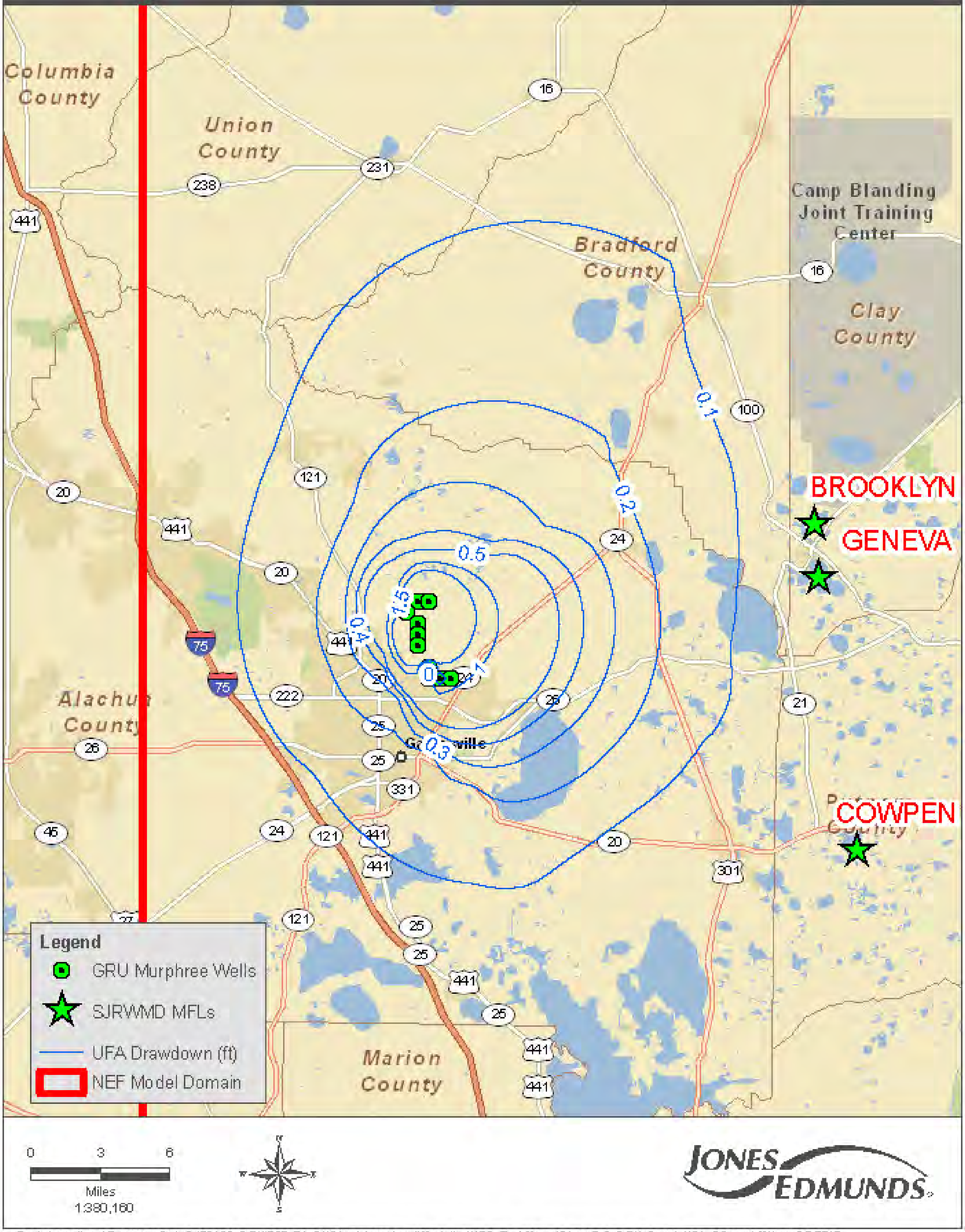
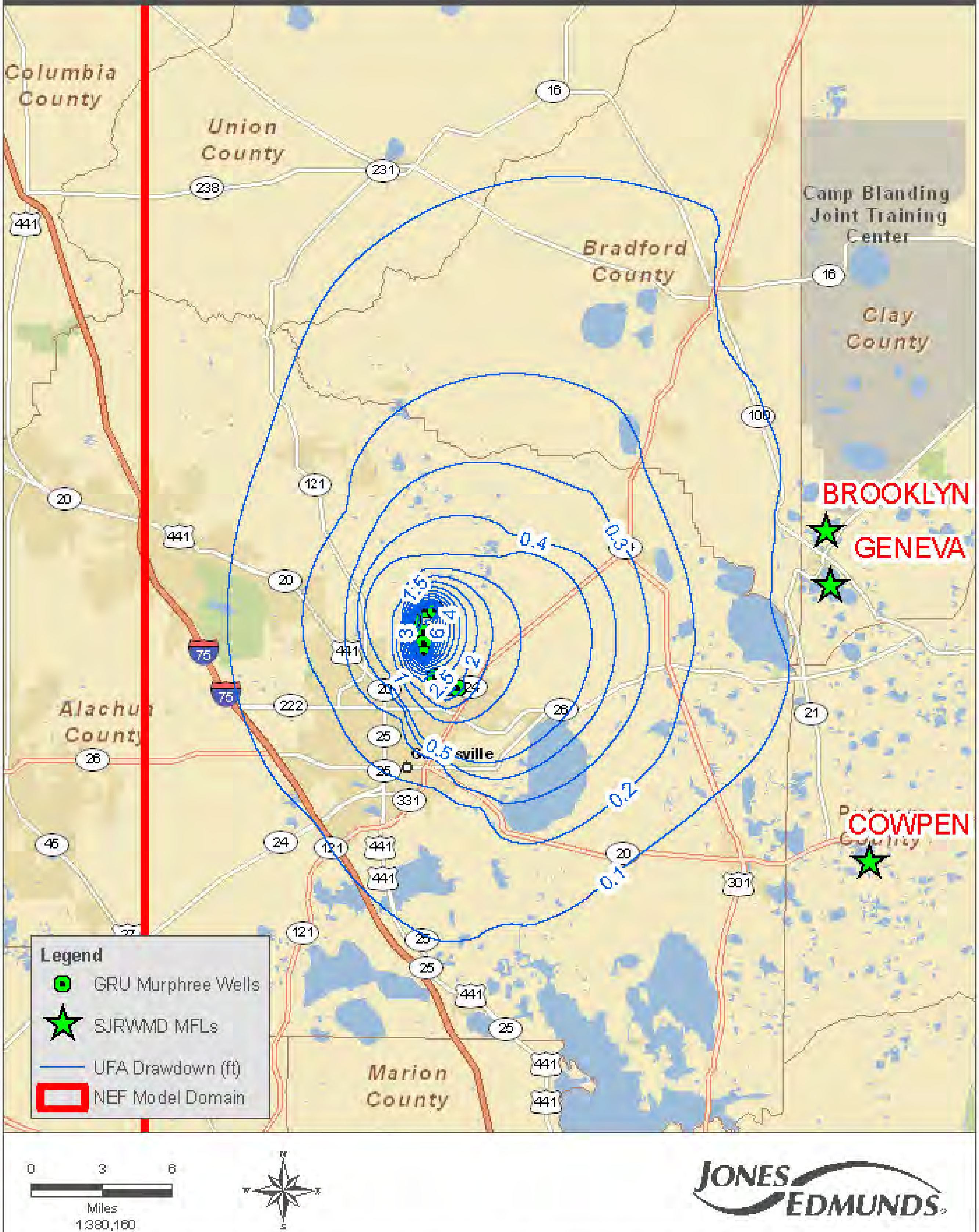


Figure 3-6

GRU's Drawdown, 4 mgd Additional Allocation

GRU Consumptive Use Permit



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Appendix B

SRWMD – Groundwater Modeling Report

Water Resources Assessment

Appendix B

SRWMD – Groundwater Modeling Report Technical Memorandum

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TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO:	Tony Cunningham, PE, and Rick Hutton, PE (GRU)
FROM:	Michelle Hays, PG, and Fatih Gordu, PE (Jones Edmunds)
XC:	Brett Goodman, PE
DATE:	October 8, 2013
SUBJECT:	SRWMD – Groundwater Modeling Report

1 INTRODUCTION

This technical memorandum details the groundwater flow model simulations created by Jones Edmunds & Associates, Inc. to evaluate the potential impact of Gainesville Regional Utilities' (GRU) withdrawals from the Upper Floridan Aquifer (UFA) on water-resource constraints and the potential benefit of Alternative Water Supply (AWS) projects that GRU could implement. GRU is not requesting an increase in its previously permitted allocation but has identified various projects that may provide beneficial recharge and could be implemented during the permit period to offset additional allocation if needed. Jones Edmunds ran model scenarios for each AWS project and compared the benefit to potential impacts from additional allocation scenarios.

1.1 WATER RESOURCE CONSTRAINTS

Potential hydrologic constraints within the Suwannee River Water Management District's (SRWMD) boundaries include Worthington Springs, the Upper Santa Fe near Graham, the Ichnetucknee River, and the Lower Santa Fe River. Figure 1-1 shows GRU's service area, hydrologic constraints, and the GRU withdrawal locations.

2 MODEL DEVELOPMENT

2.1 MODEL SELECTION AND DESCRIPTION

Jones Edmunds used the SRWMD North Florida (NF) regional groundwater flow model version 1.02 (NFv1.02) for modeling in accordance with the direction of SRWMD staff (SRWMD, 2008).

The NFv1.02 model was developed as a technical tool used by SRWMD to manage groundwater resources in North Florida. We downloaded the Groundwater Vista files for NFv1.02 from SRWMD's website on May 9, 2013.

The results of this model, as downloaded from SRWMD, serve as a baseline for comparing the results from the AWS scenarios discussed in Section 3 of this memorandum. All simulations discussed in this memorandum were run under steady-state conditions.

2.2 WELL PACKAGES

The withdrawal quantities for each permitted withdrawal location in the model are based on the estimated actual use in 2005, which is the baseline aquifer condition used in the SRWMD Water Supply Assessment Report 2010 (SRWSAR) (SRWMD, 2010). GRU's total withdrawal in the model is 25.1 million gallons per day (MGD).

The model does not contain unique well identifications (IDs); therefore, AWS simulations involving recharge well and consumptive use permit (CUP) offset scenarios were run by adding new wells instead of removing or reducing existing withdrawals from the model.

2.3 MODELED AREA AND DISCRETIZATION

The NF model grid size is 5,000 by 5,000 feet and encompasses north Florida and South Georgia. GRU's withdrawal points are within the center of the model domain. No revisions to the model grid were made for this evaluation.

2.4 MODEL LAYERS

Groundwater flow is modeled as fully three-dimensional flow with five active layers within the NF model. The layers represented in the NF model represent the Surficial Aquifer System (Layer 1), the Intermediate Aquifer System and confining unit (Layer 2), the UFA (Layer 3), the Middle Confining Unit (Layer 4), and the Lower Floridan Aquifer (LFA) (Layer 5). No alterations were made to the NF model structure for the simulations presented below.

3 MODEL SCENARIOS AND RESULTS

3.1 REQUESTED ALLOCATION (30 MGD) MODELSCENARIOS

According to Tables 3-3 and 3-4 of SRWSAR, the earliest planning period that the minimum flow constraint of one or more river or spring is estimated to be violated is 2010 to 2015. Table 2-3 of the SRWSAR includes the low-range demand projections for water supply utilities. The demand projections in Table 2-3 of the SRWSAR were used in the SRWMD's NF model to assess the water resource constraints and to produce Tables 3-3 and 3-4 of the SRWSAR. The GRU demand for 2010 to 2015 was projected to be more than 30.8 MGD in Table 2-3, and the groundwater model used to assess GRU's withdrawals for SRWSAR is the same model used in this application. Therefore, we concluded that none of the rivers and springs of concern within SRWMD will be adversely impacted by GRU's permitted allocation of 30 MGD. In addition, GRU is not requesting an increase in the permitted allocation. Thus, we did not run any model scenarios for 30 MGD.

3.2 AWS MODEL SCENARIOS

The following model scenarios were run to evaluate the potential benefit of possible AWS projects. The model downloaded from SRWMD was used as the baseline to calculate the river and drain fluxes. To quantify the recharge benefit for each scenario, we calculated flux changes in river and drain cells along the Ichnetucknee River and the Upper and Lower Santa Fe Rivers. We calculated the flux changes upstream of the target locations shown in Figure 3-1.

3.2.1 ADDITIONAL ALLOCATION (2 AND 4 MGD)

The following simulations were run to quantify the amount of water that would be required from AWS projects to offset additional allocations:

- Scenario 1 – GRU with an additional 2 MGD allocated.
- Scenario 2 – GRU with an additional 4 MGD allocated.

Table 3-1 presents the fluxes at the Santa Fe River and drain cells at the target locations.

Table 3-1 Additional Allocation Fluxes

Model Simulation	Description	Ichnetucknee Station	Fort White Station	Hwy. 441 Station	Worthington Station	Graham Station
		River and Drain Δ (MGD)	River and Drain Δ (MGD)	River and Drain Δ (MGD)	River Δ (MGD)	River Δ (MGD)
Scenario 1	2 MGD Additional Allocation	-0.05	-1.31	-0.59	0.00	0.00
Scenario 2	4 MGD Additional Allocation	-0.11	-2.61	-1.18	0.00	0.00

3.2.2 AWS – CUP OFFSETS

The following scenarios were run to evaluate the benefit of offsetting existing permitted consumptive use withdrawals:

- Scenario 3 – Reduced the Deerhaven Wastewater Treatment Facility (WWTF) withdrawal by 2 MGD.
- Scenario 4 – Reduced the Deerhaven WWTF withdrawal by 5.1 MGD.
- Scenario 5 – Reduced the Meadowbrook Gold Course withdrawal by 0.16 MGD.
- Scenario 6 – Reduced the West End Golf Course withdrawal by 0.138 MGD.
- Scenario 7 – Reduced the Gainesville Golf and Country Club withdrawal by 0.21 MGD.
- Scenario 8 – Reduced the Ironwood Golf Course withdrawal by 0.26 MGD.
- Scenario 9 – Reduced all golf course withdrawals – total of 0.76 MGD.
- Scenario 10 – Reduced the Santa Fe Community College withdrawal by 0.094 MGD.
- Scenario 11 – Reduced the Shands/SE Energy Center Expansion withdrawal by 0.226 MGD.
- Scenario 12 – Reduced the JR Kelley Generating Plant withdrawal by 0.693 MGD.
- Scenario 13 – Combined all CUP offsets for a total offset of 6.88 MGD.

For each model scenario, the offset amount was re-injected at the location of the existing withdrawal point. The model results were then compared to the baseline scenario. Table 3-2 shows the cell fluxes and drawdown amounts calculated for each CUP offset scenario. Figure 3-2 shows the locations of the proposed CUP offsets, which correspond to the map IDs shown in Table 3-2.

Table 3-2 CUP Offsets

Model Simulation	Description	Map ID	Ichnetucknee Station	Fort White Station	Hwy. 441 Station	Worthington Station	Graham Station
			River and Drain ∆ (MGD)	River and Drain ∆ (MGD)	River and Drain ∆ (MGD)	River ∆ (MGD)	River ∆ (MGD)
Scenario 3	2.0 MGD reduction at Deerhaven	1	0.06	1.34	0.61	0.00	0.00
Scenario 4	5.1 MGD reduction at Deerhaven	1	0.14	3.42	1.55	0.01	0.00
Scenario 5	0.16 MGD reduction at Meadowbrook	2	0.00	0.11	0.05	0.00	0.00
Scenario 6	0.138 MGD reduction at West End Golf Course	3	0.00	0.09	0.04	0.00	0.00
Scenario 7	0.21 MGD reduction at GGCC	4	0.00	0.10	0.05	0.00	0.00
Scenario 8	0.26 MGD reduction at Ironwood	5	0.01	0.17	0.08	0.00	0.00
Scenario 9	0.76 MGD reduction from all Golf Courses	2-5	0.02	0.47	0.21	0.00	0.00
Scenario 10	0.094 MGD reduction at Santa Fe College	6	0.00	0.06	0.03	0.00	0.00
Scenario 11	0.226 MGD reduction at Shands/SE Energy	7	0.01	0.14	0.06	0.00	0.00
Scenario 12	0.693 MGD at JR Kelley	8	0.02	0.44	0.20	0.00	0.00
Scenario 13	6.88 MGD from all Cup Offsets Combined	1-8	0.19	4.52	2.04	0.01	0.00

3.2.3 AWS – Recharge Scenarios

Scenarios were run to evaluate the benefit of recharge to the Floridan aquifer through leaky wetlands and recharge wells:

- Scenario 14 – Add 2 MGD to leaky wetlands from the Kanapaha Water Reclamation Facility (KWRF).
- Scenario 15 – Add 4 MGD to leaky wetlands from the KWRF.
- Scenario 16 – Add 4.53 MGD to KWRF recharge wells.

- Scenario 17 – Add 12.03 MGD to KWRF recharge wells.

For Scenarios 14 and 15, the additional recharge was modeled by increasing the recharge in Layer 1 at the proposed location of the wetlands. Scenarios 16 and 17 were modeled by adding two recharge wells to Layer 5 (the LFA) at the KWRF (for modeling purposes only). Scenario 16 increases the KWRF recharge to the permitted amount of 10 MGD, and Scenario 17 increases the recharge to 17.5 MGD. The model results were then compared to the baseline scenario, which includes 5.47 MGD of recharge at the KWRF wells. Table 3-3 shows the cell fluxes and drawdown amounts calculated for each scenario. Figure 3-2 shows the locations of the recharge scenarios, which correspond to the map IDs shown in Table 3-3.

Table 3-3 Recharge Scenarios

Model Simulation	Description	Map ID	Ichetucknee Station	Fort White Station	Hwy. 441 Station	Worthington Station	Graham Station
			River and Drain Δ (MGD)	River and Drain Δ (MGD)	River and Drain Δ (MGD)	River Δ (MGD)	River Δ (MGD)
Scenario 14	2.0 MGD to KWRF Leaky Wetlands	9	0.05	1.35	0.58	0.00	0.00
Scenario 15	4.0 MGD to KWRF Leaky Wetlands	9	0.11	2.69	1.16	0.00	0.00
Scenario 16	Added 4.53 MGD to KWRF Recharge Wells (10 MGD total)	10	0.11	2.77	1.23	0.00	0.00
Scenario 17	Added 12.03 MGD to KWRF Recharge Wells (17.5 MGD total)	10	0.30	7.36	3.27	0.01	0.00

3.2.4 AWS – Enhanced Conservation

Enhanced conservation scenarios were run to evaluate the benefit of improvements to agriculture irrigation and changes to silviculture land use. Silviculture areas and agriculture withdrawals southeast of the Santa Fe River were evaluated for the enhanced conservation scenarios.

We reviewed the SRWMD water use permits southeast of the Santa Fe River and selected permitted users that appeared to be used for agriculture irrigation based on the owner's name. For the agriculture scenarios, we assumed that changes in irrigation could reduce agriculture water consumption by 40%; therefore, the withdrawals were reduced by 40% for each scenario. Multiple scenarios were run to evaluate the impact of different quantities and distances to the Santa Fe River. The following agriculture scenarios were run:

- Scenario 18 – The Hines Farm withdrawal was reduced by 40%. The Hines Farm has a permitted withdrawal of 1.75 MGD and is the closest user to the Santa Fe River of the five largest users.
- Scenario 19 – A total of 13 agriculture users nearest the Santa Fe River (within a radius of approximately 1 mile) were reduced by 40%. The combined allocation of the 13 users is 5.106 MGD.
- Scenario 20 – The five largest users and the 10 largest users nearest the Santa Fe River were reduced by 40%. The combined allocation is 15.45 MGD.

For the silviculture scenario, we assumed that changes in land use could yield 1.7 inches of water per year, based on a study conducted by the University of Florida (Kaplan and Cohen, 2012). We increased the recharge to Layer 1 for the following silviculture scenario:

- Scenario 21 – We selected 10,000 acres of land used for silviculture near the Lower Santa Fe River and increased the recharge by 1.7 inches per year, which equals approximately 1.26 MGD.

Table 3-4 shows the cell fluxes and drawdown amounts calculated for the enhanced conservation scenarios. Figures 3-3 through 3-5 show the locations of the agriculture withdrawals, and Figure 3-6 shows the location of the silviculture area.

Table 3-4 Enhanced Conservation Scenarios

Model Simulation	Description	Ichetucknee Station	Fort White Station	Hwy. 441 Station	Worthington Station	Graham Station
		River and Drain Δ (MGD)	River and Drain Δ (MGD)	River and Drain Δ (MGD)	River Δ (MGD)	River Δ (MGD)
Scenario 18	Reduced Hines Farm (1.75 MGD) by 40%	0.02	0.53	0.19	0.00	0.00
Scenario 19	Reduced 10 largest users nearest the river (5.28 MGD) by 40%	0.06	1.39	0.60	0.00	0.00
Scenario 20	Reduced 5 largest users and 10 largest users nearest the river (15.45 MGD) by 40%	0.13	2.92	1.22	0.00	0.00
Scenario 21	Changed 10,000 acres of silviculture landuse (1.26 mgd)	0.13	0.22	0.03	0.00	0.00

4 SUMMARY OF RESULTS

Table 4-1 summarizes the scenarios with the greatest benefit and their potential to offset additional allocations. Cells colored green offset an additional 2 MGD at the target location; cells colored blue offset an additional 4 MGD at the target location. The analysis demonstrates that GRU is able to offset the impact of withdrawal above 30 MGD with various AWS scenarios.

The model simulations are a conservative estimate of the potential benefit for each of the scenarios presented below. In addition to the benefit calculated from the model simulations, land-use changes associated with the scenarios, such as irrigation, may provide additional benefit through increased direct recharge to sink features that are dominant within GRU's capture zone.

Table 4-1 AWS Benefit Summary

Model Simulation	Description	Ichetucknee Station River & Drain Δ (MGD)	Fort White Station River & Drain Δ (MGD)	Hwy. 441 Station River & Drain Δ (MGD)	Worthington Station River Δ (MGD)	Graham Station River Δ (MGD)	AWS Benefit
Scenario 1	2 MGD Additional Allocation	-0.05	-1.31	-0.59	0.00	0.00	
Scenario 2	4 MGD Additional Allocation	-0.11	-2.61	-1.18	0.00	0.00	
Scenario 3	2.0 MGD reduction at Deerhaven	0.06	1.34	0.61	0.00	0.00	Offsets 2 MGD
Scenario 4	5.1 MGD reduction at Deerhaven	0.14	3.42	1.55	0.01	0.00	Offsets 4 MGD
Scenario 13	6.88 MGD from all Cup Offsets Combined	0.19	4.52	2.04	0.01	0.01	Offsets 4 MGD
Scenario 14	2.0 MGD to KWRF Leaky Wetlands	0.05	1.35	0.58	0.00	0.00	Offsets 2 MGD
Scenario 15	4.0 MGD to KWRF Leaky Wetlands	0.11	2.69	1.16	0.00	0.00	Offsets 4 MGD
Scenario 16	4.53 MGD to KWRF Recharge Wells	0.11	2.77	1.23	0.00	0.00	Offsets 4 MGD
Scenario 17	12.03 MGD to KWRF Recharge Wells	0.30	7.36	3.27	0.01	0.01	Offsets 4 MGD
Scenario 19	Reduced 10 largest users nearest the river (5.28 MGD) by 40%	0.06	1.39	0.60	0.00	0.00	Offsets 2 MGD
Scenario 20	Reduced 5 largest users and 10 largest users nearest the river (15.45 MGD) by 40%	0.13	2.92	1.22	0.00	0.00	Offsets 4 MGD

* Note: We assumed that if a scenario offset the Fort White station, it would also offset the Hwy. 441 station.

5 REFERENCES

Kaplan, D. and Cohen, M. 2012. *Managing Forests for Increased Regional Water Yield in the Southeastern U.S. Coastal Plain*, Journal of the American Water Resources Association.

SRWMD. 2008. *North Florida Model Version 1.02*. http://www.mysuwanneeriver.com/index.aspx?nid=125.

SRWMD. 2010. *SRWMD Water Supply Assessment Report 2010* (SRWSAR).

Figures

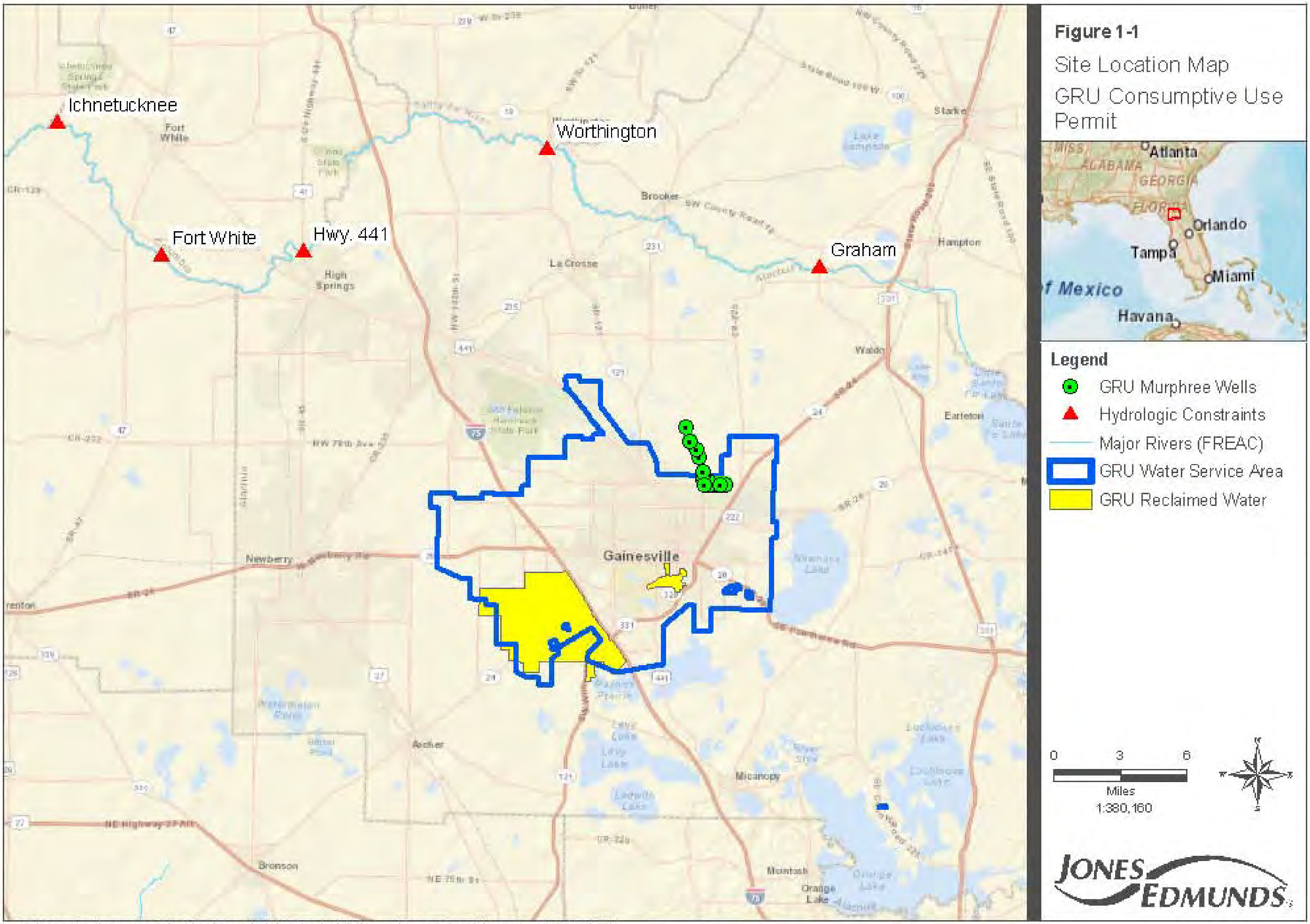

Figure 1-1
Site Location Map
GRU Consumptive Use Permit

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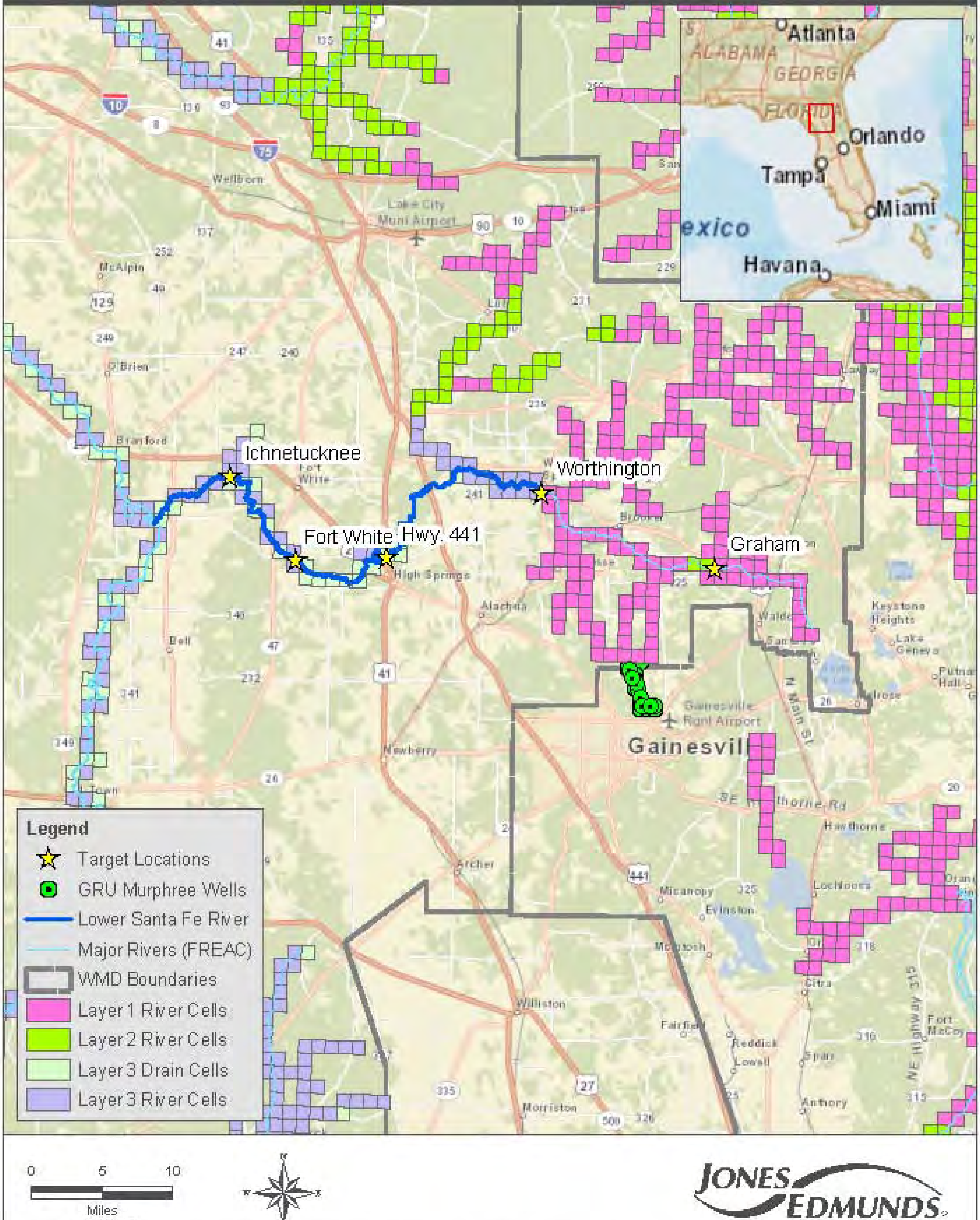
Figure 3-1

Target Locations

GRU Consumptive Use Permit



JONES EDMUNDS

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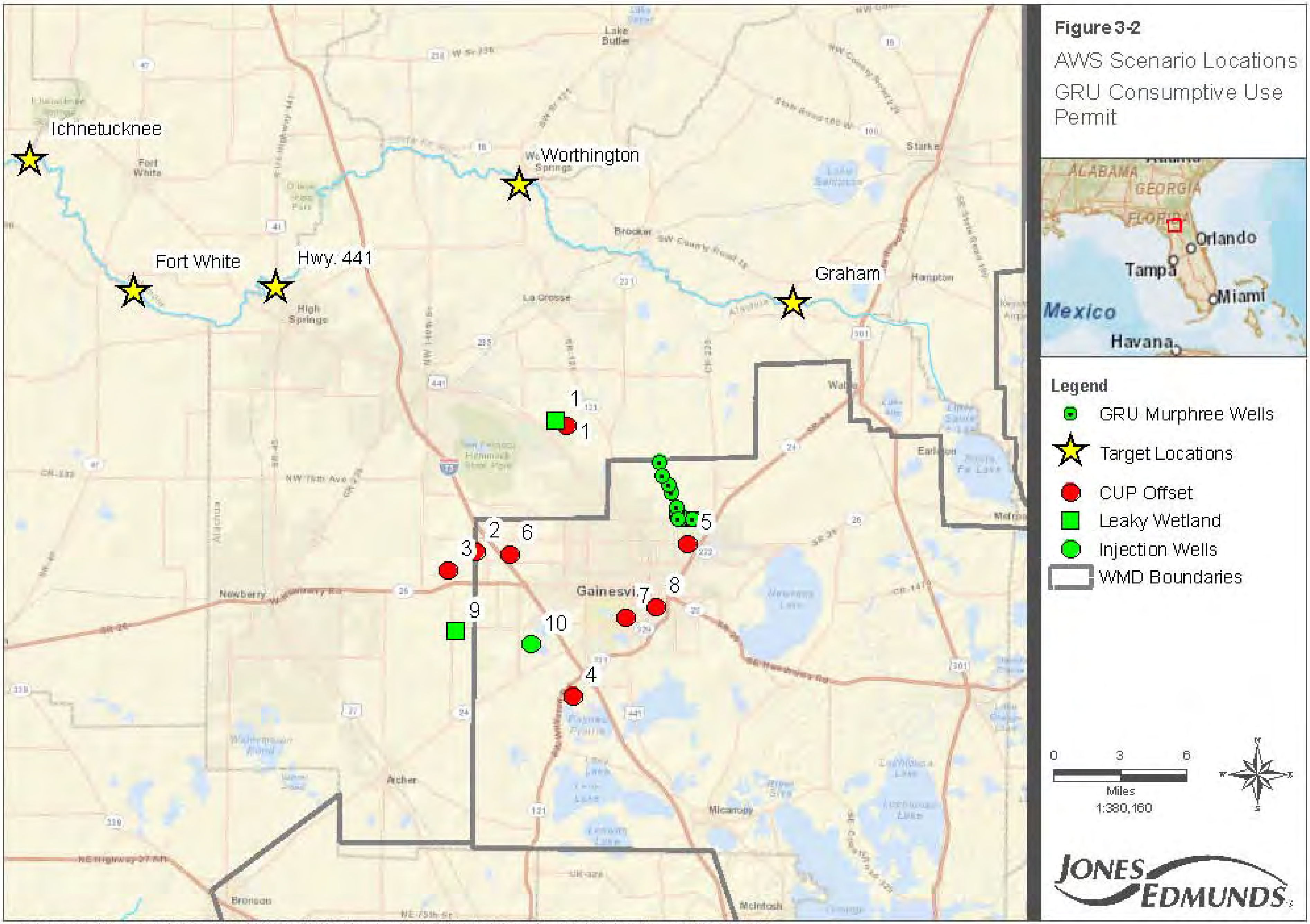

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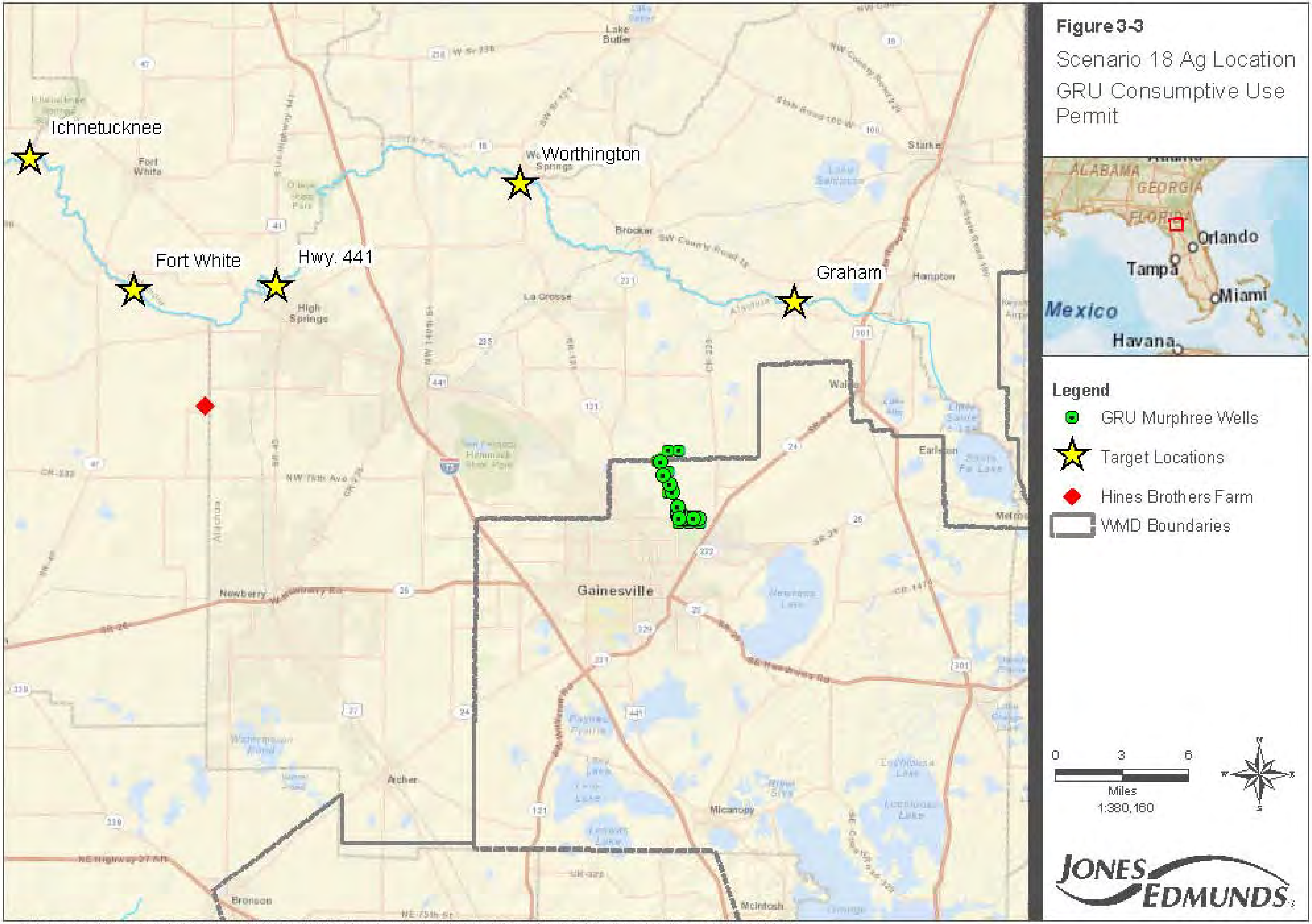

Figure 3-3
Scenario 18 Ag Location
GRU Consumptive Use Permit

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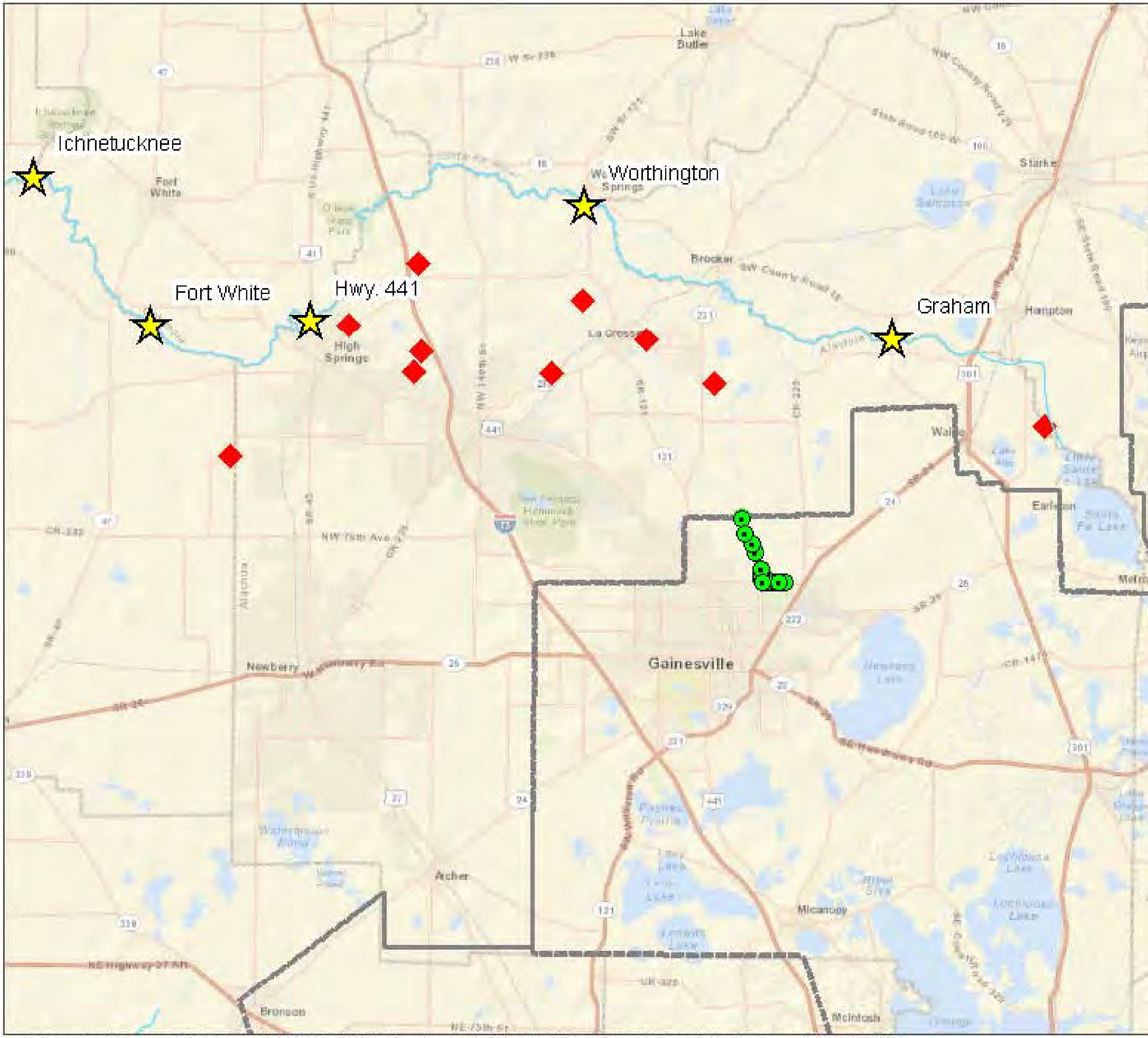

Figure 3-4

Scenario 19 Ag Locations
GRU Consumptive Use Permit

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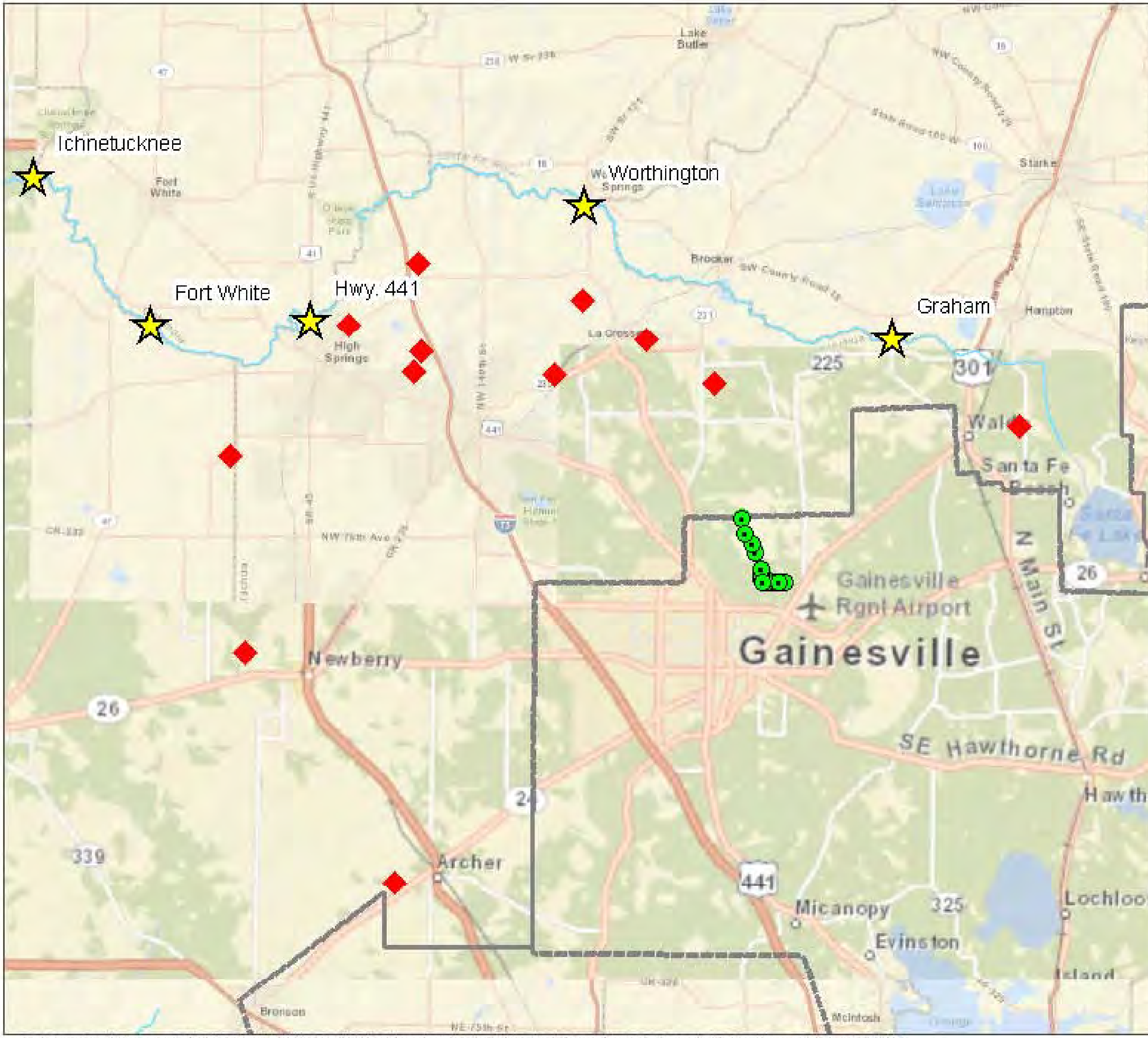


Figure 3-5

Scenario 20 Ag Locations
GRU Consumptive Use Permit

Legend

- GRU Murphree Wells
- Target Location
- Ag Conservation Locations
- WMD Boundaries

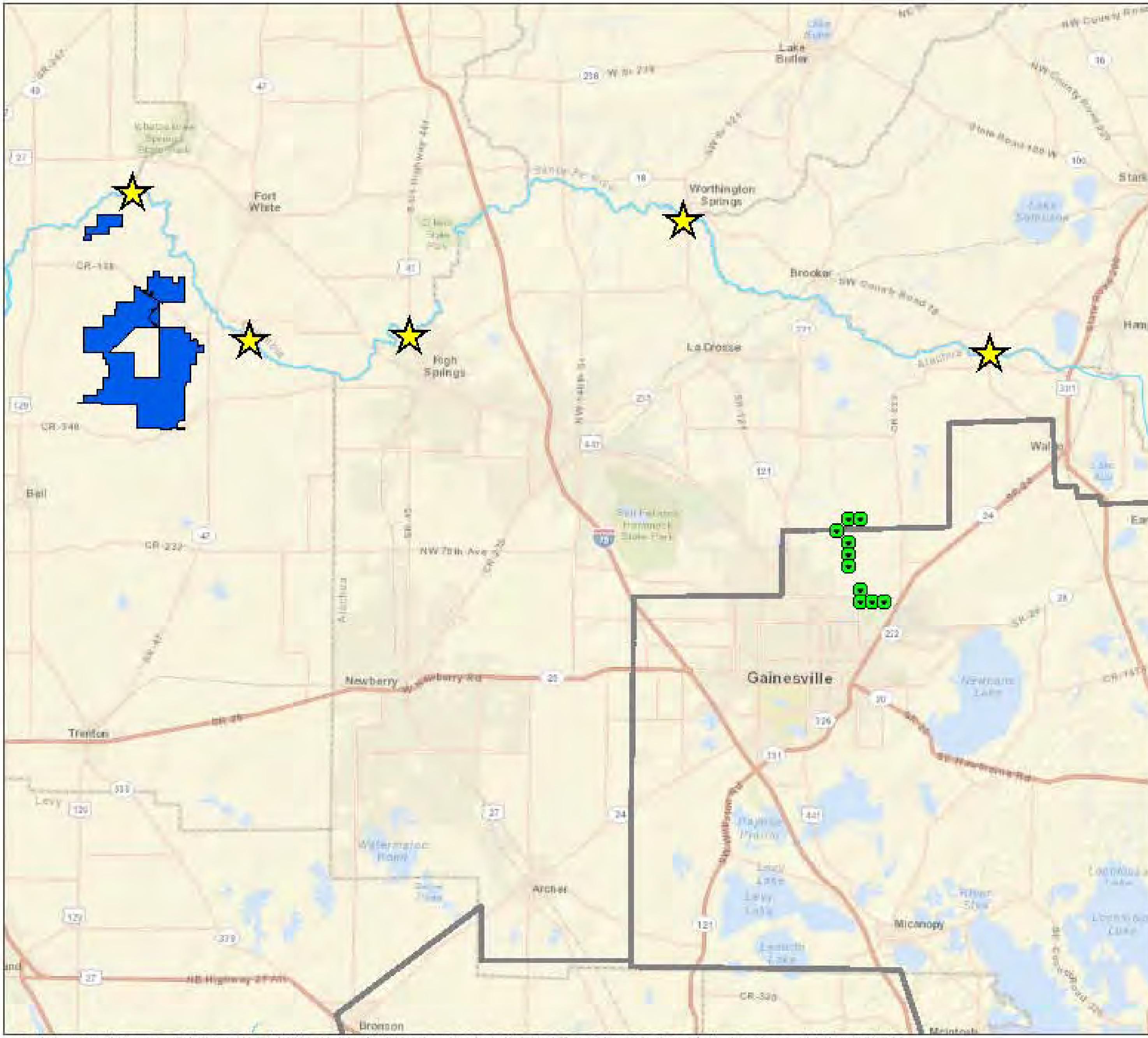
0 3 6
Miles
1:380,160

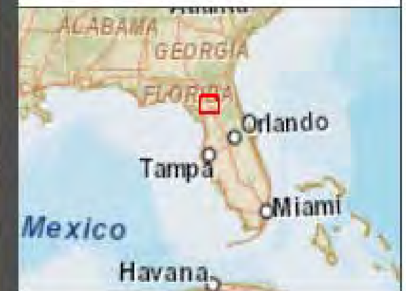
JONES EDMUNDS

For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\NF_TechMemo\Figure3-5_Scenario20_Locations.mxd MHays 6/7/2013

Figure 3-6

Scenario 21 Silviculture Location
GRU Consumptive Use Permit





Legend

- GRU Murphree Wells
- Target Location
- Silviculture Conservation Area
- WMD Boundaries

0 3 6

Miles

1:380,160

JONES EDMUNDS

For Informational Purposes Only Q:\07125_GRU\058_01_CUPAssistance\mxd\Modeling\WF_TechMemo\Figure3-6_Scenario21_Locations.mxd MHays 6/7/2013

Appendix C

Upper Floridan Aquifer

Potentiometric Surface Analysis

Water Resources Assessment

Appendix C

Upper Floridan Aquifer Potentiometric Surface Analysis Technical Memorandum

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10/8/13

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TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO: Tony Cunningham, PE; Rick Hutton, PE (GRU)

FROM: Karsten Sedmera, PE; Fatih Gordu, PE; Brett Goodman, PE (Jones Edmunds)

DATE: October 8, 2013

SUBJECT: Upper Floridan Aquifer Potentiometric Surface Analysis

1 INTRODUCTION

This analysis focused on creating a high-resolution Upper Floridan Aquifer (UFA) potentiometric surface that is broad enough to delineate the Lower Santa Fe River groundwatershed (i.e., contributing to river-bed springs) and detailed enough to accurately distinguish between areas influenced by withdrawals versus areas with significant percolation and recharge. Although many broader-scale potentiometric maps for this area were developed by the US Geological Survey (USGS) and Alachua County Environmental Protection Department (ACEPD) and illustrate the potentiometric surface of the UFA, none of them includes enough detail to help us adequately analyze groundwater flow paths and capture zones and distinguish among all source-water constraints on this portion of the aquifer. This analysis is intended to help Gainesville Regional Utilities (GRU) better understand and evaluate the influence of its withdrawals and the impact of recharge features on regional water resources.

2 DATA SELECTION AND ANALYSIS

2.1 DATA SELECTION

Jones Edmunds & Associates, Inc. has collected and analyzed all known available monitoring well records for the broader Santa Fe and Alachua County area of interest (AOI). The initial dataset includes:

- 376 wells and 61 spring gauges from the USGS web portal.
- 182 wells from:
  - St Johns River Water Management District (SJRWMD).
  - Suwannee River Water Management District (SRWMD).
  - ACEPD.
  - Florida Department of Environmental Protection (FDEP).
  - GRU.

2.2 DATA FILTERING

Some of the known wells in these various datasets are duplicates, and others had no known recorded data or only water quality records. Also, some wells had supporting documentation that clearly showed that the well measures a surficial aquifer or the Lower Floridan Aquifer. Since all of the spring sites measure water levels in a way that reflects the spring release and surficial flooding events, we only used a spring's annual minimum levels (i.e., reviewed and adjusted to the site's reference ground elevation) as an estimate of the potentiometric level. The number of sites with any useful measurements reduced to 271 after the initial screening.

Furthermore, all sites that have pertinent aquifer level measurements have a variety of irregular gaps in their records, which makes matching concurrent measurements of the aquifer level to provide a snapshot of potentiometric surface at any specific time difficult. Thus, we found that we did not have enough spatial detail to warrant estimating a potentiometric surface for the AOI in any given month or year. From the 271 wells identified in the initial screening, we found 231 well and spring-level measurements for the UFA from which to estimate the average potentiometric surface between 2005 and 2012, though only 53 of the 231 sites had measurements covering the entire period. The gauges and wells used to produce the average 2005 to 2012 potentiometric surface of the UFA are listed in Table 1 and their locations are shown in Figure 1.

Table 1 Sites Used to Construct a 2005 to 2012 UFA Potentiometric Surface

Site Name	Source	Site Name	Source	Site Name	Source
Alachua Sink	ACEPD	G294530082232001	USGS	Loncala Office	ACEPD
Alcorn	ACEPD	G294629082181301	USGS	Loncala Ranch	ACEPD
Alford	ACEPD	G294640082064501	USGS	Main	ACEPD
Asbell	ACEPD	G294726082101001	USGS	Majors	ACEPD
Balu DD	ACEPD	G294728082010901	USGS	Martin	ACEPD
Batey	ACEPD	G294807082020903	USGS	Mcalhaney	ACEPD
Bickmeyer	ACEPD	G294816081482201	USGS	McDilda	ACEPD
Bliss	ACEPD	G294839082230701	USGS	McGraw	ACEPD
Blue Springs Staff Gauge	ACEPD	G294911081572601	USGS	McGurn Investments (HRS,G-06)	ACEPD
Brady	ACEPD	G294920082044501	USGS	Mill Creek Sink	ACEPD
Broadway	ACEPD	G294928082355301	USGS	Milne	ACEPD
Brown	ACEPD	G295016081433501	USGS	MW 1-F	ACEPD
Butt	ACEPD	G295130082243001	USGS	MW 2-F	ACEPD
CB Hines	ACEPD	G295222081393501	USGS	MW 3-F	ACEPD
Church of God by Faith (G-13)	ACEPD	G295238081553701	USGS	MW 4-F	ACEPD
City of Waldo (G-34)	ACEPD	G295625081410901	USGS	MW 6-F	GRU WETLANDS
Clark	ACEPD	G295835081515001	USGS	MW F-13	GRU WETLANDS
Copeland Park (G-5)	ACEPD	G295841081514701	USGS	MWB-1A	FDEP
Dollar General	ACEPD	G295851081555301	USGS	MWB-1S	FDEP
DOT FL-15	ACEPD	G295859082003903	USGS	MWB-3D	FDEP
DOT FL-28	ACEPD	G300020082103001	USGS	MWC-1D	FDEP
Douglas	ACEPD	G300048081414301	USGS	MWC-2S	FDEP
Fahning (Taylor)	ACEPD	G300101082245201	USGS	MWC-3R	FDEP
FHP Station (G-26)	ACEPD	G300318082015401	USGS	MWC-3S	FDEP
Fleming	ACEPD	G300338081500301	USGS	MWI-4	FDEP
Freewill Baptist Church	ACEPD	G300340081383901	USGS	MWI-5	FDEP
Fuller (Gorman)	ACEPD	G300341081395401	USGS	MWI-6	FDEP
G292143082282201	USGS	G300502081432301	USGS	MWI-7R	FDEP
G292146082182501	USGS	G300540081583801	USGS	NE-2D (G-24)	ACEPD

Site Name	Source	Site Name	Source	Site Name	Source
G292200081510001	USGS	G300612082363101	USGS	Newberry Cemetery	ACEPD
G292204082022801	USGS	G300615082130501	USGS	Newmans	ACEPD
G292254081382101	USGS	G300629082030001	USGS	Olson	ACEPD
G292310081582201	USGS	G300635082295901	USGS	Poe Springs	ACEPD
G292310082373701	USGS	G300649081485901	USGS	Poe Springs Lodge	ACEPD
G292430082283001	USGS	G300656081463401	USGS	Poe Springs Production	ACEPD
G292435081441301	USGS	G300705081505401	USGS	Pratt	ACEPD
G292507082560201	USGS	G300747082225801	USGS	PUGH (Kerr)	ACEPD
G292528081383501	USGS	G300834081421301	USGS	Raulerson	ACEPD
G292543081513301	USGS	G300850081552001	USGS	Rauseo	ACEPD
G292554082034501	USGS	G300926081561603	USGS	S02321970	USGS
G292615082272601	USGS	G301022082103301	USGS	S02321977	USGS
G292622082131801	USGS	G301157081465201	USGS	S02322140	USGS
G292628081385501	USGS	G301245082233001	USGS	S02322685	USGS
G292713082493601	USGS	G301339081531203	USGS	S02322687	USGS
G292718082202601	USGS	G301347081421801	USGS	S02322688	USGS
G292744082375201	USGS	G301434082021401	USGS	S02322691	USGS
G292816082234501	USGS	G301535082162001	USGS	S02322694	USGS
G292817081483602	USGS	G301537081441901	USGS	S02322695	USGS
G292824081443301	USGS	G301551081415701	USGS	S02322698	USGS
G292838082073701	USGS	G301617081421601	USGS	S02322699	USGS
G292951082174001	USGS	G301618082110901	USGS	S02323502	USGS
G292957081573002	USGS	G301635082234001	USGS	S02323505	USGS
G293103081575501	USGS	G301702082271401	USGS	S02323566	USGS
G293228081495301	USGS	G301749081384602	USGS	S294959082404900	USGS
G293252082292301	USGS	G301758081462901	USGS	S295010082414700	USGS
G293253082055701	USGS	G301844081403801	USGS	Schert	ACEPD
G293300081523901	USGS	Garrett	ACEPD	Smith	ACEPD
G293415082112201	USGS	GC Jones	ACEPD	Stahmer	ACEPD
G293539082112601	USGS	Ginnie Springs	ACEPD	Stavely	ACEPD
G293556082043401	USGS	Gorenberg	ACEPD	Stevenson	ACEPD
G293620082362001	USGS	Gresham	ACEPD	Sulek	ACEPD
G293633081594601	USGS	Grimes (Wilkes)	ACEPD	Taylor	ACEPD
G293644082244201	USGS	Hall-Manship	ACEPD	Tipton	ACEPD
G293723082120102	USGS	Haufler	ACEPD	TREEO Center	ACEPD
G293733081474801	USGS	Hines	ACEPD	Truluck	ACEPD
G293755081412903	USGS	Hodge	ACEPD	United Methodist Church	ACEPD
G293943082085901	USGS	Hodson	ACEPD	VISA #1	ACEPD
G293951081413901	USGS	Hogle	ACEPD	VISA #2	ACEPD
G294011082260401	USGS	Holliman	ACEPD	VISA #3	ACEPD
G294028082245301	USGS	Hornsby Springs	ACEPD	VISA #4	ACEPD
G294105082171501	USGS	Joan Pocklington	ACEPD	Waters (G-17)	ACEPD
G294119082290401	USGS	Jones	ACEPD	Weiss	ACEPD
G294243081555901	USGS	Julie Pocklington	ACEPD	Wells	ACEPD
G294307082020903	USGS	July	ACEPD	Willis	ACEPD
G294321081492103	USGS	Karst Environmental	ACEPD	Wood	ACEPD
G294339082184501	USGS	Lander	ACEPD	WUFT Transmission Tower (G-30)	ACEPD
G294407082262801	USGS	LeClaire	ACEPD	Yates	ACEPD

2.3 DATA QUALITY ASSURANCE/QUALITY CONTROL

When plotted in a non-parametric box plot, several well records displayed obvious signs of outliers (e.g., arising from common data collection or recording errors) and missing data values. These questionable measurements were removed from the record for analysis. Many of the excluded outliers consisted of one or more sudden (one-time-interval) jump(s) in the well measurement (i.e., short-lived) that exceeds the land surface elevation or is more than double the sample standard deviation (SD) of the rest of the site's record. Only one case (MWC-5D, near Lake Alice) had such outliers, and a questionable record led us to abandon the record entirely; we are confident that several other wells in that location reflect the potentiometric surface more accurately. Table 2 gives an example of the reasons for removing questionable measurements in MWC-5D's record. The mean and SD of the non-removed levels are 45.26 and 2.83, respectively. The first two "removed" points are almost twice the mean. Also, the filtered mean is almost 2 feet lower than nearby wells (which are closer to the UFA injection wells than MWC-5D) and more than 4 feet lower than nearby wells after data adjustment (described in the next section). Thus, given the highly questionable nature of the MWC-5D record and since the well has no significant influence on any potentiometric divide(s), we elected to exclude MWC-5D from the dataset used to produce a potentiometric surface.

Table 2 Example of Measurements Removed from the MWC-5D Well Record

Station ID	Date	Level	Outlier	Reason for Removal
MWC-5D	3/31/2005	51.08		
MWC-5D	6/30/2005	46.29		
MWC-5D	9/30/2005	45.07		
MWC-5D	12/31/2005	45.99		
MWC-5D	3/30/2006	45.09		
MWC-5D	6/30/2006	[removed]	87.81	>> 2*SD
MWC-5D	9/30/2006	44.29		
MWC-5D	12/31/2006	44.81		
MWC-5D	3/31/2007	[removed]	93.46	>> 2*SD
MWC-5D	6/30/2007	40.07		
MWC-5D	9/30/2007	[removed]	0	No data value
MWC-5D	12/31/2007	[removed]	0	No data value
MWC-5D	3/31/2008	[removed]	0	No data value
MWC-5D	6/30/2008	[removed]	0	No data value
MWC-5D	9/30/2008	[removed]	0	No data value
MWC-5D	12/31/2008	[removed]	0	No data value
MWC-5D	3/31/2009	[removed]	0	No data value
MWC-5D	6/30/2009	[removed]	0	No data value
MWC-5D	9/30/2009	[removed]	0	No data value
MWC-5D	12/31/2009	[removed]	0	No data value
MWC-5D	3/31/2010	44.65		
MWC-5D	6/30/2010	[removed]	0	No data value
MWC-5D	9/30/2010	[removed]	0	No data value
MWC-5D	12/31/2010	[removed]	0	No data value
MWC-5D	3/31/2011	[removed]	0	No data value
MWC-5D	6/30/2011	[removed]	0	No data value
MWC-5D	9/30/2011	[removed]	0	No data value
MWC-5D	12/31/2011	[removed]	2	<< 2*SD

2.4 DATA ADJUSTMENTS

The 53 sites with 8 years of measurements are relatively evenly distributed over the AOI such that we could use the long-term sites to estimate the 8-year average at the remaining 178 sites from each site's relatively short-term average. This estimation involved the following general procedures:

- For each site with less than 8 years of measurements (Sa), locate the nearest site with full 8 years of measurements (Sb) and select the time-records common to both Sa and Sb.
- Calculate the average of each site's common-period records: Sa(Tcommon) and Sb(Tcommon).
- Calculate the difference in Sb period-averages: Sb(delta) = Sb(8-year) - Sb(Tcommon).
- Add the difference, Sb(delta), to the common-period average of Sa to get its 8-year average: Sa(8-year) = Sa(Tcommon) + Sb(delta).

In many cases, selecting "common" records between gauges required choosing measurements that occur within a month (±) of each other. Since the selection of long-term gauges for this estimation is subjective, we often tried multiple combinations to evaluate the sensitivity of the method on the 8-year estimates, and the results did not appear to show any consistent sensitivity to the phasing-difference between the "common" records used.

3 MAPPING

3.1 POTENTIOMETRIC SURFACE

Jones Edmunds applied the ordinary, spherical kriging method using ArcGIS 10.0 to interpolate the point data to a gridded surface for the AOI. We accepted the ArcTool's default estimate for the spatial resolution of the gridded surface (0.0038 degree) and contoured the gridded surface with a 1-foot interval. We then smoothed the gridded nature of the contours using the Paek smoothing ArcGIS method with a 5,000-foot tolerance for the final product.

One benefit of the kriging method, other than its interpolation accuracy, is that it produces predictable artifacts (e.g., sharp turns and small bubble-like features when contoured) in areas where the local data are not sufficiently dense for any interpolation method to produce a reliable surface of the location. This is the primary reason why the west edge of the interpolation surface – the area between the Lower Santa Fe River drainage and the Suwannee River drainage (a poorly measured area) – has been masked out; given the lack of data on the west side of the AOI, we cannot be entirely certain where the groundwater divide between the Suwannee and Lower Santa Fe River "groundwatersheds" actually falls (i.e., no matter what interpolation methods are used).

Figure 2 shows the potentiometric surface and 1-foot potentiometric contours. These potentiometric contours illustrate the influence of certain natural recharge features such as wetlands with sinkhole features and certain manmade recharge features such as recharge wells that recharge the UFA and of springs along the Santa Fe and Ichetucknee Rivers and water supply wells that depress it. Wetlands such as the Lower Santa Fe Preserve, San Felasco, and Paynes Prairie (which includes many sinkhole features) are evidenced by local mounds in the UFA level, while area springs and water supply wells produce local depressions in the average aquifer level. The recharge flows shown in the figure are the average flows from 2005 to 2012 estimated using gauge records. In addition, the average annual Gainesville rainfall from 2005 to 2012 is 43.4 inches, which is lower than the annual long-term average rainfall of 50.1 inches in the area.

3.2 Lower Santa Fe River Groundwatershed

Jones Edmunds used the ArcHydro sink-evaluation extension for ArcGIS to delineate the groundwatershed for the Lower Santa Fe River to a point near Fort White. All local sink-watersheds that the tool showed “spilling” (e.g., like a bathroom sink with a certain low-point along the rim) in the direction of Lower Santa Fe River (with the exception of the GRU wellhead capture area) were merged with the sink-watershed for the Lower Santa Fe River near Fort White. This riverine groundwatershed is portrayed with a blue line in Figure 2. We also delineated a groundwatershed using the USGS 2010 contour for comparison purposes (Figure 3). As Figure 3 shows, the groundwatershed developed using the USGS contours is not significantly different from the groundwatershed we developed in this study.

3.3 GRU Wellfield Capture Zone

All sink-watersheds that the ArcHydro extension showed “spilling” toward the sink-watershed around the GRU wells were merged. This wellhead capture area, which itself “spills” into the Lower Santa Fe groundwatershed, is portrayed with a black line in Figure 2. The fact that the GRU capture zone “spills” toward the Santa Fe groundwatershed indicates that the GRU wellfield only indirectly affects the Lower Santa Fe River by limiting a portion of its groundwater reserve (i.e., groundwatershed). In addition, most of the water GRU withdraws appears to be coming from nearby natural recharge features.

3.4 Interpolation Confidence

As noted earlier, due to a lot fewer wells on the west side of the AOI, we are not as confident about potentiometric divide between the Lower Santa Fe River’s groundwatershed and the Suwannee River’s groundwatershed. All of the kriging methods reflect this general lack of adequate well coverage on the west side of the AOI, which among other things is evidenced by excessive kriging artifacts. Thus, we have masked out the areas of the kriged potentiometric surface nearest the Suwannee River, where we do not think an accurate potentiometric surface can be estimated from the sparse available coverage. The only confident thing we can say about the Suwannee-Santa Fe Rivers capture zone divide is that it is a relatively steep divide that roughly follows a line that probably connects the Cities of Bell and Bronson (i.e., on the west side of the AOI).

4 CONCLUSION

Jones Edmunds developed a potentiometric surface of the UFA that is detailed enough to identify how local natural and manmade recharge features and wells influence the recent average level of the UFA and to help us evaluate groundwater flow paths in Alachua County.

GRU’s monthly average withdrawal between 2005 and 2012 was 25.3 million gallons per day (MGD), which is slightly less than the estimated UFA recharge from Alachua Sink nearby (e.g., shown in Figure 2).

The estimated GRU capture zone for this period does not reach the Santa Fe River or the minimum flow-level (MFL) lakes in Keystone Heights. Most of the groundwater that GRU withdraws appears to be coming from nearby natural recharge features. However, the GRU withdrawals may be indirectly affecting the Lower Santa Fe River by limiting a portion of its groundwater reserve (i.e., groundwatershed). The analysis also shows that GRU’s recharge wells at the Kanapaha Water Reclamation Facility and leaky wetlands are within the groundwatershed of the Lower Santa Fe River and therefore benefit the River’s baseflow.

Figures

Figure 1 Gauges and Wells Used in UFA Analysis, Symbolized by the Number of Years that Data are Available

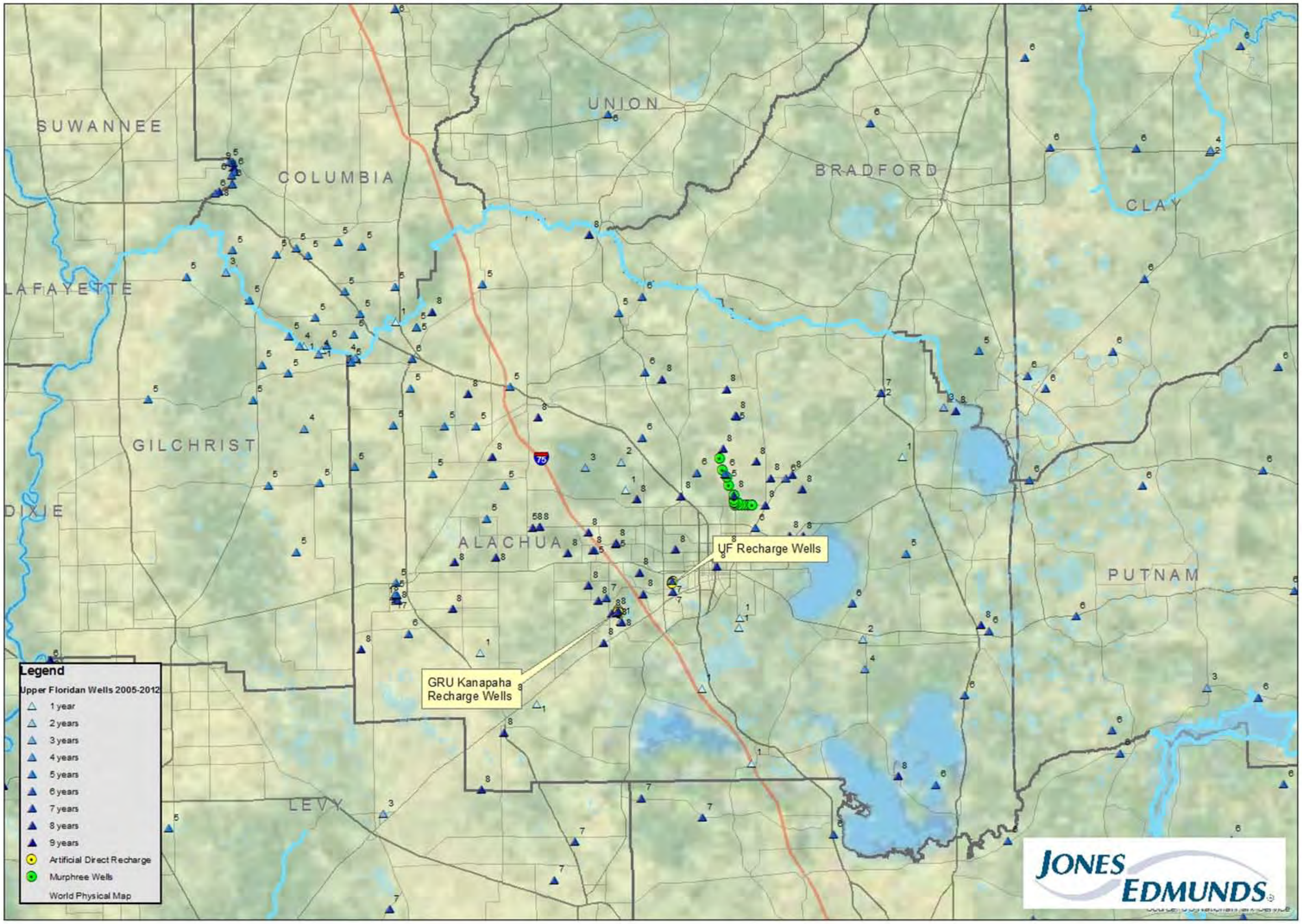


Figure 2 UFA Potentiometric Surface, Contours, Lower Santa Fe Groundwatershed, GRU Capture Zone, and Recharge Zones

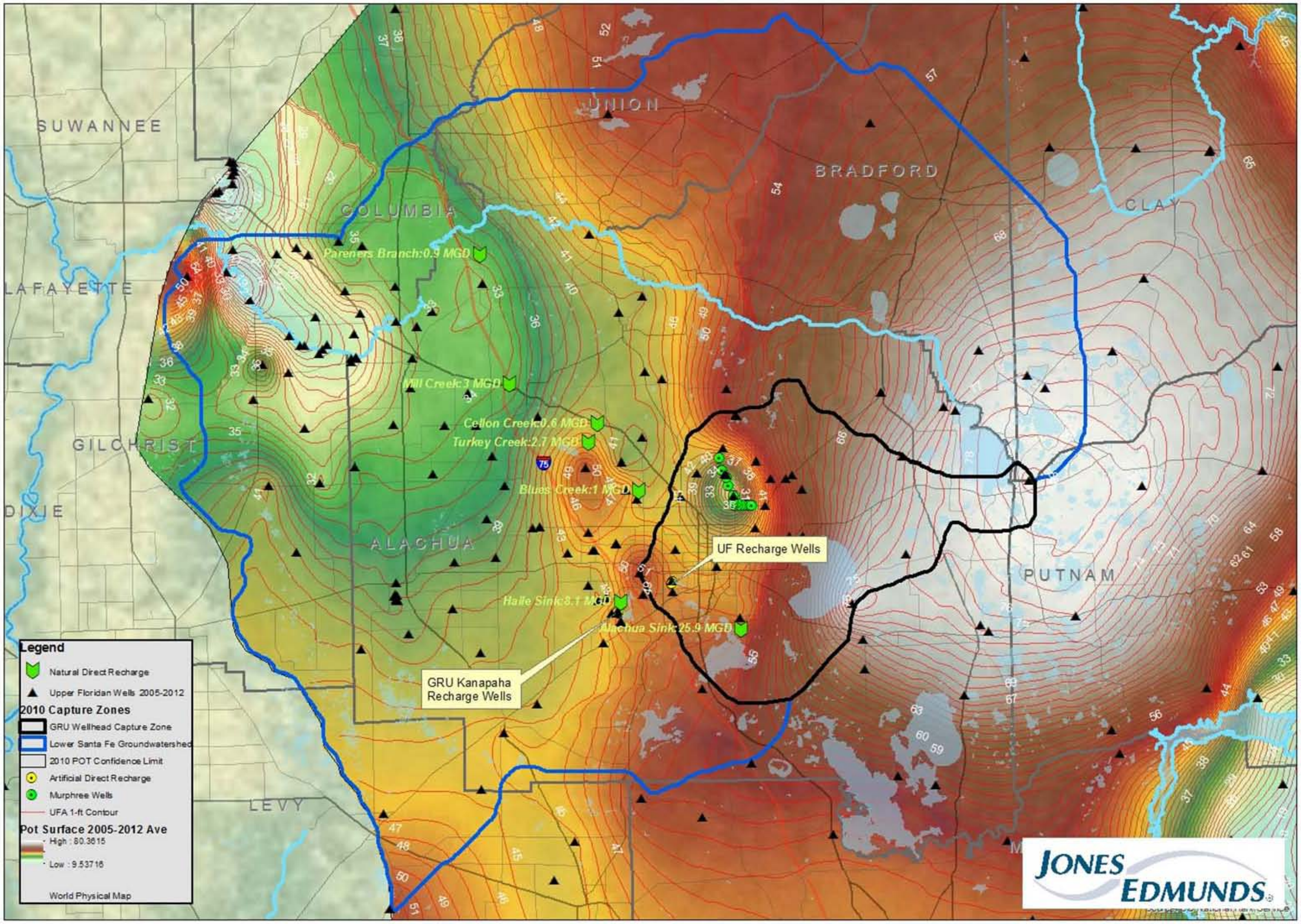
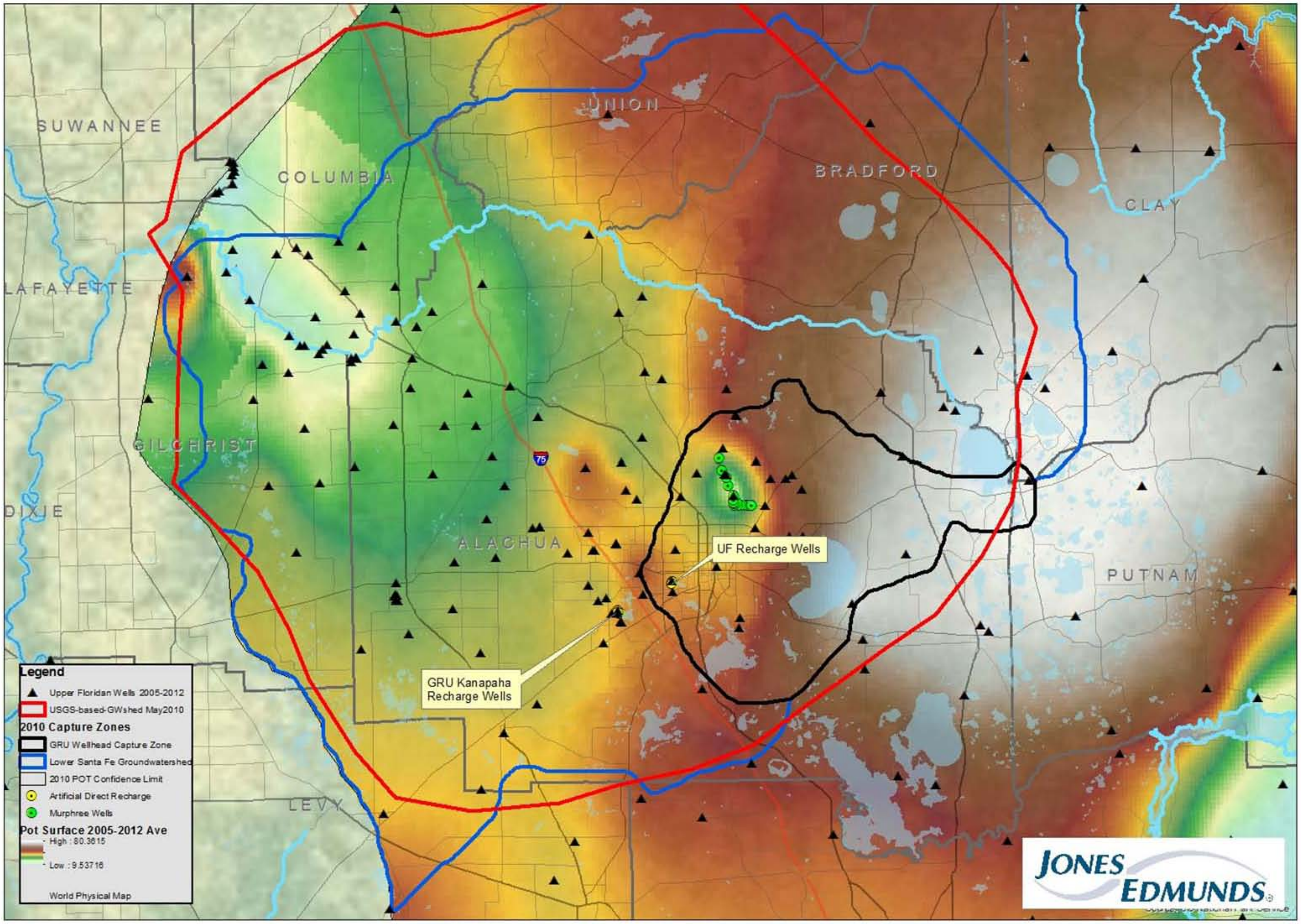


Figure 3 **Current Lower Santa Fe Groundwatershed Result Versus USGS-based Groundwatershed**



Appendix D

Analysis of UFA Levels

Water Resources Assessment

Appendix D

Analysis of UFA Levels Technical Memorandum

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TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO: Tony Cunningham, PE; Rick Hutton, PE (GRU)

FROM: Jason Icerman, PE; Brett Goodman, PE (Jones Edmunds)

XC: Fatih Gordu, PE (Jones Edmunds)

DATE: October 8, 2013

SUBJECT: Analysis of Upper Floridan Groundwater Levels

1 BACKGROUND

Gainesville Regional Utilities (GRU) owns and operates 16 public-supply wells at the Murphree wellfield that withdraw from the Upper Floridan Aquifer (UFA). GRU's peak pumpage rates occurred during a 12-month period from April 2006 to April 2007, when the average pumping reached nearly 28 million gallons per day (MGD). Following the peak withdrawals, GRU's annual average pumpage steadily decreased to 23 MGD at the end of 2012. This memorandum documents Jones Edmunds & Associates, Inc.'s analysis designed to evaluate how the local groundwater levels responded to the 5-MGD reduction in GRU's withdrawals from 2007 to 2013. The analysis provides some perspective on the extent to which changes in withdrawals up to GRU's requested allocation will affect regional water resources. The analysis also supports the results of groundwater modeling that we performed to evaluate the drawdown impacts of GRU's requested allocation.

2 AVAILABLE DATA

2.1 WELLFIELD PUMPAGE DATA

GRU provided Jones Edmunds with historical withdrawal data for the Murphree wellfield. Figure 1 shows average monthly and 12-month moving average withdrawals from 2004 through 2012.

2.2 WATER LEVEL DATA

Two UFA wells installed by Florida Department of Transportation (FDOT) are near the Murphree wellfield: MW F-6 (2 miles west of the wellfield) and MW F-13 (2 miles east of the wellfield). Daily groundwater level data available for both wells from February 2006 through 2012 capture GRU's peak withdrawals in 2006 and 2007 (28 MGD) and the substantial (5 MGD) declines in withdrawals that occurred from 2008 to 2012. We obtained additional UFA groundwater level data for several locations near the Murphree wellfield from the St. Johns River Water Management District (SJRWMD) and US Geological Survey (USGS) from 1982 to 2012 as available. Water level data locations used in the Murphree wellfield analysis are displayed in Figure 2. Figures 3 and 4 plot the time series of water levels near the wellfield on the same axis as regional groundwater monitoring wells.

Figure 1 Murphree Wellfield Withdrawals

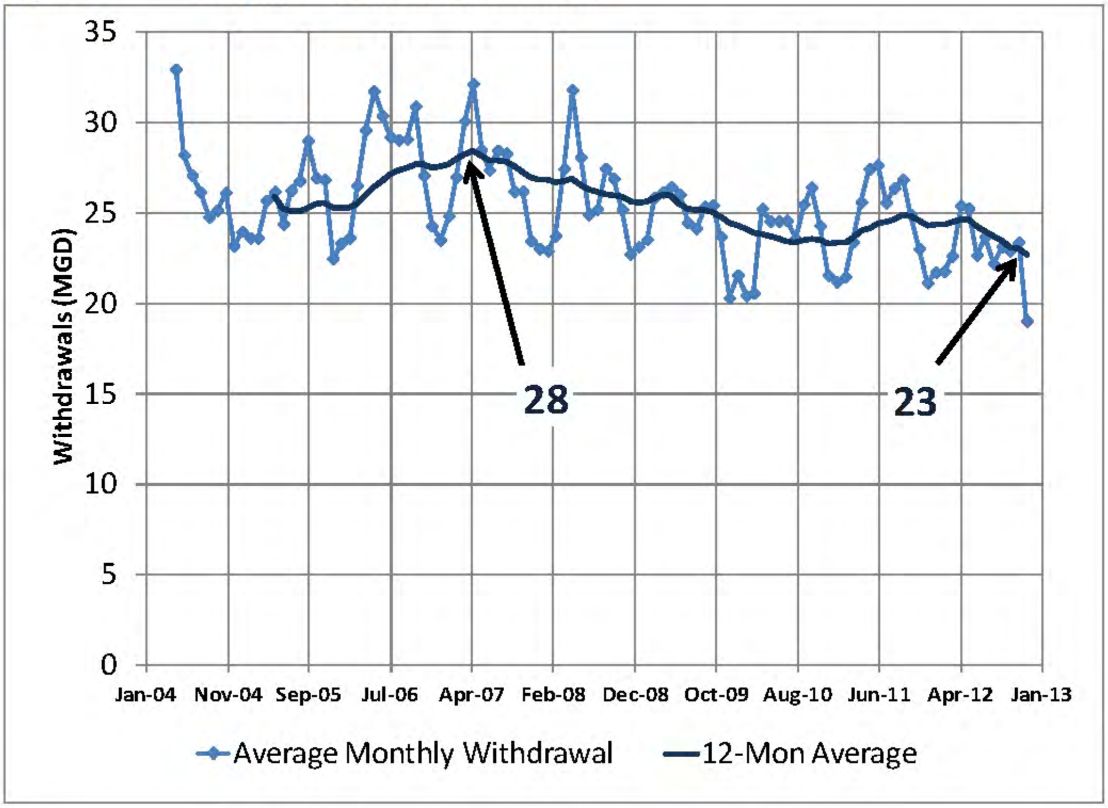

Figure 2 Upper Floridan Aquifer Level Monitoring Sites Used in Analysis

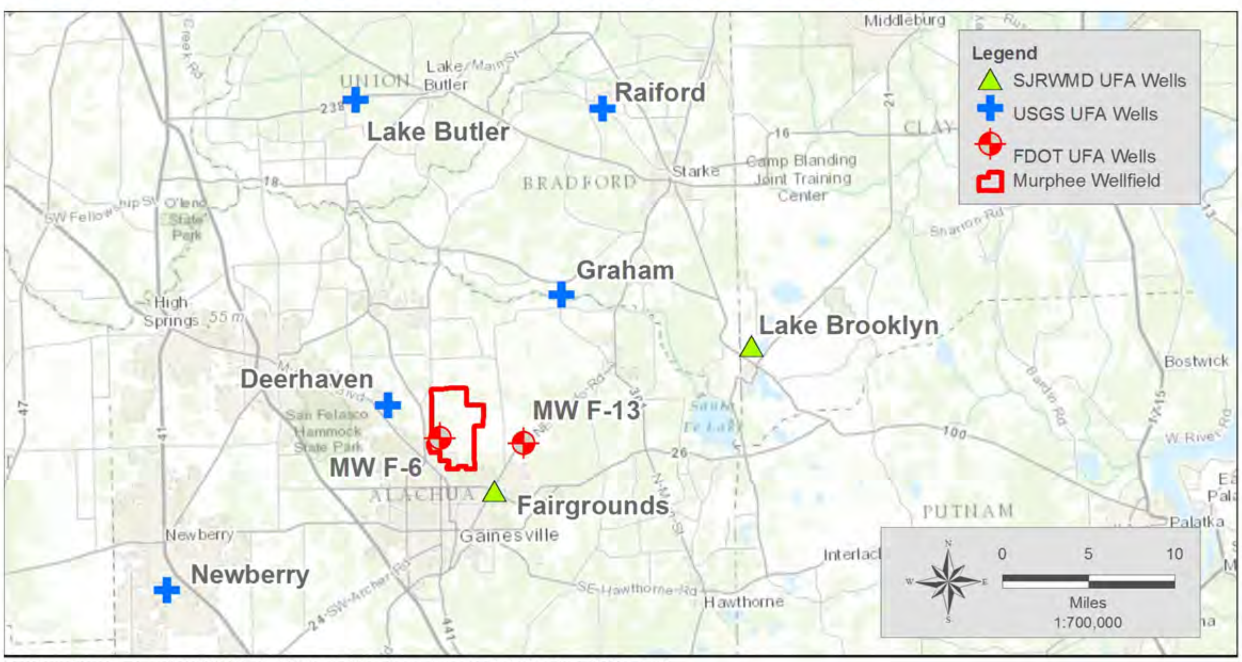

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Figure 3 UFA Wells to the East and North of the Wellfield

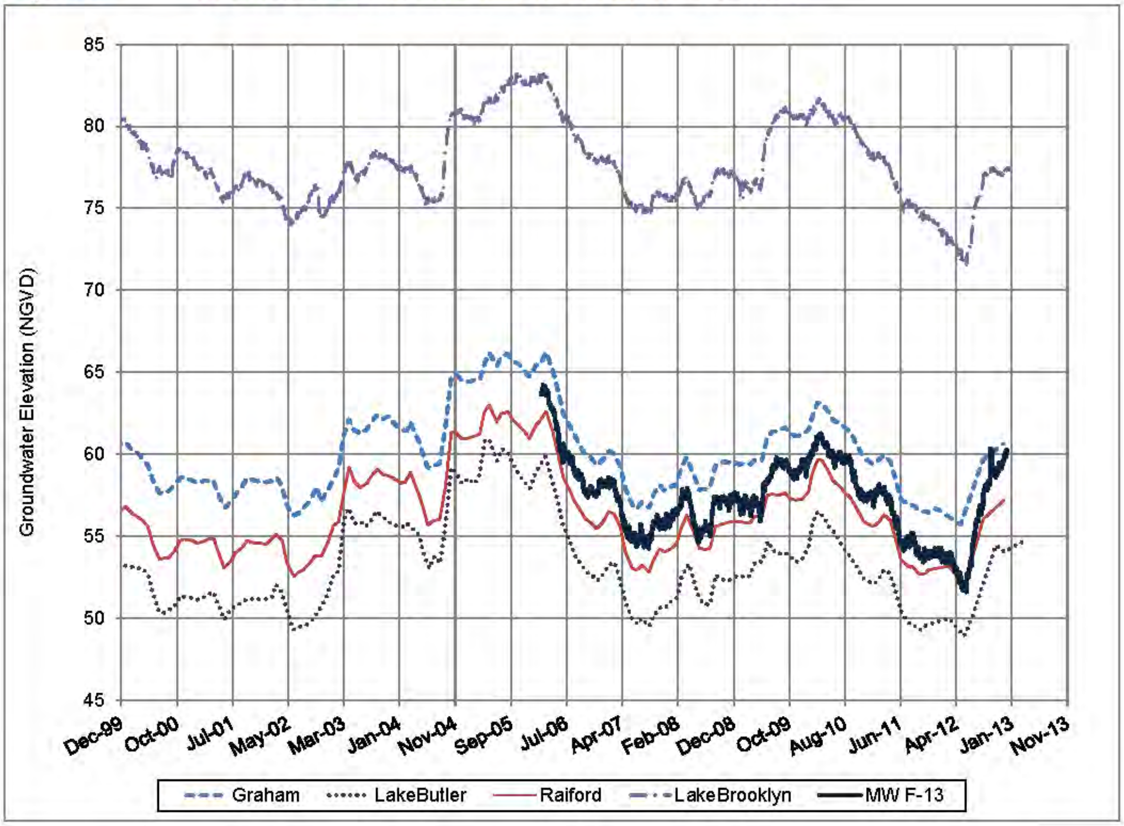
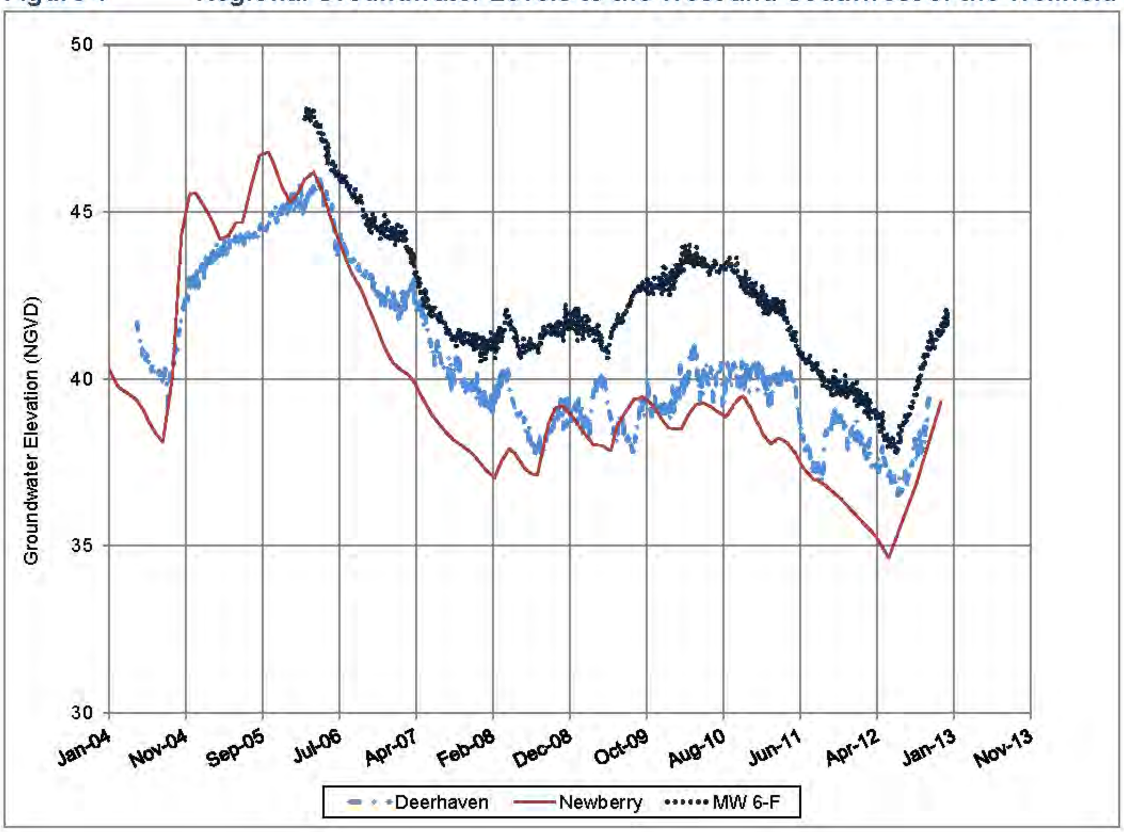


Figure 4 Regional Groundwater Levels to the West and Southwest of the Wellfield



Although we obtained data from the SJRWMD UFA monitoring well at the Alachua County Fairgrounds, we did not use these data in our analysis due to unexplained fluctuations in the daily elevations reported at the well (Figure 5). Data reported for the well also stopped in 2010, which is short of the period representative of GRU's current pumping rate. Figure 6 shows that the average monthly levels at the Alachua County Fairgrounds follow a similar trend as MW F-13.

Figure 5 Alachua County Fairgrounds UFA Groundwater Levels

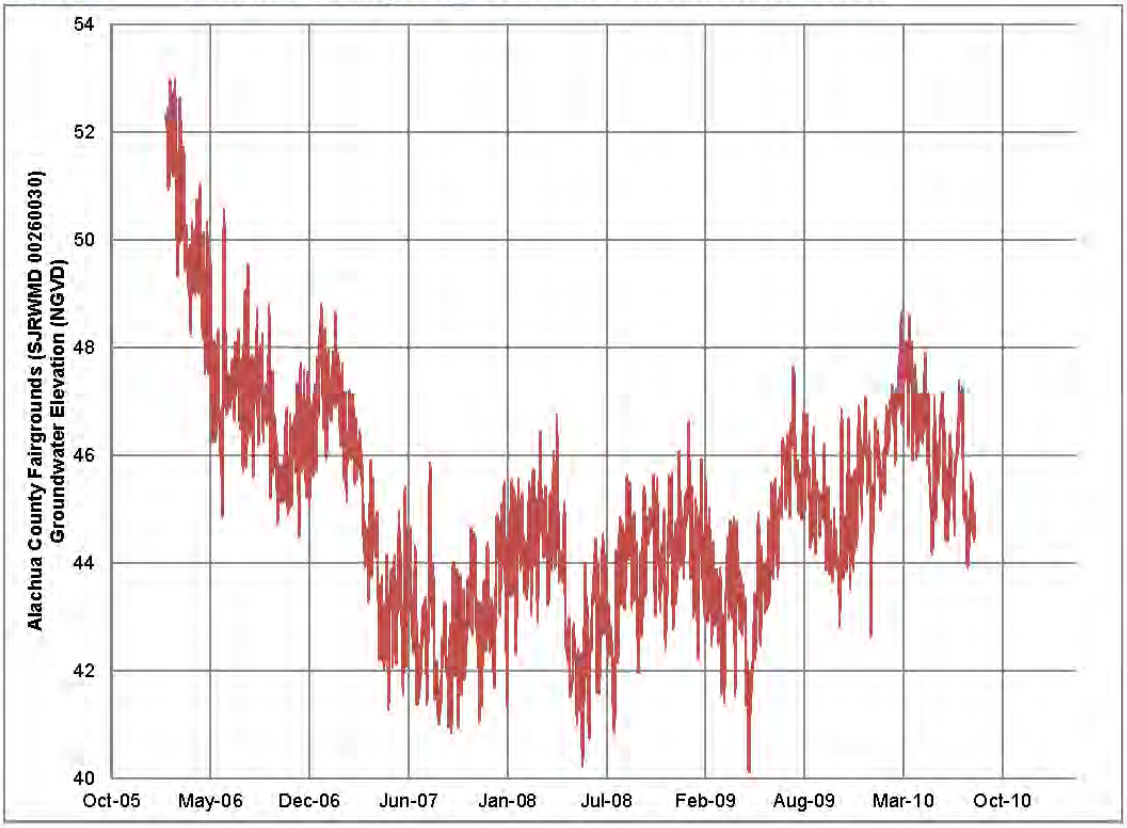
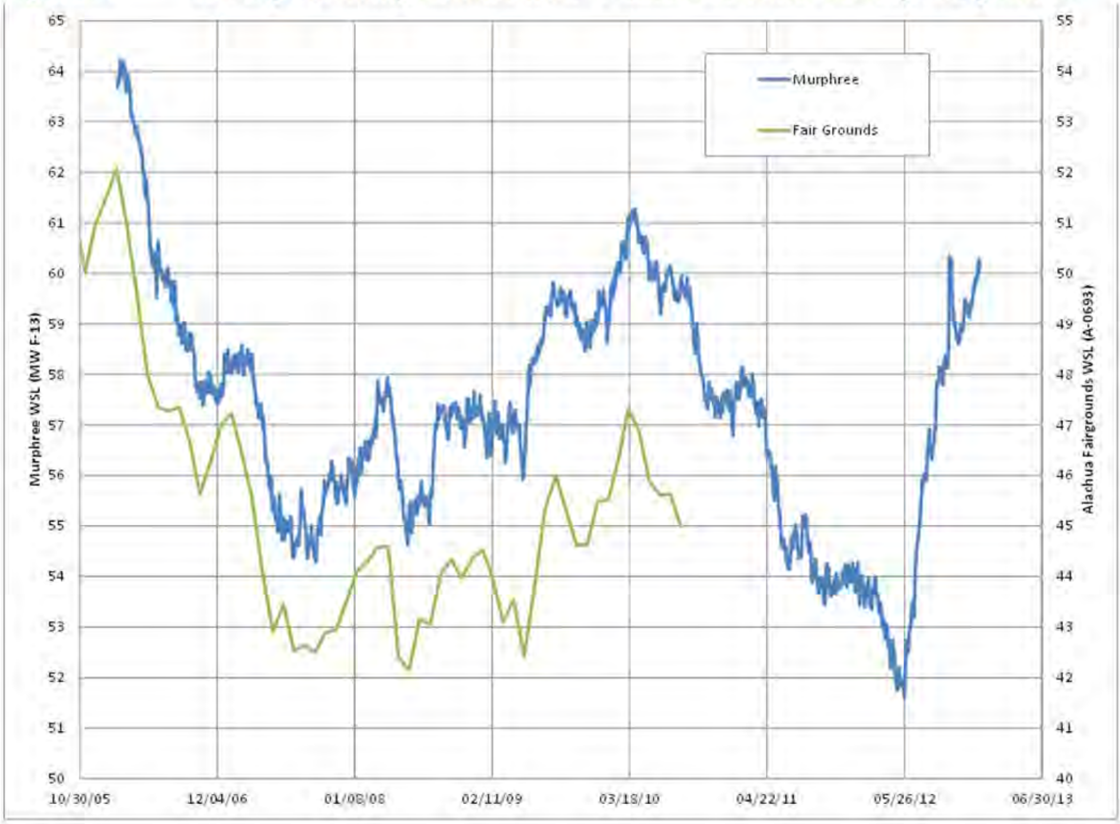


Figure 6 Average Monthly Groundwater Levels at Alachua County Fairgrounds



3 METHODS AND RESULTS

Jones Edmunds analyzed water level hydrographs from local monitoring wells and compared them with the water level hydrographs from regional monitoring wells to see if any rebound was present in the local water levels due to 5-MGD reduction in GRU's withdrawals from 2007 to 2013. The comparison helped us investigate potential trends in and among the datasets to better quantify potential impacts of changes in GRU's withdrawals on regional groundwater levels.

3.1 COMPARISON OF REGIONAL TRENDS TO TRENDS NEAR MURPHREE WELLFIELD

During our initial review of water level hydrographs, we noticed that MW 6-F had a similar trend as regional wells to the west (Deerhaven) and southwest (Newberry) while MW F-13 had a similar trend as regional wells to the east (Lake Brooklyn) and north (Lake Butler, Raiford, and Graham) (Figures 3 and 4). These differences between east and west wells are likely attributable to the changing hydrogeological conditions that occur as the UFA system goes from a confined system in the east to an unconfined or semi-confined system to the west.

Given these differences in regional trends, we used Lake Butler and Graham monitoring wells as regional background wells in the north to investigate if local MW F-13 shows signs of rebounding as a result of reduction in GRU withdrawals. We also used the Lake Brooklyn monitoring well as a regional background well in the east for similar MW F-13 comparisons. For MW F-6, we used Deerhaven and Newberry monitoring wells as regional background wells to investigate signs of rebounding.

We plotted MW F-13 with the levels at Graham (Figure 7), Lake Butler (Figure 8), and Lake Brooklyn (Figure 9) using offset vertical axes to visually compare the regional groundwater trends. The plotted period includes GRU's sustained peak pumping rates and present rates. We observed that MW F-13 follows the same regional trends as monitoring wells as far as 20 miles away to the north and east. Accordingly, we could not detect any rebound in local water levels due to the 5-MGD reduction in GRU's withdrawals. We observed similar trends when we plotted water levels at MW 6-F, Deerhaven, and Newberry with offset vertical axis (Figure 10). While both Deerhaven and Newberry regional monitoring wells are likely impacted by local pumping, Figure 10 shows that MW F-6 also follows regional trends. Cumulatively, these plots indicate that the groundwater levels at MW F-13 and MW F-6 are highly correlated with regional groundwater levels that are over 20 miles away, and the UFA response to large changes (5-MGD) in withdrawals does not translate to observable differences in well levels near the wellfield.

Figure 7 MW F-13 and Graham Groundwater Levels

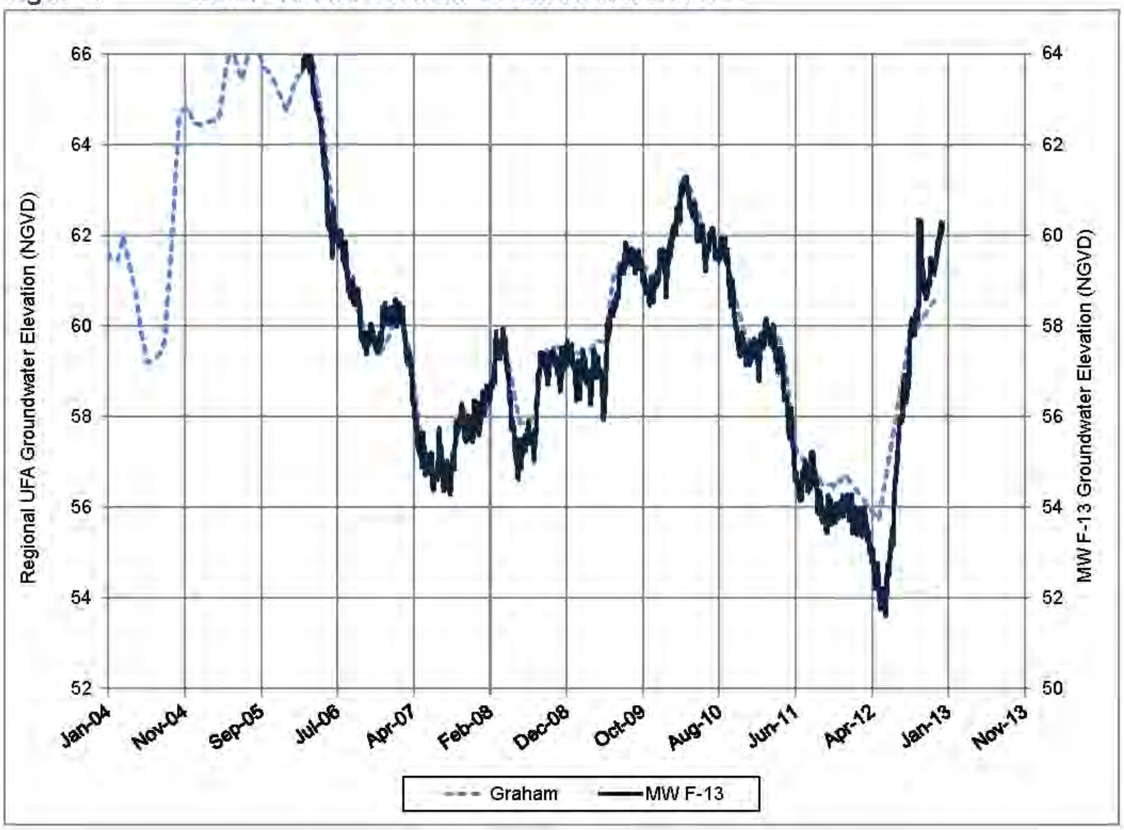


Figure 8 MW F-13 and Lake Butler Groundwater Levels

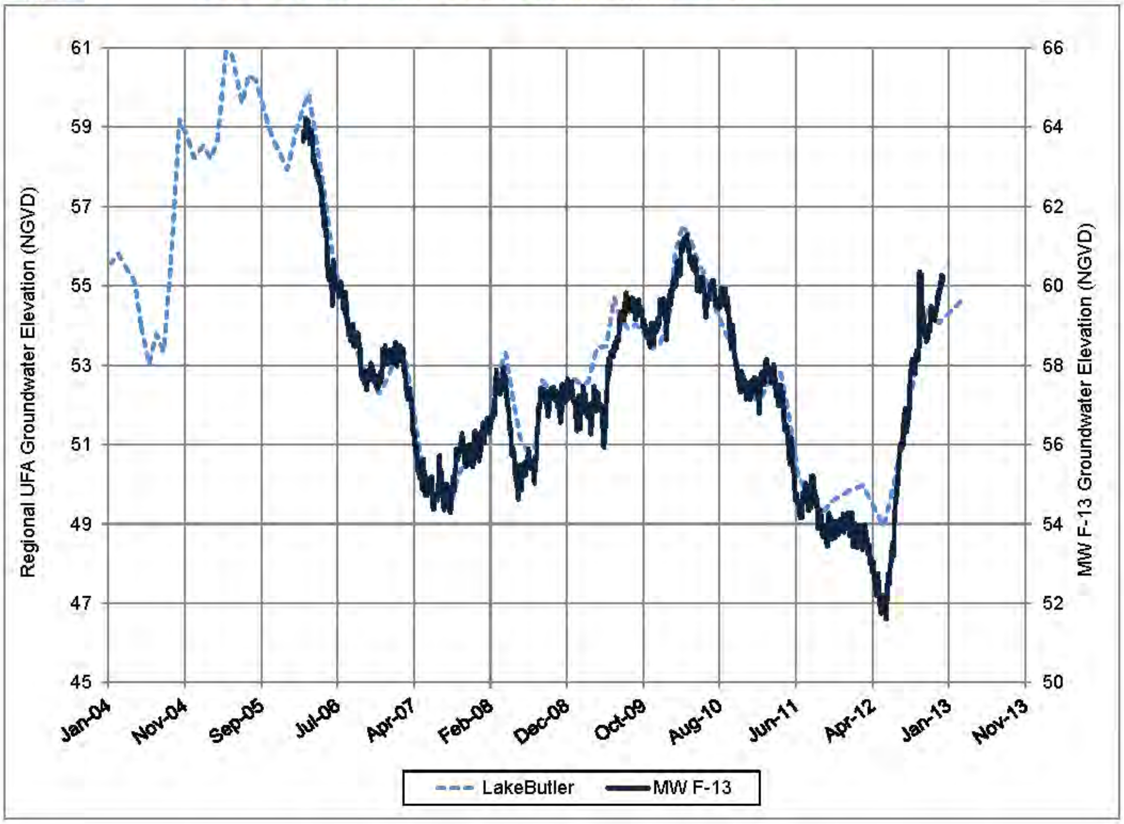


Figure 9 MW F-13 and Lake Brooklyn Groundwater Levels

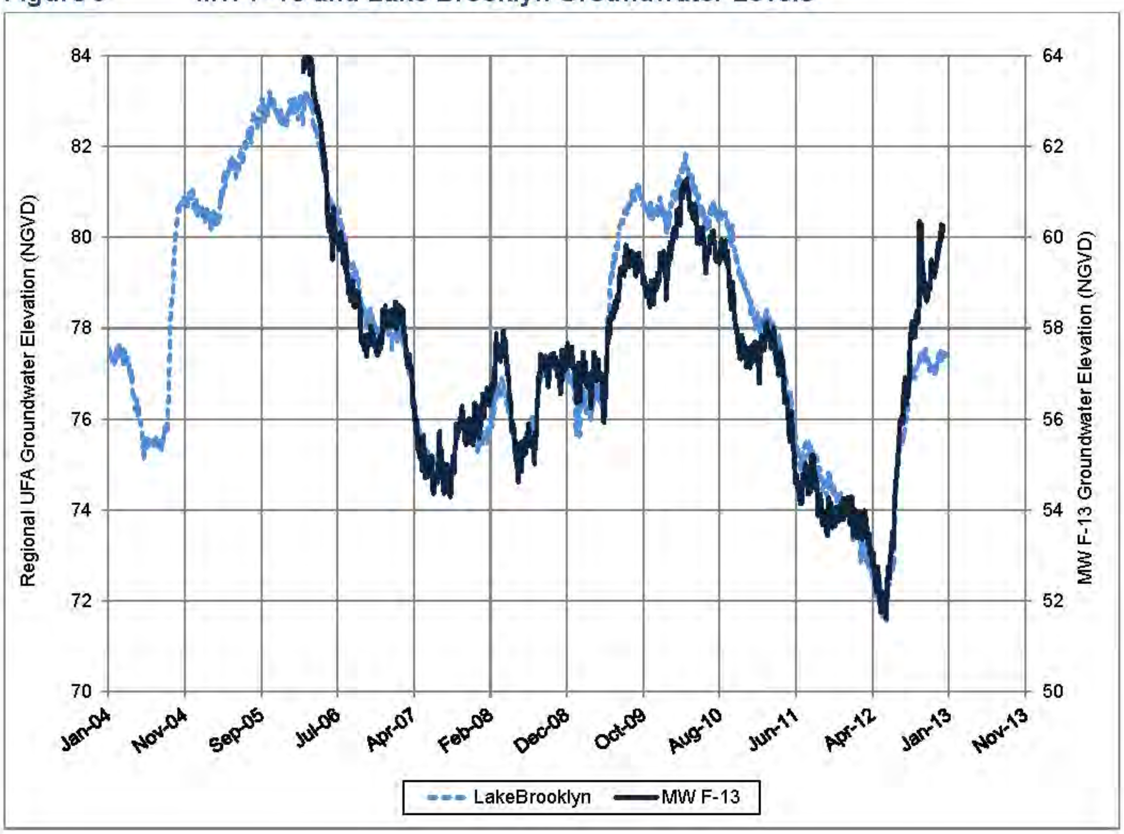
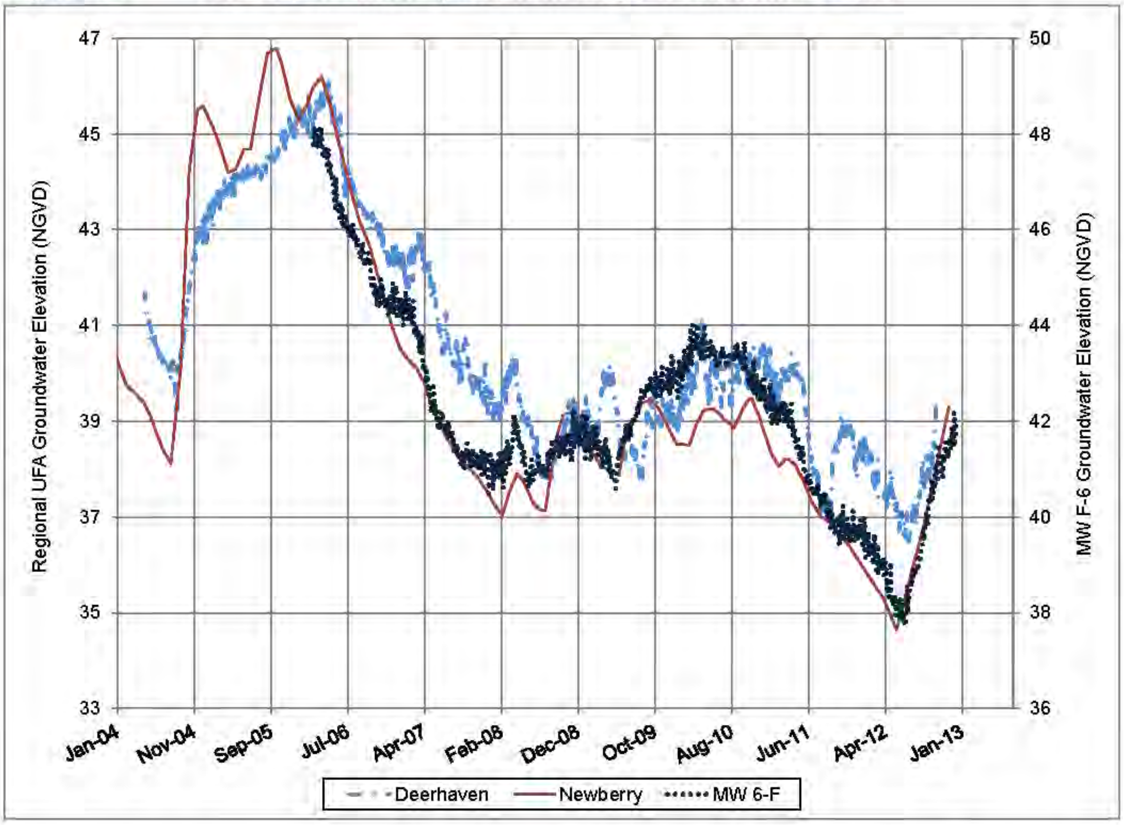


Figure 10 MW 6-F, Deerhaven, and Newberry Groundwater Levels



We calculated the water-level difference between the monitoring wells at the wellfield and the regional wells and performed the Mann-Kendall analysis on the absolute values of the residuals to determine whether there was a statistical trend in the residual from the period when GRU's withdrawals decreased (mid 2007 to 2012). Table 1 shows the Mann-Kendall results.

Table 1 Mann-Kendall Trend Analysis

Well Cluster Residual	Mann-Kendall Z	Upward Trend p-value	Downward Trend p-value	95% Confidence Limit	Mann-Kendall Result	Direction to Regional Well
FW-13 – Brooklyn	-3.24	0.99	<0.01	1.65	Downward Trend	East
FW-13 – Graham	1.56	0.06	0.94	1.65	No Trend	North
FW-13 – Butler	-0.91	0.82	0.18	1.65	No Trend	North
FW-6 – Newberry	4.22	<0.01	0.99	1.65	Upward Trend	Southwest
FW-6 – Deerhaven	-1.79	0.96	0.04	1.65	Downward Trend	West

*The p-value is the probability that the trend result does not exist.

Our review of water-level data, including Mann-Kendall analysis, found no rebound trends in the water levels of FW-13 east of the GRU wellfield from 2007 to present when compared to water levels of the Lake Butler and Graham wells. Even though the Mann-Kendall analysis of the Brooklyn well levels showed a downward trend, we believe that the last 3 months of water levels caused the downward trend (see Figure 9). During those 3 months, Gainesville received a significant amount of rainfall, which caused the water levels of FW-13 to increase dramatically. The lack of gradual increase in water levels for FW-13 compared to the Brooklyn well levels confirms our findings from the analysis of the Lake Butler and Graham wells. However, our analysis of the water levels west of the wellfield did not identify a trend, most likely because the Deerhaven and Newberry background wells are close to the pumping wells nearby.

Nonetheless, the analysis demonstrates that the large decreases in withdrawals are not consistently changing regional groundwater levels. Thus, given that historical withdrawals are within 10% of the requested allocation, GRU's requested allocation is not likely going to affect the regional groundwater levels significantly.

4 SUMMARY

Since no well within the Murphree wellfield has continuous recordings from before the wellfield came online in the 1970s until present, we cannot demonstrate the extent of GRU's influence on regional groundwater levels. However, our analysis does indicate the following:

- Historical withdrawals are within 10% of the requested allocation.
- Groundwater levels near the wellfield represent regional groundwater trends.
- Groundwater levels near the wellfield do not respond to changes in withdrawals.

The analysis also demonstrates the following for the current and requested allocation of 30 MGD:

- Pumping at the requested allocation will have a small or un-measurable change on local groundwater levels within 2 miles of the wellfield.
- A change in GRU's withdrawals to the requested allocation will not be measureable at water resource constraints over 20 miles away.
- SJRWMD and SRWMD's previous analyses—which demonstrated that the current allocation of 30 MGD will not significantly affect regional water-resources constraints—are reasonable.

Appendix E

Kanapaha Water Reclamation Facility Groundwater Recharge Assessment

Water Resources Assessment

Appendix E

Kanapaha Water Reclamation Facility Recharge Assessment Technical Memorandum

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TECHNICAL MEMORANDUM

GAINESVILLE REGIONAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO:	Tony Cunningham, PE; Rick Hutton, PE (GRU)
FROM:	Michelle Hays, PG; Jason Icerman, PE (Jones Edmunds)
XC:	Fatih Gordu, PE; Brett Goodman, PE (Jones Edmunds)
DATE:	October 8, 2013
SUBJECT:	Kanapaha Water Reclamation Facility Recharge Assessment

1 BACKGROUND

Gainesville Regional Utilities (GRU) owns and operates the Kanapaha Water Reclamation Facility (KWRF), which began operation in 1982. The facility treats water to meet drinking-water standards for recharging the Floridan Aquifer, recharging local surficial aquifer systems, and supplying public-access reclaimed water. Between 1982 and 1995, KWRF sent all reclaimed water to the Floridan Aquifer. In 1995, GRU began serving public-access reclaimed water and providing water to aesthetic water features and leaky wetland systems. In 2011, the average flow to KWRF was 8.3 million gallons per day (MGD), of which 2.5 MGD is used for public-access reuse and recharging aesthetic water features and leaky wetlands. The remaining volume is recharged to the Floridan Aquifer via four wells. This memorandum summarizes Jones Edmunds & Associates, Inc.'s literature review and groundwater-level analysis near KWRF to assess the regional benefits of GRU's recharge to the Floridan Aquifer. The focus of our literature review is to assess the leakance between the Upper Floridan Aquifer (UFA) and the Lower Floridan Aquifer (LFA) near the KWRF. The groundwater-level analysis investigates if recharging the LFA provides measurable benefits to the UFA.

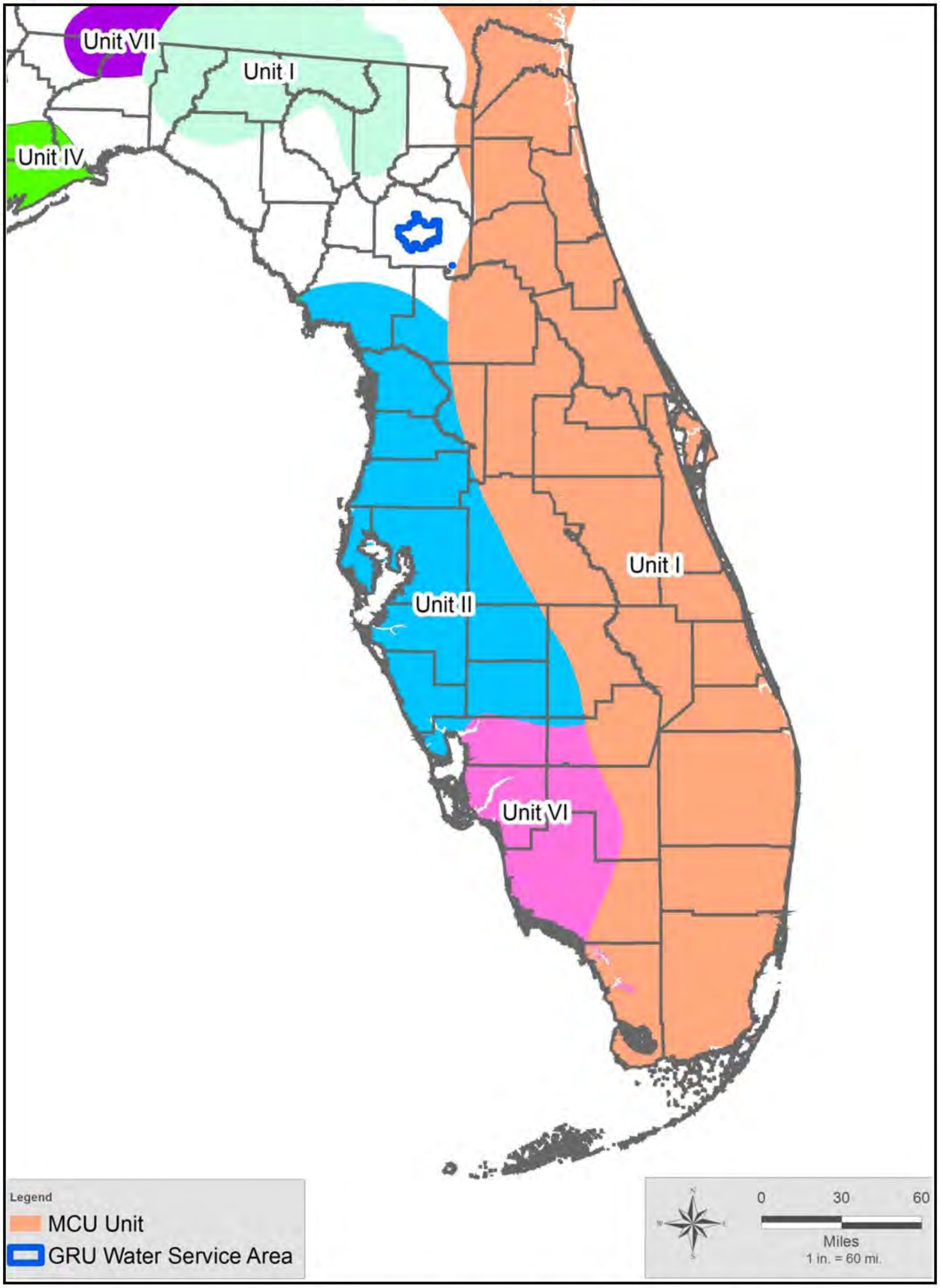
1.1 REGIONAL AQUIFER CONFINEMENT

J.A. Miller (1986) describes seven low-permeability units of sub-regional extent that lie within the Floridan Aquifer. These low-permeability zones are referred to as the Middle Confining Unit (MCU) and separate the UFA from the LFA. Where no MCU is present, the entire Floridan Aquifer System (FAS) is considered to be the UFA. The confining units are not necessarily part of the same formation and do not consist of the same rock type everywhere. Figure 1 shows the regional MCUs described by Miller, which are not present within the area of the KWRF and the Santa Fe River.

Miller's Unit I has been found west of Alachua County and is described as soft, micritic limestone and fine-grained dolomitic limestone. Unit I is described as the leakiest confining unit and is typically found in the upper portion of the Avon Park Formation and sometimes in the lower Ocala Limestone.

Miller's Unit II is mapped south of Alachua County and is described as a non-leaky confining bed that consists of low-permeability gypsiferous dolomite and dolomitic limestone. Unit II occurs in the middle of the Avon Park Formation. This unit is characterized by the presence of persistent evaporates and can be identified by "spiky" high- and low-resistivity zones on geophysical logs.

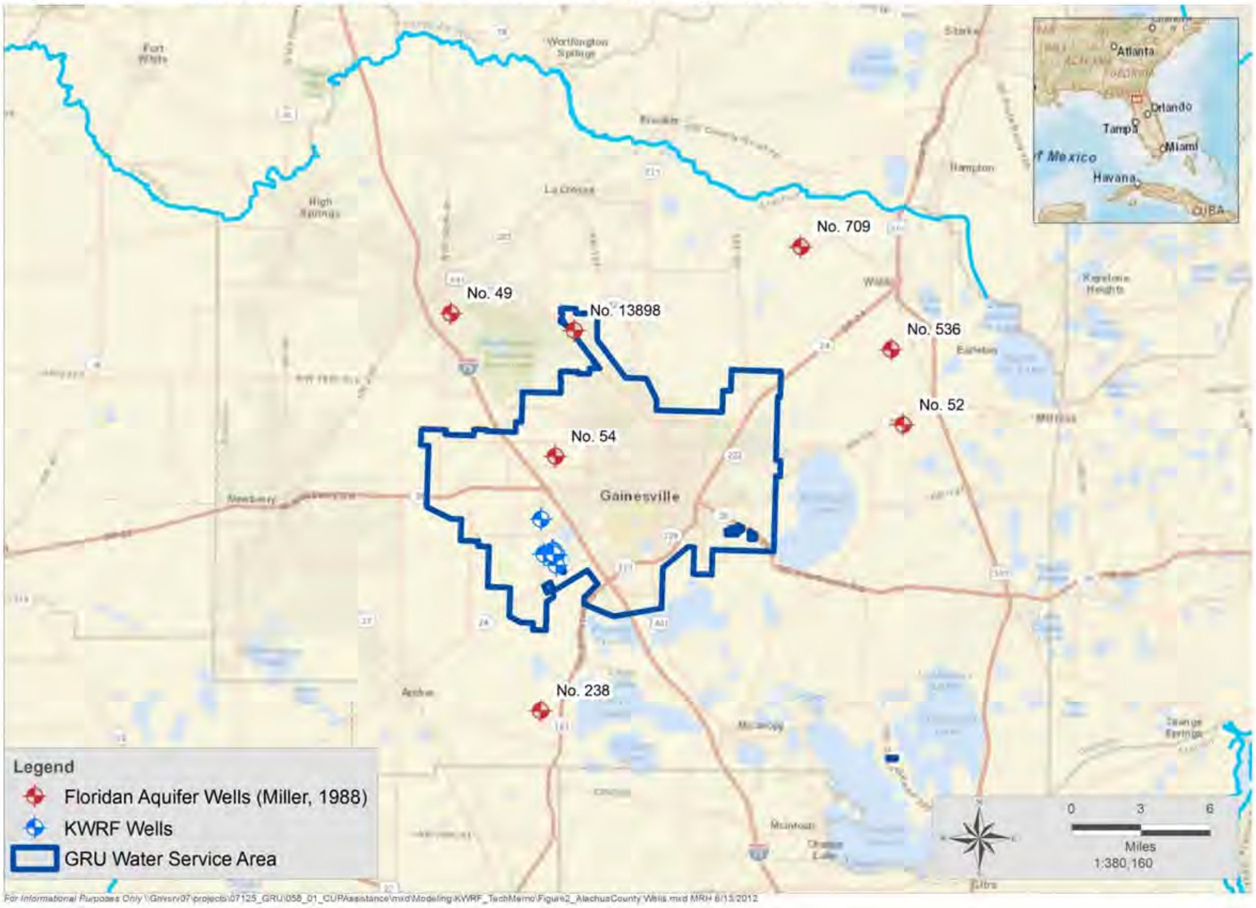
Figure 1 Middle Confining Units from Miller (1986)



Miller's Unit III is mapped north of Alachua County and the Santa Fe River and is a low-permeability dense, fossiliferous, gypsiferous dolomitic limestone located in the lower and middle part of the Avon Park Formation. This layer is described as slightly leaky.

Attachment 1 includes the Alachua County well tables from Miller (1988). The report includes seven wells that penetrate the base of the Floridan Aquifer (Figure 2). The regional MCUs described by Miller are not present in these wells. Two of the wells have local low-permeability units; however, these units are at the base of the Floridan Aquifer (depths greater than 1,000 feet mean sea level) and do not act as an MCU.

Figure 2 Alachua County Floridan Aquifer Wells (Miller, 1988)



1.2 Local Aquifer Description

C.R. Sproul (1986) describes three aquifer zones in Alachua County. Aquifer Zone I is the upper weathered part of the Crystal River Formation and limestone at the base of the Hawthorn Group. Water levels are generally 3 to 8 feet higher than water levels in the deeper zones. Aquifer Zone II is the lower part of the Crystal River Formation, the Williston and Inglis Formations (the lower Ocala), and the upper 200 feet of the Avon Park. Aquifer Zone II consists of two permeable zones – one at the Ocala/Avon Park contact and the second within the Avon Park Formation. At the KWRF, Aquifer Zone II occurs between 150 and 450 feet. Aquifer Zone II is separated from Aquifer Zone III by about 200 feet of what Sproul describes as relatively impermeable limestone and dolomite of the Avon Park Formation and the Lake City Limestone. The Lake City Limestone is no longer considered a formal unit by the US Geological Survey (USGS). Miller (1986) redefined it and includes it as the bottom part of the Avon Park Formation. Lindquist (1990) describes the beds between the aquifer zones near the KWRF as semi-confining to confining and consisting of dense and crystalline limestone with low primary porosity and permeability. At the KWRF, the depth to Aquifer Zone III is approximately 600 feet. Aquifer Zone III is the lower part of the Avon Park Formation, the Lake City Limestone (now considered the lower Avon Park Formation), and possibly the upper part of the Oldsmar Limestone. It includes two high-permeability zones separated by a low-permeability layer. Sproul (1986) reports the water levels in Aquifer Zone III to be 3 to 5 feet lower than water levels in Aquifer Zone II. The KWRF recharge wells are completed in Aquifer Zone III.

Locally, Aquifer Zone II has been considered to be the UFA and Aquifer Zone III is considered to be the LFA. An aquifer performance test conducted at the KWRF reported a leakance of 2.27×10^{-3} to 9.5×10^{-4} day^{-1} between the two aquifer systems. This indicates that some local connection exists between the aquifer zones.

When compared to the regional MCUs described by Miller, the confining unit between Aquifer Zones II and III may represent a local occurrence of a leaky unit similar to MCU Unit I due to its location within the upper to middle Eocene age units and its description of soft micritic limestone and fine-grained dolomitic limestone. Local well logs do not indicate the presence of the non-leaky MCU Unit II, which is characterized by persistent evaporites, high- and low-resistivity zones, and the presence of a mineralized zone.

1.3 KARST FEATURES

R.C. Lindquist (1990) assembled geologic information near the KWRF and noted the presence of two deep paleosinks in the KWRF vicinity that penetrate to the UFA. One is the Haile Sink, which is 178 feet deep and penetrates the Ocala/Avon Park contact. This contact is described as the top of Aquifer Zone II in Sproul (1986). The second paleosink is east of the KWRF at the location of Florida Geological Survey (FGS) log W-4045. The well log indicates that the paleosink is filled with unconsolidated sand and extends into the Avon Park Formation (Aquifer Zone II). The Lindquist report also notes other paleosinks farther from the KWRF that penetrate Aquifer Zone III, demonstrating the presence of connections between Aquifer Zones II and III farther from the KWRF.

1.4 GROUNDWATER MODELING

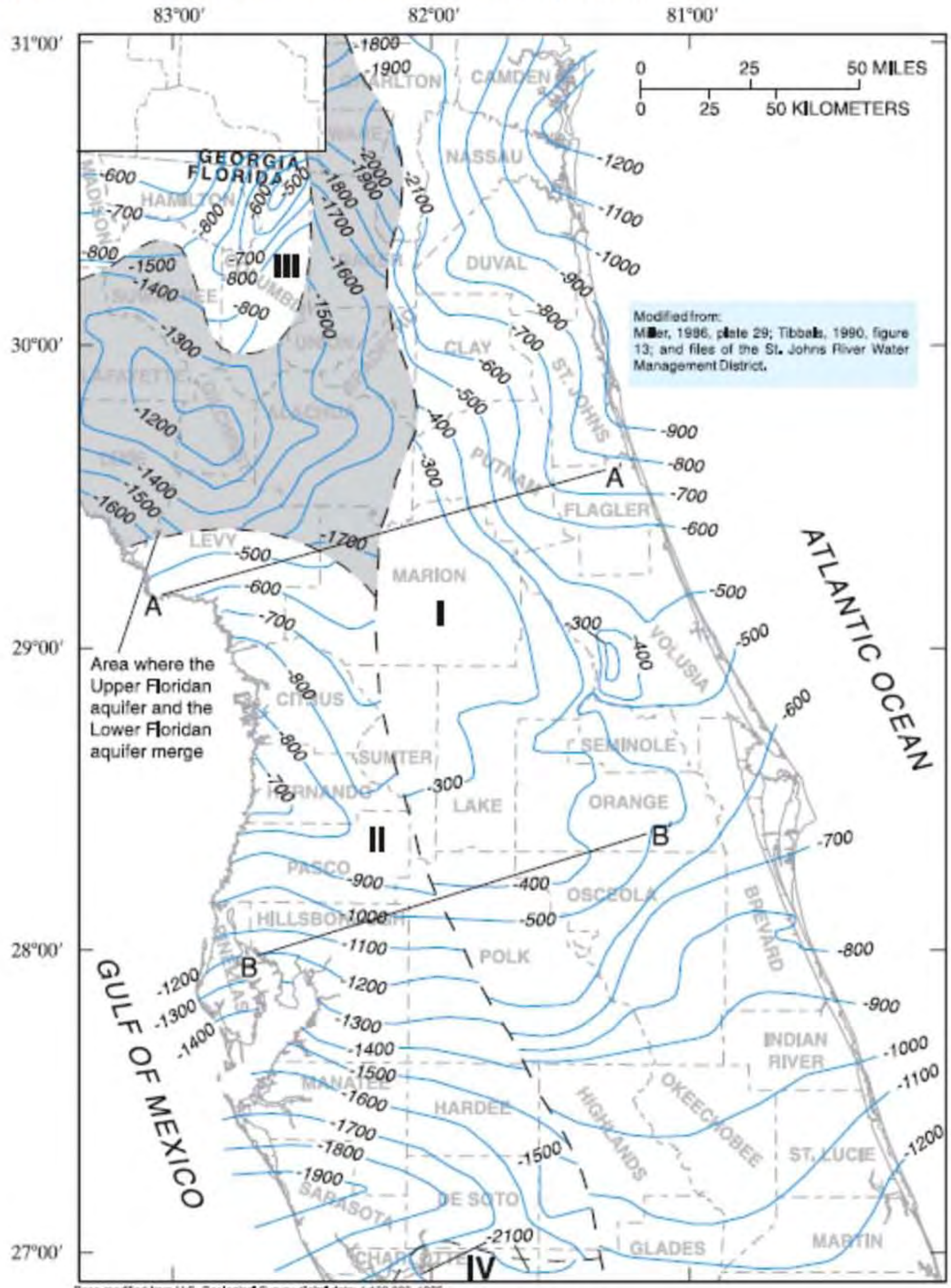
Groundwater models covering the areas west of the KWRF support that the UFA and LFA lack significant confinement. The USGS model of the Suwannee River Basin (Planert, 2007) only simulates the UFA in the area of the KWRF because the LFA is only in the north part of the Suwannee River Water Management District (SRWMD) from Jefferson County east to Columbia County and in the south half of Levy County. Also, alternative water supply (AWS) model simulations completed using the SRWMD North Florida (NF) model (see Appendix B, SRWMD – Groundwater Modeling Report) show UFA benefit from recharge to the LFA. The LFA AWS scenarios show that 4.5 MGD of recharge at the KWRF is enough to offset an additional 4 MGD from the Murphree wellfield.

In addition, USGS's groundwater model simulating the intermediate and Floridan aquifer systems in peninsular Florida (also known as the USGS Mega model) assumed that the LFA and the UFA merge into one aquifer in SRWMD, particularly near the Santa Fe River and most of Alachua County, based on available hydrogeologic data (See Figure 3).

2 GROUNDWATER LEVELS

Jones Edmunds obtained effluent flow data for the KWRF, groundwater level data near the KWRF, and regional groundwater level data. We obtained data from a variety of sources including GRU, USGS, SRWMD, and St. Johns River Water Management District (SJRWMD). In general, we focused on the 25 years from 1985 to 2010, though the exact range of analysis varied based on the data available.

Figure 3 Altitude of the Base of the UFA (Sepulveda, 2002)



Base modified from U.S. Geological Survey digital data; 1:100,000, 1985
Universal Transverse Mercator projection, zone 17

EXPLANATION

— -300 — STRUCTURE CONTOUR – Shows altitude of the base of the Upper Floridan aquifer. Contour interval 100 feet. Datum is sea level

— — — APPROXIMATE AREAL BOUNDARY BETWEEN CONFINING UNITS UNDERLYING THE UPPER FLORIDAN AQUIFER – I is middle semiconfining unit; II, III, and IV are middle confining units

A——A' HYDROGEOLOGIC SECTION

2.1 WATER LEVEL DATA

Three monitoring well clusters are located near the KWRF (Figure 4), and each cluster contains one shallow (UFA) well and one deep (LFA) well. Jones Edmunds obtained the following water level data for the wells:

- Graphical water level data from GRU from June 1979 to January 1986, which Jones Edmunds used to interpolate monthly water levels for the six wells.
- Quarterly measured data from GRU from October 1991 to January 1996 and October 2003 to October 2008.
- Monthly measured data from GRU from April 1996 to July 2003.
- Quarterly measured data from the Florida Department of Environmental Protection (FDEP) from March 2009 to December 2012.

Figure 4 Recharge Well and Monitoring Well Locations Near KWRF

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2.2 FLOW DATA

GRU provided average monthly inflow data for the KWRF from 1982 to 2012. Average flows were not available for 4 months during this period. We estimated missing monthly inflow data using an average of the preceding and following month flows.

Reclaimed water systems flows were also provided by GRU. A yearly average was provided for October 1998 to October 1999, estimated flows were provided for 2000 and 2001, and metered flows were provided from 2002 to 2011. Jones Edmunds estimated reclaimed flows from 1995 to September 1998 and November to December 1999 to be equivalent to GRU's provided yearly average (0.6 MGD). We estimated 2012 monthly reclaimed flows using the average monthly flow from 2011 (2.5 MGD).

Jones Edmunds calculated recharge flows as inflow minus reclaimed flow. From 1982 to 1995, before the reclaimed system operations, we considered recharge flow equal to inflow. This approach yielded monthly recharge flow estimates from 1982 to 2012 (Table 1).

Table 1 Estimated Average Monthly Recharge Flows for KWRF

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1982	5.4	5.7	5.6	5.9	5.1	5.5	5.5	5.6	6.2	6.3	6.1	5.9
1983	5.8	6.3	6.9	7.2	6.4	6.4	5.8	6.0	7.2	7.2	6.4	6.5
1984	7.1	6.9	7.0	6.8	6.4	6.2	6.2	6.7	7.0	6.6	6.8	6.2
1985	6.9	6.4	6.3	6.7	6.3	6.0	4.9	5.6	7.0	7.5	7.4	6.5
1986	7.4	7.5	7.8	7.5	5.8	6.2	6.3	8.0	8.9	8.9	8.3	7.9
1987	8.8	9.7	12.5	10.7	9.2	9.2	9.0	9.3	9.4	10.6	9.6	8.6
1988	8.7	8.8	9.1	7.8	8.3	7.9	7.5	8.0	10.7	8.5	7.6	7.3
1989	7.4	7.5	7.2	7.4	6.9	7.7	7.2	7.1	7.2	7.6	6.9	7.4
1990	7.6	8.2	8.3	8.0	7.4	7.8	8.3	7.8	8.3	8.8	7.5	7.3
1991	7.6	8.1	9.0	8.6	8.0	8.4	8.3	7.8	7.4	7.2	6.3	7.1
1992	7.7	8.5	8.6	8.2	7.8	7.7	8.1	8.7	8.9	9.7	8.2	8.1
1993	6.1	8.6	8.9	8.8	7.9	7.4	8.2	9.2	9.4	8.6	8.8	8.1
1994	7.3	7.9	6.8	7.6	7.9	6.1	5.8	7.3	8.1	7.7	5.8	5.4
1995	5.6	5.4	6.2	7.7	6.8	6.8	7.1	7.3	7.3	7.6	7.2	4.9
1996	5.7	7.2	8.1	7.6	5.6	4.4	8.3	9.2	9.6	9.1	7.6	8.4
1997	8.5	7.6	6.3	6.0	4.1	6.0	5.8	8.8	8.0	8.5	9.0	9.6
1998	10.3	11.6	11.0	8.3	7.3	6.6	7.8	8.0	9.3	9.4	8.0	7.3
1999	8.3	8.3	6.8	6.8	6.9	7.1	7.2	7.8	7.8	8.8	8.4	7.7
2000	7.8	7.6	7.6	7.7	7.4	7.6	7.4	7.7	8.5	7.7	7.5	6.9
2001	4.9	4.9	5.1	5.9	4.2	5.9	6.5	7.2	6.9	6.7	6.5	6.1
2002	6.1	6.1	6.7	6.9	5.8	5.5	5.3	8.0	9.3	8.2	6.6	6.6
2003	8.3	8.9	9.8	8.1	6.3	7.6	6.8	8.8	8.5	8.2	7.7	8.0
2004	8.4	9.3	8.8	7.4	7.2	7.5	7.4	8.1	15.4	11.5	8.1	8.2
2005	8.7	8.8	8.8	9.6	7.5	8.5	10.1	8.7	7.5	7.9	6.7	7.5
2006	8.1	9.2	7.3	7.7	6.7	6.7	6.1	6.8	7.6	6.6	6.7	6.9
2007	8.1	8.0	6.3	6.3	5.8	5.6	5.7	7.2	7.2	7.8	7.1	6.5
2008	6.8	7.5	8.0	6.2	5.3	6.3	6.5	8.6	8.1	7.0	7.4	7.2
2009	7.9	7.7	7.9	8.3	7.3	7.4	7.9	8.1	7.9	7.6	7.6	7.9
2010	7.9	8.3	8.0	7.3	7.3	7.3	7.7	8.5	8.3	7.4	7.3	6.6
2011	6.0	7.1	6.3	5.5	5.2	4.4	4.8	5.2	5.9	6.5	6.5	6.4
2012	4.2	4.4	4.7	3.2	3.2	4.6	4.2	5.7	6.6	6.0	5.0	5.0

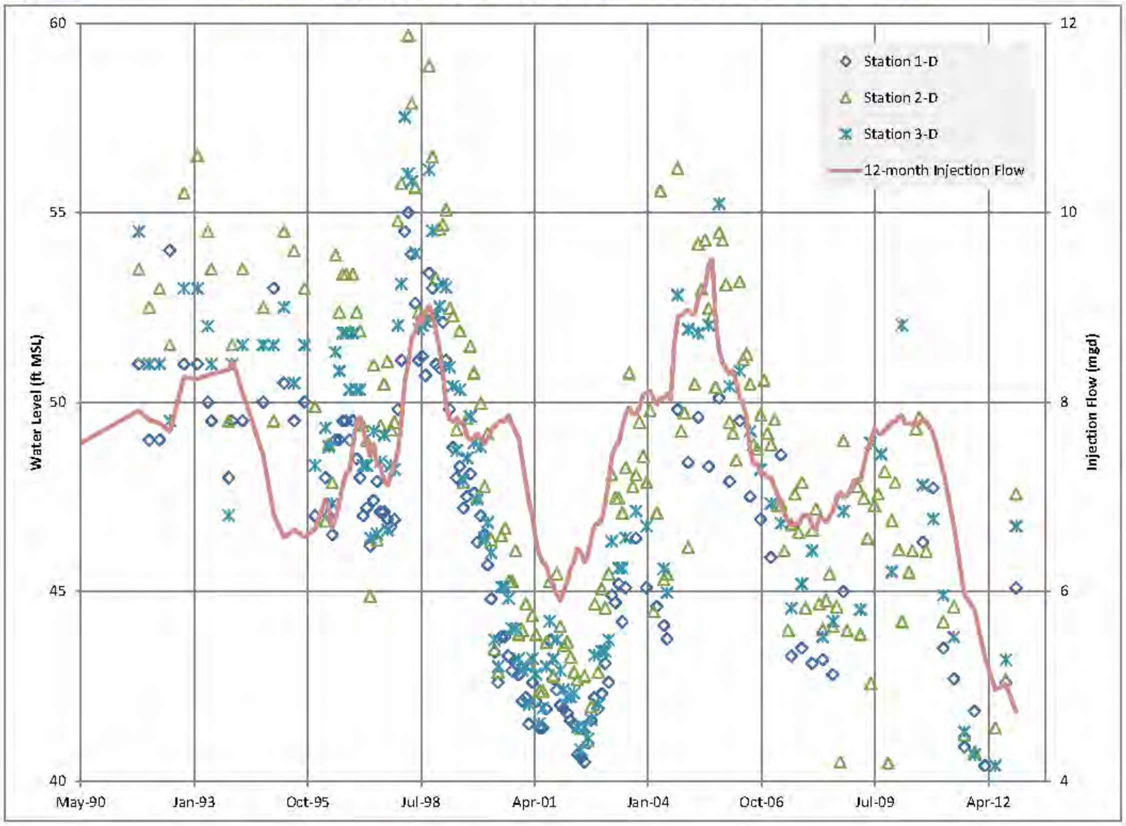
3 METHODS AND RESULTS

Jones Edmunds reviewed recharge flow and water level data for the KWRF. We investigated trends in both UFA and LFA groundwater levels at KWRF. The UFA wells are designated as "S" wells, and the LFA wells are designated as "D" wells for each well cluster. We also reviewed regional groundwater levels available from SJRWMD, SRWMD, FDEP, and USGS and investigated potential trends in and among the datasets to better quantify potential impacts on regional groundwater levels.

3.1 Comparison of Groundwater Levels

Since KWRF recharge wells discharge to the LFA, we expected to see clear evidence of recharge flow influence on LFA groundwater levels. Figure 5 displays groundwater levels measured at the three LFA wells and the 12-month moving average of recharge flows from KWRF. As expected, Figure 4 shows that recharge flow rates influence LFA levels near the KWRF.

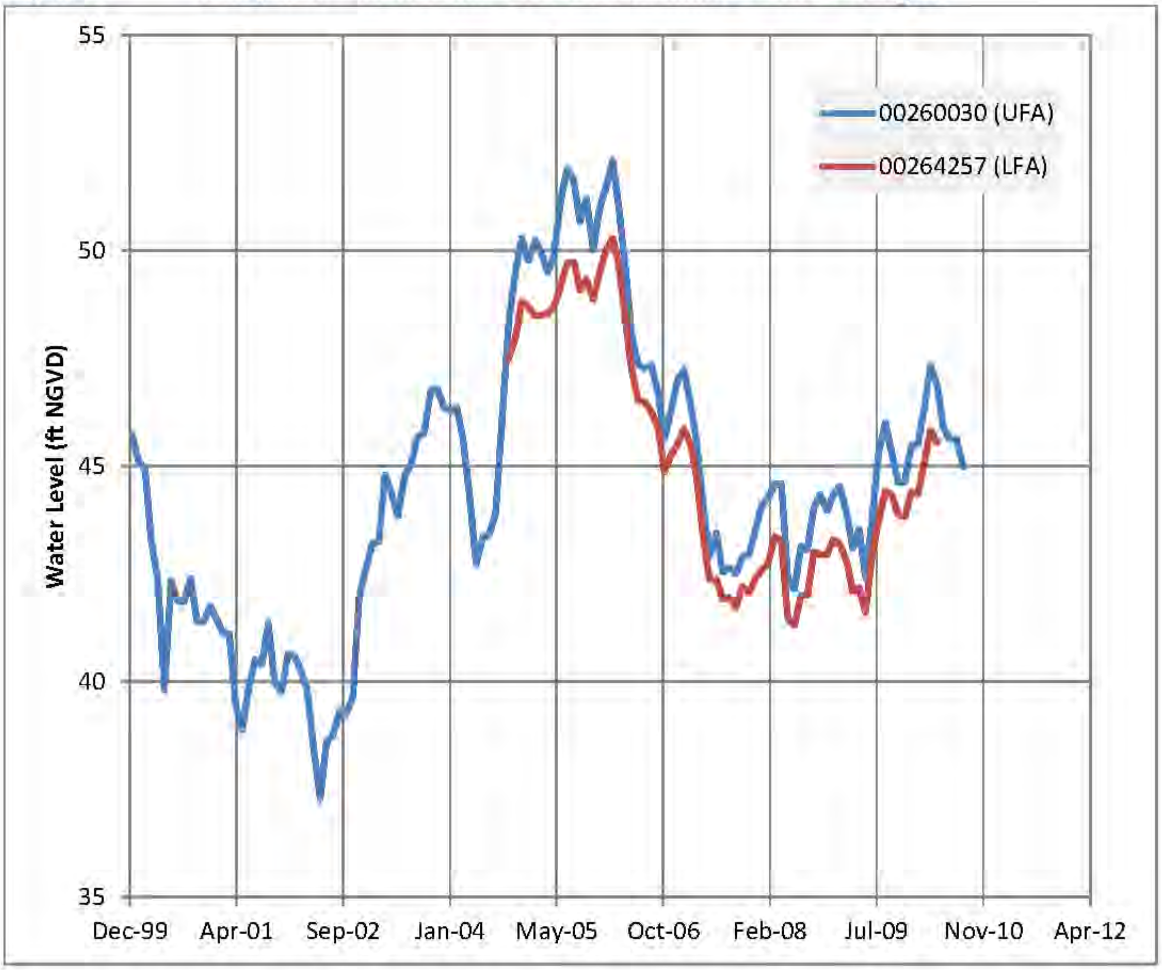
Figure 5 12-Month Average Recharge Flow Influence on LFA Levels



3.2 Comparison of Groundwater Levels Regionally

To compare the potential leakance between the UFA and LFA near the KWRF, we reviewed monitoring well data for UFA and LFA well clusters in the region. SJRWMD maintained a cluster at the Alachua County Fairgrounds (SJRWMD Well Nos. 00260030 and 00264257) that accumulated approximately 5 years of coincident data. Compared to the KWRF observations, we noted similar patterns at the Fairgrounds in that UFA groundwater levels were similar to LFA levels; however, we observed a more consistent difference in elevation at the Fairgrounds location compared to the KWRF wells (Figure 6).

Figure 6 Comparison of UFA and LFA Groundwater Levels in Region



We compared UFA groundwater levels at the KWRF (MW 2-S) to three USGS groundwater wells in the region using a double-mass analysis. A mild trend was observed at the Alto Straughn-Archer (USGS 293252082292301) and Parker Road Baptist Church (USGS 293728082282401) wells. No trend was observed for the Chitty Well at Kirkwood (USGS 293203082200601) well.

4 CONCLUSIONS

GRU has been sending reclaimed water to Floridan Aquifer recharge wells since 1982. At the KWRF, the water is treated to meet drinking water standards. After treatment, the water is sent to four wells that recharge permeable zones of the Avon Park Formation. The recharge zone is described by Sproul (1986) as Aquifer Zone III and has locally been described as the LFA. Well logs and an aquifer performance test from the recharge wells have shown that a unit of lower permeability overlies the recharge zone. The low-permeability unit separates the recharge zone from the permeable zones used for private supply wells.

Regional studies have not identified a continuous confining unit in the area, which indicates that the extent of the low-permeability unit overlying the recharge zone may be limited and most likely does not exist west and northwest of the KWRF recharge wells, including the Lower Santa Fe River area. Wells logs between the recharge wells and the Santa Fe River lack a significant confining unit, and in these areas the UFA and LFA merge and are mapped as part of the UFA. Other geologic data show the presence of sinkholes and fractures that cut through overlying low-permeability units, resulting in connections between aquifer zones.

The KWRF recharge wells are within the Lower Santa Fe River Watershed, and the regional groundwater flow direction is toward the river. The data collected indicate that regionally the UFA is connected to the recharge zone; therefore, the recharge wells are providing benefit to the springs. The recharge benefit to the springs is also supported by previous models created and calibrated for the area. The USGS model of the Suwannee River Basin and the USGS Mega model only simulate the UFA in the area supporting the presence of a regional connection between the recharge zone and the UFA. Also, AWS scenarios run using the SRWMD North Florida model show significant benefit to the springs from the Floridan Aquifer recharge. The simulations show an offset ratio greater than 90% for water recharged at the KWRF wells.

In summary, based on the available data, modeling simulations, and previous studies, we concluded that recharging the LFA through the KWRF recharge wells benefits the Lower Santa Fe River. However, GRU is working with the University of Florida to further quantify the benefits of KWRF recharge and to better understand the connection between the recharge zone and the springs.

5 REFERENCES

Lindquist, R.C. (1990) *Assembled Geologic Information Concerning the Lake Kanapaha Region in Alachua County, Florida*. Geosys, Inc. December 1990.

Miller, J.A. (1986) *Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina*: U.S. Geological Survey Professional Paper 1403-B.

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Planert, Michael (2007) *Simulation of Regional Ground-Water Flow in the Suwannee River Basin, Northern Florida and Southern Georgia:* U.S. Geological Survey Scientific Investigations Report 2007-5031, 50 p.

Sproul, C.R. (1986) *Characterization of Receiving Aquifers*. CH2M-Hill #GN20224.A0, Letter Report dated June 17, 1986. Synthesis of data from construction of the Kanapaha facility.

Sepulveda, Nicasio (2002) "Simulation of Ground-Water Flow in the Intermediate and Floridan Aquifer Systems in Peninsular Florida," U.S. Geological Survey, Water-Resources Investigations Report 02-4009.

Attachment 1

Alachua County Well Tables, Miller (1988)

RECORD NUMBER: 1200101 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-1 LAT: 0294050 LONG : 0822445

OPERATOR: TIDEWATER LEASE: #1 JOSIE PARKER

SECTION	TOWN-SHIP	RANGE	CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
33	7S	19E	X	X	X	X		168	158	3220

(DATA AVAILABLE: CUTTINGS, CORE, PALEONTOLOGY, ELECTRIC LOG, GAMMA LOG)

STATE GEOLOGICAL SURVEY WELL NUMBER: 54

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE	+158	40
MIOCENE	+118	91
OLIGOCENE		
LATE EOCENE	+27	232
MIDDLE EOCENE	-205	625
EARLY EOCENE	-830	4C5
PALEOCENE	-1245	535
CRETACEOUS	-1780	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER	+158	4C
UPPER CONFINING UNIT, LS SYSTEM	+118	91
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	+27	1533
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1506	
LOCAL LOW-PERMEABILITY UNIT(S)		
1		
2		
3		

RECORD NUMBER: 1200102 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-2 LAT: 0294610 LONG : 0822920

OPERATOR: TIDEWATER LEASE: #1 R.H. CATO

SECTION	TOWNSHIP	RANGE	CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
23	8S	18E	X		X	X		112	102	3150

DATA AVAILABLE: CUTTINGS, CORE, PALEONTOLOGY, ELECTRIC LOG, GAMMA LOG

STATE GEOLOGICAL SURVEY WELL NUMBER: 49

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE	+102	29
MIOCENE		
OLIGOCENE	+73	39
LATE EOCENE	+34	130
MIDDLE EOCENE	-96	820
EARLY EOCENE	-916	390
PALEOCENE	-1306	490
CRETACEOUS	-1796	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER	+102	29
UPPER CONFINING UNIT, LS SYSTEM		
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	+73	1511
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1438	
LOCAL LOW-PERMEABILITY UNIT(S)		
1		
2		
3		

RECORD NUMBER: 1200103 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-4 LAT: 0294210 LONG : 0820945

OPERATOR: TIDEWATER LEASE: #1 J.A. PHIFER

SECTION	TOWN-SHIP	RANGE	DATA AVAILABLE: CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
24	9S	21E	X		X	X		132	122	3238

STATE GEOLOGICAL SURVEY WELL NUMBER: 52

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE	+122	10
MIOCENE	+112	248
OLIGOCENE	-136	22
LATE EOCENE	-158	193
MIDDLE EOCENE	-351	680
EARLY EOCENE	-1031	350
PALEOCENE	-1381	493
CRETACEOUS	-1874	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER	+122	10
UPPER CONFINING UNIT, LS SYSTEM	+112	248
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	-136	1456
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1592	
LOCAL LOW-PERMEABILITY UNIT(S)		
1		
2		
3		

RECORD NUMBER: 1200104 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-6 LAT: 0293115 LONG : 0822515

OPERATOR: TEXACO LEASE: #1 A.M. CREIGHTON

SECTION	TOWN-SHIP	RANGE	CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
16	11S	19E			X	X		77	67	3524

(CUTTINGS, CORE, PALEONTOLOGY, ELECTRIC LOG, GAMMA LOG under: DATA AVAILABLE)

STATE GEOLOGICAL SURVEY WELL NUMBER: 238

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE		
MIOCENE	A-3	>135
OLIGOCENE		
LATE EOCENE	-138	322
MIDDLE EOCENE	-460	601
EARLY EOCENE	-1061	362
PALEOCENE	-1423	496
CRETACEOUS	-1919	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER		
UPPER CONFINING UNIT, LS SYSTEM	A-3	>135
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	-138	1479
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1617	
LOCAL LOW-PERMEABILITY UNIT(S)		
1		
2		
3		

RECORD NUMBER: 1200105 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-7 LAT: 0294500 LONG : 0821018

OPERATOR: CHEVRON LEASE: #1 F S DONALDSON

SECTION	TOWNSHIP	RANGE	CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
34	8S	21E				X		150	136	3340

STATE GEOLOGICAL SURVEY WELL NUMBER: 536

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE		
MIOCENE	A-34	>30
OLIGOCENE		
LATE EOCENE	-64	260
MIDDLE EOCENE	-324	745
EARLY EOCENE	-1069	210
PALEOCENE	-1279	335
CRETACEOUS	-1614	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER		
UPPER CONFINING UNIT, LS SYSTEM	A-34	>30
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	-64	1508
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1572	
LOCAL LOW-PERMEABILITY UNIT(S)		
1	-1262	107
2		
3		

RECORD NUMBER: 1200106 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-8 LAT: 0294850 LONG : 0821415

OPERATOR: CHEVRON LEASE: #1 CONTAINER-PECK

SECTION	TOWN-SHIP	RANGE	DATA AVAILABLE: CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
7	8S	21E				X		168	156	2853

STATE GEOLOGICAL SURVEY WELL NUMBER: 709

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE		
MIOCENE	A+44	>45
OLIGOCENE		
LATE EOCENE	-1	240
MIDDLE EOCENE	-241	620
EARLY EOCENE	-861	400
PALEOCENE	-1261	450
CRETACEOUS	-1711	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER		
UPPER CONFINING UNIT, LS SYSTEM	A+44	>45
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	-1	1571
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1570	
LOCAL LOW-PERMEABILITY UNIT(S)		
1	1224	97
2		
3		

RECORD NUMBER: 1200107 COUNTY: ALACHUA LOCAL WELL NUMBER: FLAAL-9 LAT: 0294535 LONG : 0822400

OPERATOR: PIPPIN LEASE: #1 DEERHAVEN-FL POWER

SECTION	TOWN-SHIP	RANGE	DATA AVAILABLE: CUTTINGS	CORE	PALEONTOLOGY	ELECTRIC LOG	GAMMA LOG	ELEVATION OF DERRICK FLOOR (FT.)	ELEVATION OF GROUND LEVEL (FT.)	DEPTH OF WELL (FT.)
26	8S	19E	X			X		185	180	3400

STATE GEOLOGICAL SURVEY WELL NUMBER: 13898

GEOLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
POST-MIOCENE	+180	10
MIOCENE	+170	100
OLIGOCENE		
LATE EOCENE	+70	203
MIDDLE EOCENE	-133	722
EARLY EOCENE	-855	308
PALEOCENE	-1163	512
CRETACEOUS	-1675	

HYDROLOGIC UNITS

UNIT	ELEVATION OF TOP OF UNIT (FT.) (MSL)	THICKNESS (FT.)
SURFICAL AQUIFER	+180	10
UPPER CONFINING UNIT, LS SYSTEM	+170	100
LIMESTONE AQUIFER SYSTEM:		
UPPER MAJOR PERMEABLE ZONE (TOP OF SYSTEM)	+70	1471
SUB-REGIONAL LOW-PERM. UNIT:		
I		
II		
III		
IV		
V		
VI		
VII		
VIII		
LOWER MAJOR PERMEABLE ZONE		
BOULDER ZONE		
BASE OF SYSTEM	-1401	
LOCAL LOW-PERMEABILITY UNIT(S)		
1		
2		
3		

Appendix F

Wetland Assessment

TECHNICAL MEMORANDUM

GAINESVILLE REGIOINAL UTILITIES CONSUMPTIVE USE PERMIT RENEWAL

TO:	Tony Cunningham, PE; Rick Hutton, PE; Rae Haefer, PE (GRU)
FROM:	B.J. Bukata, MS, PWS (Jones Edmunds)
XC:	Brett Goodman, PE; Fatih Gordu, PE (Jones Edmunds)
DATE:	October 8, 2013
SUBJECT:	Wetland Assessment

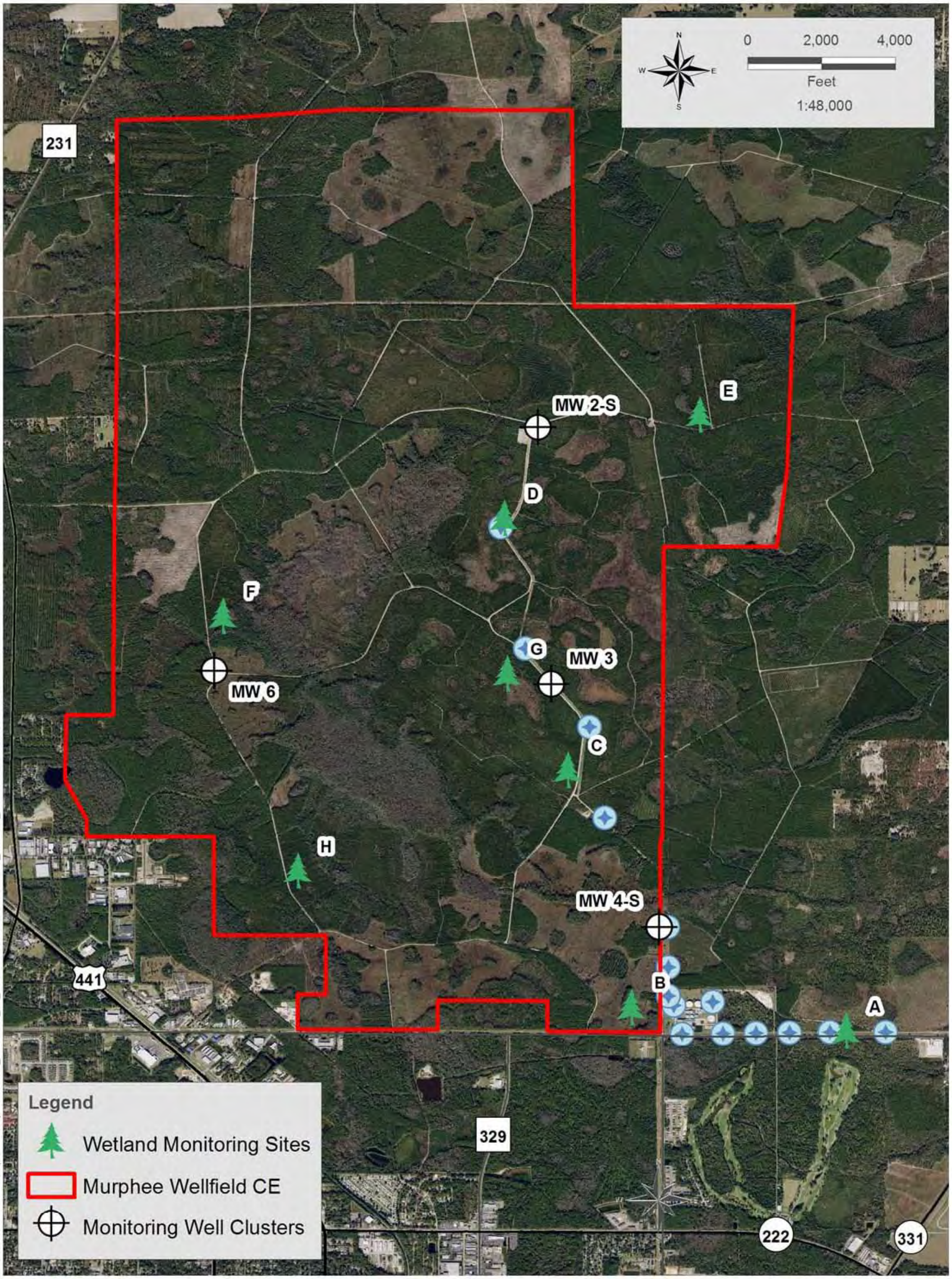
1 INTRODUCTION

The St. Johns River Water Management District (SJRWMD) authorized Gainesville Regional Utilities (GRU) to withdraw 10,950 million gallons per year (MGY) (30 million gallons per day [MGD] on average) of groundwater from the Floridan aquifer for public supply. GRU's consumptive use permit (CUP) with SJRWMD was renewed in 2009 and expires in 2014. Jones Edmunds & Associates, Inc. is assisting GRU with renewing the CUP.

Since 2000, GRU has been monitoring isolated herbaceous, shrub, and forested wetlands at its Murphree wellfield and submitting annual reports to SJRWMD. Wetlands A through D were monitored from 2000 to 2003; at the recommendation of SJRWMD, Wetlands E and F were added in 2003 and Wetlands G and H were added in 2008. Figure 1 shows the locations of the wetlands. Shallow piezometers with continuous water-level recorders were installed in all wetlands. In 2004, several monitoring-well clusters were installed by SJRWMD and partially equipped with continuous water-level recorders by GRU. The clusters contain separate surficial aquifer (SAS), Hawthorn Group, and Upper Floridan Aquifer (UFA) wells. The water-level recorders have been providing daily water-level measurements since 2006. However, only the MW-6 well cluster has been recording SAS, Hawthorn Group, and UFA levels. The MW-3 and MW-4 well clusters have only been recording the SAS and Hawthorn Group water levels, and the MW-2 well cluster has only been recording the SAS water levels.

Based on NEFv3 model-simulation results, GRU pumpage under any scenario results in no SAS drawdown (see Appendix A, SJRWMD Groundwater Modeling Report). To investigate these model results further, Jones Edmunds reviewed annual wetland-monitoring-report conclusions to assess wetland health trends and reviewed monitoring well data available within the wellfield. In addition, on March 26, 2013, we assessed the wetland field to determine qualitatively if the eight wetlands exhibit evidence of hydrologic impact from groundwater withdrawals. The following memorandum presents the methods, results, and discussion for these assessments and analyses.

Figure 1 Wetland Monitoring Sites, Production Wells, and Cluster Monitoring Wells Location Map



2 METHODS

2.1 SUMMARY OF WETLAND MONITORING TO DATE

Jones Edmunds compiled and reviewed GRU's wetland baseline and annual monitoring reports submitted to SJRWMD since 2000.

2.2 CONFINEMENT

Jones Edmunds investigated available soil and geological data to determine confinement characteristics under and within the wellfield. We reviewed the following data sets/reports:

- Wetland piezometer installation logs/data.
- Cluster wells North Main Street MW-2 (F-2), MW-3 (F-3), and MW-6 (F-6) well-construction report (SJRWMD, 2004).
- Water-level data from the MW-6 well cluster (SAS, Hawthorn, and UFA).

2.3 WETLAND FIELD ASSESSMENT

Jones Edmunds qualitatively assessed the eight wetlands that GRU monitors as part of the SJRWMD CUP (Figure 1) to determine if they are hydrologically impaired or dehydrated. At each wetland, we completed the following tasks:

1. Walk the wetland perimeter to confirm that the wetland is isolated and to identify any ditches or swales that are hydrologically connected to the wetland that may be negatively affecting its hydroperiod.
2. Record dominant vegetation species and facultative plant species present in the wetland, paying close attention to the presence and/or encroachment of facultative species that may indicate that the wetland is dehydrated.
3. Document the presence of potentially abnormal counts of tree falls or stressed obligate wetland trees.
4. Assess the elevation of biotic hydrologic indicators of stain lines, elevated lichen lines, and moss collars/lines on available tree or shrub species.
5. Document the presence or absence of standing water and its relative depth.
6. Record potential indicators of organic soil oxidation such as exposed roots or organic bodies in mineral soil.
7. Photograph any biotic or soil indicators of dehydration.

3 RESULTS AND DISCUSSION

3.1 SUMMARY OF MONITORING TO DATE

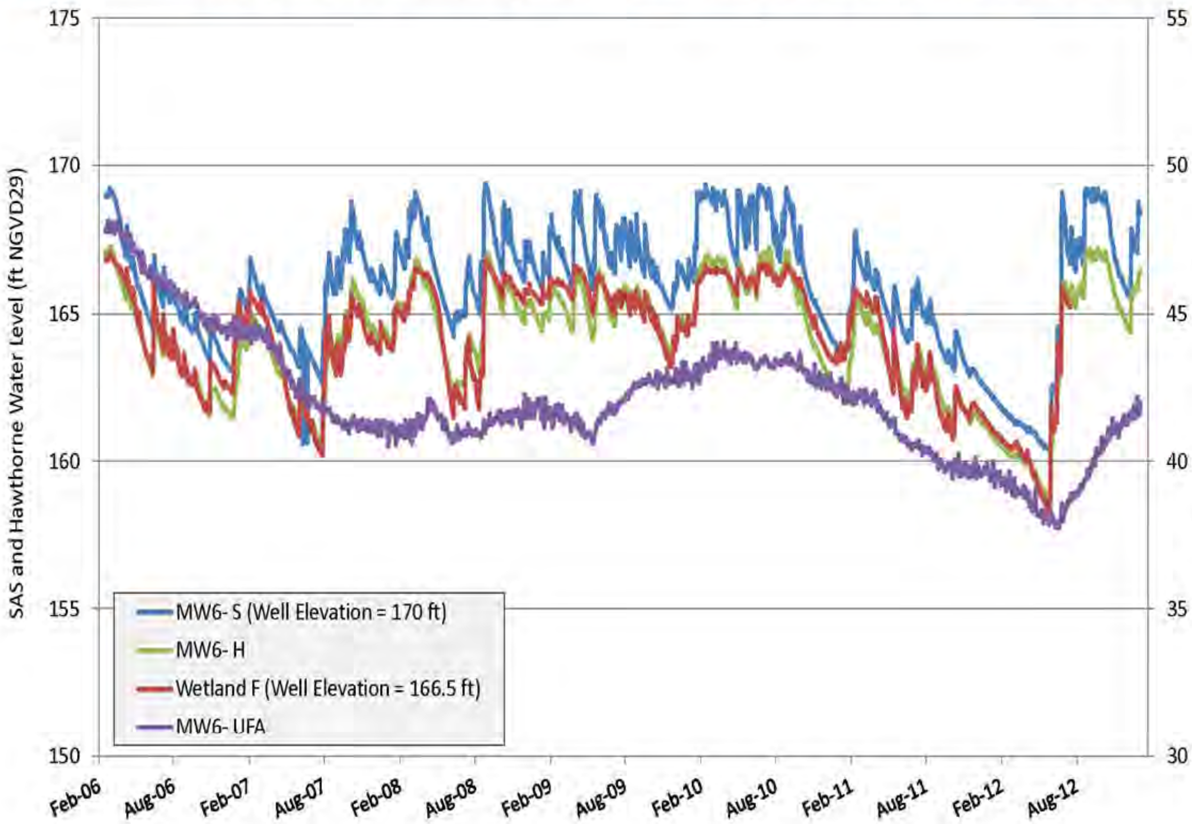
GRU's peak pumpage rates occurred in 2006 and 2007. From April 2006 to July 2007 (15 months), the average pumping reached 27.6 MGD. In 2008, Wetland Solutions, Inc. (WSI) investigated Wetlands A through F, which had not been inspected since the 2001 baseline monitoring effort completed by Jones Edmunds. In its report, WSI concluded, "There were no ecological or soil indicators to suggest that a reduction in the wetland hydroperiod has occurred in Wetlands A, D, E, or F." However, WSI noted, "Wetland C appeared to have transitioned to a slightly drier wetland community as suggested by a shift in the vegetative community and soil oxidation in the surface soils" (WSI, 2008a).

In subsequent reports from 2008 to 2011, no correlation between wetland water levels was observed and no biotic hydrologic indicators implying dehydration as a result of pumpage were reported. In 2009, GRU concluded, "Although some wetlands remained dry during 2009, there does not appear to be a cause and effect relationship between pumpage at MWTP and water levels at surrounding wetlands" (GRU, 2009). The 2011 GRU monitoring report stated, "The data suggest piezometer water levels are strongly correlated with rainfall and not with withdrawal rates." (GRU, 2011)

3.2 CONFINEMENT

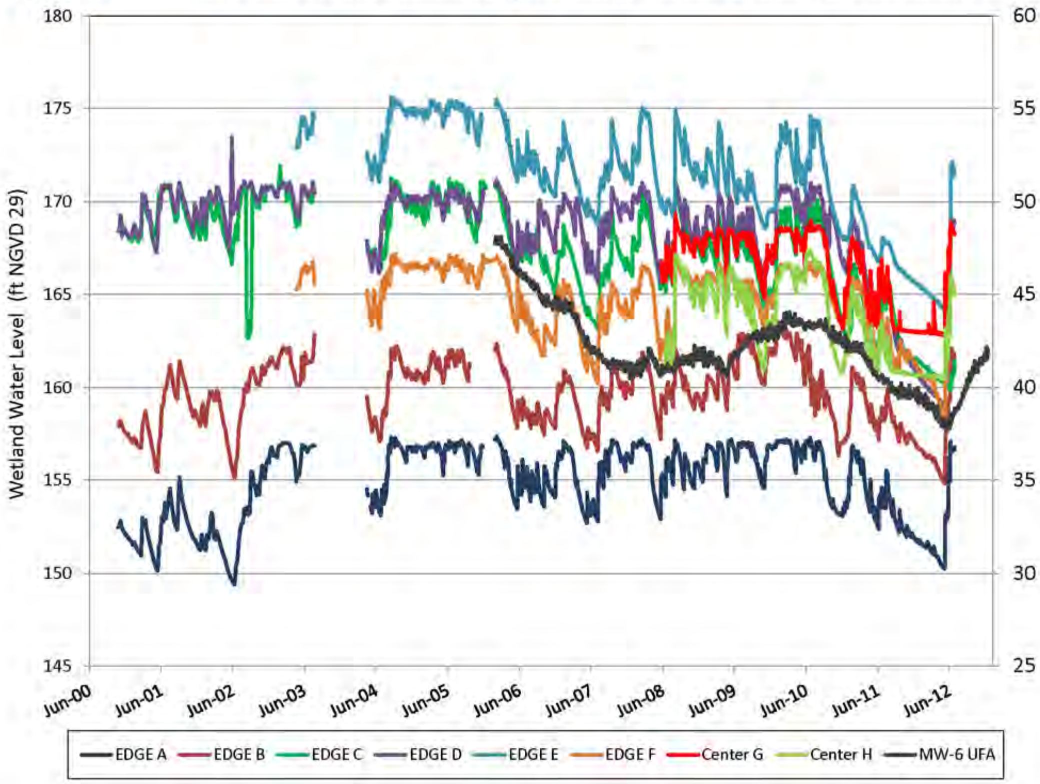
To further investigate the potential impact of pumpage on wetland water levels, Jones Edmunds reviewed boring logs for MW-6 (1,500 feet south of Wetland F) and Wetlands F, G, and H as well as the head difference between the UFA and the SAS within the wellfield. Based on data from MW-6, the vertical head difference between the water table and the UFA is approximately 120 feet for the closest wetland (Wetland F) and over 110 feet for Wetland A (Figure 2). The head difference of over 110 feet indicates significant confinement between the SAS and UFA levels. Figure 3 shows the water levels for the period of record for all monitored wetlands and water levels in MW-6 UFA.

Figure 2 MW-6 UFA and Monitoring Wetland F Water Levels for Available Period of Record



Soil data from the wetland well installations indicate that sandy clay horizons (B_t) are typically found in the wetlands at approximately 15 inches (Wetland G) to 44 inches (Wetland F) below grade along the wetland edge/ecotone, with most beginning within the upper 20 to 30 inches of soil surface (Attachment 1). The presence of clay (B_t) or spodic horizons (B_h) in these wetlands indicates that another layer of confinement in these wetlands could be near the ground surface.

Figure 3 MW-6 UFA and Monitoring Wetland Water Levels for Available Period of Record



The North Main Street MW-2 (F-2), MW-3 (F-3), and MW-6 (F-6) boring logs describe soil from 4 feet down to 115 feet or greater. The logs indicate potentially two or three clay-confining units (including the Hawthorn Group) in this area at 12 to 14 feet, at 24 to 34 feet, and at or below 40 feet. Sand or dolostone exists between these clay horizons (Attachment 2).

Multiple clay layers of varying thickness are beneath the wetlands. While these data do not indicate how leaky these sandy clay layers under the monitored wetlands are, these layers add a buffer between the UFA and the wetlands in addition to the Hawthorn Group. Therefore, the GRU pumpage on these wetlands is not like to have a negative effect.

3.3 Wetland Field Assessment

Of the eight monitored wetlands, A and G are considered shrub-dominated wetlands; C and D are herbaceous wetlands; and B, E, F, and H are forested wetlands. All wetlands are isolated, depressional wetlands except for Wetland F, which is hydrologically connected to an ephemeral stream. During the March 2013 field assessment, we observed the following:

- Only Wetlands A, F, and G had standing water, which was limited to small pockets in F and G, while A had several inches of standing water throughout the wetland.
- No ditches or drainage features are connected to any of the wetlands except for Wetlands A and F. A large roadside swale is south of Wetland A, and an ephemeral stream runs along the east side of Wetland F, which could negatively affect the hydroperiod of these wetlands.
- We did not observer any evidence of facultative plant species recruitment except in Wetland C, where broomsedge and blackberry have recruited in the outer third of the wetland.

- We did not observe any widespread or abnormal soil oxidation, exposed roots, or tree falls except in Wetland E.
- In Wetland E, we observed several young cypress tree falls in the southern half of the wetland that did not exhibit fire scars. Additionally, cypress knees were very sparse, and Wetland E has a duff layer several feet thick, which indicates slow decomposition.
- Wetlands B and E are cypress-dominated wetlands containing few knees; the knees were less than 1 foot tall. Wetland H, also cypress-dominated, had very large knees. The knees in Wetlands B and E could be potential long-term indicators that water levels were historically never high or that the wetland is not frequently inundated.
- In all forested wetlands, we observed moss lines growing on the bases of trees down to the ground surface (Photos 1 through 4).

Results of this assessment indicate that the wetlands, canopy, and understory are in good health and are not experiencing disconcerting biotic indicators of dehydration such as widespread recruitment of facultative species, significant tree falls, or widespread soil oxidation. However, moss lines in all forested wetlands near or at the ground surface indicate that the wetlands are not frequently inundated. Forested wetlands B and E also had thick duff layers, indicating a decrease in decomposition rates. Unfortunately, the 2001 baseline monitoring report provided no information regarding the elevations of Wetland B moss lines to compare to this 2013 assessment, and no future baseline reports provided such information for the other wetlands.

GRU (2013) presented wetland hydroperiods (frequency of inundation) using water levels recorded at the edge of each wetland since 2004. Based on this analysis, no trends in inundation for forested wetlands (B, E, F, and H) or herbaceous/shrub wetlands (A, C, D, and G) are apparent. Wetlands were inundated for the shortest duration in 2011 (a dry year) and for the longest duration in 2008 (Table 1). Additionally, Jones Edmunds calculated the mean and median water levels for the period of record and compared them to the elevation near the center of the wetland at the monitoring well. Table 2 and Figures 4 and 5 show the results of this analysis. While wetlands were inundated the least during the two years with the lowest annual average rainfall (2006 and 2011), wetlands were not inundated for the greatest frequency during the years with the highest rainfall (2004 and 2012). This could be due to the rainfall pattern for a given year. For example, 2004 had the second-highest rainfall, but a large percentage of that “excess” fell during only a few months association with hurricane events.

Previous monitoring reports do not indicate correlations between wetland water levels and pumpage. The moss lines at ground surface in the forested wetlands observed during our March 2013 field investigation most likely indicate cumulative rainfall deficits since 2000 (Figure 6). Since no biotic or water-level data for these wetlands before pumping began are available for comparison, we could not determine if the low elevations of the moss lines in the forested wetlands resulted from pumpage or rainfall patterns. Based on available information and field investigations, wetlands within the wellfield do not appear to be experiencing significant dehydration that could be caused by GRU pumpage. However, the low moss lines, the relatively low number of days flooded, and biotic indicators at Wetland E warrant continued monitoring of these wetlands.

Photograph 1 Wetland B Moss Line

Photograph 2 Wetland H Moss Line

Photograph 3 Wetland E Moss Line

Photograph 4 Wetland F Moss Line

Table 1 Flood Frequency for Wetland Monitoring Sites (GRU, 2013)

Wetland Piezometer	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Percent of Days Flooded								
Center A	59%	100%	36%	64%	100%	91%	74%	20%	18%
Edge A	55%	87%	18%	48%	40%	69%	67%	11%	9%
Center B	13%	8%	6%	0%	100%	46%	66%	0%	39%
Edge B	5%	0%	4%	0%	0%	21%	33%	0%	2%
Center C	48%	68%	14%	0%	100%	0%	27%	0%	25%
Edge C	40%	56%	13%	0%	10%	0%	4%	0%	0%
Center D	45%	62%	18%	13%	100%	32%	76%	10%	36%
Edge D	18%	29%	13%	5%	20%	1%	39%	0%	0%
Center E	53%	83%	16%	0%	14%%	1%	7%	0%	0%
Edge E	36%	50%	12%	0%	4%	0%	0%	0%	0%
Center F	66%	100%	28%	10%	100%	83%	78%	14%	0%
Edge F	31%	44%	16%	0%	4%	2%	11%	0%	1%
Center G					100%	54%	64%	3%	42%
Center H					100%	25%	66%	0%	20%
Center Avg	**47%**	**70%**	**20%**	**15%**	**89%**	**41%**	**57%**	**6%**	**23%**
Edge Avg	**31%**	**44%**	**12%**	**9%**	**13%**	**16%**	**26%**	**2%**	**2%**
Annual Average Rainfall (Inches)*	**58.4**	**50.0**	**35.4**	**40.8**	**39.7**	**46.9**	**40.8**	**35.0**	**58.9**

*Rainfall data from Gainesville Regional Airport

Table 2 Mean Water Level for Period of Record and Wetland Center Elevation at Well for Wetland-Monitoring Sites

Wetland	Center of Wetland Elevation (NAVD29)	Mean Wet Season Water Elevation (June-October) (NAVD29)	Mean Water Elevation (NAVD29)	Median Water Elevation (NAVD29)
A	155.2	155.2	155.0	155.6
B	161.9	159.8	160.2	160.4
C	169.5	167.2	166.8	166.6
D	170	168.8	168.7	169.1
E	174.4	171.5	170.7	170.4
F	165.2	165.2	164.0	165.2
G	167.8	166.2	166.4	167.1
H	165.6	163.7	163.6	163.7

Figure 4 Water Levels in Wetlands A, B, C, and H Relative to Ground Elevation

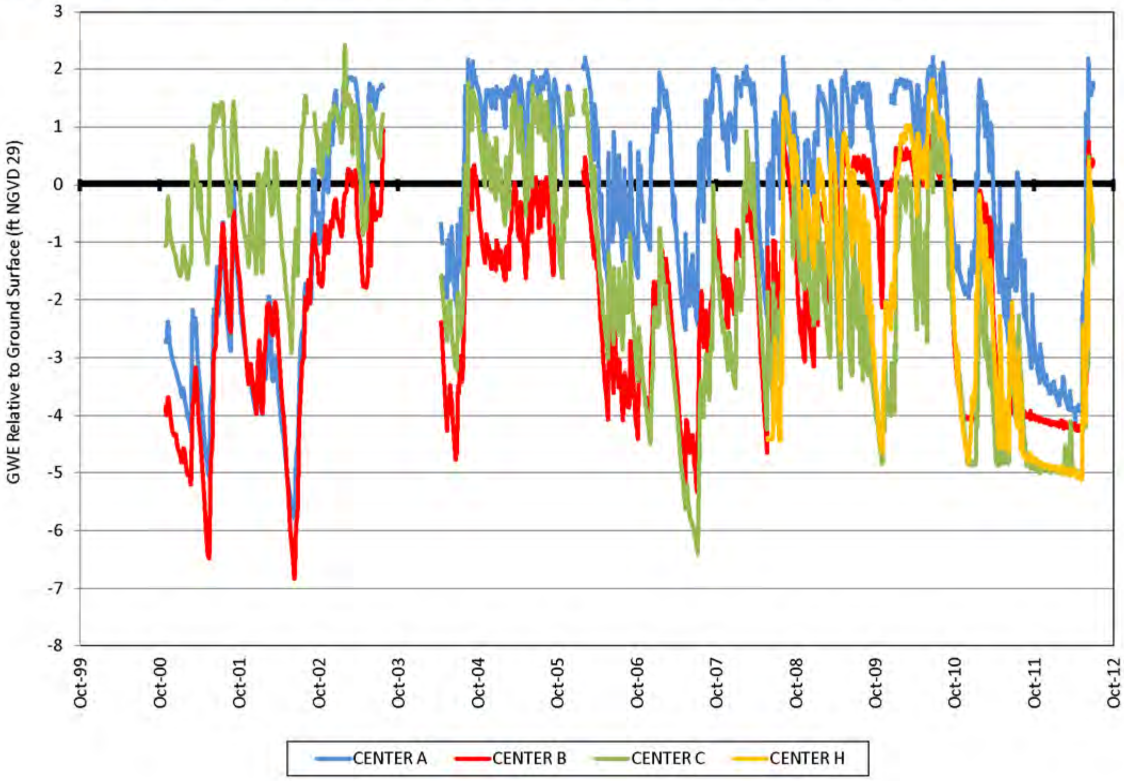


Figure 5 Water Levels in Wetlands D, E, F, and G Relative to Ground Elevation

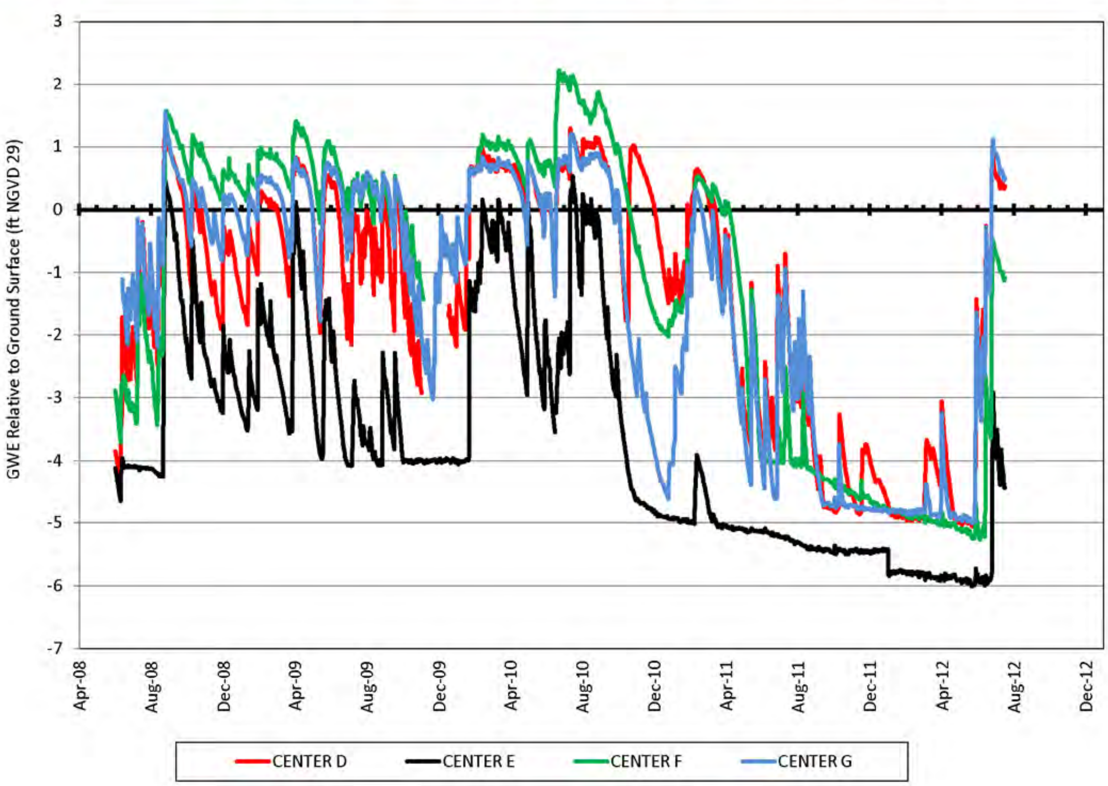
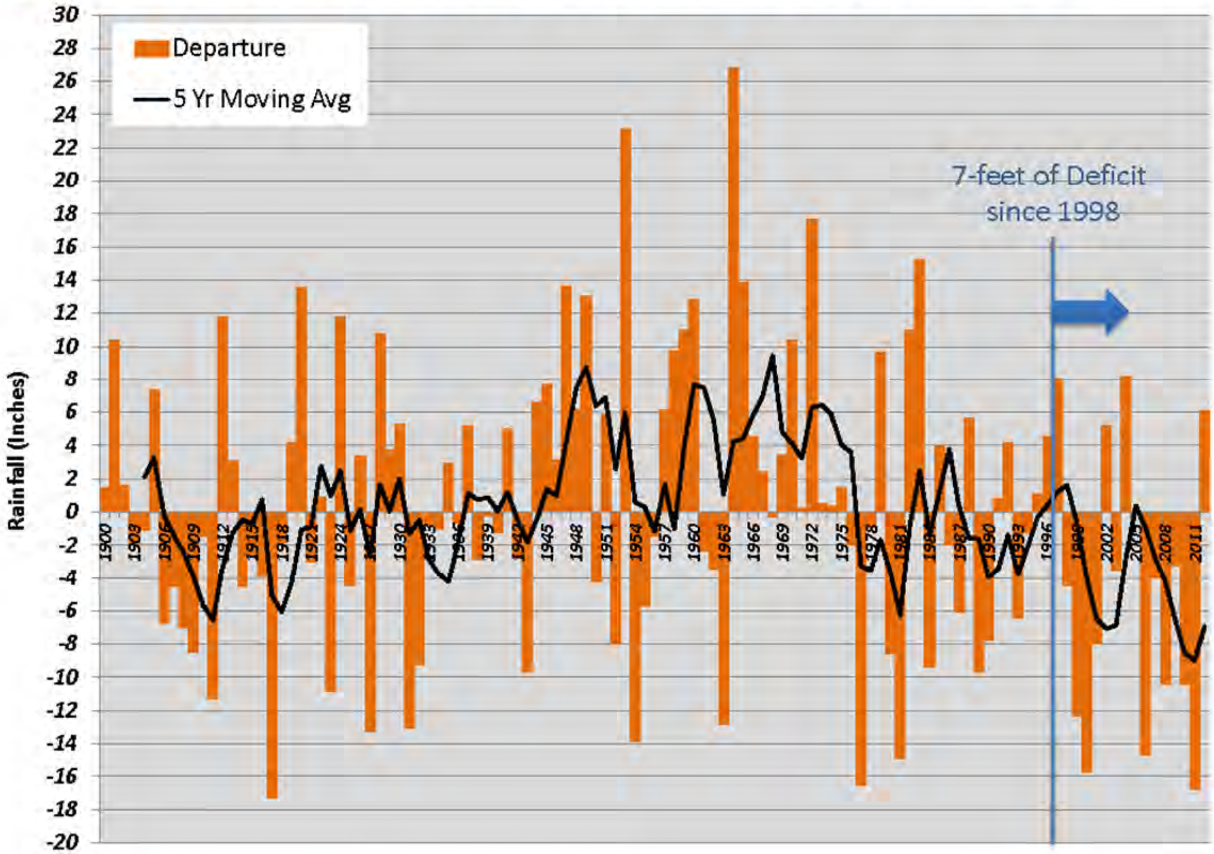


Figure 6 Annual Departure from Average Annual Rainfall for Gainesville, Florida



4 PROPOSED MONITORING PLAN

GRU has monitored wetlands within the wellfield for the past 13 years. During the July 2013 wellfield site visits with SJRWMD and the Suwannee River Water Management District (SRWMD), SJRWMD proposed revising the GRU wetland-monitoring program. While SJRWMD and GRU will develop the details of the revised monitoring program after the CUP application package is submitted, the basic elements of the proposed monitoring plan are as follows:

- Remove Wetland A from the monitoring program.
- Within 6 months of permit issuance, instrument and maintain water level monitoring equipment at the following locations:
  - Wetlands B through H.
  - Well clusters 2, 3, 6 (S, H, F). SJRWMD is monitoring F-3 remotely, and we assume that they will continue to conduct this monitoring.
- Report water level monitoring data to SJRWMD annually.

- In March through May following permit issuance and every 5 years (2018, 2023, 2028), conduct the following:
  - Establish an elevation profile along a belt transect at least 150 feet in length such that 50 feet of adjacent upland is included.
  - Monument the jurisdictional wetland line and distinct vegetation community breaks along the transect with PVC or other material.
  - Record soil elevations at 5-foot intervals and wherever the plant community changes.
  - Prepare a cross-section diagram of elevations, plant communities, hydric soils, and biotic hydrologic indicators (e.g., moss collars, adventitious roots) located along the transect.
  - Describe plant communities present and dominant tree, shrub, and herbaceous species within 10 feet of one side of the transect line within each plant community along the transect.
  - Describe soil color, texture, and hydric soil indicators in the top 24 inches of soil at 25-foot intervals along the transect or intervals that allow a minimum of three soil characterizations per each unique vegetation community type.
  - Provide a summary report on or before July 1.

5 SUMMARY OF REASONABLE ASSURANCE

Our analysis of previous monitoring reports, groundwater-level data, and field assessments is summarized below.

- GRU has been monitoring wetlands since 2000.
- No correlations between wetland water levels and pumpage have been documented.
- The wetlands' levels and SAS levels correlate to rainfall.
- Many of the forested wetlands have moss lines at ground surface that indicate a lack of inundation.
- The moss lines at ground surface that may indicate dehydration are likely the result of the significant rainfall deficit that has occurred since 2000.

The allocation being requested in the permit renewal for the next 20 years is not likely to degrade local or regional wetlands for the following reasons:

- GRU's pumpage has reached levels that are similar to the requested allocation without observable impacts to the nearby wetland communities.
- There is a head difference of over 100 feet between the SAS and the UFA, which indicates a significant hydraulic separation between the withdrawals and the wetland communities.
- Boring logs show significant and multiple confining layers in the Hawthorn Group between the SAS and the UFA.
- Groundwater models confirm that GRU's requested allocation will not cause significant drawdown in the SAS.

6 REFERENCES

Gainesville Regional Utilities (GRU). (2013). *2012 Murphree Wetlands Monitoring Report*. Prepared for the St. Johns River Water Management District (SJRWMD).

GRU. (2010). *2010 Murphree Wetlands Monitoring Report*. Prepared for the SJRWMD.

GRU. (2009). *2009 Murphree Wetlands Monitoring Report*. Prepared for the SJRWMD.

Jones Edmunds & Associates, Inc. (2002). *GRU Murphree Wellfield Expanded Wetland Monitoring Program – Fall 2002 Baseline Monitoring Event*. Prepared for GRU and SJRWMD.

SJRWMD. (2004). *Field Services Construction, Preliminary Data, GRU Property, Alachua County, Florida; Aquifer System Monitor Wells*. SJRWMD Program No. 5111-04001, Division of Groundwater Programs, Department of Resource Management.

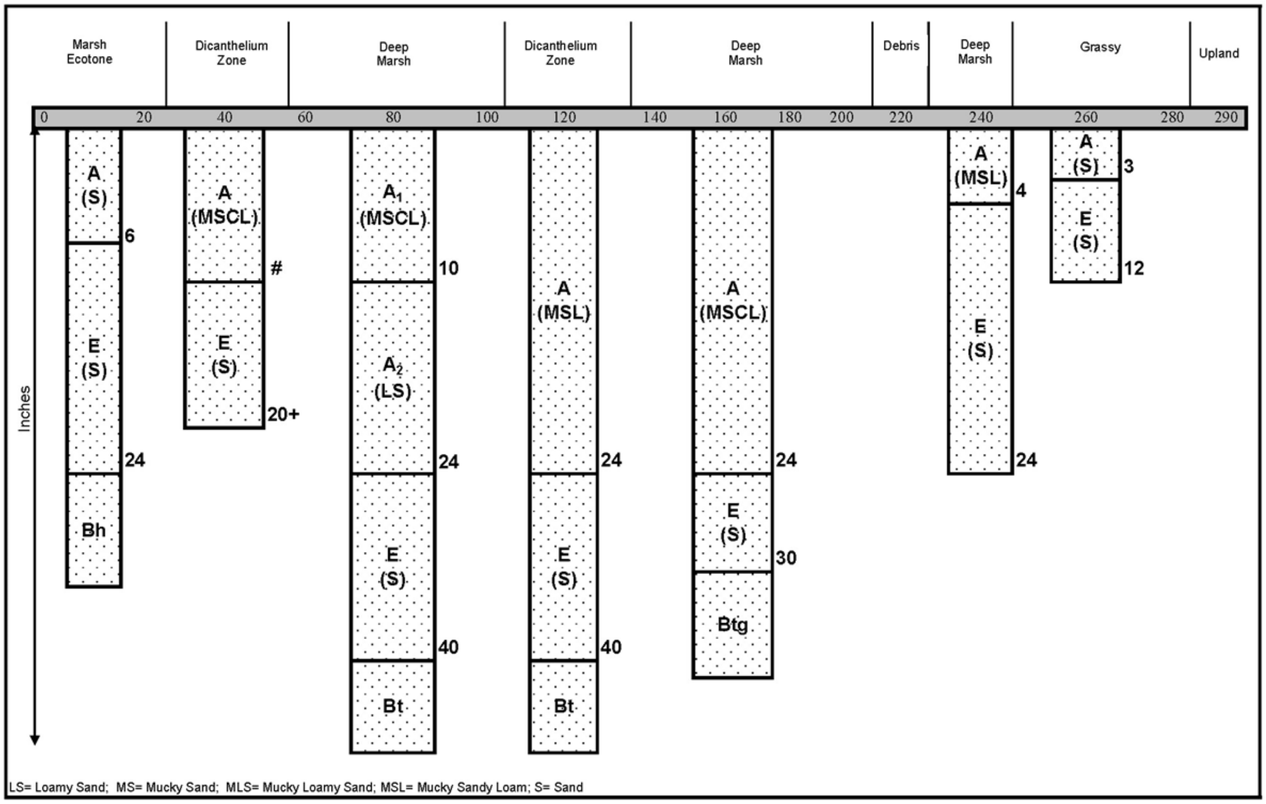
Wetland Solutions, Inc. (WSI). (January 2008a). G*ainesville Regional Utilities Murphree Water Treatment Plant; Wellfield Wetland B Report*. Prepared for GRU and SJRWMD.

WSI. (July 2008b). *Gainesville Regional Utilities Murphree Water Treatment Plant; Wellfield Wetlands G and H Baseline Monitoring Report*. Prepared for GRU and SJRWMD.

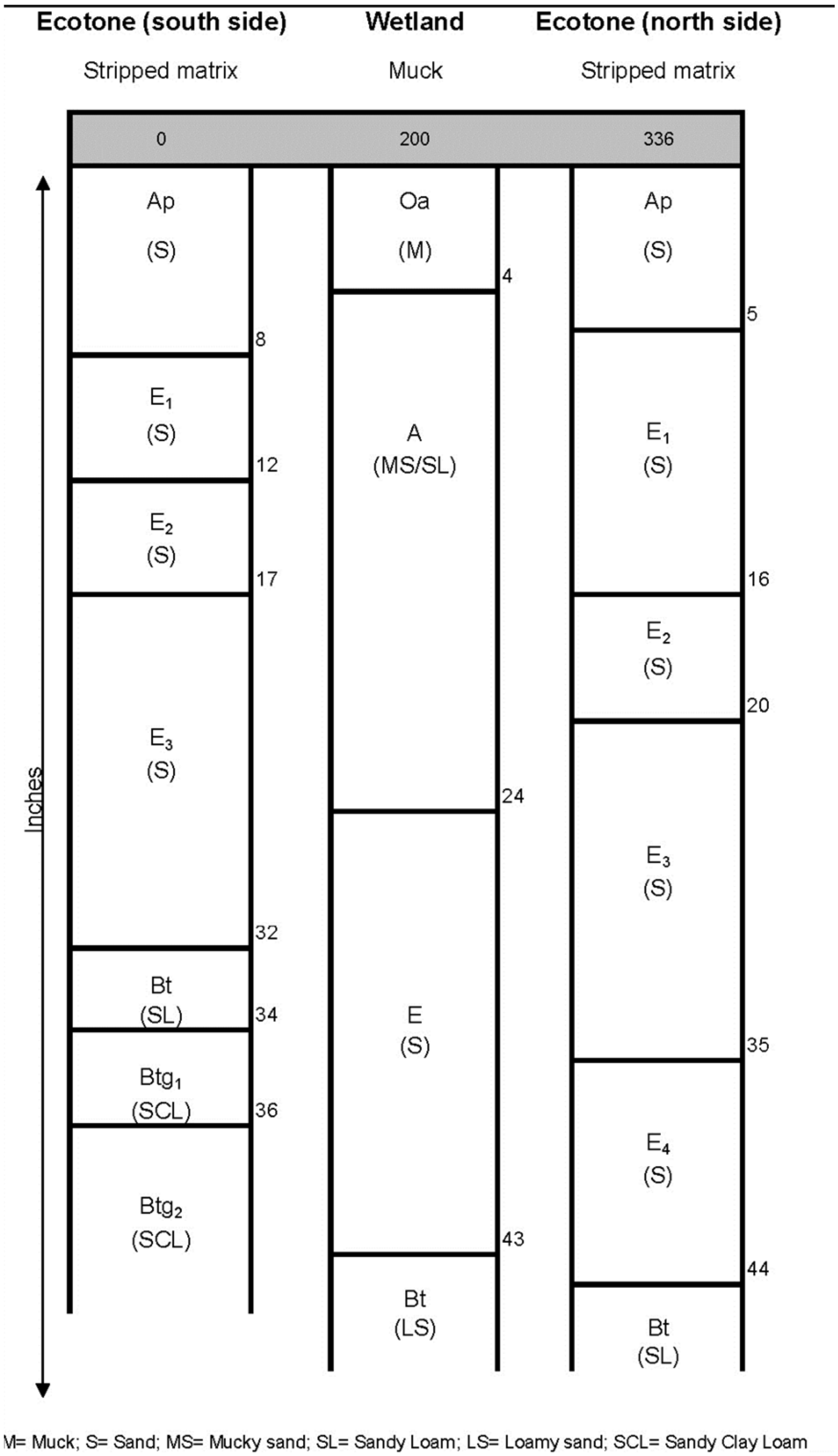
Attachment 1

Wetland Piezometer Soil Profiles

Wetland D Soil Profile (Jones Edmunds, 2002)

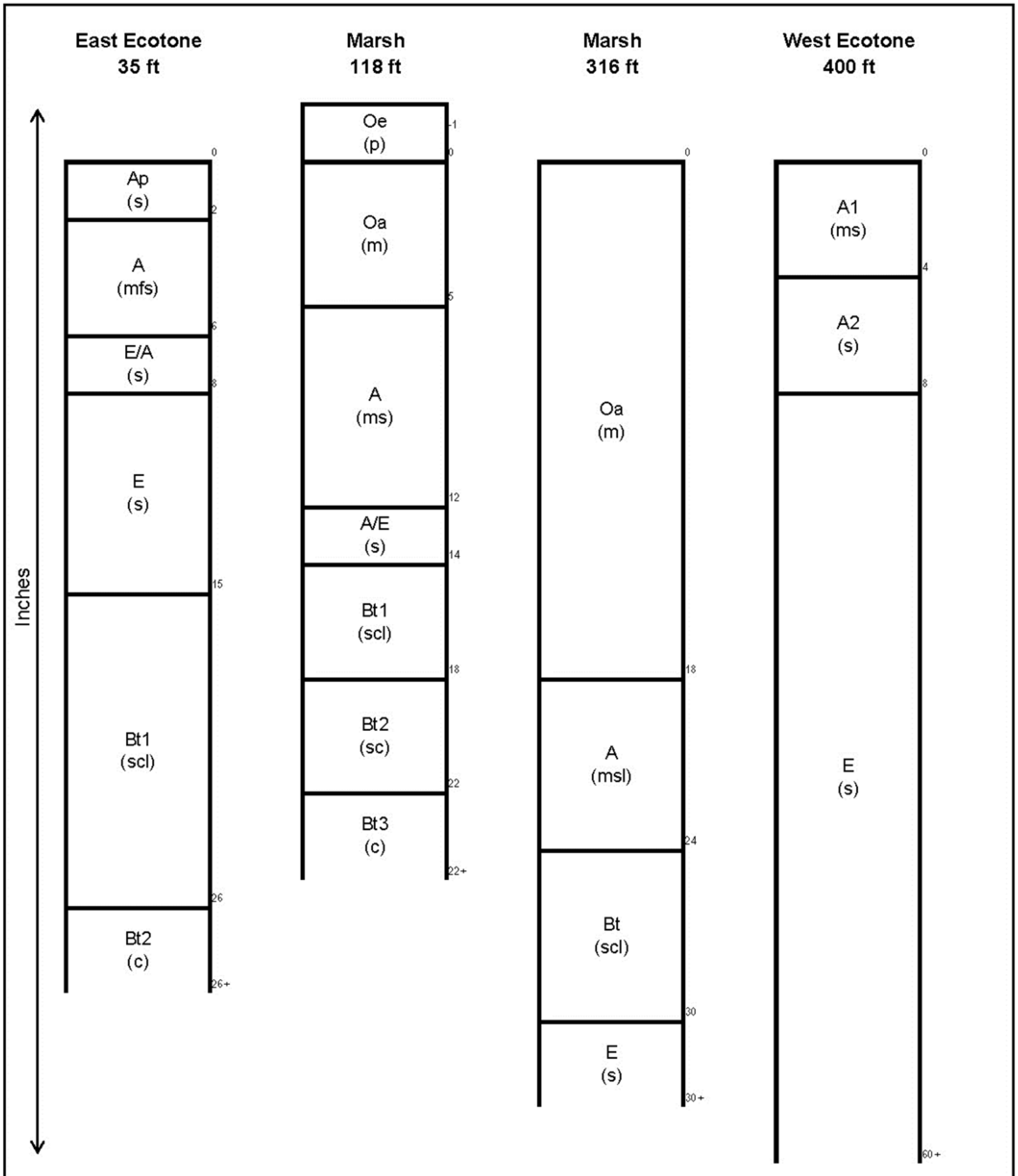


Wetland F Soil Profile (Jones Edmunds, 2002)



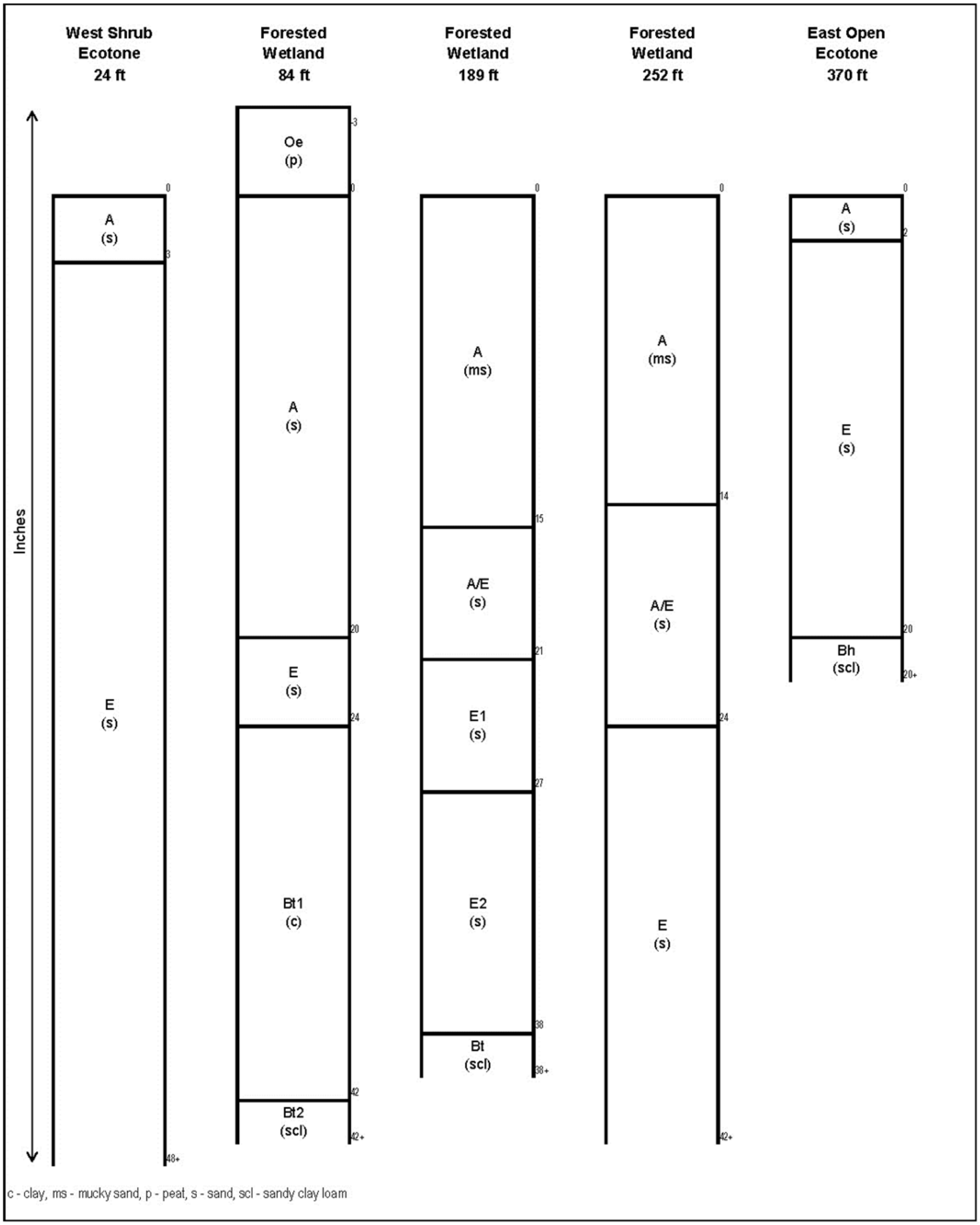
Wetland G Soil Profile

(WSI, 2008b)



c - clay, m - muck, mfs - mucky fine sand, ms - mucky sand, p - peat, s - sand, scl - sandy clay loam

Wetland H Soil Profile (WSI, 2008b)



Attachment 2

Boring Logs

Field Services
Construction
Preliminary Data
GRU Property
Alachua County, Florida

Aquifer System Monitor Wells

North Main Street
Surficial: A-0391
Intermediate: A-0392
Intermediate: A-0393

F-2
Surficial: A-0398
Intermediate: A-0399
Abandoned: A-0400

F-3
Intermediate: A-0396
Intermediate: A-0397

F-6
Surficial: A-0401
Intermediate: A-0402
Floridan: A-0404

SJRWMD Program No. 5111-04001

December 16, 2004

Division of Ground Water Programs
Department of Resource Management
St. Johns River Water Management District
Palatka, Florida

This report was generated for the Division of Ground Water Program's use.
All data, figures, tables and information are provisional.

Table 1. **Lithologic Description**

Site: GRU Property North Main Street **Well ID:** A-0392

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
4	6	SPT	8 25 36 40	**Sand,** pale yellowish brown, some silt, fine – medium [wet]	80
6	8	SPT	-	**Sand,** pale yellowish brown, some silt, fine – medium	100
8	10	SPT	12 17 - 10	**Sand,** pale yellowish brown/ very pale orange, fine – medium	70
10	12	SPT	12 10 6 6	**Sand**, silty, clayey, moderate yellowish brown, fine – medium	70
12	14	SPT	3 7 13 14	**Sand**, silty, clayey, moderate yellowish brown, fine – medium [tos] **Clay**, pale yellowish brown, stiff [bos]	70
14	16	SPT	9 14 15 12	**Sand**, moderate yellowish brown, medium	70
16	18	SPT	13 14 16 17	**Sand**, dark yellowish brown, medium	100
18	20	SPT	8 14 20 13	**Sand**, moderate/ dark yellowish brown, medium	100
20	22	SPT	6 13 16 15	**Sand**, silty, clayey, moderate yellowish brown, fine – medium	70
22	24	SPT	5 7 15 11	**Sand**, silty, clayey, moderate yellowish brown, fine – medium	100
24	26	SPT	4 5 8 10	**Clay,** greenish gray, soft	100
26	28	SPT	5 3 3 5	**Clay,** greenish gray, soft, sand lenses, pale yellowish brown, fine - medium	100
28	30	SPT	6 9 9 12	**Clay,** greenish gray, soft	90
30	32	Shelby	-	**Clay,** greenish gray, soft	
32	34	SPT	3 5 50-4	**Sand**, silty, clayey, pale yellowish brown, fine, phosphate and phosphate pebbles	90
34	36	SPT	45 24 15 15	**Sand**, silty, clayey, pale yellowish brown, fine, phosphate and phosphate pebbles	40
36	38	SPT	3 3 12 19	**Sand**, silty, clayey, pale yellowish brown, fine, phosphate and phosphate pebbles [tos] **Dolostone**, sandy, pale yellowish brown, poorly indurated [bos]	40
38	40	SPT	25 28 24 24	**Sand**, silty, clayey, pale yellowish brown/ very pale orange, fine, phosphatic	70
40	42	SPT	3 5 7 11	**Sand**, silty, clayey, pale yellowish brown, fine, phosphate and phosphate pebbles	60
42	44	SPT	4 6 8 7	**Sand**, silty, clayey, pale yellowish brown, fine, phosphate and phosphate pebbles	40
44	46	SPT	4 5 7 10	**Sand**, silty, clayey, pale yellowish brown/ grayish orange, fine, phosphatic	100
46	48	SPT	5 6 7 8	**Sand**, silty, clayey, pale yellowish brown, fine, phosphatic	50
48	50	SPT	8 10 20 23	**Sand**, silty, clayey, pale yellowish brown, fine - medium, phosphatic	100
50	52	SPT	5 7 13 11	**Sand**, silty, clayey, pale yellowish brown, fine - medium, phosphatic	40
52	54	SPT	11 16 40 46	**Sand**, silty, clayey, pale yellowish brown, fine - medium, phosphatic	100
54	56	SPT	7 11 14 21	**Sand**, clayey, light olive gray, fine – medium, phosphatic, heavy minerals	100
56	58	SPT	11 14 19 38	**Sand**, clayey, light olive/ yellowish gray, fine – medium, phosphatic, heavy minerals	100
58	60	SPT	13 48 50-3	**Clay,** sandy, light olive/ yellowish gray, soft, phosphatic, heavy minerals	50
60	62	SPT	12 15 22 20	**Clay,** sandy, light olive/ yellowish gray, soft, phosphatic, heavy minerals	80
62	64	SPT	9 20 32 30	**Clay,** sandy, light olive/ yellowish gray, soft, phosphatic, heavy minerals	100

Table 1. **Lithologic Description**

Site: GRU Property North Main Street **Well ID:** A-0392

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
64	66	SPT	10 16 20 28	**Clay,** sandy, olive gray, moderately stiff, phosphatic, heavy minerals	100
66	68	SPT	13 16 28 32	**Clay,** sandy, olive gray, stiff, phosphatic, heavy minerals [3-inch pale yellowish brown clay bleb]	70
68	70	SPT	8 12 40 20	**Clay,** sandy, olive gray, stiff, phosphatic, heavy minerals	60
70	72	Shelby	-	**Clay,** sandy, olive gray, stiff, phosphatic, heavy minerals	
72	74	SPT	12 15 15 22	**Clay,** sandy, olive gray, stiff, phosphatic, heavy minerals	100
74	76	SPT	10 10 10 10	**Clay,** sandy, olive gray, stiff, phosphatic, heavy minerals	100
76	78	SPT	9 15 28 23	**Clay,** dark greenish gray, very stiff, phosphatic, heavy minerals	100
78	80	SPT	11 17 27 34	**Clay,** dark greenish gray, very stiff, phosphatic, heavy minerals	100
80	82	SPT	11 17 18 26	**No return**	-
82	84	SPT	8 16 22 36	**Clay,** dark greenish gray, moderately stiff	100
84	86	SPT	12 14 15 27	**Clay,** dark greenish/ olive gray, moderately stiff, phosphatic	60
86	88	SPT	8 45 50-3	**Clay,** dark greenish/ olive gray, moderately stiff, phosphatic [tos] **Clay,** yellowish gray, very stiff, phosphatic [increase in size] [bos]	80
88	90	SPT	15 15 27 37	**Clay**, yellowish/ dark greenish gray, very stiff, phosphatic	100
90	92	SPT	9 15 24 34	**Clay**, dark greenish gray, very stiff, stringers of high% phosphate	100
92	94	SPT	15 48 38 42	**Clay**, dark greenish gray, very stiff, minor phosphate	100
94	96	Shelby	-	**Clay**, dark greenish gray, stiff, minor phosphate	100
96	98	SPT	17 21 31 32	**Clay**, dark greenish gray, stiff, minor phosphate	100
98	100	SPT	17 25 27 36	**Clay**, dark greenish gray, stiff, minor phosphate	100
100	102	SPT	6 18 26 30	**Clay**, dark greenish gray, stiff, minor phosphate	100
102	104	SPT	10 19 26 50-4	**Clay**, dark greenish gray, stiff, minor phosphate	90
104	106	SPT	24 22 26 27	**Clay**, dark greenish gray, stiff, minor phosphate	30
106	108	SPT	13 26 24 25	**Clay**, dark greenish gray, stiff, minor phosphate	100
108	110	SPT	50-4	**Clay**, pale yellowish brown, moderately stiff, heavy minerals, some dolostone, poorly indurated	50
110	112	SPT	35 35 50-4	**Clay**, pale yellowish brown, moderately stiff, heavy minerals, some dolostone, poorly indurated	60
112	114	SPT	15 26 50-5	**Clay**, dark greenish gray, stiff, stringers of high% phosphatic sand	100
114	116	SPT	50-5	**Clay**, dark greenish gray, stiff	20
116	118	Core	-	**Dolostone**, very pale orange/ gray, cherty, fossil molds, sand lenses, olive gray, fine – coarse, phosphatic	80
118	120	Core	-	**Dolostone**, very pale orange/ gray, cherty, fossil molds, sand lenses, olive gray, fine – coarse, phosphatic	50
120		SPT	-	**Dolostone**, clayey, very pale orange/ gray, cherty, fossil molds, sand lenses, olive gray, fine – coarse, phosphatic	5
120	125	Core	-	**Dolostone**, very light olive gray, phosphatic, clay at bottom of core barrel greenish gray	30
125	130	Core	-	**Dolostone**, clayey, very light olive/ light greenish gray, phosphatic	100
130	135	Core	-	**Dolostone**, clayey, very light olive/ light greenish gray, phosphatic	80
135	140	Core	-	**Dolostone**, clayey, very light olive/ light greenish gray, phosphatic	100
140	145	Core	-	**Dolostone**, clayey, very light olive/ light greenish gray, phosphatic, softer, less consolidated lenses	75
145	150	Core	-	**Dolostone**, clayey, very light olive/ light greenish gray, phosphatic, softer, less consolidated lenses **Limestone**, poorly indurated, pebble size [boc]	75

Table 1. **Lithologic Description**

Site: GRU Property North Main Street **Well ID:** A-0392

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
150	155	Core	-	**Dolostone,** clayey lenses, limestone, quartz grains to pebble size in limestone matrix, phosphatic	75
155	160	Core	-	**Dolostone,** very light olive gray, clayey, light greenish gray, phosphatic	100
160	165	Core	-	**Clay,** light/ dark olive gray, very stiff, dolostone stringers, quartz grains, phosphatic	25
165	170	Core	-	**Dolostone,** light olive gray, clay blebs, very stiff, quartz grains, phosphatic	80
170	175	Core	-	**Clay,** light greenish gray, hard, consolidated, calcite infilling, pyrite crystals	100
175	180	Core	-	**Clay,** light/ dark greenish gray, soft [toc] **Sand**, clayey, light/ dark greenish gray, fine – coarse [boc]	80
180	192	Cuttings	-	Cuttings indicate [top of rock @ 192 ft bls] limestone, very pale orange	-

*[tos] top of spoon [bos] bottom of spoon [toc] top of core [boc] bottom of core

Table 2. **Testhole Abandonment Data**

Site: GRU North Main Street **Testhole ID:** A-0392

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANITY (yds/bags)	MATERIAL	COMMENTS
08/30/04	192	B-4	17 bgs 1 bg	P-94 Bentonite	Abandon testhole in stages Top off

*P-94 = Type 1 Portland Cement *Q-40 = Quickrete 40 lbs

Table 10. **Lithologic Description**

Site: GRU F-2 **Well ID:** A-0399

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
4	6	SPT	4 5 4 8	**Sand,** dark yellowish brown, fine – medium [wet]	40
6	8	SPT	8 10 10 11	**Sand,** moderate yellowish brown, fine – medium	80
8	10	SPT	8 16 25 20	**Sand,** moderate yellowish brown, fine – medium	80
10	12	SPT	11 16 14 18	**Sand,** moderate yellowish brown, fine – medium [tos] **Clay,** olive gray, stiff [bos]	100
12	14	SPT	5 10 20 28	**Clay,** olive gray, stiff	40
14	16	SPT	10 14 7 9	**Clay,** olive/ pale yellowish gray, stiff [tos] **Sand,** pale yellowish gray, fine – coarse [bos]	40
16	18	SPT	7 7 14 16	**Sand**, pale orange, fine – coarse [tos] **Sand**, pale brown, fine - coarse [bos]	90
18	20	SPT	11 15 20 25	**Sand**, pale brown, fine - medium [tos] **Sand**, pale orange, fine - medium [bos]	60
20	22	SPT	11 11 13 15	**Sand**, pale brown, fine – medium	90
22	24	SPT	14 18 26 23	**Sand**, pale orange, fine – medium [tos] **Sand**, pale brown, fine – medium [bos]	100
24	26	SPT	3 3 3 3	**Clay,** greenish gray, stiff	100
26	28	SPT	3 7 10 12	**Clay,** greenish gray, stiff [tos] **Sand**, pale yellowish brown, fine, some silt [bos]	90
28	30	SPT	4 4 4 6	**Sand**, pale yellowish brown, fine, silty	50
30	32	SPT	4 6 9 7	**Sand**, pale yellowish brown, fine, silty	100
32	34	SPT	5 11 9 13	**Clay**, sandy, yellowish/ greenish gray, medium stiff, heavy minerals	100
34	36	SPT	5 6 14 12	**Clay**, sandy, yellowish/ greenish gray, medium stiff, heavy minerals	100
36	38	SPT	9 11 16 25	**Clay**, silty, sandy [increasing near bos], yellowish gray, soft, phosphatic pebbles, heavy minerals	90
38	40	SPT	12 5 8 8	**Clay**, silty, sandy, yellowish gray, soft, phosphatic pebbles, heavy minerals	25
40	42	SPT	11 16 27 27	**Clay,** yellowish gray, medium stiff, phosphatic, heavy minerals	100
42	44	SPT	14 16 19 14	**Clay,** greenish/ yellowish gray, medium stiff, phosphatic, heavy minerals	80
44	46	SPT	25 48 50-4	**Clay,** olive/ yellowish gray, dark gray stringers, stiff, phosphatic, heavy minerals	100
46	48	SPT	50-1	**Clay,** sandy, olive/ yellowish gray, medium stiff, phosphatic, heavy minerals	60
48	50	SPT		**No return**	0
50	52	SPT	11 18 18 23	**Clay,** sandy, olive/ yellowish gray, stiff, phosphatic, heavy minerals	70
52	54	SPT	19 28 50-0	**Clay,** sandy, olive/ yellowish gray, stiff, phosphatic, heavy minerals [high % phosphate, some pebble size]	25
54	56	SPT	9 16 20 22	**Clay,** olive gray, stiff, phosphatic, heavy minerals	100
56	58	SPT	12 11 28 38	**Clay,** olive gray, stiff, phosphatic, heavy minerals	100
58	60	SPT	20 50-4	**Clay,** olive gray, stiff, phosphatic, heavy minerals [tos] **Clay,** dolomitic, yellowish/ olive gray, phosphatic, heavy minerals [bos]	20
60	62	SPT	8 10 30 34	**Clay,** olive gray, stiff, sandy, phosphatic, some pebble size	80
62	64	SPT	20 48 50-5	**Clay,** olive gray, stiff, sandy, phosphatic [high %]	60
64	66	SPT	8 14 22 20	**Clay,** olive gray, medium stiff, phosphatic	100

Table 10. **Lithologic Description**

Site: GRU F-2 **Well ID:**

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology
66	68	Shelby	-	**Clay,** olive gray, medium stiff, phosphatic
68	70	SPT	10 44 50-4	**Clay,** olive gray, soft to medium stiff, phosphatic
70	72	SPT	50-3	**Clay,** olive gray, soft to medium stiff, phosphatic [high %]
72	74	-	-	Drilled through
75	80	Core	-	**Dolostone**, greenish gray, sandy, phosphatic
80	85	Core	-	**Dolostone**, greenish gray, sandy, phosphatic [tos] **Clay**, greenish/ yellowish gray, medium stiff, sandy, phosphatic [bos]
85	90	Core	-	**Clay**, greenish/ yellowish gray, medium stiff, sandy, some dolomitization, phosphatic [lower %]
90	95	Core	-	**Clay**, greenish/ yellowish gray, medium stiff, sandy, some dolomitization, phosphatic [lower %]
95	100	Core	-	**Clay**, greenish/ yellowish gray, medium stiff, sandy, some dolomitization, phosphatic [lower %]
100	103	Core	-	**Clay**, greenish gray, very stiff, phosphatic [small %]
103	105	Core	-	**No return**
105	110	Core	-	Clay, [from core barrel bit] greenish gray, very stiff
110	112	SPT	8 8 15 19	**Clay**, greenish gray, very stiff, sandy, phosphatic
112	114	SPT	8 48 50-4	**Clay**, greenish gray, very stiff, sandy, phosphatic
125		-	-	**Clay**, [from core bit] greenish gray, very stiff, sandy, phosphatic
125	129	Core	-	**Sand** pebble comglomerate, well cemented, light yellowish gray, clay blebs, dark greenish gray, heavy minerals, multi colored [toc] **Clay**, dark greenish gray, hard, interleaved with sand, light yellowish gray, cemented, bedding planes visible [boc]
129	134	Core	-	**Clay**, light yellowish gray, hard, interleaved with sand, light yellowish gray, cemented, calcite infilling and crystals in voids
134	140	Core	-	**Clay**, dark greenish gray, hard, interleaved with sand, light yellowish gray, cemented [toc] **Sand**, (135-140) light greenish gray, clayey, fine – coarse, minor cementation, pyrite crystals visible [boc]
140	145	Core	-	**Clay**, dark greenish gray, hard lenses, sand, light greenish gray, cemented, fine – pebble size
145	152	Core	-	**Sand,** clayey, yellowish gray, cemented, heavy minerals
152	155	Core	-	**Clay**, dark greenish gray, hard [toc] **Clay**, sandy, light greenish gray, dolomitic [boc]
155	160	Core	-	**Clay**, yellowish gray, hard, cemented, heavy minerals, dark dolomitic stringers
160	165	Core	-	**Dolostone,** yellowish gray, black lenses, gastropod fossil molds [toc] **Limestone,** pale yellowish brown, fossil molds, lepidocyclina [top of rock @ 163 ft bls] [boc]

*[tos] top of spoon [bos] bottom of spoon [toc] top of core [boc] bottom of core

Table 18. **Lithologic Description**

Site: GRU F-3 **Well ID:**

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology
4	6	SPT	4 6 9 11	**Clay,** orange [road base] [wet] [tos] **Clay**, gray [bos]
9	11	SPT	19 19 17 17	**Sand,** grayish white, clay stringers, orange, fine - medium
14	16	SPT	12 14 16 18	**Sand,** grayish white, fine - medium
19	21	SPT	12 13 16 19	**Sand,** grayish white/ light brown, fine - medium
24	26	SPT	15 13 11 15	**Sand,** grayish white, fine - medium
29	31	SPT	5 4 3 3	**Clay,** very light greenish gray, soft
34	36	SPT	5 13 50-5	**Clay,** light greenish/ greenish gray, soft, portions cemented grading to limestone, high percentage of phosphate grains/pebbles
39	41	SPT	5 7 9 11	**Clay**, sandy, light green, phosphatic, heavy minerals
41	43	Shelby	-	**Clay**, light green, phosphatic, heavy minerals, minor sand
44	46	SPT	7 9 12 14	**Clay**, light green, phosphatic, heavy minerals, minor sand
49	51	SPT	9 15 26 50-1	**Clay**, gray, phosphatic, heavy minerals, minor sand seams [tos] **Clay**, gray, phosphatic, heavy minerals, carbonates [consolidated]and shells] [bos]
52	54	SPT	50-0	**No return**
54	58	Core	-	**Dolostone**, gray mottled with black,, phosphatic
58	63	Core	-	**Dolostone**, gray mottled with black/ white, phosphatic, fossil molds, minor quartz grains, clear-brown, fine-pebble size, clay blebs, greenish gray
63	68	Core	-	**Dolostone**, gray, phosphatic, minor quartz grains, clear-brown, fine-pebble size, clay blebs, greenish gray
68	73	Core	-	**Dolostone**, gray, phosphatic, clay lenses, greenish gray, minor quartz grains, clear-brown, fine-pebble size
73	78	Core	-	**Dolostone**, gray, phosphatic, clay lenses, greenish gray, minor quartz grains, clear-brown, fine-pebble size
78	80	Core	-	**Dolostone**, gray, phosphatic, clay lenses, greenish gray, minor quartz grains, clear-brown, fine-pebble size [toc] **Clay**, greenish gray, cemented, minor quartz grains, clear-brown, fine-pebble size phosphatic, heavy minerals [boc]
80	85	Core	-	**Clay**, greenish gray, cemented, minor quartz grains, clear-brown, fine-pebble size phosphatic, heavy minerals
85	90	Core	-	**Clay**, greenish/ yellowish gray, cemented, minor quartz grains, clear-brown, fine-pebble size phosphatic, heavy minerals
90	95	Core	-	**Clay**, greenish/ yellowish gray, medium stiff, minor quartz grains, clear-brown, fine, phosphatic, heavy minerals
95	100	Core	-	**Clay/ dolostone** lenses, yellowish gray, minor quartz grains, clear-brown, fine, phosphatic, heavy minerals
100	105	Core	-	**Dolostone**, gray mottled with black, phosphatic, clay lenses, greenish gray, minor quartz grains, clear-brown, fine
105	110	Core	-	**Dolostone**, gray, phosphatic, clay lenses, greenish gray, minor quartz grains, clear-brown, fine-pebble size [toc] **Clay**, dark greenish gray, very hard, phosphatic, heavy minerals, calcite veins and infilling [boc]
110	115	Core	-	**Clay**, dark greenish gray, very hard, phosphatic, heavy minerals, calcite veins and infilling [toc]

Table 18. **Lithologic Description**

Site: GRU F-3 **Well ID:**

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology
115	120	Core	-	**Clay**, dark greenish gray, very hard, phosphatic, heavy minerals [core clogged, sample had to be pressure washed out]
120	125	Core	-	**Clay/ dolostone,** dark greenish gray, very hard, phosphatic, heavy minerals, calcite veins and infilling
125	130	Core	-	**Dolostone**, gray, phosphatic [toc] **Sand,** clayey, gray, fine – coarse [moc] **Dolostone**, gray, phosphatic [boc]

*[tos] top of spoon [bos] bottom of spoon [toc] top of core [boc] bottom of core [moc] middle of core

Table 19. **Testhole Abandonment Data**

Site: GRU F-3 **Testhole ID:**

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANITY (yds/bags)	MATERIAL	COMMENTS
09/23/04	130	B-4	11 bgs	P-94	Abandon testhole

Table 20. ***Permeability**

MONITORING WELL		Collection Method	Sample Depth (ft, bls)	Wet Density (lb/ft^3)	Coefficient O Permeability (cm/sec)
Site	Well ID				
GRU F-3	A-0396	Shelby	41 - 43	95.0	1.4E-07
		Core	63 – 65	137.0	2.9E-06
		Core	95 - 100	157.5	1.8E-05
		Core	106	130.4	5.1E-06
		Core	121	134.8	3.0E-06

Permeability test (ASTMD5084) performed by MACTEC Engineering and Consulting, Inc

Table 26. **Lithologic Description**

Site: GRU F-6 **Well ID:** A-0402

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
4	6	SPT	4 8 9 6	**Sand,** pale yellowish brown, fine – medium [wet]	50
6	8	SPT	8 9 12 7	**Sand,** pale yellowish brown, fine – medium, some silt	95
8	10	SPT	14 11 14 12	**Sand,** pale yellowish brown, fine – medium, some silt	70
10	12	SPT	7 11 24 20	**Sand,** clayey, very pale yellowish brown, fine – medium [tos] **Sand,** very pale yellowish brown, fine – medium [bos]	50
12	14	SPT	14 20 20 23	**Sand,** clayey, very pale yellowish brown, fine – medium	80
14	16	SPT	3 4 6 4	**Clay**, very light olive gray, stiff [tos] **Sand**, clayey, light olive gray, fine – medium [bos]	50
16	18	SPT	4 8 5 8	**Sand**, clayey, light olive gray, fine - medium	90
18	20	SPT	4 5 6 6	**Sand**, clayey, very light olive gray, fine - medium	100
20	22	SPT	5 5 2 2	**Sand**, clayey, silty, very light olive gray, fine - medium	50
22	24	SPT	2 6 7 2	**Sand**, clayey, silty, very light olive gray, fine - medium	100
24	26	SPT	2 2 2 2	**Limestone** grading to Clay, very pale orange, micritic, poorly indurated, some heavy minerals	90
26	28	SPT	1 2 5 5	**Limestone** grading to Clay, very pale orange, micritic, poorly indurated, some heavy minerals	60
28	30	SPT	8 10 12 8	**Limestone** grading to Clay, very pale orange, micritic, poorly indurated, some heavy minerals	70
30	32	SPT	2 2 4 8	**Limestone** grading to Clay, very pale orange, micritic, poorly indurated, some heavy minerals	70
32	34	SPT	15 40 50-3	**Limestone** grading to Clay, very pale orange, micritic, poorly indurated, some heavy minerals	100
34	36	SPT	17 10 16 16	**Clay**, pale yellowish gray, stiff, some dolomitization, heavy minerals	100
36	38	SPT	7 7 12 16	**Limestone** grading to Clay [silty, lime mud], yellowish gray, micritic, poorly indurated, some heavy minerals	100
38	40	SPT	20 30 50 -2	**Limestone** grading to Clay [silty, lime mud], yellowish gray, micritic, poorly indurated, some heavy minerals	100
40	42	SPT	40 50-5	**Clay,** very pale gray, hard, phosphatic [tos] **Clay,** very pale gray, hard, phosphate pebbles, heavy minerals [bos]	60
42	44	SPT	20 25 28 40	**Clay,** very pale gray/ orange, hard, limestone, very pale gray/ orange, poorly indurated, some dolomitization, phosphatic, heavy minerals	90
44	46	SPT	28 50-6	**Clay,** very pale gray/ orange, hard, limestone, very pale gray/ orange, poorly indurated, some dolomitization, phosphatic, heavy minerals	60
46	48	SPT	15 16 25 30	**Clay,** olive gray, hard, phosphatic, heavy minerals	100
48	50	SPT	38 50-6	**Clay,** olive gray, hard, phosphatic, heavy minerals	90
50	55	Core	-	**Clay,** sandy, greenish gray, hard, some dolomitization, indurated, calcite infilling, phosphatic, heavy minerals	100
55	60	Core	-	**Clay,** sandy, olive/ yellowish gray, stiff, phosphatic, heavy minerals [high % phosphate, some pebble size]	100
60	65	Core	-	**Clay,** very light gray, hard, some dolomitization, phosphatic, heavy minerals	100
65	70	Core	-	**Clay,** greenish gray, stiff, phosphatic, heavy minerals	50
70	75	Core	-	**Clay,** sandy, greenish gray, stiff, phosphatic, heavy minerals	100
75	80	Core	-	**Dolostone,** light gray, indurated, clay lenses, greenish gray, stiff	50

Table 26. **Lithologic Description**

Site: GRU F-6 **Well ID:** A-0402

Samples Described By: L. Nelms

From	To	Sample Method	Blow Count	Lithology	Return %
80	85	Core	-	**Clay,** dark greenish gray mottled with light green, stiff	30
85	90	Core	-	**Clay,** dark greenish gray, hard, dolostone lenses, light gray, indurated	100
90	95	Core	-	**Clay,** dark greenish gray, hard, dolostone lenses, light gray, indurated, calcite infilling	100
95	100	Core	-	**Clay,** dark greenish gray, hard, dolostone lenses, light gray, indurated, calcite infilling	100
100	105	Core	-	**Clay,** sandy, very light gray, hard, phosphatic, heavy minerals [tos] **Sand,** clayey, silty, very light gray, fine-coarse, heavy minerals [bos]	100
105	110	Core	-	[**Sand,** clayey, silty, very light gray, fine-coarse, heavy minerals	100
110	115	Core	-	**Clay,** greenish black, hard [toc] **Sand**, light gray, clayey, silty, heavy minerals [boc]	100
115	120	Core	-	**Dolostone**, gray, gastropod molds [tos] **Limestone**, very pale orange, fossiliferous, lepidocyclina [top of rock @ 119 ft bls] [bos]	100

*[tos] top of spoon [bos] bottom of spoon [toc] top of core [boc] bottom of core [moc] middle of core

Table 27. **Testhole Abandonment Data**

Site: GRU F-6 **Testhole ID:** A-0402

DATE	TAG DEPTH (ft)	ANNULUS/ BORE (inch)	QUANITY (yds/bags)	MATERIAL	COMMENTS
09/30/04	120	B-4	12 bgs 2 bgs 3 bgs	P-94 Bentonite Quick Gel	Abandon testhole

***Permeability**

Table 28.

MONITORING WELL		Collection Method	Sample Depth (ft, bls)	Wet Density (lb/ft^3)	Coefficient Of Permeability (cm/sec)
Site	Well ID				
GRU F-6	A-0402	SPT	14 - 16	123.9	2.1E-08
		Core	34 - 36	136.7	3.5E-08
		Core	100 - 101	113.8	7.1E-08
		Core	116	139.3	4.1E-05

Permeability test (ASTMD5084) performed by MACTEC Engineering and Consulting, Inc

GRU Section 9

WORKSHOP SUMMARY

GRU CUP RENEWAL MEETING MINUTES

JONES EDMUNDS

PURPOSE:	Kick-off GRU's CUP Renewal
MEETING DATE:	October 23, 2012
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- David Richardson, Tony Cunningham, Rae Hafer, Rick Hutton SJRWMD – Mike Register, Carl Larrabee SRWMD – Tim Sagul GIS Associates – Rich Doty, Jason Teisinger Jones Edmunds – Brett Goodman

The following is a summary of the discussion and action items from the meeting:

Item	Action	Description
1	Info	David provided a summary of the public outreach completed by GRU pr the meeting. GRU has met with several agencies, local commissions interested stakeholders to present their renewal approach. GRU has rec valuable input and a favorable reaction to the approach.
2	Info	Tony gave a presentation on GRU's water supply that outlined the topics addressed and the general renewal approach. GRU would like to extend current permit allocation with a 20-yr duration and the flexibility to additional allocation or extended time.
3	Info	GRU would like to set up monthly meetings on the 2nd Wednesday from 1 4:30 pm at GRU to work through all the issues prior to submittin application. Mike and Tim acknowledged that the proposed meetings progression is consistent with how the Districts would like to proceed. indicated that SJRWMD would be the lead and would be responsible for c coordinating with SRWMD. The schedule to submit the application is esti to be in April or May 2013.
4	Action GRU	Tony will schedule the first meeting in November.
5	Info	The water management district staff will include Carl from SJRWMD and Carlos Herd and Kevin Wright from SRWMD. Mike and Carl will let know who will be the lead reviewer from SJRWMD.

GRU Water Supply

GRU100
100 YEARS of SERVICE | 1912-2012

GRU Background

- GRU supplies public water and provides wastewater treatment for City of Gainesville and portions of Alachua County
- GRU serves approximately 189,000 people as well as UF, area hospitals and business
- GRU serves ~3/4 of the population of Alachua County
- GRU within both SJRWMD and SRWMD boundaries

GRU100
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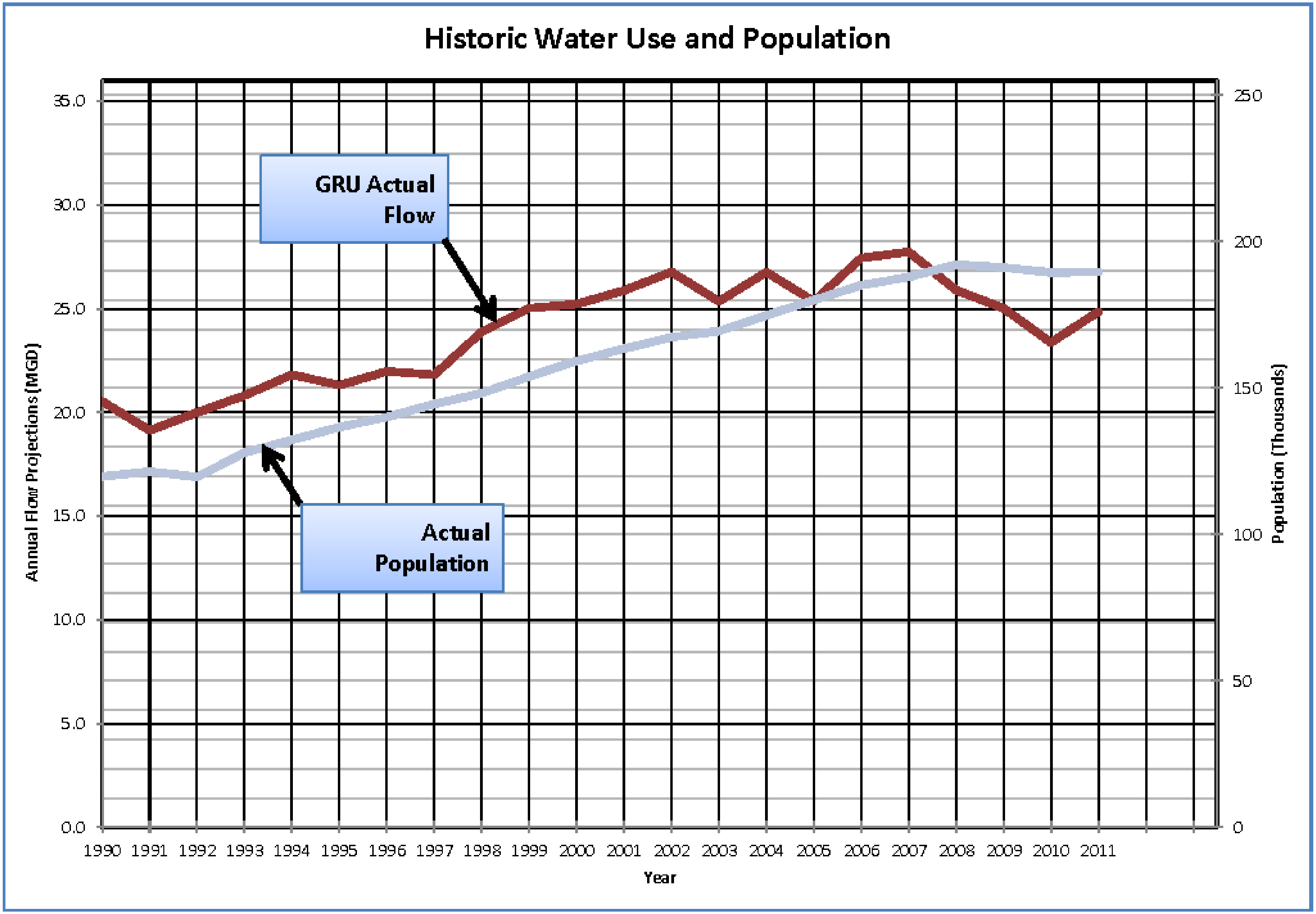
GRU Water Philosophy – The 3 R's

- **Reduce** – Continue to promote/encourage water conservation
- **Reuse** – Continue to promote/encourage reclaimed water use for irrigation & cooling towers as potable water offset
- **Recycle** – Continue to beneficially recycle water to the Floridan Aquifer through recharge

GRU 100

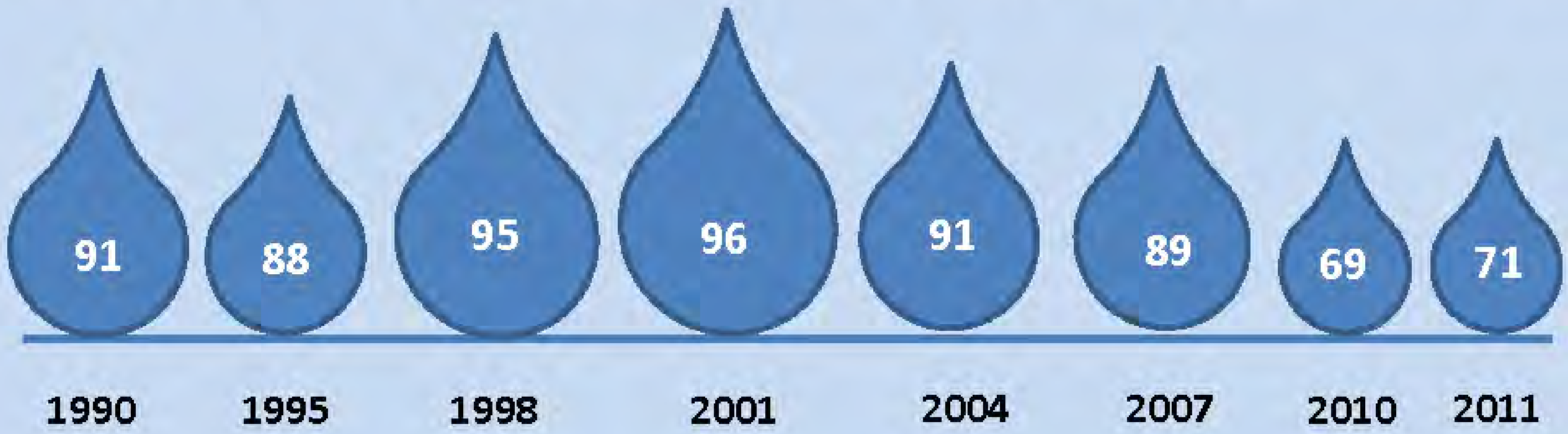
100 YEARS of SERVICE | 1912-2012



Historic Water Use and Population
GRU Actual Flow
Actual Population
Annual Flow Projections (MGD)
Population (Thousands)
Year
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
250
200
150
100
50
0
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

Reduce - Water Conservation

Gainesville and Vicinity Public Water Supply – Residential Use



Average gallons used per person per day.

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Reuse – Reclaimed Water

Residential & Golf Course Irrigation

- Residential reclaimed water irrigation offsets potable water use
- Golf course reclaimed water irrigation eliminates groundwater use

GRU South Energy Center at Shands

- Reclaimed water used for cooling in chilled water production.
- Shands uses reclaimed water for irrigation.

Reuse Incentives for New Development

- RCW Service Area

GRU100

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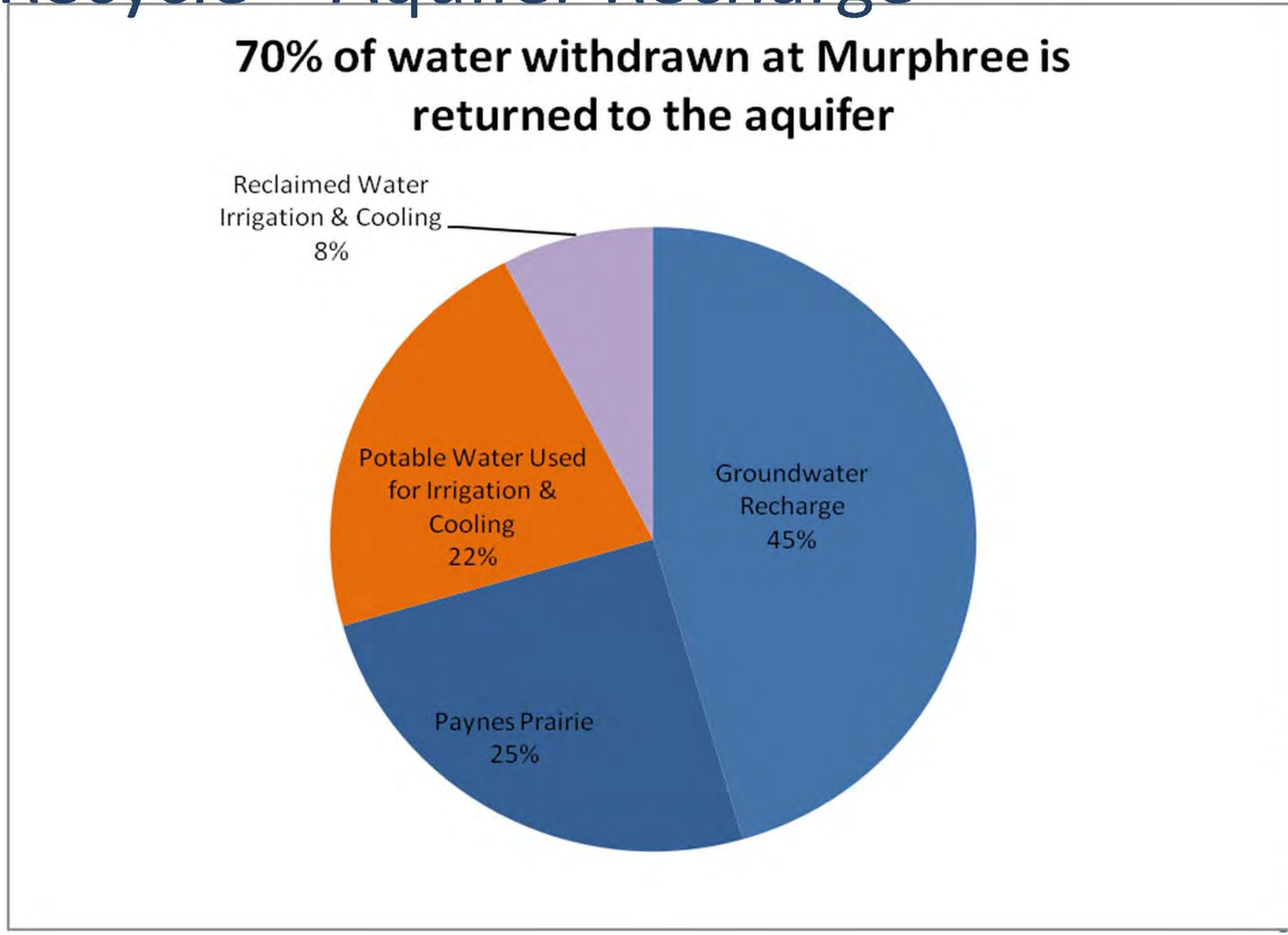
Recycle – Aquifer Recharge



Consumptive Use Permit

- Current CUP issued by SJRWMD in August 2009 and expires in August 2014
  - Allocation = 30 mgd
- SJRWMD issued current CUP
- Sole permitting authority must reside with one WMD, but GRU will work closely with both Districts throughout process

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Preliminary Water Demand

- SRWMD regional water supply assessment projects GRU 2030 year water supply needs of 36.345 MGD (low range)
- SJRWMD regional water supply plan projects GRU 2030 year water supply needs of 31.79 MGD.
- Preliminary 2032 demand ~32.7 mgd, using 5-year average per capita

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Plan for CUP Renewal (developing)

- GRU working with SRWMD and SJRWMD staffs
- Looking at meeting most future need with existing Floridan aquifer allocation using conservation & expanded reclaimed water
- Propose extending/renewing the existing 30 mgd CUP another 20 years

Plan for CUP Renewal (developing)

- Need means to increase allocation in future if necessary without environmental impacts.
- Potential means:
  - Offset golf course, agricultural or industrial groundwater use with reclaimed water
  - Partner with agriculture for additional conservation reducing/eliminating groundwater use

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Coordination

- SJRWMD issued current CUP
- Sole permitting authority must reside with one WMD, but GRU will work closely with both Districts throughout process
- Existing Interlocal Agreement
- How do we ensure both SJRWMD & SRWMD involved throughout permitting process?

GRU 100 YEARS of SERVICE | 1912-2012

Pre-Application Topics

- Demand Projections
- Water Conservation
- Reclaimed Water
- Groundwater Models
- Surfacewater Models
- Minimum Flows and Levels (MFLs)
- Wetlands, Other Legal Users
- Application Package

GRU 100
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Scheduling

- Dates/Times
  - Monthly Meetings
  - 2nd Wednesday of every month?
  - 1:30 to 4:30 pm?
- Location
  - Centrally located (GRU)
  - Rotate Districts
  - Teleconferencing

Next Steps

- Receive latest/greatest available data on projected population
- Confirm consistency of historic water use and service area boundary
- Finalize date/time/location of future meetings
- GRU to distribute November meeting agenda

Questions

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GRU CUP RENEWAL
MEETING MINUTES

JONES EDMUNDS

PURPOSE: GRU's CUP Renewal Workshop No.2

MEETING DATE: December 12, 2012

LOCATION: GRU Administration Building

PARTICIPANTS: GRU- Tony Cunningham, Jenn McElroy, Rae Hafer, Rick Hutton
SJRWMD – Carl Larrabee, Jay Lawrence
SRWMD – Tim Sagul, Kevin Wright
GIS Associates – Rich Doty, Jason Teisinger
Liquid Solutions Group – Rob Denis
Jones Edmunds – Brett Goodman

The following is a summary of the discussion and action items from the meeting. The presentation and sign-in sheet are attached to the end of the meeting minutes:

Item	Action	Description
1	Info	Tony opened up the meeting with introductions and described GRU's permitting approach. GRU's requested renewal process is to hold regular meetings with both Water Management Districts to answer and resolve all the permitting questions before submitting the renewal application. As part of this process, it is important that we get agreement on each topic before we move on so we avoid inefficiencies and requests for information after the permit is submitted. This meeting is to get agreement on the approach used for the following: • Population Projections • Water Demand Projections • Water Conservation Estimates • Reclaimed Water Estimates • Permitting approach to deal with requested allocation
2	Info	**Population and Water Demand Projections** - Rich presented the approach and preliminary (subject to revision) estimates of population and water demands: • The population is based on the District's estimates with reasonable modifications that have been applied in the past for CUP permitting. • The baseline demand is modified to account for demands during drier conditions and is reduced to account for additional water conservation and reclaimed water use. • GRU's requested amount will be held at 30 MGD, however the demonstrated need is higher.

- Since there is a gap between the demonstrated need and the requested allocation, GRU will be requesting the ability to condition the permit to achieve the demonstrated need above 30 MGD if it can mitigate the additional demands through measures like enhanced recharge, reclaimed water, regional partnerships, etc. GRU would like to remain flexible since it has not identified the most cost effective approach to mitigate the potential withdrawals above 30 MGD.
- We are assuming that using the District population is okay with both Districts.
- We are assuming that once the population and demand projections are accepted (January or February 2013), they will be final and will become the basis of all future modeling. We want to avoid changes that could result from future updates by the Water Management Districts.

3	**Action Item (Rich)**	Rich and GRU are still finalizing numbers and will provide population and demand projections to District for review next week.
4	**Action Item (Jay)**	Once Jay receives information from Rich, he will discuss the approach with Tammy Bader.
5	Info	**Conservation -** Jenn summarized GRU's conservation programs: • GRU has been very active with water conservation as indicated by the changes customer water usage. • New homes are using more water than older homes. The increase is attributed to more outdoor irrigation. GRU is currently conducting a pilot study on the effectiveness of soil moisture sensors. • GRU is currently piloting several other initiatives • GRU has made significant contributions to the development of Conserve Florida EZ Guide.
6	Info	**Conservation –** Rob summarized GRU's approach to quantifying the potential for future water conservation savings: • GRU recommends using the Conserve Florida EZ Guide as the basis of estimating future water conservation savings with assumptions that have been developed as part of the Central Florida Water Initiative (CFWI). • Rob presented the background on the EZ Guide and the CFWI assumptions. • Kevin noted that SRWMD is familiar with the EZ Guide and its application. • We discussed that not all water user's start from the same place regarding conservation. Through existing programs and aggressive rates, GRU has already achieved significant savings. The historic water savings will be accounted for in the estimate of future water savings. • We discussed the business challenges with conservation – raising rates can have unanticipated impacts like increased water demands from

JONES EDMUNDS

- private irrigation wells and decreasing revenues. Effective conservation must include the financially aspects of utility services.
- GRU will use the result of the analysis to quantify the amount of savings that will be used in demand estimates. Since conservation techniques and technologies can change, GRU wants to remain flexible with how they achieve the conservation goal.

7	**Action Item (Rob)**	Rob will provide an explanation of the modification to the Conserve Guide used for the CFWI.
8	**Action Item (Jay)**	Jay will get more familiar with the EZ Guide and the assumptions made for CFWI by following up with Don Brandes.
9	Info	**Reclaimed Water** - Rick provided a summary of the GRU reclaimed water programs. • GRU's program emphasizes resource protection and enhanced recharge. Roughly 70% of the groundwater withdrawn by GRU ends up as aquifer recharge. All of the reclaimed water is used beneficially. • They have recently started charging customers based on volume used which has had an impact on the amount of reclaimed water being used. • A future customer for both reclaimed and potable service is the Innovation District. There is significant development already happening and more planned in the future. We agreed that it would be important to show how this development impacts the growth and that it would not follow traditional growth projections. • GRU has a unique water budget and needs flexibility to pursue options with reclaimed water that have the greatest net positive benefit for its customers. • Quantifying the net positive of recharge will likely come up during the review of environmental constraints.
10	Info	**Dealing with Uncertainty** – The demonstrated needs is greater than the proposed allocation of 30 MGD. The District is open to conditioning permit to accommodate demands greater than 30 MGD. Jay gave some examples of how the permit could be conditioned depending on the circumstances.
11	Info	The review teams will likely include the following Water Management District staff: <u>Population and Demand</u> Tammy Bader Tim Sagul and Kevin Wright <u>Environmental</u> Lance Hart Eric Marzolf <u>Groundwater Modeling</u>

Trey Grubbs
Doug Hearn

12	**Action SRWMD (Tim)**	Tim mentioned that SRWMD may bring the MOU delegating SJRWMD as the primary reviewer of the permit to their board in January. Tim will notify GRU if this gets put on the SRWMD Board agenda.
13	**Action SJRWMD (Jay) / SRWMD (Tim)**	GRU is looking to prepare final population and demand projections at the January 9th meeting and needs feedback from District staff on the proposed methods and approach by December 28th. GRU will be providing updated demands projections to SJRWMD by December 21st.
14	Info	We discussed the proposed permitting process and that GRU wants to get approval on the population and demand projections prior to moving forward with any modeling or additional analyses.
15	Info	Carl mentioned that process being followed is desirable by the Water Management Districts and discussed the possibility of using this permit as a case study for the governing board to hear about as the permit gets closer to finalization.
16	**Action Item (Brett)**	Brett will include a schedule of meeting and topics with the meeting minutes.

GRU CUP Permit Renewal Meeting Schedule

Date*	Proposed Topic
December 12	Population, Demand, Conservation, & Reclaimed Water Projection Approaches
January 9, 2013	Population, Demand, Conservation, & Reclaimed Water Projection Estimates
February 13, 2013	Groundwater and Surface Water Modeling Approach
March 13, 2013	Wetlands and Non-MFL water-bodies, Other Legal Users
April 10, 2013	Minimum Flow and Levels
May 8, 2013	Offsets and Substitutions
June 12, 2013	Proposed conditions and application development
July 10, 2013	Finalize application

* Subject to change based on progress

Gainesville Regional Utilities
CUP Workshop No. 1
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: December 12, 2012
LOCATION: GRU – Admin Building
PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
Brett Goodman	Jones Edmunds	bgoodman@jonesedmunds.com	352-377-5821
Rick Doty	GIS ASSOCIATES	rdoty@gis-associates.com	352-246-8028
Rae Hafer	GRU	haferra@gru.com	352-393-1635
Rob Denis	Liquid Solutions	rob@lsgfl.com	407 349 3900
Kevin Wright	SRWMD	KLW@SRWMD.ORG	386-362-1001
Tim Sagul	SRWMD	tjs@srwmd.org	386-362-1001
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386-329-4205
CARL LARRABEE	SJRWMD	clarrabee@sjrwmd.com	(386) 329.4222
Rick Hutton	GRU	huttonrh@gru.com	352 393 1218
Jennifer McElroy	GRU	mcelroyja@gru.com	352 393 1291

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Jason Teisinger	GIS Associates	jteisinger@gis-associates.com	

GRU CUP Renewal
Outline of Methodology for Calculation of Water Conservation Potential
DRAFT 12-18-12

Introduction
This document is intended to provide an outline of the proposed framework for use of the Conserve Florida Water EZ Guide to produce an estimate of water conservation potential for GRU. Changes to the EZ Guide are proposed to be kept to a minimum to retain the integrity of the model and the documentation of this work. However, modifications and adjustments required to address factors that have not yet been incorporated into the EZ Guide are proposed as documented below.

There are two types of changes proposed: 1) changes to the EZ Guide configurable parameters and 2) adjustments to the EZ Guide output. For changes to the EZ Guide configurable parameters, a detailed description of the changes is provided below organized by EZ Guide module and tab.

STEP 1: Change EZ Guide Configurables (highlighted)

Water Supply Analysis Module>>Other Water Supply Data

Water Production Cost

Water Production Cost ($/kgallon)
$3.00

This change causes the EZ Guide to display a $3/kgal cost effectiveness limit in the solutions graphics. However, this value is not actually used in EZ Guide calculations.

BMP Analysis Module>>Single Family BMPs

Attributes of Single Family Residential Indoor Fixtures

Fixture Level	Toilets gal/flush	Clothes Washers gal/load	Showerheads gal/min	Faucets gal/min
Conventional	1.60	36.0	1.85	1.5
Better	1.59	35.9	1.84	1.5
Best	1.28	25.2	1.70	1.5

Total Utility Cost per Fixture

Fixture Level	Toilets	Clothes Washer	Showerheads	Faucets
Conventional	200	500	20	15
Better	1,000	1,000	100	100
Best	250	625	22.50	17.50

These proposed changes result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly. The "Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

BMP Analysis Module>>Single Family Outdoor BMPs

Attributes of SF Outdoor Devices

Device or Practice	Average Savings Rate (gal/1,000 ft^2/day)
Soil Moisture Sensors	24.19
Non Potable Irrigation System (e.g. Reuse)	0.0
Irrigation Audit	5.69

Total Device Cost per Implementation

Device or Practice	Device Cost ($/$ft^2$)
Soil Moisture Sensors	0.10
Non Potable Irrigation System (e.g. Reuse)	1,000
Irrigation Audit	0.06

Reuse Offset Credit

Non Potable Offset Credit (%)	Reuse Accessibility (%)
0	0

These changes effectively eliminate Reuse from being considered as an option in the EZ Guide. Reclaimed water reuse and the associated offset is being incorporated into GRU's permit application package separately from the EZ Guide.

BMP Analysis Module>>Multi-Family BMPs

Attributes of Multi Family Residential Indoor Fixtures

Fixture Level	Toilets gal/flush	Clothes Washers gal/load	Showerheads gal/min	Faucets gal/min
Conventional	1.60	36.0	1.85	1.5
Better	1.59	35.9	1.80	1.5
Best	1.28	25.2	1.70	1.5

Total Utility Cost per Fixture ($)

Fixture Level	Toilets	Clothes Washer	Showerheads	Faucets
Conventional	200	500	20	15
Better	1,000	1,000	100	100
Best	250	625	22.50	17.50

These proposed changes result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly. The "Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

BMP Analysis Module>>CII BMPs

Attributes of CII BMPs

Fixture Level	Toilets gal/flush	Urinals gal/flush	Faucets gal/min	Showerhead gal/min	Pre-rinse spray valves gal/min	Water audit
Conventional	1.60	1.00	0.5	2.20	1.60	0.15
Better	1.59	0.90	0.5	2.19	1.59	0.15
Best	1.28	0.50	0.5	2.00	1.25	0.15

Total Utility Cost per Fixture ($)

Fixture Level	Toilets	Urinals	Faucets	Showerheads	Pre-rinse spray valves	Water Audit $/ft^2
Conventional	150	320	45	30	50	0.27
Better	1,000	1,000	100	100	50	0.27
Best	180	375	55	31	60	0.27

These proposed changes result in the EZ Guide effectively comparing the "Conventional" and "Best" options because the "Better" option is rendered too costly. The "Conventional" option is at or slightly better than current building code standards. The "Best" options generally represent minimum WaterStar eligible levels of efficiency.

STEP 2: EZ Guide Calculations

After completing the input changes described above, the EZ Guide will execute an algorithm to compute maximum potential water savings. The results will be presented as two curves of cumulative BMP water savings (kgal/day) and a summary table as follows (no values included). Detailed tables for each BMP are also developed.

BMP Summary Information

BMP Type	Optimum Number of Implementations	Cost of Implementation	Total Savings Gallons/Day	Total Savings Gross GPCD
Toilet				
Residential				
Commercial				
Urinal				
Clothes Washer				
Showerhead				
Residential				
Commercial				
Faucet				
Residential				
Commercial				
Pre-rinse Spray Valve				
Water Audit				
Soil Moisture Sensor				
Non Potable Irrigation System (eg. Reuse)				
Irrigation Audit				
Total				

STEP 3: Adjust EZ Guide Results

The EZ Guide calculates the total potential water conservation given four main assumptions:

1) No cost effectiveness limitation
2) Savings are based on EZ Guide population and demand estimates
3) A 100% participation rate is assumed
4) No existing water conservation practices are incorporated

These assumptions drive the EZ Guide towards calculation of maximum water conservation levels with minimal regard for feasibility. Adjustments to the EZ Guide results must be made to allow for the water conservation savings to be achievable as discussed below.

Cost Effectiveness Limitation

The EZ Guide should be adjusted such that only programs below an acceptable cost effectiveness limitation are included in the water conservation calculations. In line with SWFWMD Regional Water Supply Plans, it is proposed that $3.00/kgal be used. This value is also a reasonable feasibility limit for GRU at this time.

Population/Demand Adjustment

For residential indoor BMPs, it is proposed that the estimated water conservation potential be adjusted by the ratio of the estimated 2011 population to the EZ Guide estimated population as follows:

$$Adjusted\ SF/MF\ Indoor\ Potential = EZGuide\ SF/MF\ Indoor\ Potential * \frac{2011\ population}{EZGuide\ population}$$

For other BMPs, it is proposed that the estimated water conservation potential be adjusted by the ratio of the actual 2011 demand/flow shown in the EZ Guide to the EZ Guide estimated demand as follows:

$$Adjusted\ Outdoor/CII\ \ Potential = EZGuide\ Outdoor/CII\ Potential * \frac{2011\ actual\ flow}{EZGuide\ 2009\ flow}$$

Participation Rate

The adjusted water conservation potential is subject to an achievable saturation rate. SWFWMD has previously used 23% for fixture replacement programs, 12.5% for programs that require a site visit, and 40% for water budgets. These values are also reasonable feasibility limits for GRU at this time. Most BMPs would be subject to the 23% rate, but the CII audit and Irrigation Audit programs would be subject to the 12.5% rate.

Previous Water Conservation

The EZ Guide currently does not factor in existing water conservation programs or passive replacement that may have occurred faster than their estimates. Previous replacements by GRU were subtracted from the estimated BMP potential.

STEP 4: Calculate Potential Water Savings Rate

As described above, the adjustment of EZ Guide results will lead to an estimated potential water savings in MGD for 2011. The estimated savings in MGD can be divided by actual flows to calculate a savings rate as follows:

$$Percent\ savings\ = \frac{Adjusted\ EZGuide\ Potential\ (MGD)}{2011\ Demand\ (MGD)}$$

A conservative estimate of future potential savings would be to apply this percent savings to future GRU demand projections.

Population & Water Demand Projections, Water Conservation & Reclaimed Water

Pre-application Meeting #2
12/12/12

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Agenda Topics

- Introduction
- Population & Water Demand Projections
- Water Conservation Approach
- Reclaimed Water Approach
- Ability to increase groundwater use with accompanying offsets in future

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Population & Water Demand Projections

Pre-application Meeting #2
12/12/12

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Population and Water Demand Projections

- Population Projection Data & Methods
  - Historic (2007-2011) served residential units and population from GRU billing database
  - Added population growth (projected by SJR) to estimated served population to derive population projections
    - Added 0.68% Seasonal Population (from Census)
    - Converted 1% of SJRWMD's estimated DSS population to PS each year
      - GRU will connect free within City limits

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Population and Water Demand Projections

- Water Demand Projection Data & Methods
  - Based on the five-year historic average (2007-2011) per capitas (for each water use category) from GRU's Table 1
  - Multiplied projected population by above per capitas to derive baseline forecast of future water demand through 2033
  - Reduced baseline forecast with additional future conservation efforts and potable offsets to new reclaimed water users

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Population and Water Demand Projections

- Draft Table 1

Past Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day (mgd) w/o UF	UF Avg. Day (mgd)	Commercial/ Industrial Avg. Day (mgd)	Public Use Irrigation Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility (mgd)	Unaccounted for Water (mgd)	Total Avg. Day (mgd)	Reclaimed Potable Offset Avg. Day (mgd)	Groundwater Avg. Day (mgd)
2007	187,911	80,787	89	16.69	7.23	2.51	9.73	0.23	0.02	0.90	1.01	28.58	0.83	27.75
2008	192,203	82,703	76	14.68	7.24	2.82	10.06	0.23	0.00	0.86	0.91	26.75	0.85	25.90
2009	191,189	82,338	72	13.78	6.75	2.71	9.46	0.23	0.00	0.72	1.81	25.99	0.96	25.03
2010	189,495	81,679	69	13.10	6.12	2.39	8.51	0.23	0.00	0.70	1.71	24.26	0.89	23.37
2011	189,715	81,842	75	14.26	6.22	2.28	8.50	0.23	0.00	1.37	1.54	25.90	1.04	24.86

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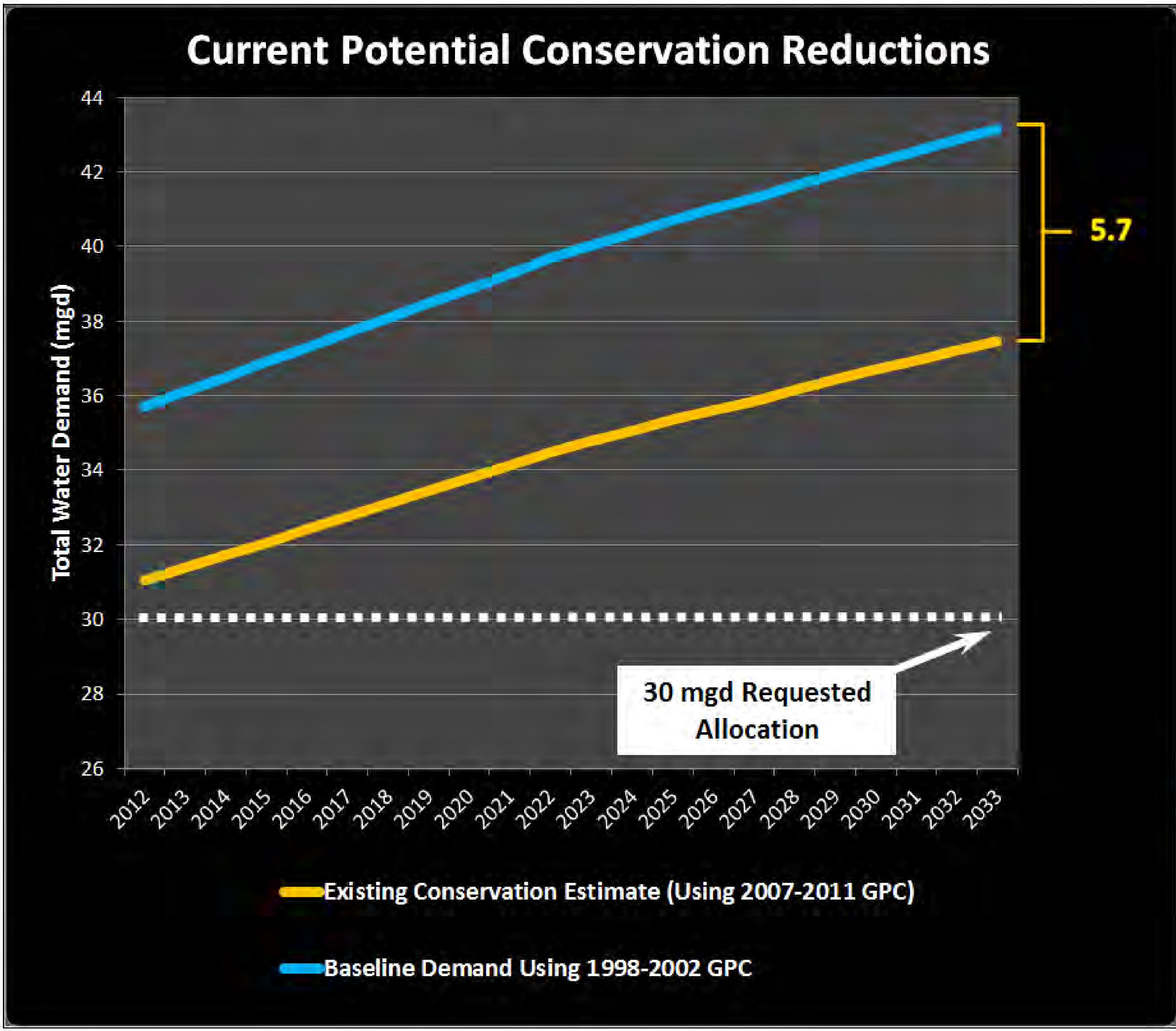

Current Potential Conservation Reductions
Total Water Demand (mgd)
44
42
40
38
36
34
32
30
28
26
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
5.7
30 mgd Requested Allocation
Existing Conservation Estimate (Using 2007-2011 GPC)
Baseline Demand Using 1998-2002 GPC

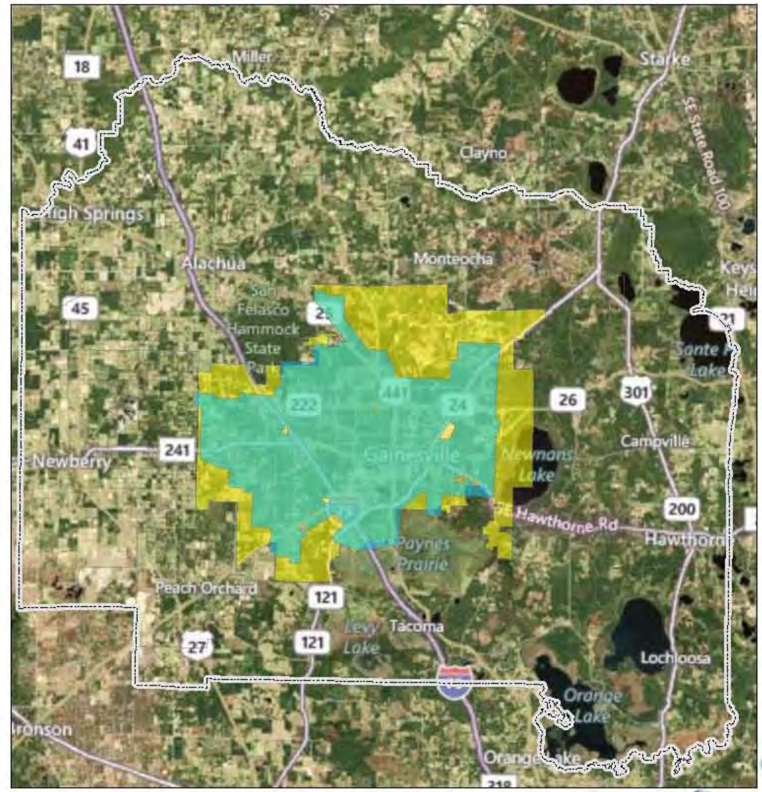
Population and Water Demand Projections

- Draft Table 2 – Current Conservation & RCW Offsets

Future Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Historical Commercial / Industrial Avg. Day (mgd) w/o UF	UF Avg. Day (mgd)	Net Increase in i-District Avg. Day (mgd)	Total Commercial / Industrial Avg. Day (mgd)	Public Use Irrigation Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility Avg. Day (mgd)	Unaccounted for Water (mgd)	Total Avg. Day (mgd)	Historical Reclaimed Potable Offset Avg. Day (mgd)	Groundwater Avg. Day with Drought Factor (mgd)	Requested Groundwater Allocation Avg. Day (mgd)
2012	191,774	82,730	76	14.63	7.31	2.84	0.00	10.15	0.23	0.00	1.38	2.93	29.34	0.91	30.13	30.00
2013	193,833	83,619	76	14.79	7.38	2.84	0.05	10.27	0.24	0.00	1.39	2.97	29.66	0.91	30.47	30.00
2014	195,892	84,507	76	14.95	7.46	2.84	0.09	10.39	0.24	0.00	1.40	3.00	29.98	0.91	30.81	30.00
2015	197,951	85,395	76	15.11	7.53	2.84	0.14	10.51	0.24	0.00	1.41	3.03	30.30	0.91	31.15	30.00
2016	200,061	86,305	76	15.27	7.60	2.84	0.18	10.63	0.24	0.00	1.42	3.06	30.62	0.91	31.49	30.00
2017	202,170	87,215	76	15.43	7.68	2.84	0.23	10.74	0.25	0.00	1.43	3.10	30.95	0.91	31.84	30.00
2018	204,280	88,125	76	15.59	7.75	2.84	0.27	10.86	0.25	0.00	1.44	3.13	31.28	0.91	32.18	30.00
2019	206,389	89,035	76	15.75	7.83	2.84	0.32	10.98	0.25	0.00	1.45	3.16	31.60	0.91	32.53	30.00
2020	208,499	89,945	76	15.91	7.90	2.84	0.36	11.10	0.25	0.00	1.46	3.19	31.93	0.91	32.88	30.00
2021	210,624	90,862	76	16.07	7.98	2.84	0.41	11.22	0.26	0.00	1.47	3.23	32.26	0.91	33.22	30.00
2022	212,748	91,778	76	16.24	8.05	2.84	0.45	11.34	0.26	0.00	1.48	3.26	32.58	0.91	33.57	30.00
2023	214,873	92,695	76	16.40	8.13	2.84	0.45	11.42	0.26	0.00	1.49	3.29	32.86	0.91	33.86	30.00
2024	216,997	93,612	76	16.56	8.20	2.84	0.45	11.49	0.27	0.00	1.50	3.31	33.14	0.91	34.16	30.00
2025	219,122	94,528	76	16.72	8.28	2.84	0.45	11.57	0.27	0.00	1.51	3.34	33.42	0.91	34.45	30.00
2026	220,932	95,309	76	16.86	8.34	2.84	0.45	11.63	0.27	0.00	1.52	3.37	33.65	0.91	34.70	30.00
2027	222,741	96,089	76	17.00	8.40	2.84	0.45	11.70	0.27	0.00	1.53	3.39	33.89	0.91	34.95	30.00
2028	224,551	96,870	76	17.14	8.47	2.86	0.45	11.78	0.27	0.00	1.54	3.42	34.15	0.91	35.23	30.00
2029	226,361	97,651	76	17.27	8.53	2.89	0.45	11.87	0.28	0.00	1.55	3.44	34.41	0.91	35.51	30.00
2030	228,170	98,431	76	17.41	8.60	2.91	0.45	11.96	0.28	0.00	1.56	3.47	34.68	0.91	35.79	30.00
2031	229,838	99,151	76	17.54	8.66	2.93	0.45	12.04	0.28	0.00	1.57	3.49	34.92	0.91	36.04	30.00
2032	231,507	99,871	76	17.67	8.71	2.95	0.45	12.12	0.28	0.00	1.57	3.52	35.16	0.91	36.30	30.00
2033	233,175	100,590	76	17.79	8.77	2.97	0.45	12.20	0.28	0.00	1.58	3.54	35.40	0.91	36.56	30.00

Population and Water Demand Projections

- Uncertainty with 30 mgd
  - Population
    - Future service area expansion
    - Uncertainty with BEBR forecast



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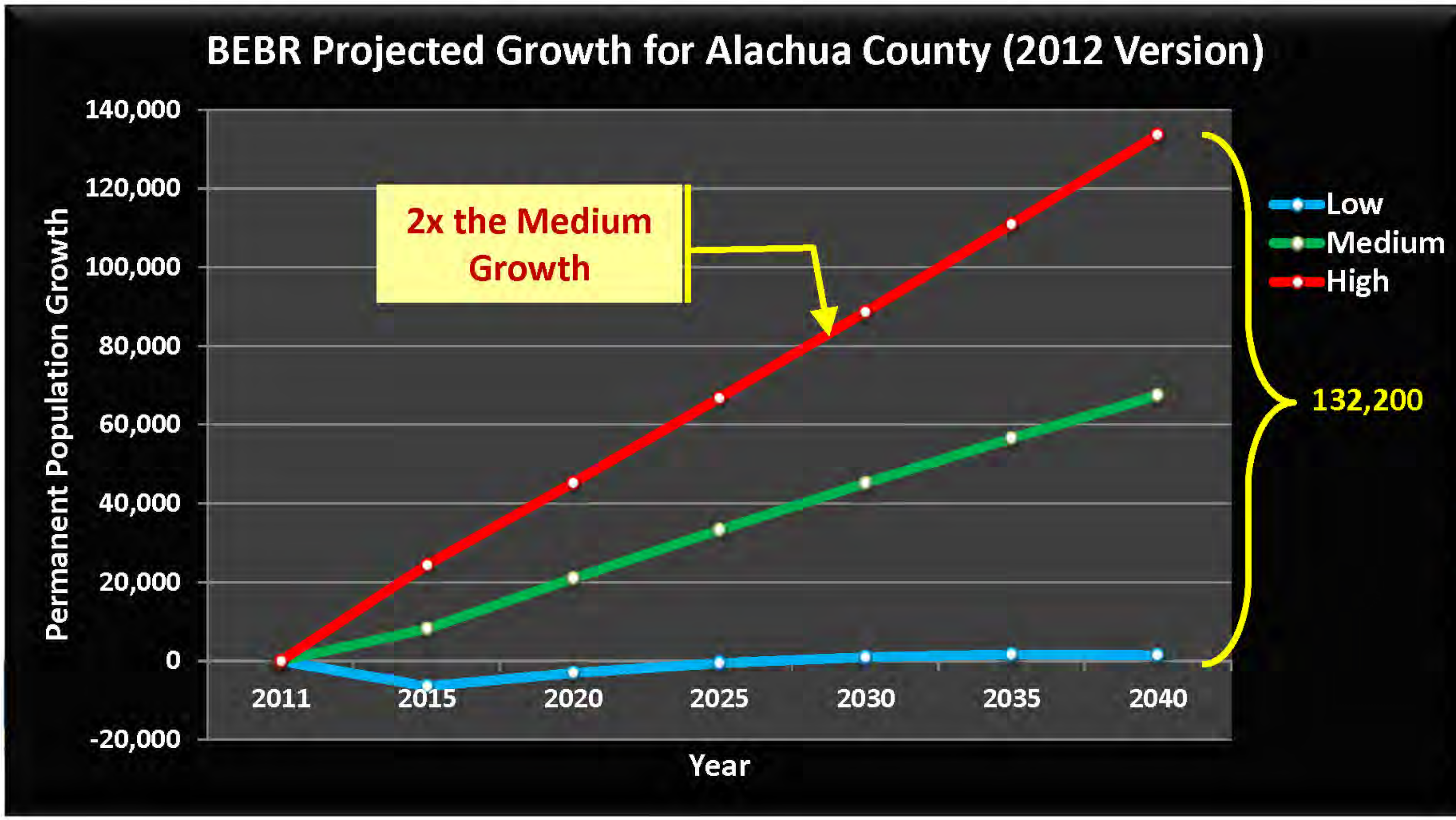
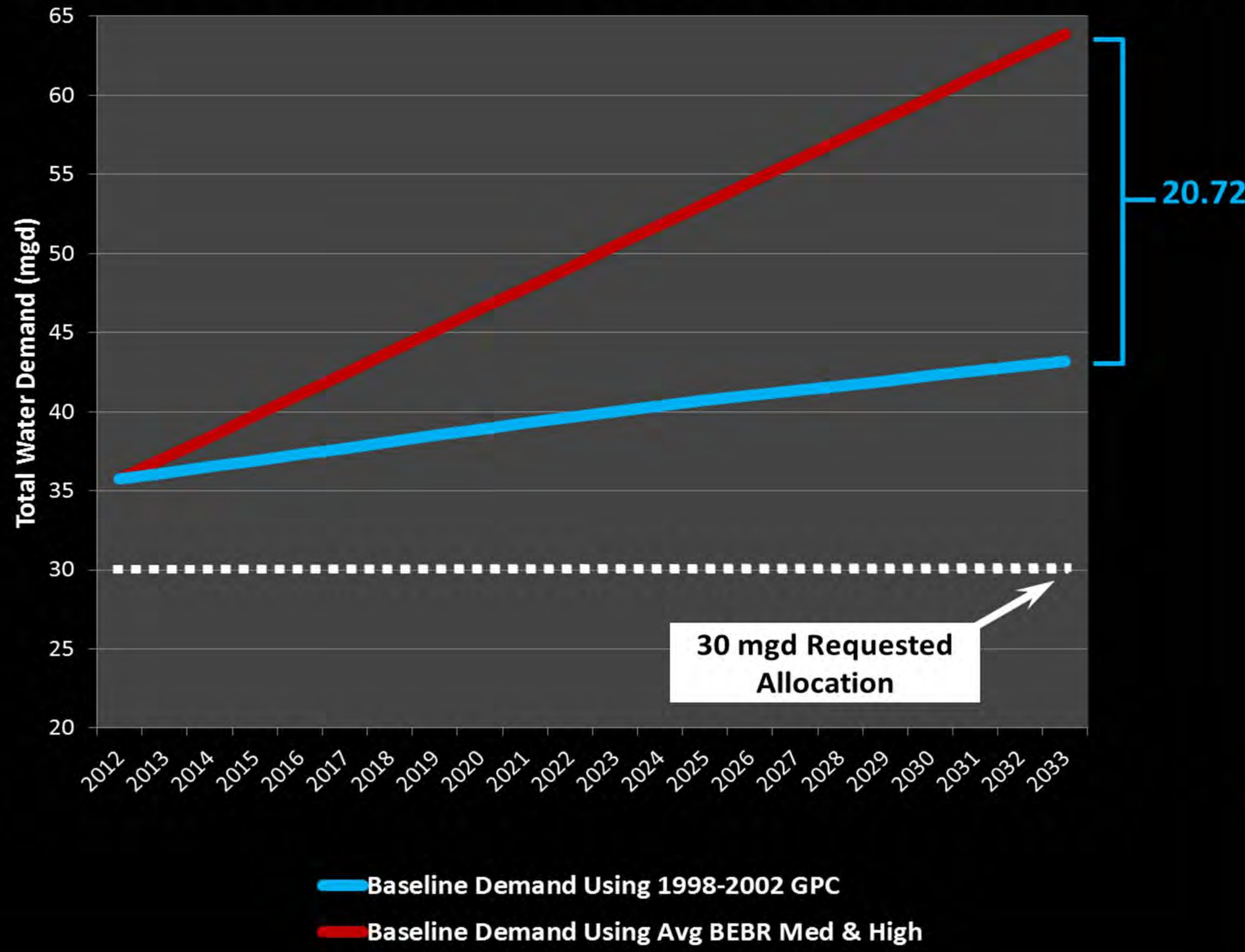
Population and Water Demand Projections

– Significant uncertainty with forecasting growth
  - ~ 25% of counties will experience growth outside the wide range of the BEBR projections



Estimated Demands from Average of BEBR Medium & High



Population and Water Demand Projections

- Uncertainty with 30 mgd
  - Per Capita Water Use
    - Last 5 years historic per capita use may be artificially low due to economic downturn
    - Higher proportion of in-ground irrigation systems in newer developments compared with historic customer base
    - Increase in overall water use for homes built recently
    - Drought year factor

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Water Conservation

Pre-application Meeting #2
12/12/12

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GRU Water Philosophy – The 3 R's

- **Reduce** – Continue to Promote/Encourage Water Conservation
- **Reuse** – Continue to Promote/Encourage Reclaimed Water Use for Irrigation & Cooling Towers as Potable Water Offset
- **Recycle** – Continue to Beneficially Recycle Water to the Floridan Aquifer through Recharge

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Promote Water Conservation

- Residential customers use decreased >25% since 2001
- Water conservation efforts include:
  - Tiered water rates – higher users pay more for potable water
  - High user identification & audits
  - Customer Programs
    - Free water use surveys
    - Irrigation rebates
  - Other programs and pilots: soil moisture sensors, toilet retrofits, kitchen spray nozzles, conservation potential studies
    - Cost share conservation projects with SJRWMD
  - RCW Kgal charge to promote RCW efficient use

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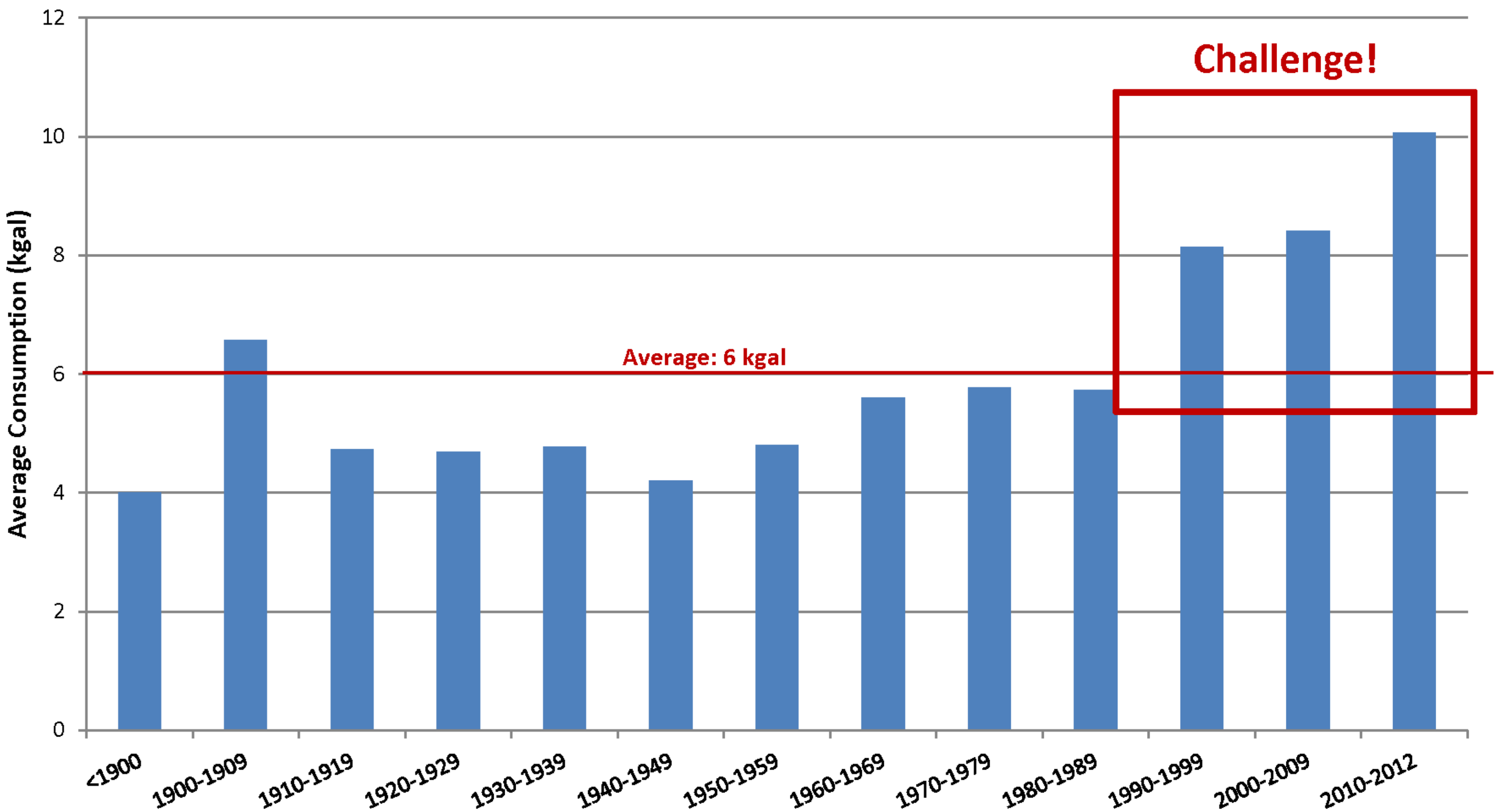
Average SFR Water Consumption from Jan 2009 - Oct 2012 by Year Built



Promote Water Conservation

- The Path Forward
  - Optimizing program effectiveness
    - Matching programs and participants
    - Maximize *sustainable* savings
  - Understanding behavior change
    - SMS Project
    - Current partnerships with UF, AC, BANCF, FFL
    - Focus: outdoor use & **new development**

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Promote Water Conservation

- Partnerships with other agencies
  - SJRWMD
    - Conservation Potential Pilot Study
    - SMS, Toilet Retrofits, Commercial Kitchen Spray Nozzles, RCW Pilots
  - Alachua County
    - Trained staff to perform water surveys
    - DSS Study
    - Water Conservation
    - Develop and Implement Irrigation Ordinances
  - SJRWMD/SRWMD
    - Participating in District Water Supply Planning
    - Water Supply Planning Subcommittees
  - Conserve Florida Water
  - UF, IFAS, FFL
  - FSAWWA/FWEAUC
    - Water Conservation Policy and Incentives

GRU's Historic Conservation

- Many metrics can be applied to calculate historic water conservation efforts
- CUP demands based on:

Year CUP Issued	Residential Per Capita (gpcd)	Gross Per Capita (gpcd)
2001	101	160
2009	90	150

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GRU's Historic Conservation

- Many metrics can be applied to calculate historic water conservation efforts
- CUP demands based on:

Year CUP Issued	Residential Per Capita (gpcd)	Gross Per Capita (gpcd)
2001	101	160
2009	90	150
Current App	75 - 80	135 - 145

- Proposed CUP demands represent significant reductions due to conservation and reclaimed water investment

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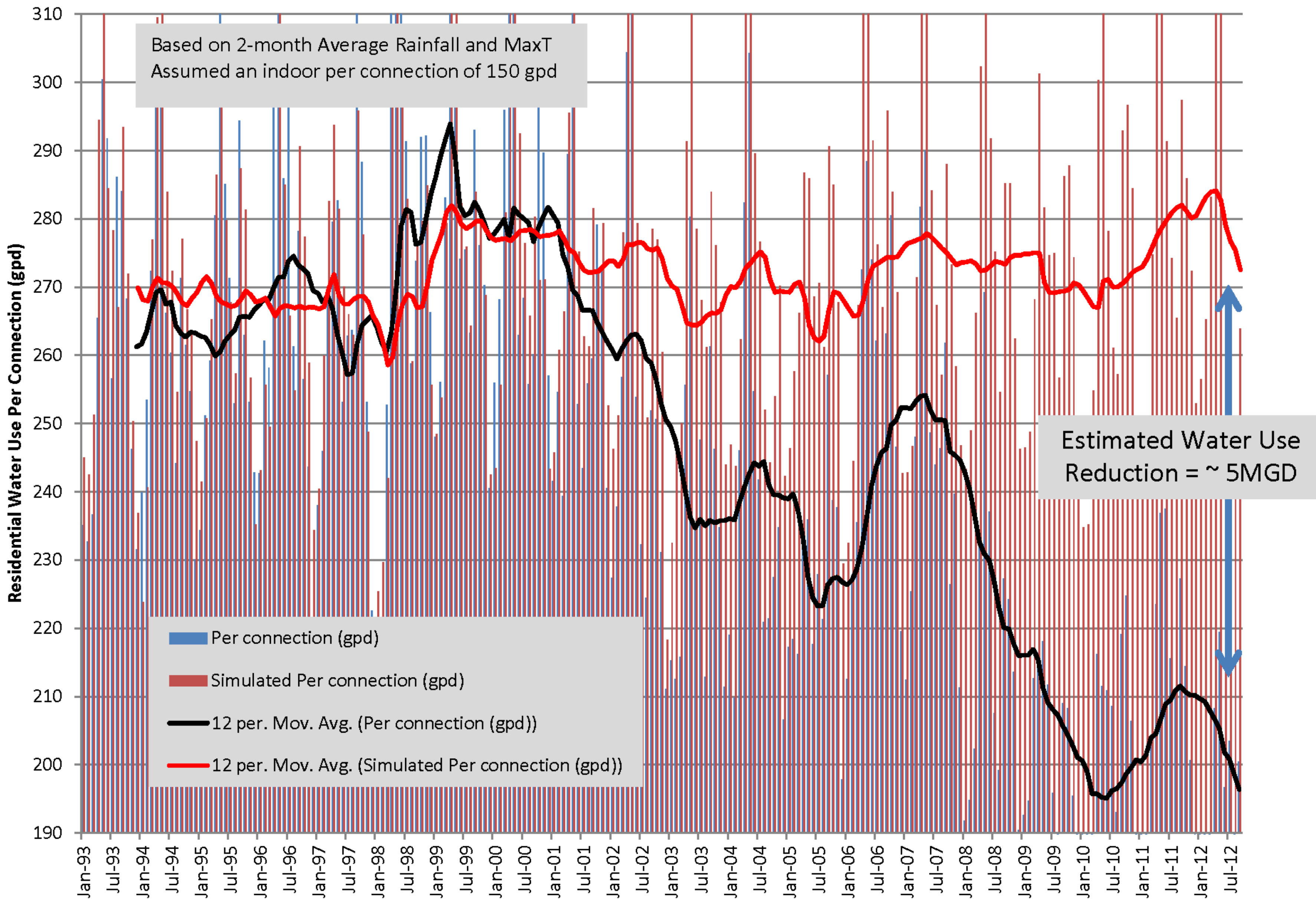
Based on 2-month Average Rainfall and MaxT
Assumed an indoor per connection of 150 gpd
Estimated Water Use Reduction = ~ 5MGD
Per connection (gpd)
Simulated Per connection (gpd)
12 per. Mov. Avg. (Per connection (gpd))
12 per. Mov. Avg. (Simulated Per connection (gpd))
Residential Water Use Per Connection (gpd)
310
300
290
280
270
260
250
240
230
220
210
200
190
Jan-93
Jul-93
Jan-94
Jul-94
Jan-95
Jul-95
Jan-96
Jul-96
Jan-97
Jul-97
Jan-98
Jul-98
Jan-99
Jul-99
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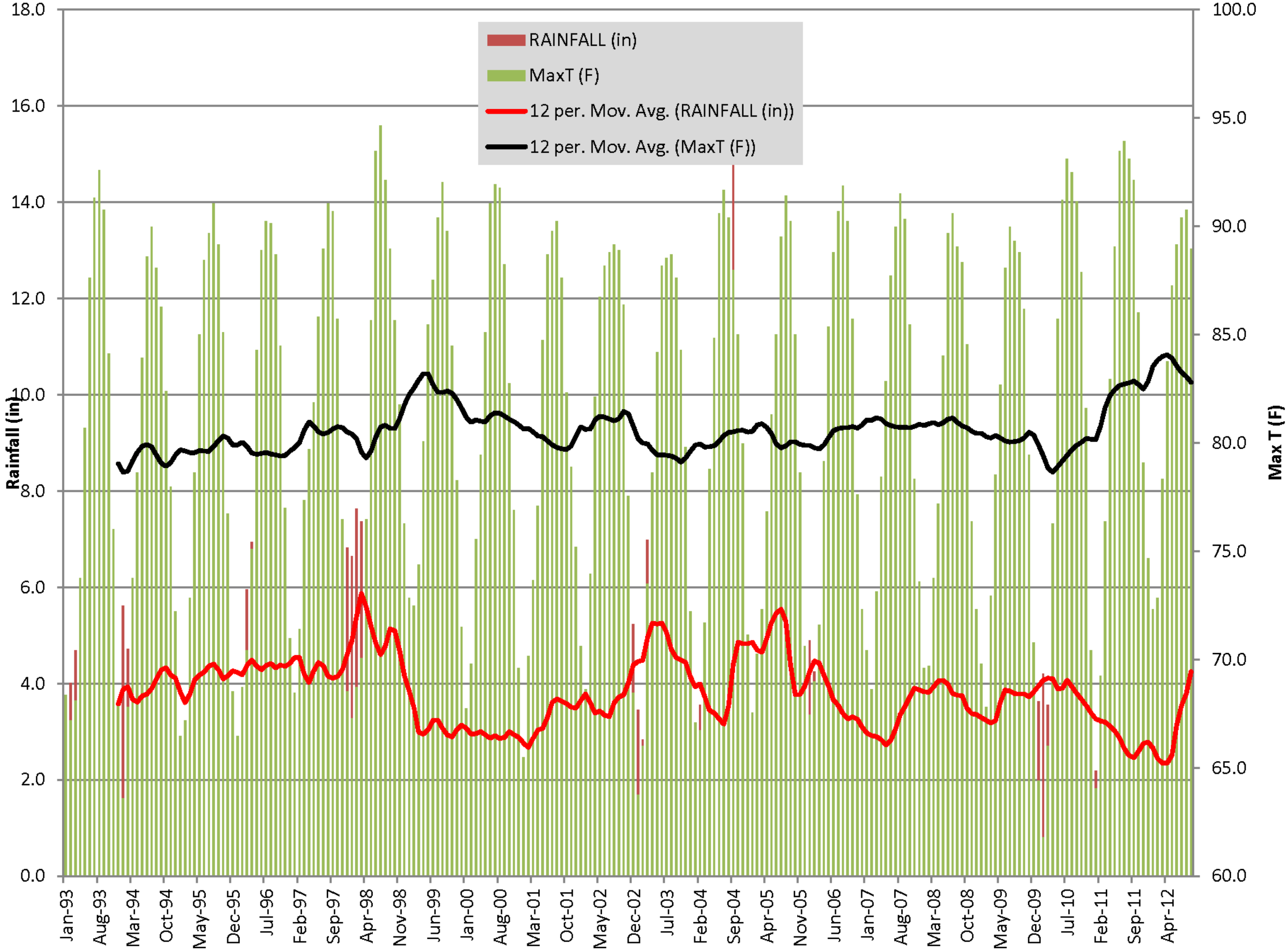
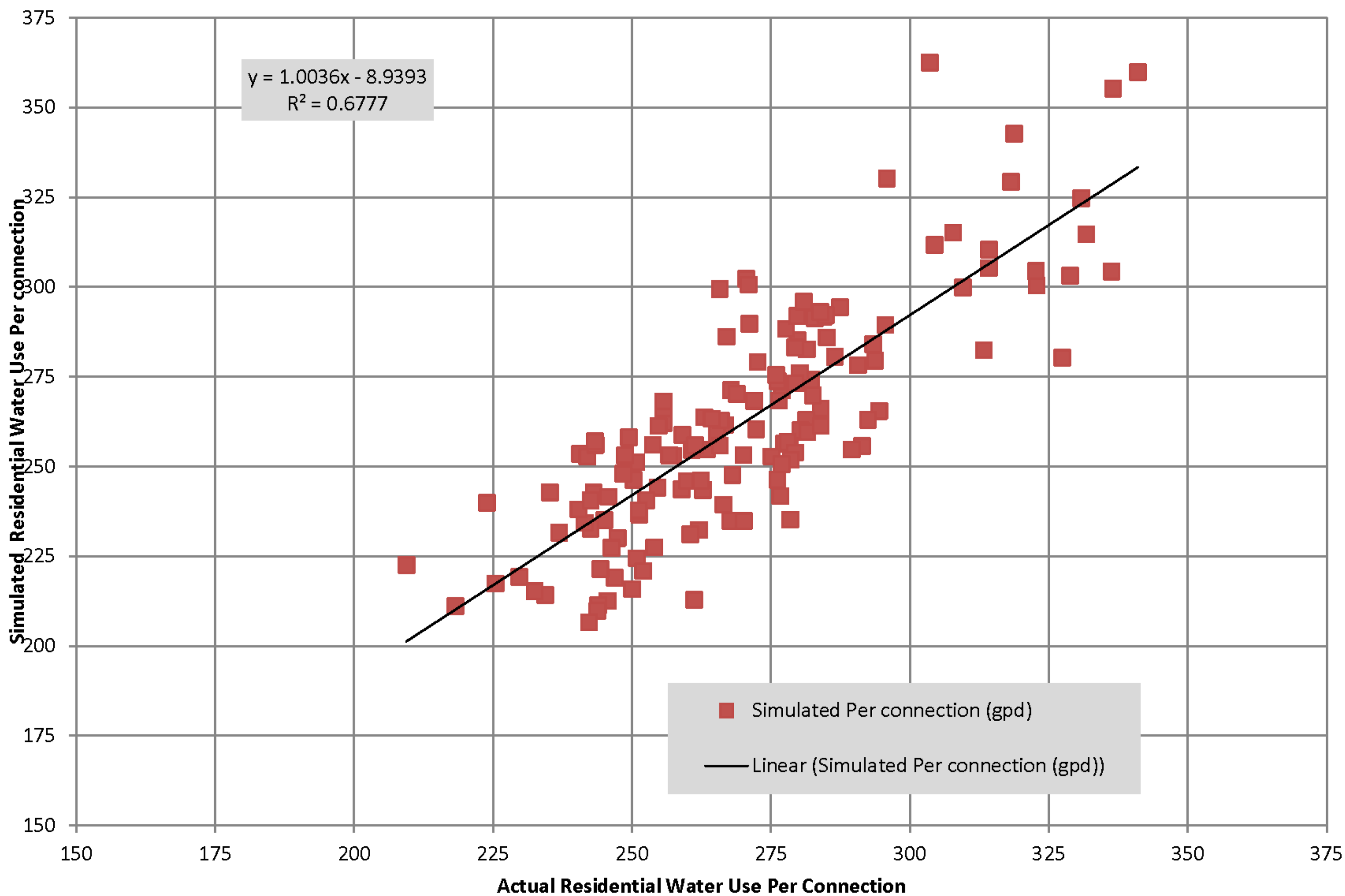
Jan-12
Jul-12


RAINFALL (in)
MaxT (F)
12 per. Mov. Avg. (RAINFALL (in))
12 per. Mov. Avg. (MaxT (F))
Rainfall (in)
Max T (F)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
100.0
95.0
90.0
85.0
80.0
75.0
70.0
65.0
60.0
Jan-93
Aug-93
Mar-94
Oct-94
May-95
Dec-95
Jul-96
Feb-97
Sep-97
Apr-98
Nov-98
Jun-99
Jan-00
Aug-00
Mar-01
Oct-01
May-02
Dec-02
Jul-03
Feb-04
Sep-04
Apr-05
Nov-05
Jun-06
Jan-07
Aug-07
Mar-08
Oct-08
May-09
Dec-09
Jul-10
Feb-11
Sep-11
Apr-12

Simulated Per connection (gpd)



GRU's Historic Conservation

- Out of this reduction, the majority is due to conservation.
- Conservation represents a 3 to 4 mgd source
- Though challenging to maintain this level, conservation is allowing GRU to grow into allocation

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Additional Conservation

- GRU demand projections incorporate current levels of water conservation
- Is additional water conservation feasible?

Additional Conservation

- GRU demand projections incorporate current levels of water conservation
- Is additional water conservation feasible?

- Yes! GRU proposes to quantify additional feasible water conservation using the Conserve Florida EZ Guide

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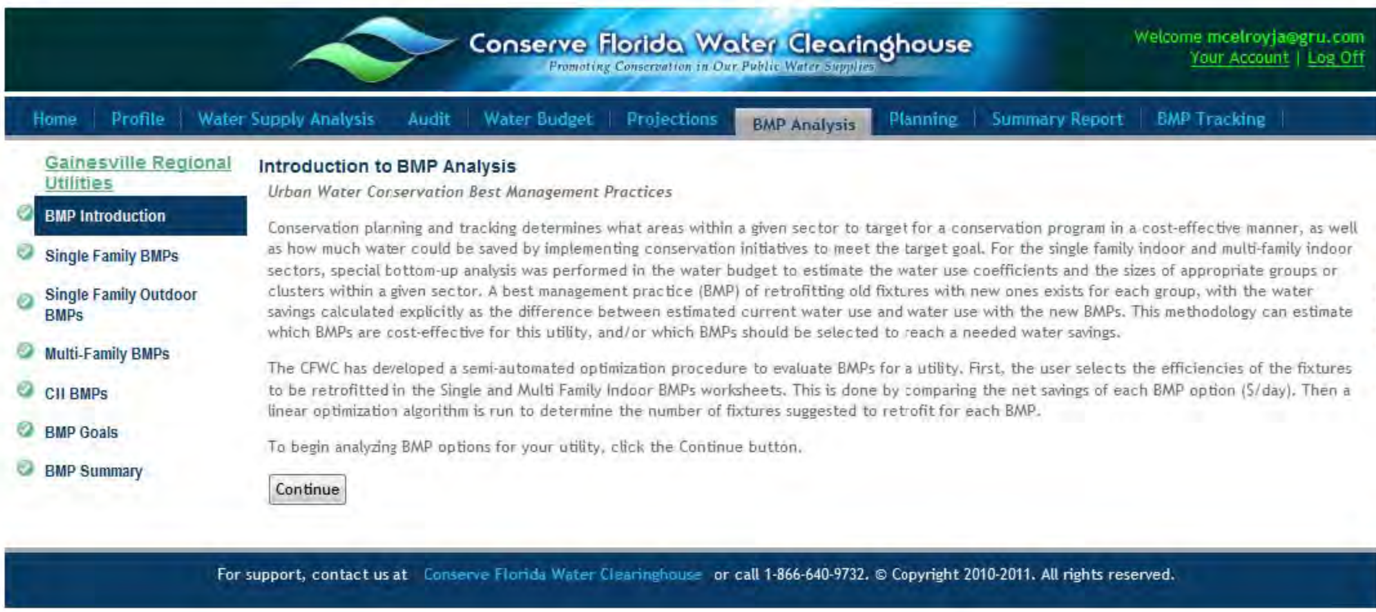
What is the EZ Guide?

- The EZ Guide is a web-based application that models a utility's water use and conservation potential
  - Developed by the Conserve Florida Water Clearinghouse at UF
  - Funded by the FDEP and water management districts
- Basis for EZ Guide calculations well researched and published



Required Input

- The EZ Guide uses a combination of user-supplied data and public data to create a utility profile

User:	Utility PWSID
	Service area boundary shapefile
Public:	FDEP Monthly Operating Report (MOR)
	FDEP Basic Facilities Report (BFR)
	County Property Appraiser data

- Calculations are performed "bottom-up" for each parcel and then aggregated to the utility level

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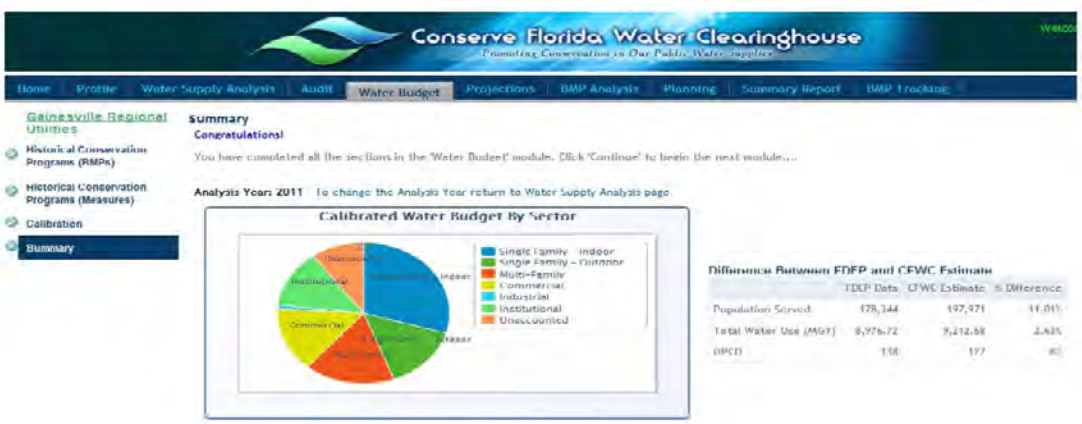
Water Budget Calculations

- EZ Guide estimates the number of customers and water use by type (SFR/MFR/CII) based on parcel data
- EZ Guide generates a count of the number of fixtures
  - Toilets/Urinals
  - Faucets
  - Showerheads
  - Clothes washers
  - Pre-rinse spray valves
- EZ Guide estimates the area of irrigated landscape



Calibration

- The EZ Guide allows users to adjust some water budget values to closer match actual use
- Calibration factors include:
  - Service lives of fixtures
  - Number of CII accounts
  - % of SFR parcels with sprinkler systems
  - % of SFR landscape irrigated
  - Source of irrigation water

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Calculations

- Conservation potential is based on the existing characteristics of each parcel
  - Number of fixtures
  - Water-use efficiency level of current estimated fixtures
  - Area of landscape irrigated
  - Application rate of irrigation
- EZ Guide calculates cost and water savings for fixture replacement and landscape programs
- Curves for water savings vs cost developed

Strengths and Limitations

- EZ Guide developed by 3rd party and well researched
- Utilized in CFWI for conservation potential estimates
- Solid basis for development of a goal-based plan

- EZ Guide continues to be in development
- Model gaps that need to be addressed
  - Participation rate
  - Historic conservation achieved
  - Fixture assumptions
  - Normalization with population/flow
  - Cost thresholds

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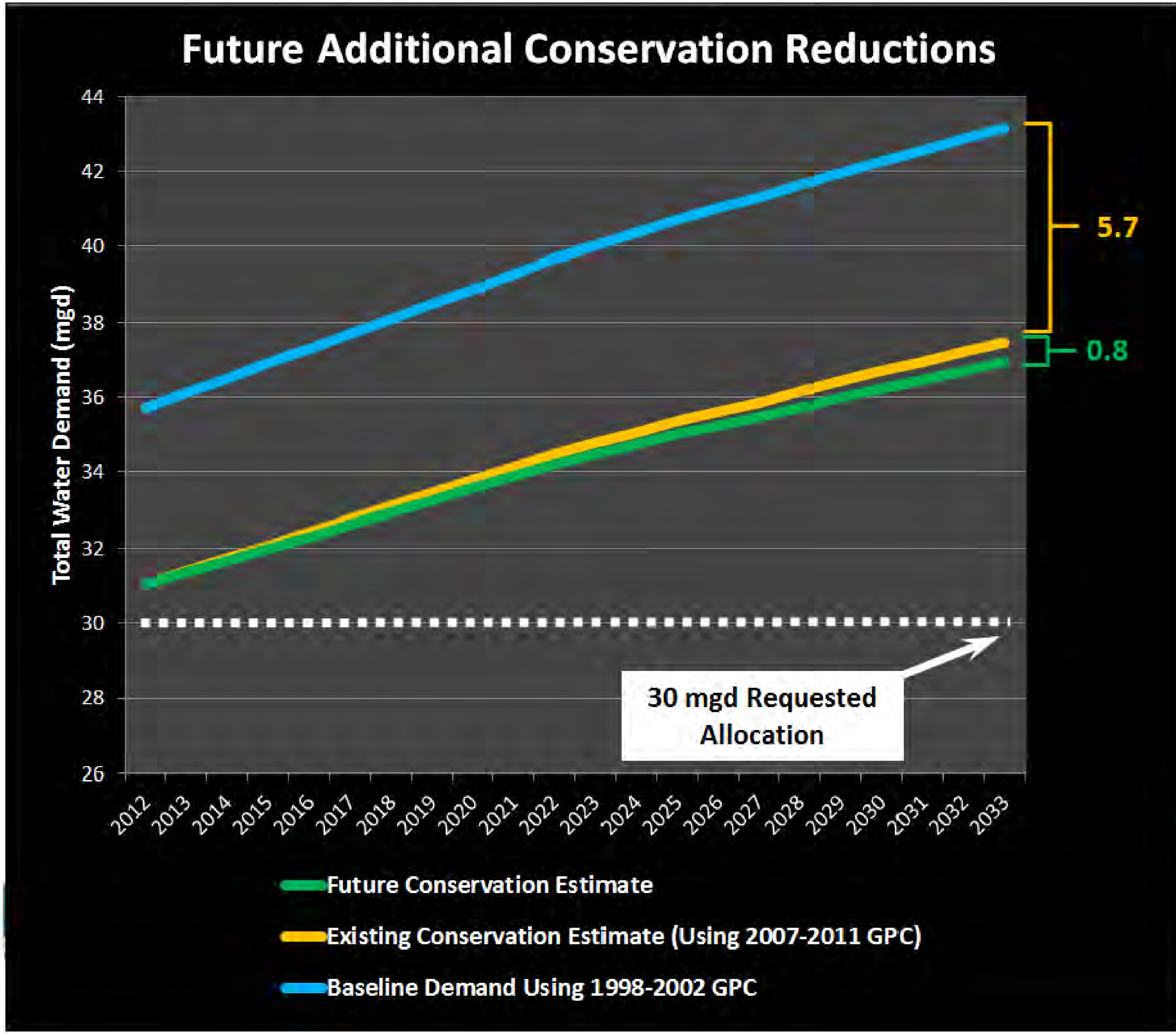
GRU Approach

- Quantify and document existing water conservation
- Use EZ Guide to estimate additional conservation
- Address EZ Guide limitations (per CFWI):
  - Participation rate (same values as CFWI)
  - Historic conservation achieved (based on GRU's implementation)
  - Fixture assumptions (same values as CFWI)
  - Normalization with population/flow (same as CFWI)
  - Cost thresholds (same value as CFWI)
- Results of this effort will be a credible and defensible water conservation plan
- Despite best efforts, uncertainty remains

GRU 100 YEARS of SERVICE | 1912-2012



Future Additional Conservation Reductions
Total Water Demand (mgd)
44
42
40
38
36
34
32
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28
26
2012
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2014
2015
2016
2017
2018
2019
2020
2021
2022
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2033
5.7
0.8
30 mgd Requested Allocation
Future Conservation Estimate
Existing Conservation Estimate (Using 2007-2011 GPC)
Baseline Demand Using 1998-2002 GPC

Reclaimed Water

Pre-application Meeting #2
12/12/12

Reclaimed Water – Potable Offset

Residential & Golf Course Irrigation

- Residential Reclaimed Water Irrigation Offsets Potable Water Use
- GRU Reclaimed Water is used to Irrigate Golf Course thereby eliminating groundwater use

GRU South Energy Center at Shands

- GRU uses reclaimed water for cooling in Chilled Water Production.
- Shands uses reclaimed water for irrigation.

Reuse Incentives for New Development

- RCW Service Area

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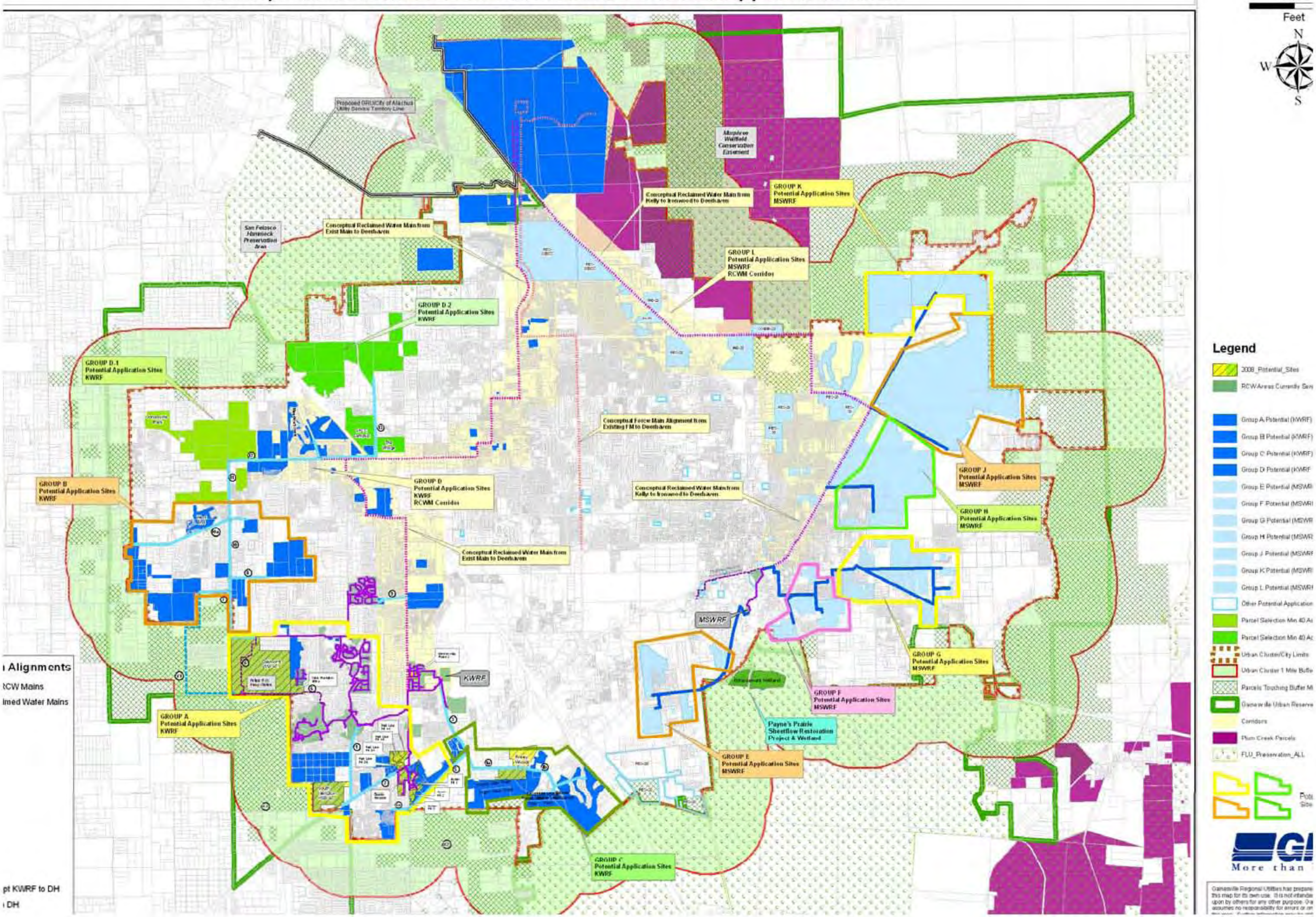
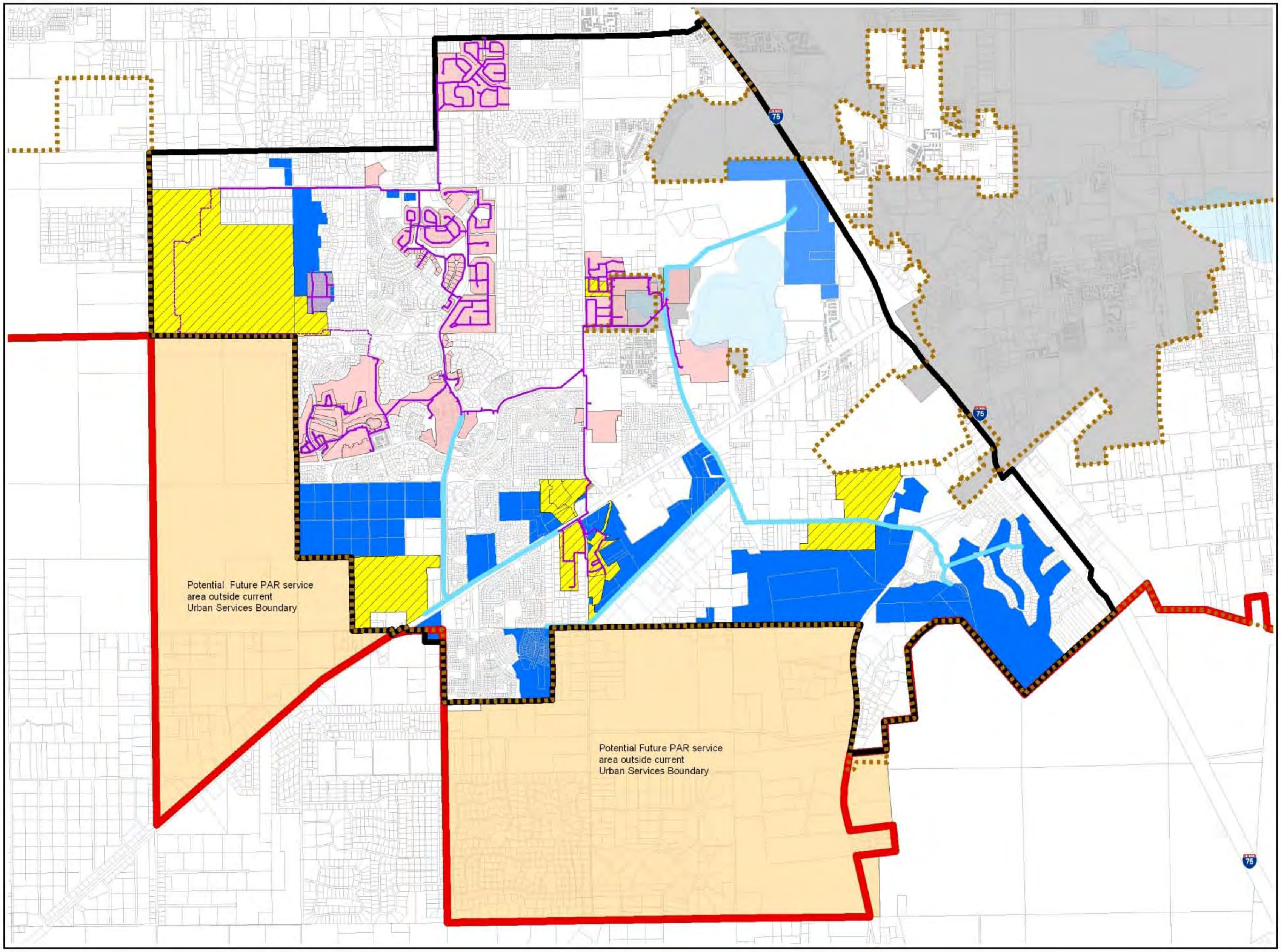
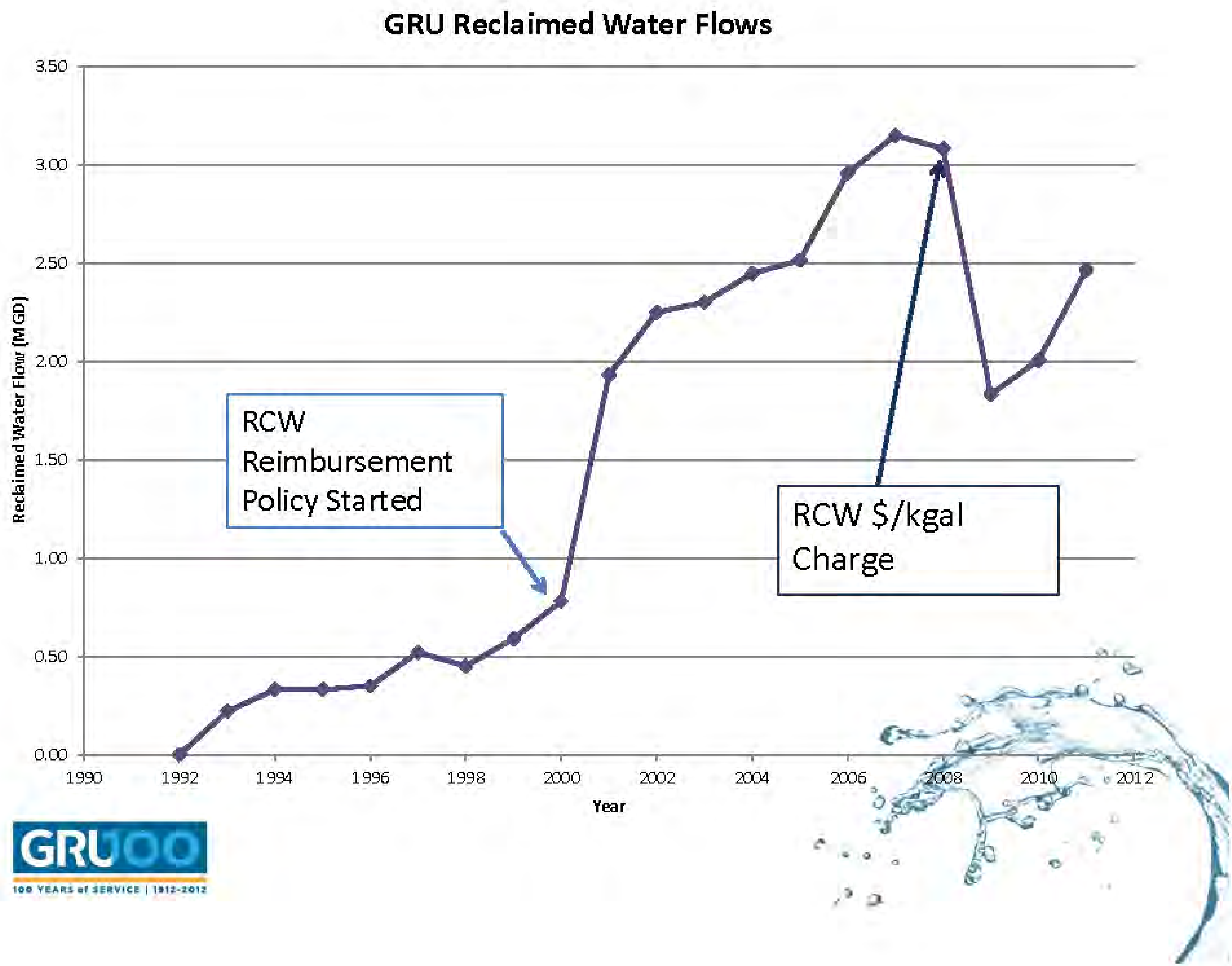
Conceptual Reclaimed Water Mains and Potential Application Sites



GRU RCW Service Area




KEEP OFF
SHEET
PILE


GRU Reclaimed Water Flows
Reclaimed Water Flow (MGD)
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
Year
RCW Reimbursement Policy Started
RCW $/kgal Charge
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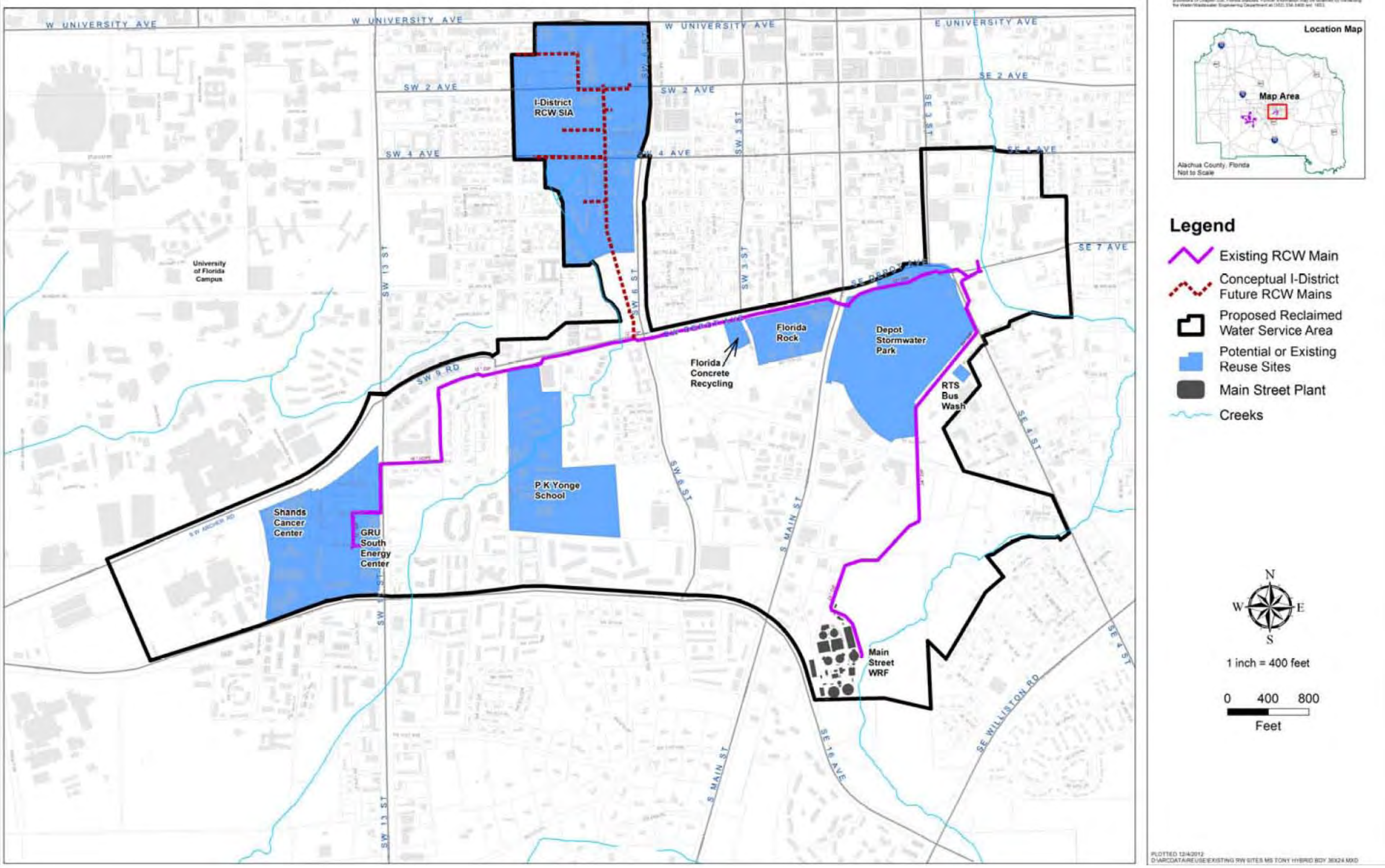
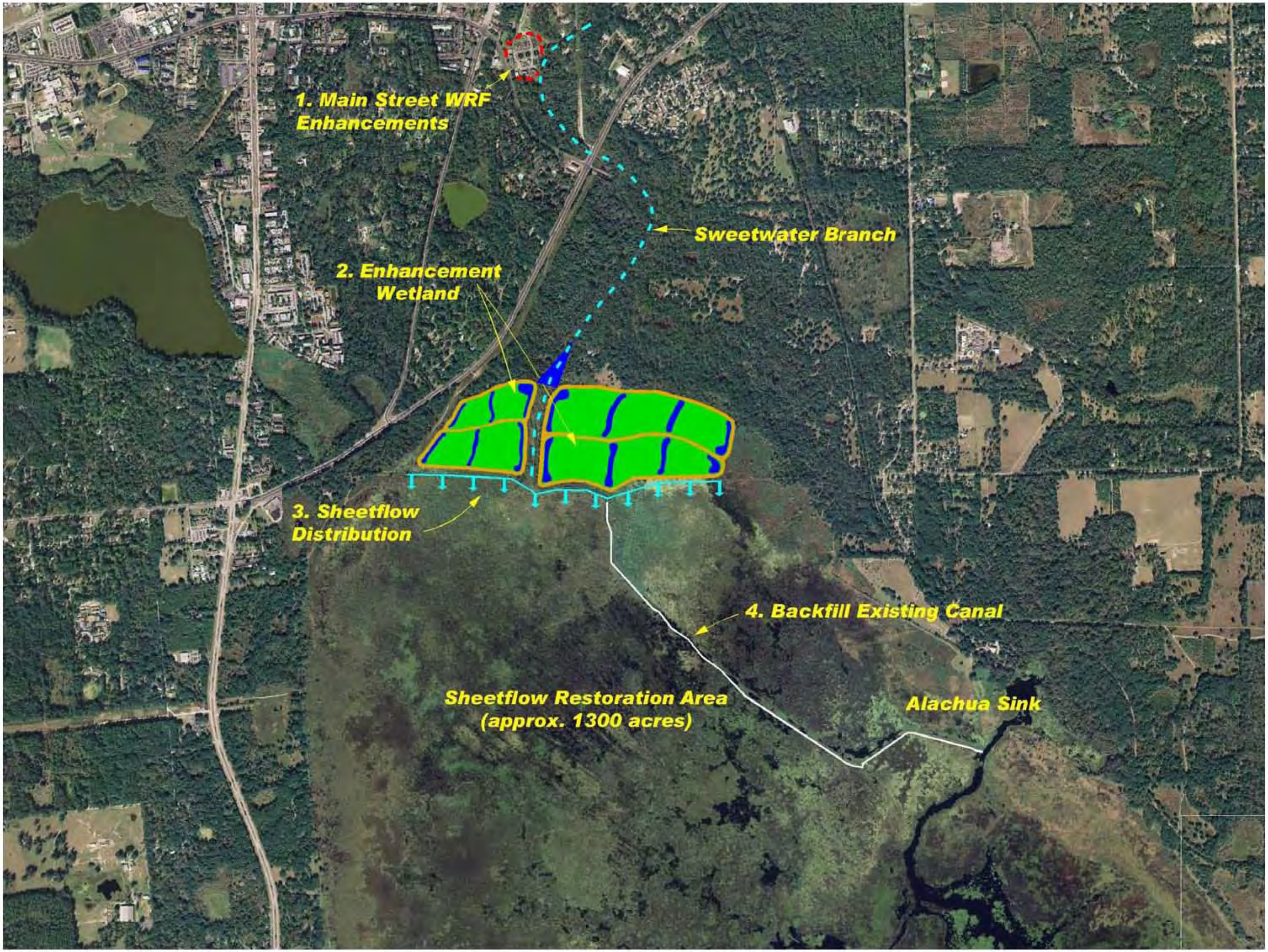
100 YEARS of SERVICE | 1912-2012

Existing & Future Reclaimed Water System - Main Street WRF

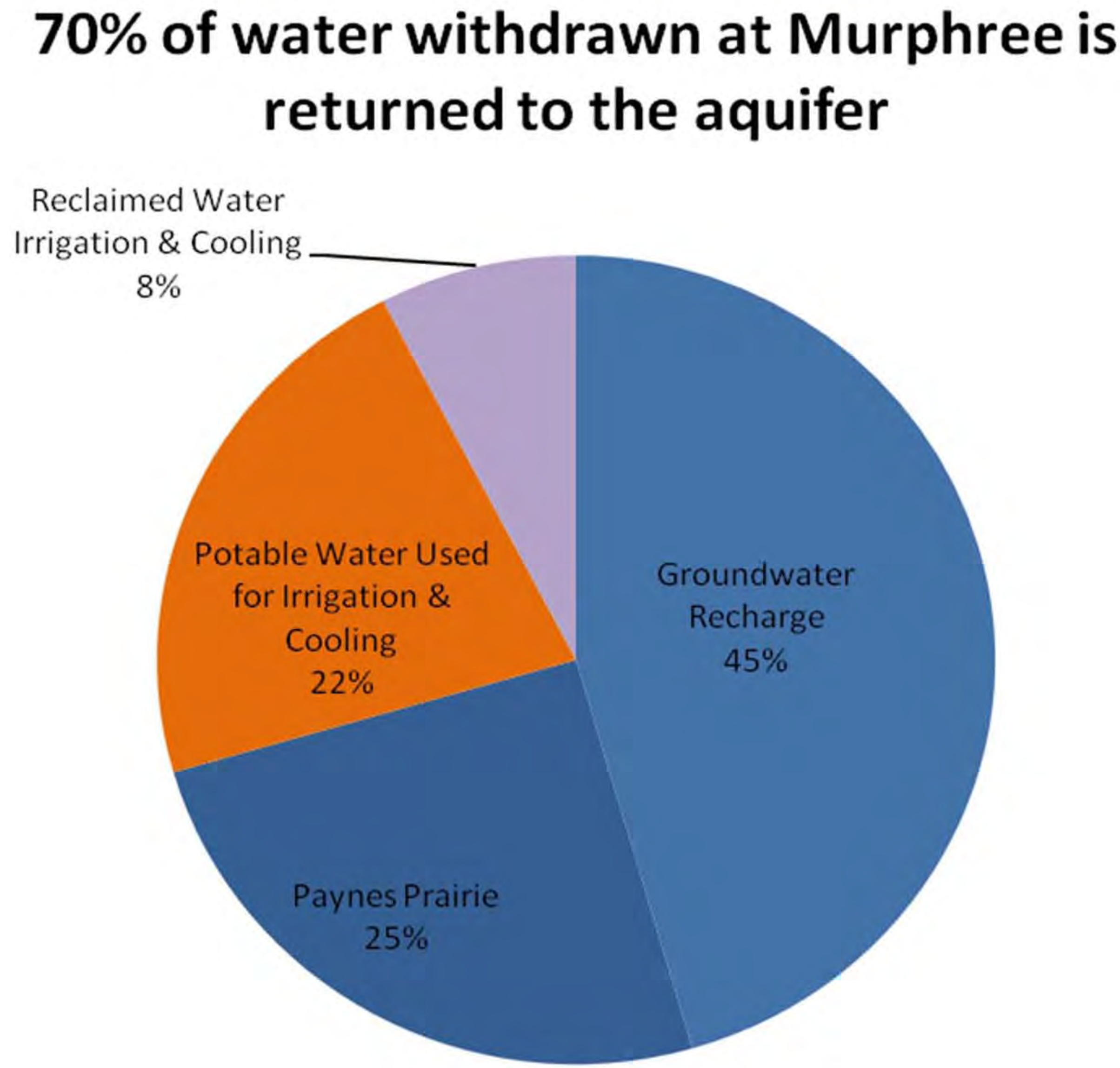


Innovation District Master Plan



1. Main Street WRF Enhancements
Sweetwater Branch
2. Enhancement Wetland
3. Sheetflow Distribution
4. Backfill Existing Canal
Sheetflow Restoration Area (approx. 1300 acres)
Alachua Sink

Recycle – Aquifer Recharge



Projected Future Reclaimed Water Use

	2012	2033	
Potable Offset Reuse	1.62	3	mgd
Recharge Wetlands	1.2	2.2	mgd
Recharge Wells	7.1	7.7	mgd
Paynes Prairie	5.8	7	mgd
Total	15.7	19.9	mgd

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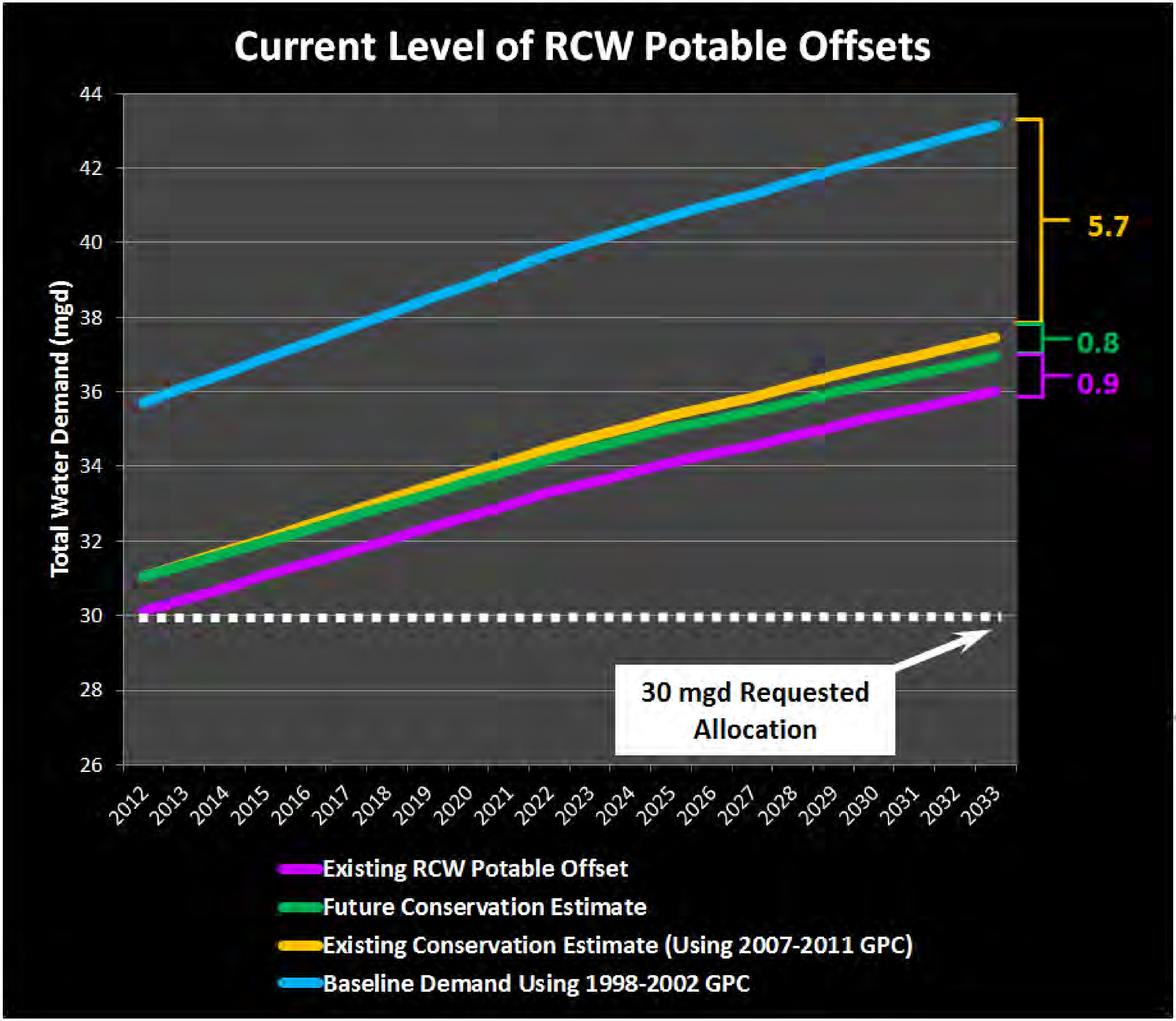

Current Level of RCW Potable Offsets
Total Water Demand (mgd)
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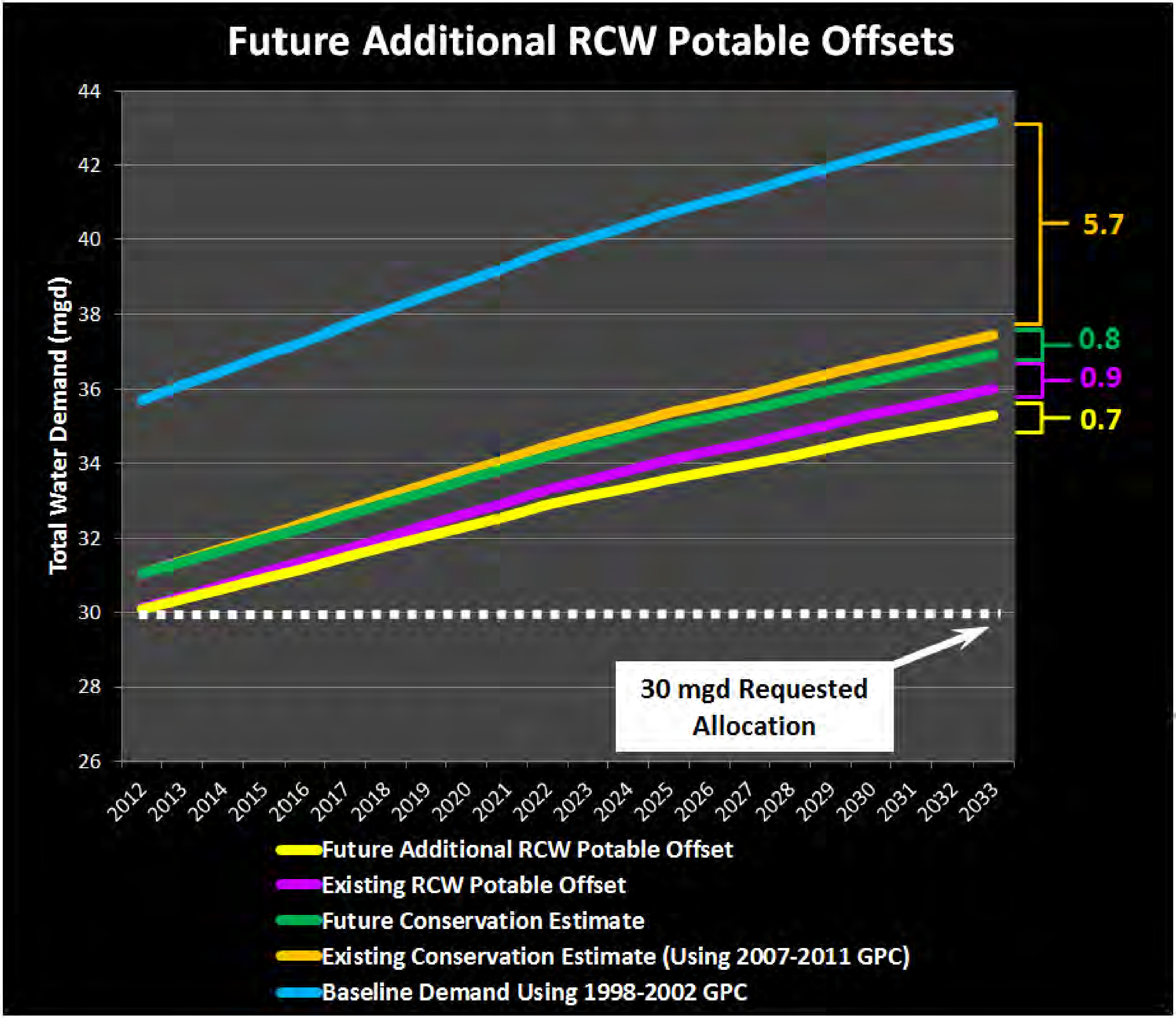
30 mgd Requested Allocation
Existing RCW Potable Offset
Future Conservation Estimate
Existing Conservation Estimate (Using 2007-2011 GPC)
Baseline Demand Using 1998-2002 GPC


Future Additional RCW Potable Offsets
Total Water Demand (mgd)
44
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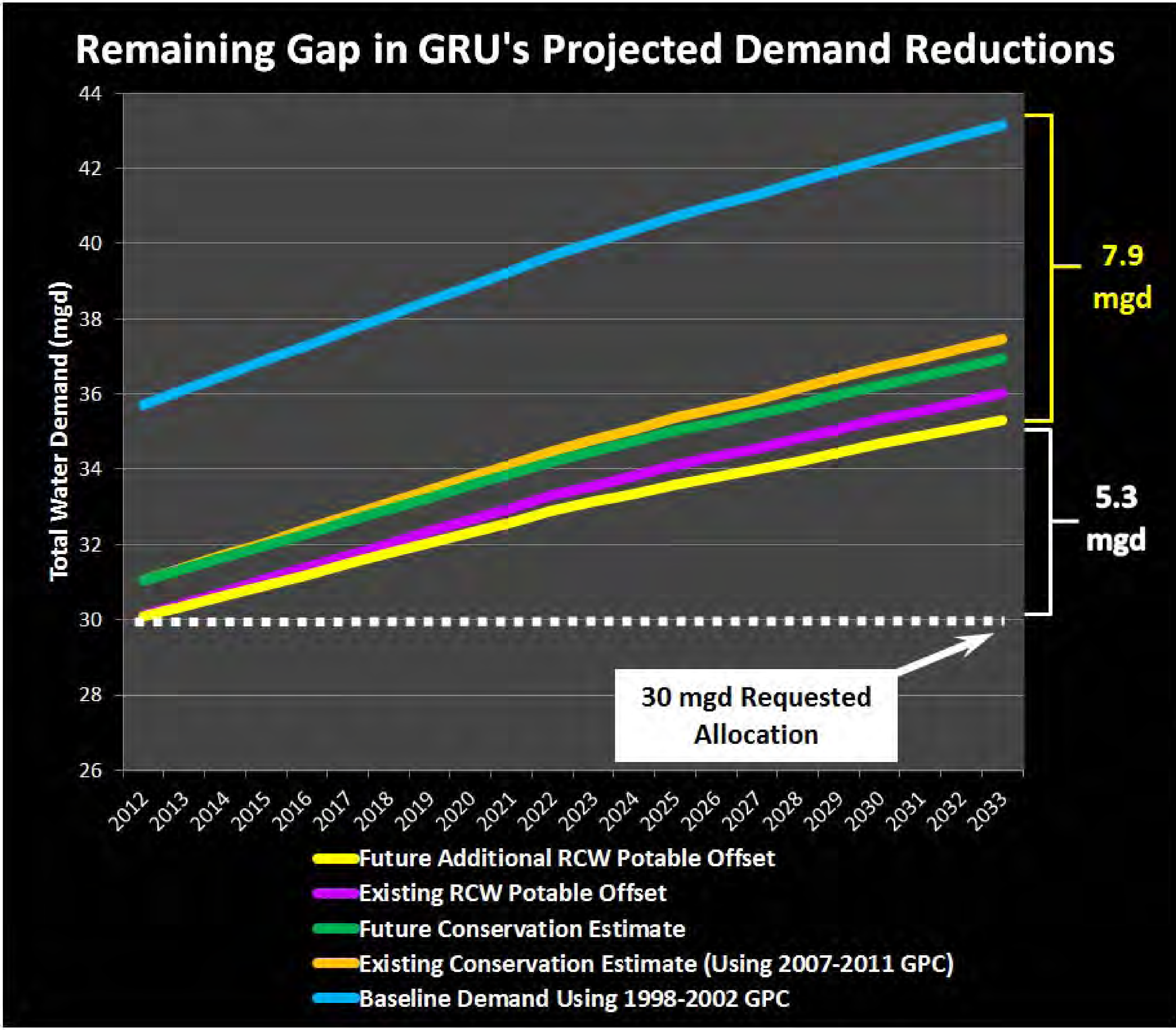
30 mgd Requested Allocation
Future Additional RCW Potable Offset
Existing RCW Potable Offset
Future Conservation Estimate
Existing Conservation Estimate (Using 2007-2011 GPC)
Baseline Demand Using 1998-2002 GPC


Remaining Gap in GRU's Projected Demand Reductions
Total Water Demand (mgd)
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2012
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2033
7.9 mgd
5.3 mgd
30 mgd Requested Allocation
Future Additional RCW Potable Offset
Existing RCW Potable Offset
Future Conservation Estimate
Existing Conservation Estimate (Using 2007-2011 GPC)
Baseline Demand Using 1998-2002 GPC

Dealing with Uncertainty

Pre-application Meeting #2
12/12/12

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Dealing with Demands > 30 MGD

- 30 MGD may be insufficient to meet future demand due to uncertainties in population growth, water conservation effectiveness and reclaimed water benefits.
- GRU would increase groundwater withdrawal up to ~34 MGD as necessary to meet unexpected demand after additional conservation and reclaimed water approaches were employed.
- For all quantities >30 MGD, GRU will mitigate impact of additional withdrawals via :
  - Enhanced Recharge
  - Reclaimed water
  - Regional partnerships (Ag, R&P strategies, District WRD)
- Allows GRU to meet demand uncertainties with resource improvement.

Goals of Meeting #2

- Population & Water Demand Projections
  - ☑ Agreed to Approach
- Water Conservation Approach
  - ☑ Agreed to Approach
- Reclaimed Water Approach
  - ☑ Agreed to Approach
- Ability to increase groundwater use with accompanying offsets in future
  - ☑ Agreed to Approach

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Next Meeting – Jan 9th, 2013

- Get District comments by Dec 28th
- Submit Population & Water Demand Projections to District at the next meeting
- Lock down projections before additional efforts:
  - Groundwater modeling
  - Water resources constraints

GRU CUP RENEWAL MEETING MINUTES

JONES EDMUNDS

PURPOSE:	Workshop No. 3
MEETING DATE:	January 9, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Jennifer McElroy, Rick Hutton, Rae Hafer SJRWMD –Carl Larrabee, Jay Lawrence SRWMD – Kevin Wright GIS Associates – Rich Doty Liquid Solutions Group – Rob Denis Jones Edmunds – Brett Goodman

The following is a summary of the discussion and action items from the meeting:

Item	Action	Description
1	Info	The purpose of the meeting is to get as close to the final demand numbers as possible so that GRU can move forward with modeling and additional efforts related to the CUP renewal. There were no follow up questions from last meeting to be addressed.
2	Info	GRU provided revised Table 1 and Table 2 spreadsheets to the Districts on Monday, January 7th. Tammy Bader was able to review and provide comments to Jay and Rich.
3	Info	Tony and Rich explained Table 1
4	Info	Jay questioned whether GRU allows master meters. The District encourages individual metering. Tony and Jennifer explained GRU's policy that promotes individual metering, but does not strictly forbid master meters.
5	**Action Rich**	The column on public use irrigation should be merged back into commercial use since it is metered under commercial use. The change should also be reflected in Table 2.
6	Info	Since UF has a secondary CUP, we agreed that it is acceptable to separate UF from commercial use.
7	Info	The power supply use in Table 1 is confusing but appropriate since it includes the back-up cooling water demand for the Kelly power plant and potable water offsets for the South Energy Center.

8	Info	The group discussed the water utility and unaccounted for water columns in Table 2. The water utility and unaccounted for water varies from year to year, but the sum of the two columns is more consistent. There are have been several plant modifications related to lime sludge processing that have increased the water utility use over the past year. The water utility also includes well lubrication water which is discharged back into the production wells to improve operations. Therefore, there will be additional water utility use when Well No. 16 comes on-line. Carl questioned whether there needs to be a reduction factor for the lubrication water when the wells are in operation. However, it was discussed that this water flows continuously regardless of well operational status. Since the lubrication water is metered, GRU uses the metered totals in the water utility water use totals without adjustment.
9	**Action Rich**	Jay requested that we re-label the heading for the potable water offsets so that it is very clear how to determine the volume of wellfield withdrawals.
10	Info	Tony and Rich discussed Table 2.
11	Info	Rich explained the population differences from the SJRWMD estimates. The population estimates follow a standard approach that has been used in previous permits. The primary differences are small adjustments for seasonal population, domestic self supply conversion (1%), and inclusion of population growth from Innovation Square. Rich noted that GRU did not include some of the larger developments that are not in the models used by the District to estimate population.
12	Info	It was noted that the commercial use starts with the maximum of the past 5 years instead of the average. Tony explained that this was necessary to address concerns with providing water to commercial accounts that are active but under used due to economic conditions. Tony also noted that stakeholders voiced concerns that GRU have adequate water supply for potential economic growth in the region. Rob explained that other permits have made similar provisions to account for the uncertainty in commercial growth and water use. Commercial use is not as elastic as residential. Carl noted that others have used tiered commercial rates to encourage commercial conservation.
13	Info	The projected power plant flow includes the combination of back up cooling water demands (Kelly power plant) and the potable offsets from reclaimed water at the new South Energy Center (SEC). Jay requested that the notes make clear the difference between the water pumped from the wellfield and use being served with reclaimed water
14	Info	The demand projections include a drought factor. Jay mentioned that this something that is not commonly done. The group discussed the need for the

		drought factor or some other method to incorporate flexibility in the permitted allocation. The flexibility will be important to have the permit reflect the offsets or substitutions beyond the 30 MGD request. The group agreed to revise Table 2 by removing the drought factor and increase the residential demands using a similar approach as done for the commercial use categories.
15	**Action Rich**	Rich will revise Table 2 residential use to reflect the discussion of removing the drought factor
16	Info	Jay noted that he does not see any major problems with Table 1 and 2. Rich volunteered to follow up with Tammy and go through any questions and make sure that any additional information is provided to the Districts.
17	Info	The goals of the next meeting will be to finalize the population and demand projections and start the discussion on modeling approach and the "++" permit conditions.
18	**Action Jay and Kevin**	Jay and Kevin will invite the groundwater modeling review staff to the February 13th meeting.
19	**Action GRU**	Carl requested that GRU provide a map of the systems for the next meeting to help understand the location of the withdrawals, the constraints, and recharge features.
19	**Action Rich**	Rich will provide responses to Tammy's comments

Gainesville Regional Utilities
CUP Workshop No. 3
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: December 12, 2012

LOCATION: GRU – Admin Building

PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
Brett Goodman	Jones Edmunds	bgoodman@jonesedmunds.com	352-377 5821
Kevin Wright	SRWMD	KLW@SRWMD.ORG	386-362-1001
Rie Hafer	GRU	haferra@gru.com	352-393-1635
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386 329 4205
Jenn McElroy	GRU	mcelroyja@gru.com	352 393 1291
Rick Hutton	GRU	huttonrh@gru.com	352 393 1218
Tony Cunningham	GRU	CUNNINGHAMAL@GRU.com	
Rick Dotty	G/S ASSOCIATES	rdotty@gis-associates.com	352-246-8028
CARL LARRABEE	SJRWMD	clarrabee@sjrwmd.com	386.329.4222
Rob Denis	LSG	rob@lsgfl.com	407 349 3900

Population & Water Demand Projections, Water Conservation & Reclaimed Water

Pre-application Meeting #3
01/09/13

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Agenda Topics

- Review Results of Meeting No.2
- Finalize Table 1 and Table 2
- Set Agenda for February Meeting

Goals of Meeting #2

- Population & Water Demand Projections
  - [x] Agreed to Approach
- Water Conservation Approach
  - [x] Agreed to Approach
- Reclaimed Water Approach
  - [x] Agreed to Approach
- Ability to increase groundwater use with accompanying offsets in future
  - [x] Agreed to Approach

GRU 100 YEARS of SERVICE | 1912-2012

Population and Water Demand Projections

- Draft Table 1: Historic Water Use

Past Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Com/ Ind Avg. Day (mgd) w/o UF	UF Avg. Day (mgd)	Com/ Ind Avg. Day (mgd)	Public Use Irrigation Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility (mgd)	Unaccounted for Water (mgd)	Total Avg. Day (mgd)	Reclaimed Potable Offset Avg. Day (mgd)	Ground-water Avg. Day (mgd)
2007	187,911	80,787	88	16.55	6.53	2.51	9.03	0.23	0.02	0.90	1.85	28.58	0.83	27.75
2008	192,203	82,703	76	14.55	6.51	2.82	9.32	0.23	0.00	0.86	1.78	26.75	0.85	25.90
2009	191,189	82,338	71	13.64	6.09	2.71	8.80	0.23	0.00	0.72	2.59	25.99	0.96	25.03
2010	189,495	81,679	68	12.97	5.50	2.39	7.89	0.23	0.05	0.70	2.43	24.26	0.89	23.37
2011	189,715	81,842	74	14.13	5.73	2.28	8.00	0.23	0.03	1.37	2.13	25.90	1.04	24.86

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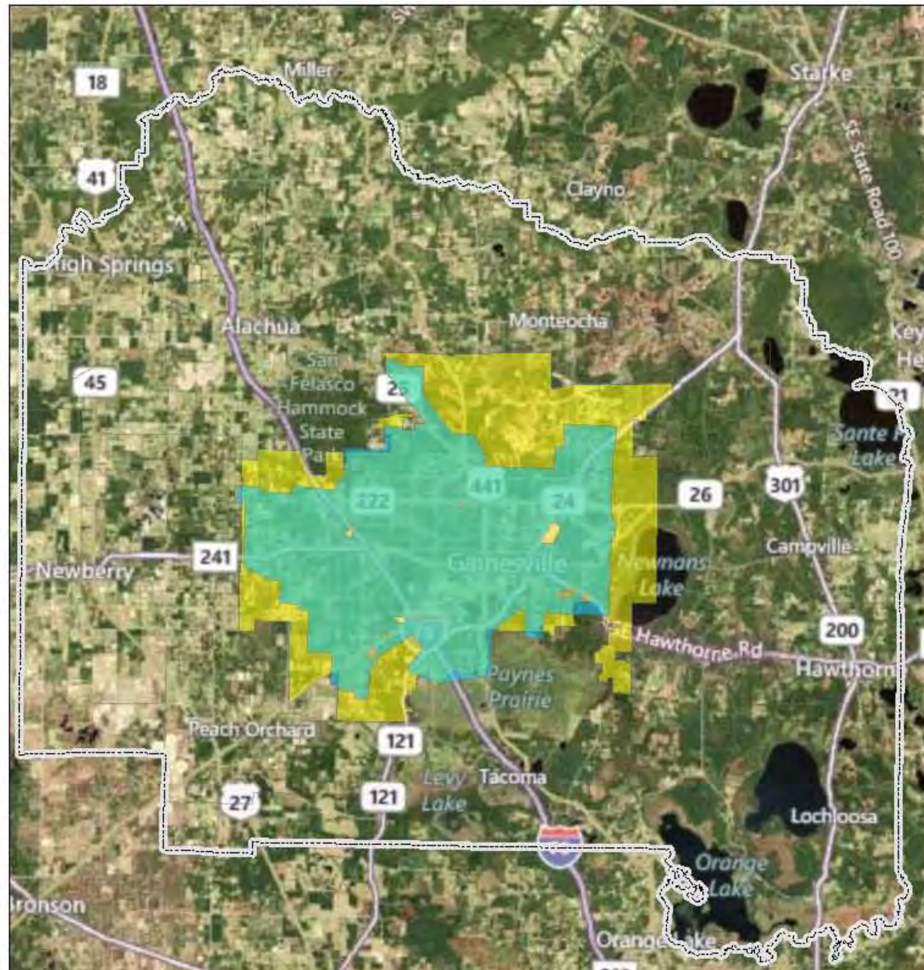
Population and Water Demand Projections

- Uncertainty with 30 mgd
  - *Population*
    - **Future service area expansion**



Population and Water Demand Projections

- Uncertainty with 30 mgd
  - *Population*
    - **Innovation District**
      - » Link to CNBC Interview of Governor Scott & UF President Machen
      - » Link to Gainesville Sun Article: Innovation Economy Thrives Locally
      - » Link to Gainesville Sun Article: New Leader for UF, Growth Resumes

Population and Water Demand Projections

- Uncertainty with 30 mgd
  - *Population*
    - **Significant uncertainty with BEBR medium forecast**
      - Historically have erred on the low side
      - ~ 25% of counties will experience growth <u>outside</u> the wide range of the BEBR projections

Population and Water Demand Projections

- Uncertainty with 30 mgd
  - *Per Capita Water Use*
    - **Last 5 years historic per capita use may be artificially low due to economic downturn**
    - **Higher proportion of in-ground irrigation systems in newer developments compared with historic customer base**
    - **Increase in overall water use for homes built recently**

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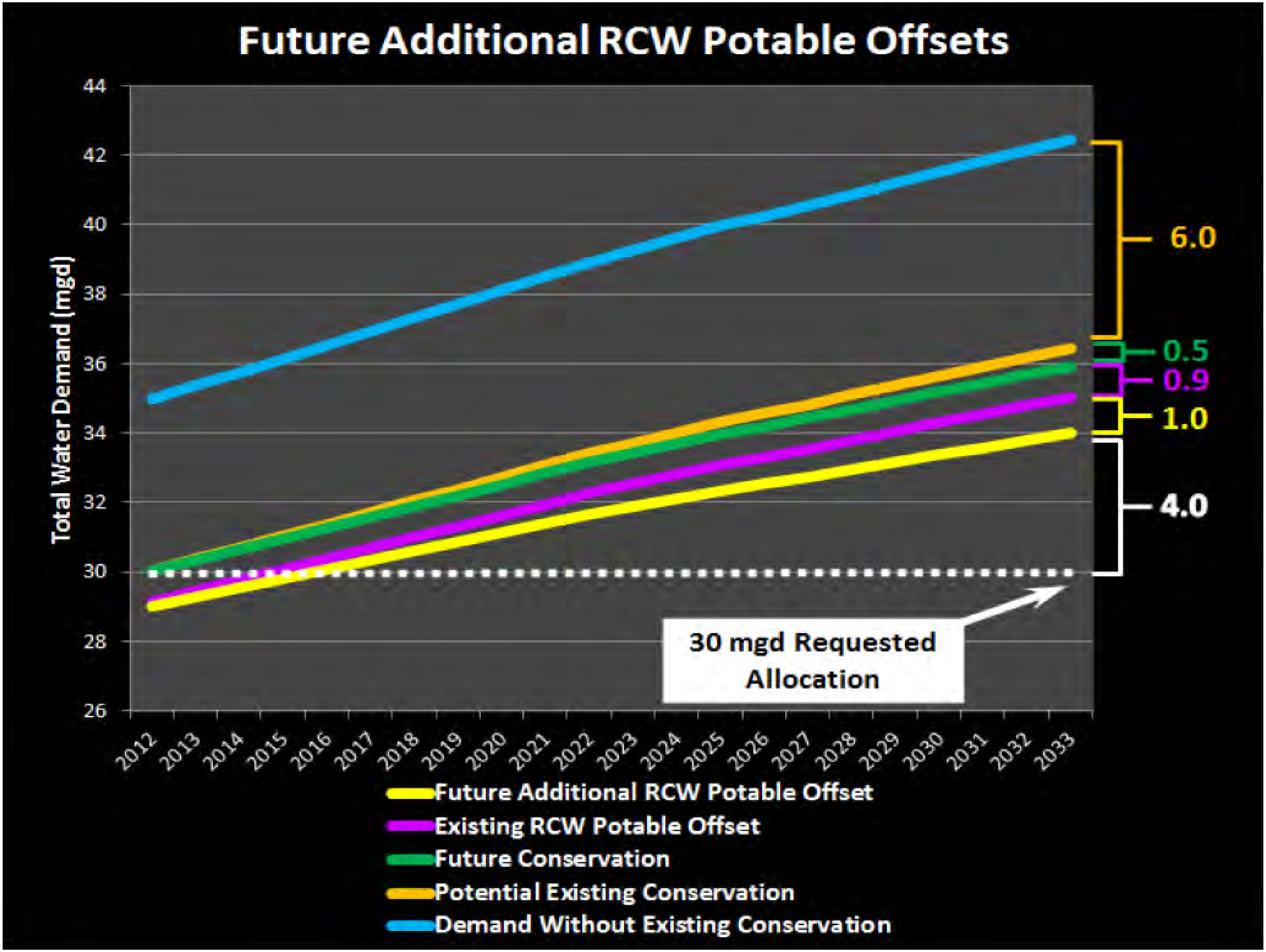
Population and Water Demand Projections

- Draft Table 2 – With New Conservation & RCW Offsets

Future Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day (mgd) w/o UF	UF Avg. Day (mgd)	Innovation District Avg. Day (mgd)	Total Commercial/ Industrial Avg. Day (mgd)	Public Use Irrigation Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility Avg. Day (mgd)	Unaccounted for Water (mgd)	Total Avg. Day (mgd)	Historical Reclaimed Potable Offset Avg. Day (mgd)	Groundwater Avg. Day with Drought Factor (mgd)	New Reclaimed Potable Offset Avg. Day (mgd)	Total Reclaimed Potable Offset Avg. Day (mgd)	New Conservation Avg. Day (mgd)	Final Groundwater Avg. Day (mgd)	Requested Groundwater Allocation Avg. Day (mgd)
2012	191,774	82,730	76	14.50	6.59	2.84	0.00	9.43	0.23	0.10	1.38	2.73	28.38	0.91	29.12	0.13	1.04	0.00	28.99	30.00
2013	193,833	83,619	76	14.66	6.66	2.84	0.05	9.54	0.24	0.10	1.39	2.76	28.69	0.91	29.45	0.16	1.08	0.03	29.26	30.00
2014	195,892	84,507	76	14.81	6.72	2.84	0.09	9.65	0.24	0.11	1.40	2.79	29.00	0.91	29.78	0.23	1.14	0.05	29.50	30.00
2015	197,951	85,395	76	14.97	6.79	2.84	0.14	9.77	0.24	0.12	1.41	2.81	29.32	0.91	30.11	0.26	1.18	0.08	29.77	30.00
2016	200,061	86,305	76	15.13	6.86	2.84	0.18	9.88	0.25	0.12	1.42	2.84	29.64	0.91	30.45	0.30	1.22	0.10	30.04	30.00
2017	202,170	87,215	76	15.29	6.92	2.84	0.23	9.99	0.25	0.13	1.43	2.87	29.95	0.91	30.78	0.35	1.26	0.13	30.31	30.00
2018	204,280	88,125	76	15.45	6.99	2.84	0.27	10.10	0.25	0.13	1.44	2.90	30.27	0.91	31.12	0.39	1.30	0.15	30.58	30.00
2019	206,389	89,035	76	15.61	7.06	2.84	0.32	10.21	0.25	0.15	1.45	2.92	30.60	0.91	31.46	0.44	1.36	0.18	30.84	30.00
2020	208,499	89,945	76	15.76	7.13	2.84	0.36	10.33	0.26	0.16	1.46	2.95	30.92	0.91	31.81	0.49	1.41	0.21	31.11	30.00
2021	210,624	90,862	76	15.93	7.19	2.84	0.41	10.44	0.26	0.17	1.47	2.98	31.25	0.91	32.16	0.54	1.45	0.23	31.38	30.00
2022	212,748	91,778	76	16.09	7.26	2.84	0.45	10.55	0.26	0.19	1.48	3.01	31.58	0.91	32.50	0.59	1.50	0.26	31.66	30.00
2023	214,873	92,695	76	16.25	7.33	2.84	0.45	10.62	0.26	0.20	1.49	3.03	31.85	0.91	32.80	0.64	1.55	0.28	31.88	30.00
2024	216,997	93,612	76	16.41	7.40	2.84	0.45	10.69	0.27	0.21	1.50	3.05	32.13	0.91	33.09	0.69	1.61	0.31	32.09	30.00
2025	219,122	94,528	76	16.57	7.47	2.84	0.45	10.76	0.27	0.23	1.51	3.08	32.41	0.91	33.39	0.73	1.65	0.34	32.32	30.00
2026	220,932	95,309	76	16.70	7.52	2.84	0.45	10.81	0.27	0.24	1.52	3.10	32.65	0.91	33.64	0.77	1.69	0.36	32.51	30.00
2027	222,741	96,089	76	16.84	7.58	2.84	0.45	10.87	0.27	0.25	1.53	3.12	32.89	0.91	33.89	0.81	1.73	0.38	32.70	30.00
2028	224,551	96,870	76	16.98	7.64	2.86	0.45	10.95	0.28	0.27	1.54	3.14	33.15	0.91	34.17	0.85	1.77	0.40	32.91	30.00
2029	226,361	97,651	76	17.12	7.70	2.89	0.45	11.03	0.28	0.28	1.55	3.16	33.41	0.91	34.45	0.89	1.81	0.43	33.13	30.00
2030	228,170	98,431	76	17.25	7.75	2.91	0.45	11.11	0.28	0.29	1.56	3.18	33.68	0.91	34.73	0.93	1.85	0.45	33.35	30.00
2031	229,838	99,151	76	17.38	7.81	2.93	0.45	11.19	0.28	0.31	1.57	3.20	33.92	0.91	34.99	0.97	1.88	0.47	33.55	30.00
2032	231,507	99,871	76	17.50	7.86	2.95	0.45	11.26	0.28	0.32	1.57	3.23	34.17	0.91	35.25	1.00	1.91	0.49	33.76	30.00
2033	233,175	100,590	76	17.63	7.91	2.97	0.45	11.34	0.29	0.33	1.58	3.25	34.41	0.91	35.51	1.03	1.95	0.51	33.97	30.00



Future Additional RCW Potable Offsets
Total Water Demand (mgd)
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30 mgd Requested Allocation
Future Additional RCW Potable Offset
Existing RCW Potable Offset
Future Conservation
Potential Existing Conservation
Demand Without Existing Conservation

February Agenda

- Finalize Requested Allocation
  - Population
  - Reclaimed Water
  - Water Conservation
  - Demands
- Agree to "++" concepts
- Present Groundwater Modeling Approach
  - Models
  - Scenarios

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End of Presentation

GRU100
100 YEARS of SERVICE | 1912-2012

GRU CUP RENEWAL MEETING MINUTES

JONES EDMUNDS

PURPOSE:	GRU's CUP Renewal Workshop No.4
MEETING DATE:	February 13, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Jenn McElroy, Rae Hafer SJRWMD – Jay Lawrence, Patrick Burger SRWMD – Tim Sagul, Kevin Wright, Clay Coarsey, Trey Grubbs GIS Associates – Rich Doty Jones Edmunds – Brett Goodman, Fatih Gordu Liquid Solutions – Rob Denis

The following is a summary of the meeting discussion. The meeting presentation and sign-in sheet are provided as attachments to the meeting minutes.

Item	Action	Description
1	Info	Population and Demand Projections – Tony opened up the meeting with a discussion of the final Tables 1 and 2. GRU wants to reach closure on the demand projections so that their consultants can move forward with modeling. Jay provided an email from Tammy Bader indicating that "the tables look good". Jay will double-check with Tammy that there are no further reservations with the projections. Jay recommended that GRU plan on submitting the current Tables as part of the application. Jay noted that there could be some minor changes with the construction of the tables, but he is comfortable with proceeding with the projected demands GRU and its consultants will begin documenting the inputs and analyses that support the tables. Kevin Wright indicated SRWMD is acceptable of projections and agrees to move forward with modeling using these projections. The group discussed the proposed allocation. GRU is requesting a permit for 30 MGD not 34 MGD. GRU is committed to being below 30 MGD through the 20-yr duration. However, GRU is requesting that the permit recognize the ability to gain additional allocation if GRU offsets withdrawals above 30 MGD.
2	Info	Groundwater Modeling – The group discussed the general approach to groundwater modeling. A key concern is that both Districts have models that are being revised with uncertain completion dates. GRU noted concerns with moving forward with previous model versions and new versions becoming available that will result in additional work. GRU would prefer to lock in a

model and keep the process moving forward.

GRU proposed using the SJRWMD NEF V4.1 as the baseline model since this model has been reviewed by the North Florida Utility Coordination Group and captures the Murphree wellfield. NEF v4.1 is still being revised by INTERA and should be available in the next several months. Patrick noted that V4.0 and V4.1 may not be much different and that an advance copy of V4.1 could be sent to the NFUCG and reviewed by GRU for possible use in the CUP renewal. Jones Edmunds will be reviewing the NEF model to make sure that any site specific information like aquifer performance tests and recharge flows are accurately represented in the model. In addition, Jones Edmunds will study the interaction between the UFA and LFA in the vicinity of GRU's injection wells to evaluate the effect of GRU's LFA injection on the UFA levels. Patrick said that he would be very interested in that as well.

The group discussed the SRWMD North Florida model and the status of the current revision from Version 1.0 to Version 2.0. INTERA is currently revising the NF model, but V 2.0 will not be complete in enough time for GRU to use in their permit renewal application under the current schedule.

SJRWMD and SRWMD did not give assurance that GRU could lock in a model given given that both of their current models are in the process of being revised, and that one or both of those models may be available for use prior to GRU's application. Patrick noted that GRU always has the ability to build a model that would cover the areas of concern without boundary issues. Rob mentioned that a new model would still not alleviate the risk of the revised model's being compared with a new model.

3	**Action Patrick and Clay**	Patrick will provide the group with the scope for model revisions for NEF V4.1 and Clay will provide the group with the scope for model revisions for NF 2.0.
4	Info	GRU proposed using the NEF to define the 0.1-ft contour as the limits of GRU's zone of influence in the analysis of cumulative drawdowns. The 0.1-ft contour is a common threshold for establishing the *de minimus* effects of an applicant's withdrawals. SRWMD and SJRMWD voiced concerns that there may be boundary effects along the western boundary. Trey noted that 0.1-ft drawdown along the western boundary may not be appropriate when evaluating the influence of drawdowns on the springs. He noted that fluxes along the boundary or at cells in the model may be preferred as a *de minimus* threshold instead of a drawdown contour.
5	**Action Patrick and Jay**	Patrick will send the District's general modeling approach for evaluating CUPs. The modeling guidance is attached for review & feedback by all parties. Jay and Patrick will provide feedback on the 0.1-ft contour for constraints on the SJRWMD water resources.

6 **Action Fatih**		Prior to next meeting, Fatih will run the NEF V4.0 to evaluate the extent of the drawdown influence. After this analysis, GRU's team will recommend an approach for defining a *de minimus* threshold and evaluating constraints in SRWMD and SJRWMD. The approach may include an uncertainty analysis to determine the potential importance of the western boundary and other inputs.
7 **Action Trey**		SRWMD will be prepared to discuss a *de minimus* threshold after GRU preliminary model analyses and recommended approach.
Info		Water Resources Constraints – GRU proposed using the re-evaluated MFLs for the Keystone Heights Lakes. The group agreed that this is an acceptable approach. Clay noted that the proposed MFLs for Lake Butler would be released in the next month and the Lower Santa Fe is going to be released in the April timeframe. Clay noted that the preliminary analyses are showing that the Lower Santa Fe is in recovery.
Info		Alternative Water Supply Scenarios – GRU presented the approach to analyze withdrawals that are greater than 30 MGD. There is likely a "permittable withdrawal" that is greater than 30 MGD that will not cause harm and could be permitted if there was not a policy decision to limit the request to the current allocation (30 MGD). If this is the case, GRU proposes to offset any new withdrawals above 30 MGD at a 1:1 ratio. For withdrawals greater than the permittable withdrawal, GRU would have to provide the District reasonable assurance that projects will offset the potential harm of withdrawals greater than the permittable quantity. Jay noted that we should proceed with this general approach and see what the analysis look like before we make any decisions on the best way to condition the concepts in the permit. There was consensus that the permit could be conditioned to account for this type of flexibility and certainty for GRU and the Districts. Jay and Tim mentioned that the location of potential offsets would likely be important. GRU's modeling approach will be to demonstrate that the additional withdrawals can be offset.

GRU CUP WORKSHOP No. 4

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Modeling Approach and Finalizing Population & Water Demand Projections

Pre-application Meeting #4
02/13/13

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Agenda Topics

- Finalize Population and Water Demand Projections
- Groundwater Modeling Approach
- Alternative Water Supply Approach and Project Concepts

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Population and Demand Projections

- Met on 12/12/12 and 1/9/13 to discuss basis for population and demand calculations
- Received and addressed comments and questions
- No known issues at this time
- GRU will proceed with this demand

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Draft Table 1

DRAFT TABLE 1: HISTORIC WATER USE

Past Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day w/o UF (mgd)	UF Avg. Day (mgd)	Commercial/ Industrial Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility (mgd)	Unaccounted for Water (mgd)	Total Avg. Day + Reclaimed Potable Offset (mgd)	Reclaimed Potable Offset Avg. Day (mgd)	Total Avg. Day (mgd)
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2007	187,911	80,787	88	16.55	6.76	2.51	9.26	0.02	0.90	1.85	28.58	0.83	27.75
2008	192,203	82,703	76	14.55	6.74	2.82	9.56	0.00	0.86	1.78	26.75	0.85	25.90
2009	191,189	82,338	71	13.64	6.33	2.71	9.04	0.00	0.72	2.59	25.99	0.96	25.03
2010	189,495	81,679	68	12.97	5.73	2.39	8.12	0.05	0.70	2.43	24.26	0.89	23.37
2011	189,715	81,842	74	14.13	5.96	2.28	8.24	0.03	1.37	2.13	25.90	1.04	24.86

Draft Table 2

DRAFT TABLE 2: PROJECTED WATER USE (USING SJRWMD'S PROJECTIONS)

Future Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day w/o UF (mgd)	UF Avg. Day (mgd)	Innovation District Avg. Day (mgd)	Total Commercial/ Industrial Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility Avg. Day (mgd)	Unaccounted for Water (mgd)	Total Avg. Day + Historical Reclaimed Potable Offset (mgd)	Historical Reclaimed Potable Offset Avg. Day (mgd)	New Reclaimed Potable Offset Avg. Day (mgd)	Total Reclaimed Potable Offset Avg. Day (mgd)	New Conservation Avg. Day (mgd)	Total Avg. Day (mgd)	Difference between Forecasted Demand and Requested Groundwater Allocation Avg. Day (mgd)	Requested Groundwater Allocation Avg. Day (mgd)
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
2012	191,774	82,730	76	16.71	6.82	2.84	0.00	9.67	0.10	1.38	2.62	30.47	0.91	0.13	1.04	0.00	29.43	-0.57	30.00
2013	193,833	83,619	76	16.87	6.89	2.84	0.05	9.78	0.10	1.39	2.64	30.78	0.91	0.16	1.08	0.03	29.67	-0.33	30.00
2014	195,892	84,507	76	17.02	6.96	2.84	0.09	9.89	0.11	1.40	2.66	31.08	0.91	0.23	1.14	0.05	29.89	-0.11	30.00
2015	197,951	85,395	76	17.18	7.03	2.84	0.14	10.00	0.12	1.41	2.68	31.39	0.91	0.26	1.18	0.08	30.13	0.13	30.00
2016	200,061	86,305	76	17.34	7.10	2.84	0.18	10.12	0.12	1.42	2.70	31.70	0.91	0.30	1.22	0.11	30.38	0.38	30.00
2017	202,170	87,215	76	17.50	7.17	2.84	0.23	10.23	0.13	1.43	2.72	32.02	0.91	0.35	1.26	0.14	30.62	0.62	30.00
2018	204,280	88,125	76	17.66	7.24	2.84	0.27	10.35	0.13	1.44	2.75	32.33	0.91	0.39	1.30	0.17	30.86	0.86	30.00
2019	206,389	89,035	76	17.82	7.31	2.84	0.32	10.46	0.15	1.45	2.77	32.65	0.91	0.44	1.36	0.19	31.10	1.10	30.00
2020	208,499	89,945	76	17.97	7.38	2.84	0.36	10.58	0.16	1.46	2.79	32.97	0.91	0.49	1.41	0.22	31.34	1.34	30.00
2021	210,624	90,862	76	18.14	7.45	2.84	0.41	10.70	0.17	1.47	2.81	33.29	0.91	0.54	1.45	0.25	31.58	1.58	30.00
2022	212,748	91,778	76	18.30	7.52	2.84	0.45	10.81	0.19	1.48	2.83	33.61	0.91	0.59	1.50	0.28	31.83	1.83	30.00
2023	214,873	92,695	76	18.46	7.59	2.84	0.45	10.88	0.20	1.49	2.85	33.88	0.91	0.64	1.55	0.31	32.03	2.03	30.00
2024	216,997	93,612	76	18.62	7.66	2.84	0.45	10.95	0.21	1.50	2.87	34.15	0.91	0.69	1.61	0.33	32.21	2.21	30.00
2025	219,122	94,528	76	18.78	7.73	2.84	0.45	11.02	0.23	1.51	2.88	34.42	0.91	0.73	1.65	0.36	32.42	2.42	30.00
2026	220,932	95,309	76	18.91	7.79	2.84	0.45	11.08	0.24	1.52	2.90	34.66	0.91	0.77	1.69	0.39	32.59	2.59	30.00
2027	222,741	96,089	76	19.05	7.85	2.84	0.45	11.14	0.25	1.53	2.91	34.89	0.91	0.81	1.73	0.41	32.76	2.76	30.00
2028	224,551	96,870	76	19.19	7.91	2.86	0.45	11.22	0.27	1.54	2.93	35.15	0.91	0.85	1.77	0.43	32.95	2.95	30.00
2029	226,361	97,651	76	19.33	7.97	2.89	0.45	11.31	0.28	1.55	2.95	35.41	0.91	0.89	1.81	0.46	33.15	3.15	30.00
2030	228,170	98,431	76	19.46	8.03	2.91	0.45	11.39	0.29	1.56	2.97	35.67	0.91	0.93	1.85	0.48	33.34	3.34	30.00
2031	229,838	99,151	76	19.59	8.09	2.93	0.45	11.47	0.31	1.57	2.98	35.91	0.91	0.97	1.88	0.50	33.53	3.53	30.00
2032	231,507	99,871	76	19.71	8.14	2.95	0.45	11.54	0.32	1.57	3.00	36.15	0.91	1.00	1.91	0.52	33.71	3.71	30.00
2033	233,175	100,590	76	19.84	8.20	2.97	0.45	11.62	0.33	1.58	3.34	36.72	0.91	1.03	1.95	0.55	34.22	4.22	30.00

Groundwater Modeling Approach

- Model Selection
- Model Review
- Environmental Constraint Identification
- Scenario Selection
- AWS Project Scenarios

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Model Selection

- Environmental Constraints Analysis
  - NEF v4.1 Base Model (see figure)
- If impact beyond western boundary of NEF v4.1 model
  - NF v2.0 or other
  - Site-Specific
- Limitations
- Timetable (March 1st)

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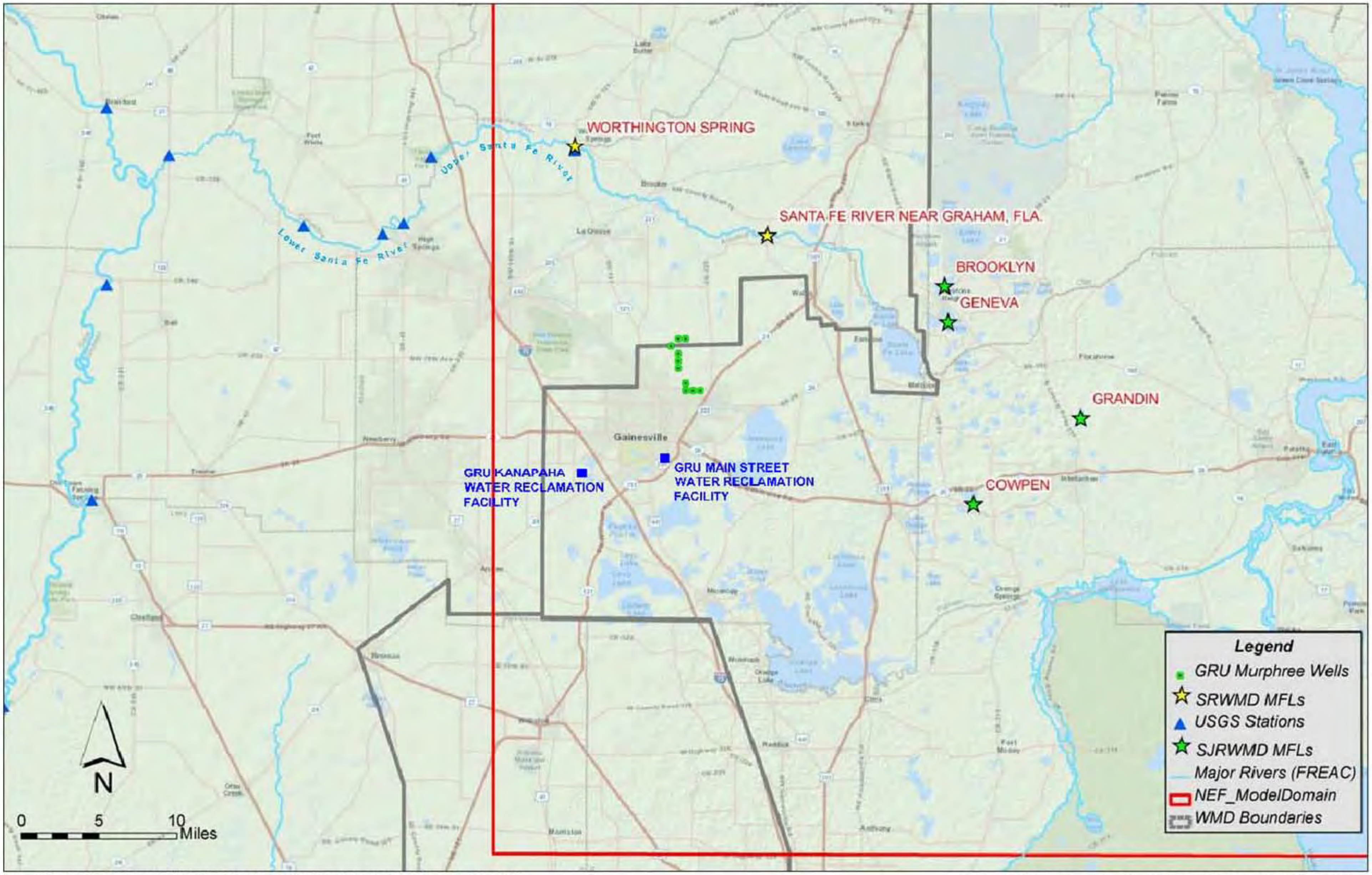
Environmental Constraints & Model Boundary



MAP PROVIDED BY: FATIH GORDU, PE JONES EDMUNDS & ASSOCIATES, INC.

D:\arcdata\Water\Springs Summit\Area Map JEA.dwg PLOTTED: 02\13\13 10:10am by C.A.O.

Model Review

- Model Components
  - GRU's Recharge in the models
    - Injection wells and Alachua Sink, etc
  - Other possible recharges in Alachua County
    - Golf course and Ag irrigations
    - Increased recharge through mining activities
    - Sinks
  - Aquifer Parameters
    - APTs
    - Leakage between UFA and LFA
  - Withdrawals
    - Location
    - Amount

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Environmental Constraint Identification

- SJRWMD MFLs
  - Lake Geneva (latest re-evaluated)
  - Lake Brooklyn (latest re-evaluated)
  - Lake Cowpen (latest re-evaluated)
  - Lake Grandin
- SRWMD MFLs
  - Upper Santa Fe River – Worthington and Graham
- Non-MFL Waterbodies
  - Wetlands and lakes
  - Lower Suwannee River
  - Lower Santa Fe River

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Model Scenario Selection (30 MGD)

- NEF v4.1 Baseline Scenario: 1995 Simulation
- GRU Only Requested Allocation Impact Assessment : GRU= 30 MGD, Others= 0
  - 0.1′ contour in UFA defines limits of influence
- Cumulative Impact Assessment: GRU= 30 MGD, Others= EOP withdrawals
  - Within 0.1′ contour limits of influence established above

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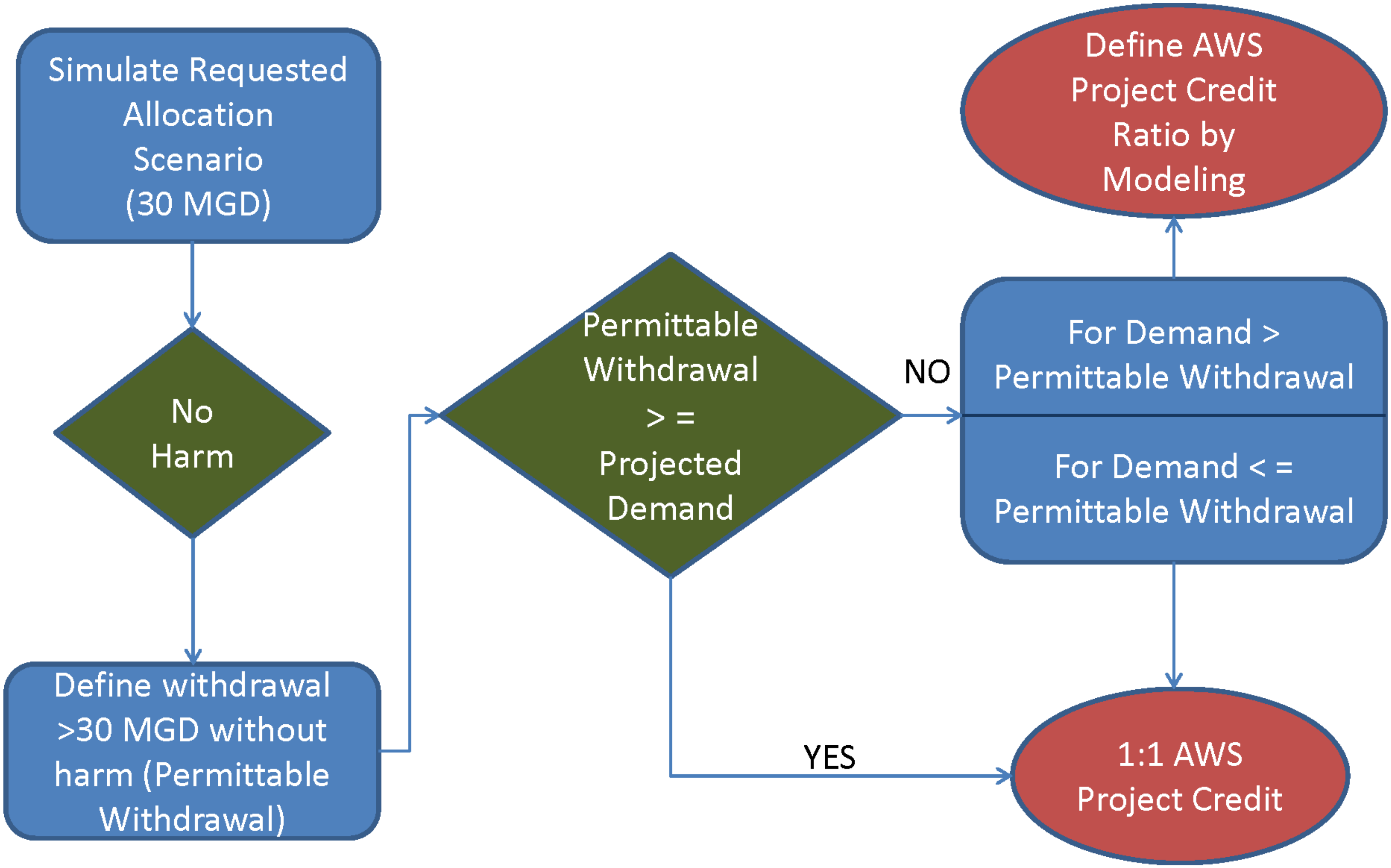
AWS Implementation Approach



AWS Projects Scenarios (>30 MGD)

- If withdrawals without harm
  - Voluntary GRU Proposal
  - Project-specific offset not applicable
  - 1:1 Credit
- Additional withdrawals requiring impact offset or substitution credit
  - AWS projects to address specific concerns
  - Credit ratio or offset defined by modeling

AWS Project Concept Examples

- Additional beneficial recharge at KWRF
- Additional beneficial recharge – Leaky wetlands, RIBs and Sinks
- Reclaimed water substitutions for existing CUPs
- Incentivize conservation and land management by others

Goals of Meeting #4

- Population & Water Demand Projections
  - ☑ Agreed to Values
- Model Selection
  - ☑ Agreed on Model
- Modeling Approach
  - ☑ Agreed to Approach
- AWS Implementation Approach
  - ☑ Agreed to Approach

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March Agenda

- Model Review
    - Discuss Improvements
    - Preliminary Zone of Influence
- Other Legal Users Within Zone of Influence
- Other Legal Users
- Water Quality
    - Cabot Carbon/Koppers Superfund Site
    - Trends at Wellfield
- Interagency Agreement
- Others

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Guidance Document for Reporting Ground Water Flow Model Efforts related to Consumptive Use Permit Applications

Ground water flow modeling is used to evaluate the potential for hydrologic impacts associated with ground water withdrawals. Users of ground water models and reviewers of consumptive-use permit applications must be able to assess the reasonableness of a particular modeling application to achieve its intended purpose. This guideline is intended to elaborate on the requirements necessary for documentation and reporting of a ground water flow modeling evaluation submitted in support of a consumptive use permit application to the St. Johns River Water Management District (District).

The specific guidelines listed below were derived from two published sources. The first source is a report prepared by the U. S. Geological Survey (USGS) to assist users in the evaluation of models and to guide model developers in preparing ground water flow model documentation (Reilly and Harbaugh 2004). The second source is an outline of the major steps required to document and archive a ground water flow model application (ASTM 2006). If the ASTM outline is used, the specific bulleted items listed for submission under the USGS Guideline example must also be included within the appropriate section of that outline. In the outlines provided, some sections may or may not apply. The exact number of sections to address may vary from case to case, but an attempt to cover a majority of the sections is extremely important and makes the review process easier for all involved. **After the second outline, a list is included that describes the minimum requirement for modeling simulations to evaluate the potential impact upon the ground water flow system of a proposed consumptive use. Depending on the complexity of the evaluation needed, the permit reviewer may require additional model simulations to justify the permittee's request.**

In cases where the applicant/consultant has chosen to utilize an existing District groundwater flow model developed by Groundwater Programs, this does not lessen their responsibility to report the modeling work performed in a cohesive, understandable manner. Some or all of the reporting items listed below should be addressed. In these cases, it is extremely important the report emphasize any differences between the District's version of the model and the model data set submitted for the application. All changes in any element of the model must be explicitly detailed and justified.

I. USGS Guidelines for Model Documentation:

1. Describe the purpose of the study and the role that the simulation plays in the addressing that purpose.

The objective of the simulation should be clearly stated. Discussion should revolve around how the model addresses or solves specific problems or answers specific questions.

2. Describe the hydrologic system (conceptual model) under investigation.

The applicant should present in this section all test drilling data (geology, water level and water quality data, geophysical logs and packer test information) and aquifer performance test information collected as part of the RAI process or other related work. Describe the extent, nature of the boundaries, hydrogeologic properties, areas of recharge/discharge and associated mechanisms to help the reader understand the modeler's conceptualization of the system. As much as possible reference previous works, but if you have changed the conceptualization or altered a previous model, then that information needs to be presented in order to contrast the differences.

3. Describe the mathematical method used and their appropriateness to solve the problem.

This is the paragraph describes your use of MODFLOW or other analytical techniques. If there are any changes made to the code, describe it here or options available in the code that you selected to use and why.

4. Describe the hydrogeologic character of the boundary conditions used in the simulation of the system.

Describe the areal extent of boundaries in the model and how they were chosen. Are they physical boundaries or are they arbitrary boundary conditions that do not materially affect the study or area of interest? Internal boundaries such as streams, lakes and pinch-outs of important hydrogeological zones, and/or water quality should be discussed. How these boundaries are represented in the model should also be described.

- A clear, convincing argument of the appropriateness of the boundaries used in the model to represent the actual system should be made for the entire bounding surface of the modeled area (volume) or cross section, as well as for any internal boundaries.

5. Describe the discretization of the modeled area.

Describe the discretization; show a map of the study area with the grid on it. Present an illustration describing the vertical discretization. The manner in which time is discretized for transient models should also be discussed. If a steady-state model is used to simulate average or approximate steady-state conditions, discuss the errors that could be introduced in the study results as a consequence of using a steady-state model.

6. Describe the aquifer system properties modeled.

Explain whatever inferences are made from field data and previous studies such as the spatial variation of hydraulic properties of the aquifer and confining units and how discretized values are computed throughout the simulated area. A description of both the initial starting values and the final parameter sets determined during model calibration must be described.

- GIS layers or some type of graphic representation of parameter values and boundary conditions on a grid-by-grid basis should be included for model review purposes. Include a display of the location and values of all relevant aquifer performance tests that describe the aquifer properties for the system under consideration.

- ***If a previously published model (e.g., one of the District regional ground water flow models) is used as a starting point for the model application, all differences and/or changes made to the published model must be explicitly described and justified.***

7. Describe all the stresses modeled, such as pumpage, evapotranspiration, recharge, discharge, leakage from other aquifers, and connections to surface water features.

The relationship between observed and modeled stresses should be described. The manner in which stresses are averaged within the discretized time and space scheme should also be described. If a steady-state model is used to simulate an average condition, describe how the average stresses representing this system were calculated and handled in the model. The spatial distribution of modeled stresses should be included.

- A location maps of well withdrawals, distribution and magnitudes of reclaimed water within a utilities service area or other sources of water that might influence recharge to the model.

- Tables describing the well construction characteristics, quantities of water to be withdrawn by each well and the layer in the model which the withdrawal is assigned. Also, indicate the difference in wells removed or added as it related to the required modeling simulations.

- For sources influencing recharge, in addition to the spatial location maps, provide a description of the methodology used to estimate any returns flows (reclaimed or potable) or rapid infiltration basin (RIB) recharge applied to the model simulations.

8. For transient models, describe the initial conditions that are used in the simulations.

Ideally, a transient simulation will start from a steady-state condition, and the initial conditions will be generated by a steady-state simulation using the same model. In this case, the steady-state simulation must use the same hydraulic and stress parameters that are used in the transient simulation, except that the transient stresses are removed. For a situation where it is not possible to start a transient model from a simulated steady-state condition, describe how the initial conditions were derived and the possible impact on the model results.

9. Presentation of the ground water flow model calibration criteria, procedure and results.

Describe the source of the observed data to which model results are compared. Explain the appropriateness of using these data for model comparisons and the rationale for any adjustments made to actual observations when making the comparison. It is important to report and use as many types of data as possible for calibration including both heads and fluxes (e.g., spring flows).

- Provide tables of model related statistics by layer and for the model as a whole.

- Provide maps of residuals for target locations in each layer as well as tables listing observed and simulated values for each target.

10. Describe the simulated water budget.

- Provide a table or description of the model-wide and layer-by-layer simulated water budget for each simulation.
- Include a description or tabular listing of the changes in water budget components between base and predictive simulations.

11. Include a description of a sensitivity analysis conducted for important input parameters and/or boundary conditions

Describe the sensitivity of the model's calibration and predictions to variations in the important inputs.

12. Discuss the limitations of the model's representation of the actual system and the impact those limitations have on the results and conclusions presented.

This section should address model limitations and uncertainty related to quality of data used, lack of specific data (aquifer parameters, water levels, lack of topographic data…etc). Include suggestions for improvement of the model.

II. ASTM Guidelines for Documenting a Ground-Water Flow Model Application

The list below was adapted from the ASTM recommended outline for written and graphical presentation of a modeling application (ASTM 2006):

1.0 Introduction

1.1 General Setting
1.2 Modeling Objectives
1.3 Model Function

2.0 Conceptual Model

2.1 Aquifer system Framework
2.2 Ground Water Flow System
2.3 Hydrologic Boundaries
2.4 Hydraulic Properties
2.5 Sources and Sinks
2.6 Water Budget

3.0 Computer Code

3.1 Code Selection
3.2 Code Description
3.3 Modeling Code Assumptions and Limitations

4.0 Ground Water Flow Model Construction

4.1 Model Domain Description
4.2 Hydraulic Parameters

4.3 Boundary Conditions and Sources/Sinks
4.4 Selection of Calibration Targets and Calibration Goals
4.5 Numerical Input Parameters

5.0 Calibration

5.1 Residual Analysis
5.2 Sensitivity Analysis
5.3 Model Verification

6.0 Predictive Simulations

7.0 Summary and Conclusions

7.1 Model Assumptions and Limitation
7.2 Model Predictions
7.3 Recommendations

8.0 References

III. Modeling simulations and corresponding graphical presentations that are required to evaluate the potential impact upon the ground water flow system of a proposed consumptive use:

1. **Model Simulations:**

- Scenario A – all permitted users at 1995 estimated actual flow rates (flow rates can be provided by District)
- Scenario B – Applicant at 1995 rate and other permitted users at current end-of-permit allocation (allocations can be provided by District)
- Scenario C – Applicant at current end-of-permit allocation and other permitted users at current end-of-permit allocation (all users at permitted allocation)
- Scenario D – Applicant at new or modified requested allocation and all other users at current end-of-permit allocation
- Others requested by the Reviewer

2. **Head Difference(Drawdown) Calculations for the Floridan and Surficial Aquifers**:

1. Current permitted cumulative drawdown = Scenario A – Scenario C
2. Applicant's current permitted drawdown = Scenario B - Scenario C
3. Applicant only requested allocation(new or modified) drawdown from 1995 = Scenario B – Scenario D
4. Applicant only additional drawdown for requested allocation from current permitted allocation = Scenario C – Scenario D
5. New cumulative drawdown (from 1995) with applicant's new or modified use = Scenario A – Scenario D

3. **Presentation of model simulations**

Present all model simulations on an appropriate base map that includes but is not limited to wetlands, water bodies, major roads and county boundaries.

- Show wells, service area boundaries (potable and reclaimed) and other items of interest important to the review process.

IV. Submitting Model Files and Data sets for Review:

Accompanying the modeling report or technical memorandum, the applicant should provide <u>all model input and output files in electronic format.</u> Other supporting information related to changes in well locations, fluxes, boundaries or distributions of supplemental recharge (reclaim water projects, irrigation or rapid infiltration basins (RIBs)) should be submitted as GIS coverages and or Excel spreadsheets. The applicant should also provide any other digital files or information crucial to the model developments that are designed to address the reviewing hydrologist's questions.

V. References Cited:

ASTM International, 2006, *Standard Guide for Documenting a Ground-Water Flow Model Application*; Designation D 5718-95 (Reapproved 2006), ASTM International, West Conshohocken PA, 2006, 5 pages.

Reilly, T,E., and Harbaugh, A.W., 2004, *Guidelines for evaluating ground-water flow models*: U.S. Geological Survey Scientific Investigations Report 2004-5038, 30 p.

GRU CUP RENEWAL MEETING MINUTES

PURPOSE:	GRU's CUP Renewal Workshop No.5
MEETING DATE:	March 13, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Jenn McElroy, Rae Hafer, Rick Hutton SJRWMD – Jay Lawrence, Patrick Burger, Carl Larrabee, John Fitzgerald SRWMD – Tim Sagul, Lindsey Marks, Trey Grubbs Liquid Solutions Group –Rob Denis Jones Edmunds – Brett Goodman, Fatih Gordu

The following is a summary of the meeting discussion. The presentation and sign-in sheet are attached at the end of the meeting minutes.

Item	Action	Description
1	Info	Tony discussed the agenda and water resources constraints to be considered as part of the application. We are using the re-evaluated MFLs for the lakes near Keystone Heights. Based on discussions with SJRWMD MFL staff, Lake Geneva is likely the most limiting MFL and the re-evaluated MFL report for Lake Brooklyn will be released in the near future.
2	Info	Jones Edmunds performed preliminary model runs using SJRWMD NEFv4.0 and SRMWD NFv1.0. GRU acknowledges that both models are under revision, however, these initial results were performed to facilitate the discussion on the following questions that were raised in the February meeting: • Are there boundary effects on the NEF's prediction of GRU's drawdown at 30 MGD? • What is the extent of GRU's drawdown at 30 MGD and how close does it come to potential constraints? • What will be the definition of *de minimis* in the evaluation of GRU withdrawals?
3	Info	The initial modeling of the 30 MGD allocation in NEFv4.0 show that there are boundary effects along the western part of GRU's drawdown. We will need an additional tool to evaluate how the proposed withdrawals influence the Lower Santa Fe River.
4	Info	SJRWMD - Using NEFv4.0 with 30 MGD of allocation, the 0.1-ft contour doesn't extend to the lakes near Keystone Heights. Patrick voiced concerns that the NEFv4.0 is going to be changing with INTERA's new work and that the

results will likely change with the next version. One of the primary concerns with NEF4.0 is the reduction in transmissivity from NEFv3.0. Fatih noted that the transmissivity values from aquifer tests near the Keystone Heights were closer to NEFv4.0 than the values in NEFv3.0. The status of the updated model is still unknown, but INTERA has a work order and have been showing the results of the re-calibrated mode. SJRWMD is open to providing an advanced copy of this model to GRU's team when it becomes available.

5	Info	The group discussed the possibility that GRU's requested allocation could lead to recovery and prevention plan language in the permit. We agreed that there could be a couple of options for GRU. One option could be to have a blanket condition similar to recent permits that requires GRU to participate in the recovery and prevention plan process, which they have already been doing. The other option would be to define a local scale alternative that allows GRU to mitigate its share to the drawdown under an MFL water body. This would relieve them from participating in a regional prevention strategy.
6	Info	The group discussed the differences between the planning model withdrawals and the end-of-permit (EOP) withdrawals. In this region, the planning model withdrawals are likely greater than the EOP withdrawals. In this case, the EOP results could show that the MFLs are not in prevention within GRU's requested permit duration. If this is the case, it is not clear why GRU would need to address this issue in its permit. John noted that the planning model numbers are being revised to reflect the updated projections, so the differences between the planned and permitted withdrawals will be closer. If the revised planning numbers still show the MFLs in prevention, it would trigger a prevention plan and GRU's permit application would need to address this issue even if the EOP simulations are showing no prevention through the permit duration.
7	Info	GRU will continue to advance the application and start evaluating Alternative Water Supplies to offset potential withdrawals above 30 MGD. SJRWMD acknowledged that using NEFv3.0 would be conservative. It is likely that if an AWS project works in V3.0 it will most likely work in v4.1. Patrick noted that GRU's injection wells are not correctly represented in V3.0 and this could have an impact on the results. SJRWMD is in the process of revising the model files on the website to reflect the changes to KWRF recharge wells. Jones Edmunds has been gathering information to update the recharge and return flow in the models. The preliminary modeling performed for this meeting did not adjust the return flows or recharge rates that would be commensurate with additional withdrawals.
8	Action Item Jones Edmunds	Jones Edmunds will provide SJRWMD with updated recharge information in GRU's zone of influence. This will incorporate changes in recharge, return flows, reclaimed irrigation, septic tanks and land use change.

9	Info	SRWMD - Using the NFv1.0 with GRU at 30 MGD, the change in flux at the Lower Santa Fe River is approximately 0.04%. The change is based on increasing GRU's withdrawals from 21.5 to 30.0 MGD. NFv2.0 is still being developed, but it is much closer to completion than reported at the last meeting. SRWMD indicated that NFv2.0 is significantly different than NFv1.0. Trey asked several questions about the modeling performed by Jones Edmunds.
10	Action Item Jones Edmunds	Jones Edmunds will provide SRWMD the simulation files and schedule a follow up meeting with Trey and SRWMD to answer any questions.
11	Info	The group continued to discuss *de minimis*. We established that *de mimimis* is the threshold above zero that the impacts are considered insignificant due to the practical limits of modeling. There is still no conclusion on what will be deemed insignificant in the modeling analysis. SJRWMD has used 0.1-ft in the past, but they are considering a different policy. SRWMD has not established a consistent threshold to evaluate requested allocations and evaluate each request on a case-by-case basis. Patrick suggested that an analysis could be performed to bracket the model limits and uncertainty. This would help define what is insignificant at the edges for GRU's drawdown contour.
12	Action Item SRWMD and SJRWMD	The policy question on *de minimis* needs to be resolved by the Water Management Districts as soon as possible. Otherwise the modeling effort spent and the work leading up to the application could be irrelevant and lead to requests for information and additional effort after the application is submitted.
13	Info	The group discussed the general modeling approach which follows the guidelines provided by SJRWMD. If the NFv2.0 is available, the process for both Districts could use the same baseline condition. SRWMD requested time to review the approach and guidelines.
14	Action Item SRWMD	SRWMD will review the SJRWMD modeling guidelines and let GRU know if this approach is acceptable for modeling by the next meeting.
15	Info	Tony reviewed the approach for evaluating AWS projects. WMD staff noted that GRU would first need to demonstrate that the request of 30 MGD doesn't have an impact. Both SJRWMD and SRWMD voiced the need to look at the spatial location of potential AWS projects. This would help demonstrate the credit and potential offsets. Tim noted that SRWMD would like to understand the potential options that could be considered in the western and northwestern parts of GRU's zone of influence.

16	Info	Water Quality – Rick Hutton provided an update on the status of the Cabot Carbon – Koppers Superfund Site. GRU has been a very active stakeholder in this process. They enlisted a team of experts to advise them on the most appropriate remedies to protect the public water supply. The EPA is the responsible agency for the site. EPA has recently approved a comprehensive remedy for the site. The responsible party for implementing the remedy will be commencing with construction now that the EPA's Record of Decision has been issued. Once complete, the remedy will be protective of the Floridan Aquifer. In the meantime, there has been an extensive amount of groundwater monitoring in the Floridan Aquifer around the site that shows that the site is not an immediate concern to GRU's wellfield. Brett noted that the last permit provide a summary of the activities that were going to take place as reasonable assurance and now those activities are being implemented. GRU will provide a summary of the status in the application.
17	Info	Water Quality - Sulfates have been tracked at each well since the requirement in the last CUP. Generally, the sulfate levels vary between wells. The wellfield has experienced some upward trends in hardness and sulfates. The likely cause is the up-coning of water from the Lower Floridan Aquifer. While levels vary from well to well, the finished water quality of the plant is well below the drinking water standards. In addition, the expansion of the wellfield over the last 10 years allows GRU to spread out the drawdowns and reduce the upconing potential. GRU is proposing to summarize and submit the information that has been reported to the SJRWMD on an annual basis.
18	Info	Existing Legal Users – GRU is proposing to submit a summary of existing legal users and a well interference plan that is very similar to those approved with the last permit application. Jay noted that we should use a conservative withdrawal such as a maximum month demand. GRU will perform the analysis with a demand representative of a maximum month condition. The previous application used 40 MGD, this is likely sufficient.
19	Info	The Interagency Agreement was discussed. GRU has requested changes to the agreement that provide GRU notification if the agreement is terminated and the agreement needs to recognize the duration of the permit in the language. Tim informed the group that the agreement was going to be modified and presented to the SRWMD in April.
20	Action Item Tim	Tim will provide Jay with copy of the modified language. If possible, GRU would like to get an advanced copy of the language changes.

Gainesville Regional Utilities
CUP Workshop No. 5
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: March 13, 2013

LOCATION: GRU – Admin Building

PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
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Jack "Trey" Grubbs	SRWMD	jwg@srwmd.org	386-362-1001
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Jenn McElroy	GRU	mcelroyja@gru.com	352.393.1291

JONES EDMUNDS

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Modeling Approach, Other Legal Users, Water Quality, Interagency Agreement

Pre-application Meeting #5
03/13/13

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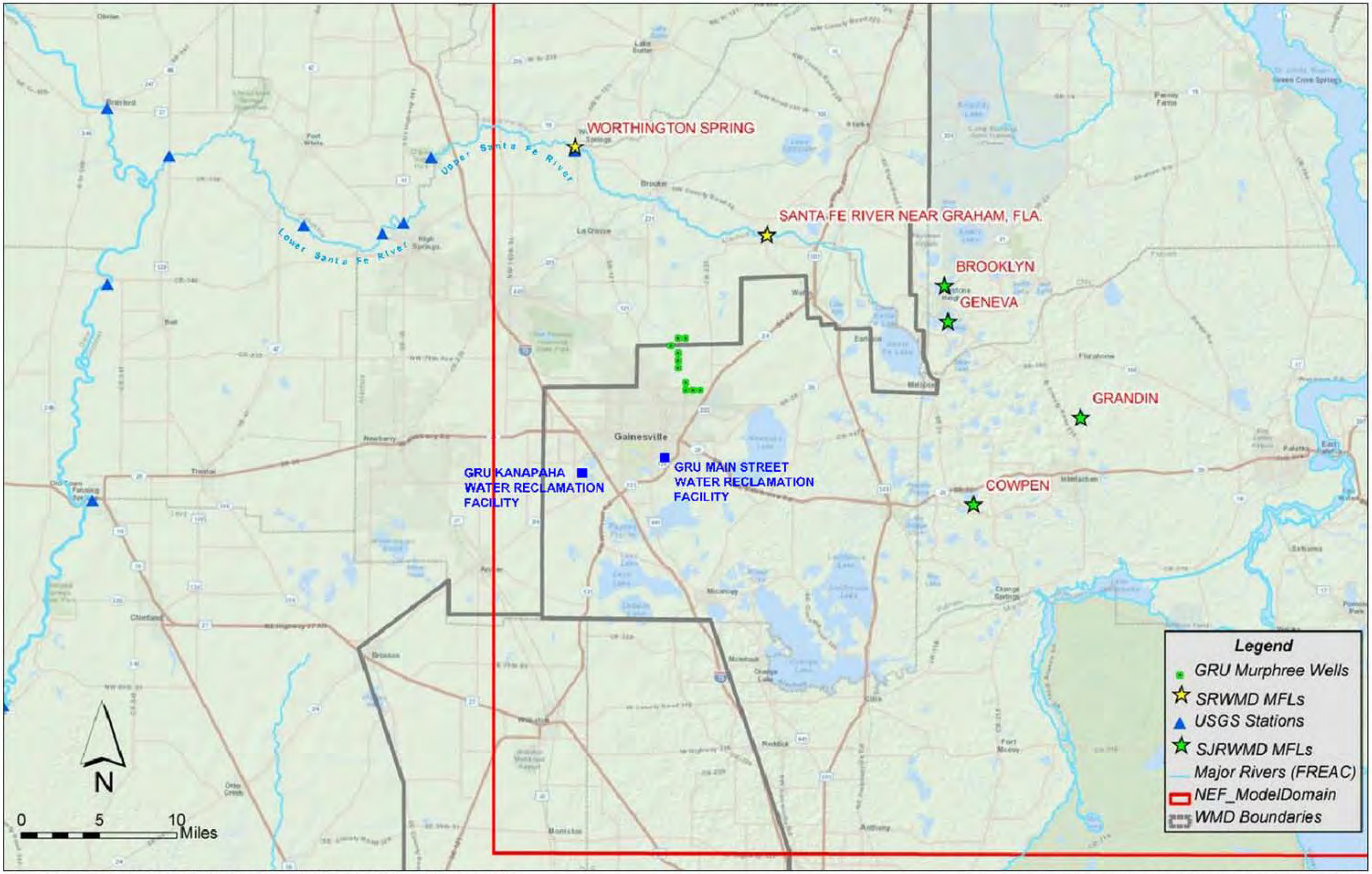
Environmental Constraint Identification

- SJRWMD MFLs
  - Lake Geneva (latest re-evaluated)
  - Lake Brooklyn (latest re-evaluated)
  - Lake Cowpen (latest re-evaluated)
  - Lake Grandin
- SRWMD MFLs
  - Upper Santa Fe River – Worthington and Graham
- Non-MFL Waterbodies
  - Wetlands and lakes
  - Lower Suwannee River
  - Lower Santa Fe River

Environmental Constraints & Model Boundary



MAP PROVIDED BY: FATIH GORDU, PE JONES EDMUNDS & ASSOCIATES, INC.

D:\arcdata\Water\Springs Summit\Area Map JEA.dwg PLOTTED: 02\13\13 10:10am by C.A.O.

Preliminary Modeling Results

- NEF v4.0 Baseline Scenario: 1995 Simulation
  - GRU Only Requested Allocation Impact Assessment : GRU= 30 MGD, Others= 0
    - 0.1′ contour in UFA defines limits of influence within NEF model boundary
    - NEF v4.0 zone of influence (0.1′ contour) does not extend to Clay/Putnam lakes
- NF v1.0 Baseline Scenario: 2005 Simulation
  - GRU Only Requested Allocation Impact Assessment : GRU= 30 MGD, Others= 0
    - Define *de minimis* within NF v2.0 model
    - NF v1.0 shows 0.034% impact (considered *de minimis*)

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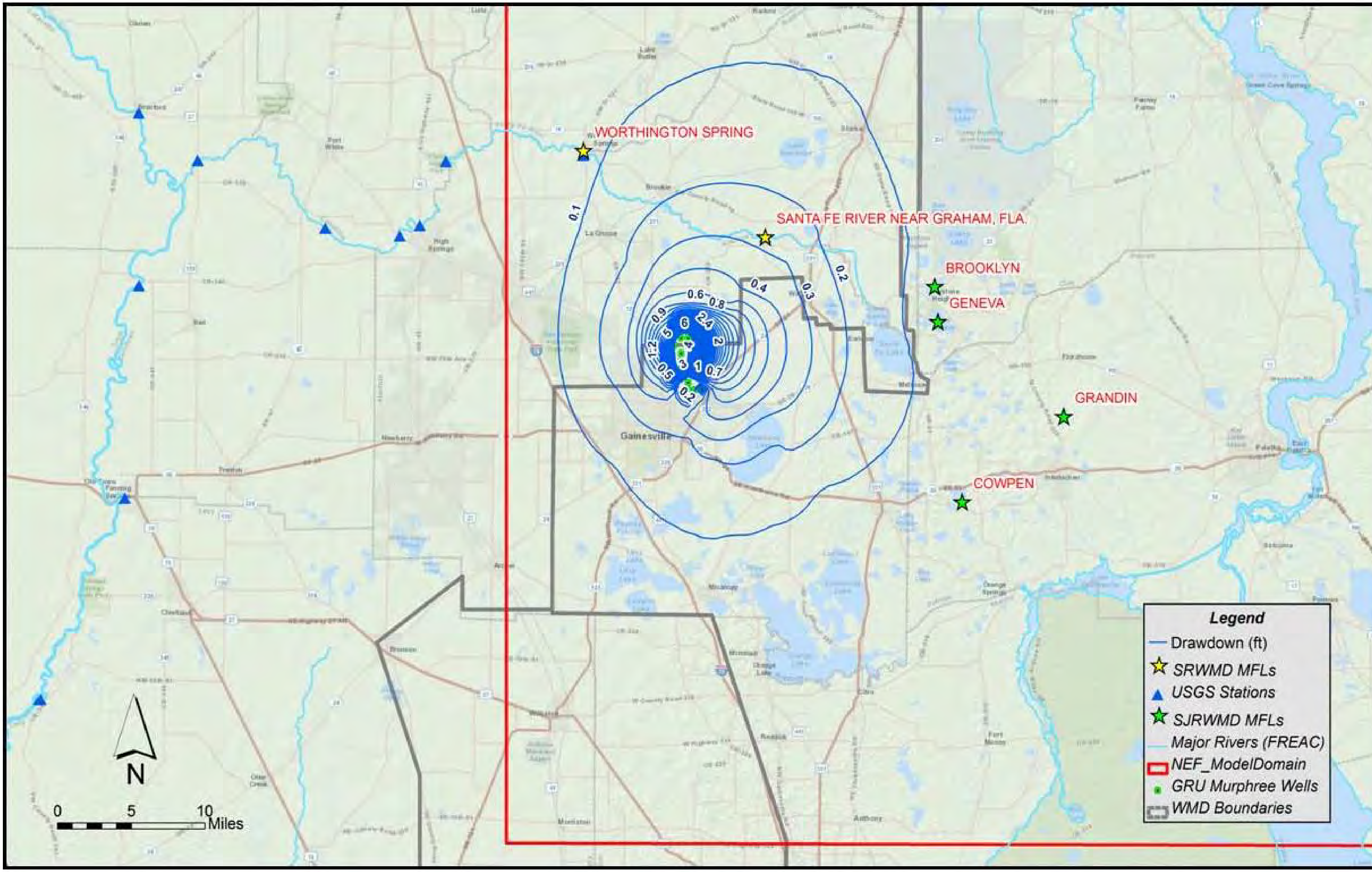
NEF v4.0 Model Results – 30 mgd



Model Selection

- Environmental Constraints Analysis
  - NEF v4.0/4.1 Base Model
  - NF v2.0 (March 29th) for Lower Santa Fe Constraints
- Identifying Limitations

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Modeling Approach

- Follow SJRWMD Modeling Guidelines
  - UPDATE WITH SJRWMD guidelines and SRWMD scenarios
  - Scenario A: All permitted users at 1995 estimated actual
  - Scenario B:
- Cumulative Impact Assessment: GRU= 30 MGD, Others= EOP withdrawals
  - Within 0.1' contour limits of influence established above
  - No MFL environmental constraints within limits of influence
- Start AWS Project Scenario Analyses

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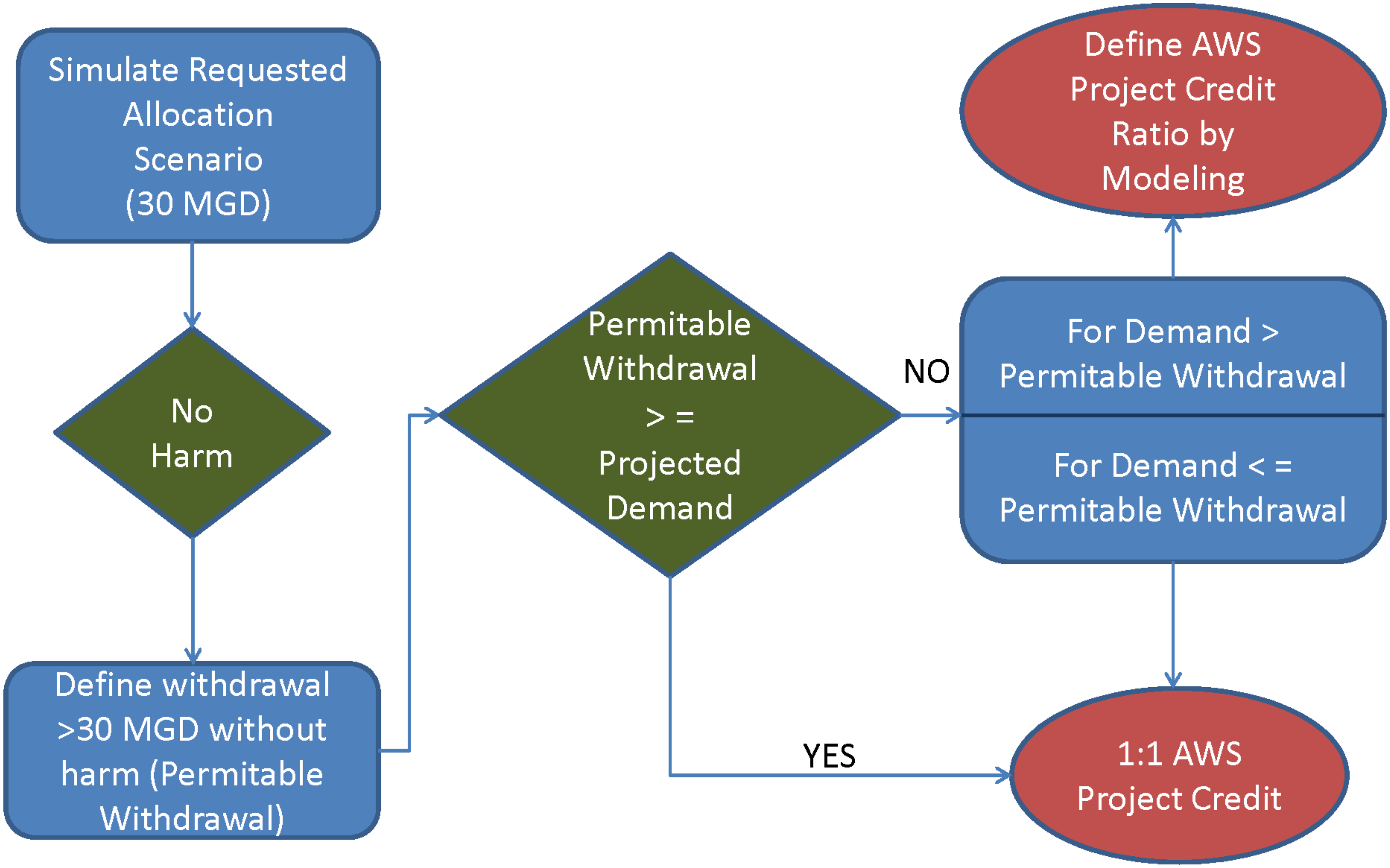
AWS Implementation Approach



AWS Projects Scenarios (>30 MGD)

- If withdrawals without harm
  - Voluntary GRU Proposal
  - Project-specific offset not applicable
  - 1:1 Credit
- Additional withdrawals requiring impact offset or substitution credit
  - AWS projects to address specific concerns
  - Credit ratio or offset defined by modeling

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AWS Project Concept Examples

- Additional beneficial recharge at KWRF
- Additional beneficial recharge – Leaky wetlands, RIBs and Sinks
- Reclaimed water substitutions for existing CUPs
- Incentivize conservation and land management by others

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Other Legal Users

- Update Analysis from last permit with 30 mgd using the NEF v4.0/4.1 model
- Well Drawdowns 1.pdf
- Well Drawdown 2.pdf

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Water Quality

- Koppers Update
- Wellfield Trends


Conservation Easement
Murphree
Koppers
Cabot Carbon
N
W
E
S
0
0.25
0.5
1
Miles

Koppers Monitoring Wells

Well ID	Mar.	May	Aug.	Nov.
FW-25B	**0.96 UJ	-	-	-

Well ID	Mar.	May	Aug.	Nov.
FW-25C	-	-	-	-

Well ID	Mar.	May	Aug.	Nov.
FW-26B	-	-	-	1.1 J

Well ID	Mar.	May	Aug.	Nov.
FW-26C	-	-	-	0.97 J

Well ID	Zone	Feb.	May	Aug.
FW-22B	1	-	-	-
	2	6.6	21	58
	3	48	120	110
	4	1.3 J	1.2 J	-

Well ID	Zone	Feb.	May	Aug.	Nov.	Jan.
FW-12B	1	65	85	95	51	76
	2	1.2 J B	-	-	1.2 I J	1.4 I J
	3	750	950	970	680	750
	4	590	690	680	220	360

Well ID	Zone	Feb.	May	Aug.	Nov.	Jan.
FW-20B	1	730	1000	870	1200	630
	2	96	150	170	83	63
	3	-	-	-	5.9 I J	1.6 I J
	4	-	-	-	5.8	-

Well ID	Feb.	May	Aug.	Nov.	Jan.
FW-6	1100	**1045	2600	730	850

Well ID	Zone	Feb.	May	Aug.	Nov.	Jan.
FW-21B	1	130	140	41	200	**170
	2	9.6	38	10		
	3	-	7.6	-	NS	NS
	4	-	-	-	NS	NS

Well ID	Zone	Feb.	May	Aug.	Nov.	Jan.
FW-16B	1	24	36	30	27	30
	2	1.5 J B	-	-	4.1 I J	-
	3	1.1 J B	-	-	1.9 I J	-
	4	1.7 J B	0.9 UJ	-	5 I J	-

Interagency Agreement

- Improve agreement with recognition of duration of permit renewal
- Name GRU as 3rd party beneficiary with notification

Goals of Meeting #5

- Model Selection
  - ☑ Agreed on Model
- Modeling Approach
  - ☑ Agreed to Approach
- Other Legal Users Analysis
  - ☑ Agreed to Previous Analysis
- Interagency Agreement
  - ☑ Agreed to Update Agreement with SRWMD delegating to SJRWMD

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April Agenda

- Modeling Results
- AWS Implementation Approach
- AWS Project Scenarios
- Others
- Push April meeting to April 17th

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Questions/Action Items

- How did you permit other 20 mgd in Santa Fe Basin?
- Does SRWMD have EOP withdrawals?
- Do we run similar scenarios in SRWMD model as SJRWMD guidelines?
- Narrow the field with 30 mgd request, since other permits have been issued with our 30 mgd legal use. How do we show you that our 30 mgd continues to be acceptable allocation?
- Did SRWMD show our existing legal use when issuing other permits?
- Goals: 30 mgd is clearly permitable. Next step is determining above current legal allocation is permitable. Then additional AWS permitable. Need to have clear understanding of de minimis and allowable. We are getting ready to start modeling AWS projects. We need answers.

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GRU CUP RENEWAL MEETING MINUTES

PURPOSE:	GRU's CUP Renewal Workshop No.6
MEETING DATE:	April 17, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Jenn McElroy, Rae Hafer, Rick Hutton, Debbie Daugherty SJRWMD – Jay Lawrence, Patrick Burger, Lance Hart, Scott Laidlaw SRWMD – Tim Sagul, Lindsey Marks, Trey Grubbs , Marc Minno, Kevin Wright Liquid Solutions Group –Rob Denis Jones Edmunds – Brett Goodman, Fatih Gordu, BJ Bukata

The following is a summary of the meeting discussion. The presentation and sign-in sheet are attached at the end of the meeting minutes.

Item	Action	Description
1	Info	Tony gave a background of the renewal status. The groundwater models are still in flux at both Districts and GRU would like to move forward with the application. GRU's schedule is to submit an application in June.
2	Info	Marc questioned which model was being used as part of the analysis. We recalled that the last permit used the North Central Florida model with a site specific model around the Murphree wellfield. Since that time, the SJRWMD has created the Northeast Florida Model (NEF). We are using NEF Version 3 (V3) for this application. The NEF V3 shows very minimal drawdowns in the surficial aquifer near the wellfield which is similar to the last permit.
3	Info	SRJWMD Modeling Approach – We are proceeding with following the SJRWMD guidelines for evaluating GRU's requested allocation. SJRWMD confirmed that NEF V3 is the appropriate model and that V4.1 was still under development without a firm completion data. Jones Edmunds will be making modifications to return flows and review the recharge at Kanapaha Water Reclamation Facility.
4	Info	We continued to discusse *de minimis*. SJRWMD has not decided on a policy for determining the threshold at which the influence of an applicant's withdrawals is insignificant. GRU is moving forward with 0.1-ft as the *de-minimus* criteria for SJRWMD constraints since this has been used in previous permits that have used the NEF V3 model.

5	Info	SRWMD Approach – After the last workshop, SRWMD provided GRU with recently renewed permits in the areas of the Lower Santa Fe River. The purpose of the permit reviews was to determine how we could use a similar approach as previous permits to evaluate GRU's withdrawals. We were not able to develop an approach for GRU's permit using the permit documents. We agreed to have a meeting with SRWMD in the next two weeks to go through the modeling steps of recent permits such as PCS phosphate.
6	Info	Groundwater Level Trends - Jones Edmunds has reviewed nearby and regional groundwater levels. The purpose of the analysis is to get an understanding of the local and regional influences of GRU's withdrawals and help demonstrate reasonable assurance of the requested allocation. Monitoring wells within 2 miles of the wellfield are showing the same trends as regional groundwater levels over 40 miles away. The 4 MGD reduction in pumpage at GRU's wellfield over the last five years has not affected the groundwater levels within 2 miles of the wellfield. Trey recommended plotting the head differences between wells to get an understanding of how the relationships may be changing and if there is a gradient in the relationship between regional and local groundwater monitoring levels. Patrick recommended looking at the Upper Floridan Well near the Alachua County Fairgrounds.
7	Info	Wetlands Discussion – Jones Edmunds has completed an assessment of the wetlands near the Murphree wellfield. GRU has been submitting annual monitoring reports to SJRWMD since 2000. There have been no observable impacts from pumpage reported over this period. Some wetlands are showing indicators of the long term drought. Long-term water level trends in the wetlands follow the regional rainfall patterns. Since 2004, the levels have steadily declined. The regional rainfall has declined by 7-feet since 1998. With over 100 feet of head difference between the surficial and Floridan Aquifers, the impact of GRU's withdrawals is minimal. This is confirmed with the NEF modeling and monitoring data. Trey asked if the wetland monitoring wells are measuring the surficial aquifer levels. Jones Edmunds will verify. GRU will be proposing improvements to the wetland monitoring program as part of the application.
8	**Action Item GRU**	**Set up modeling meeting with SRWMD**
9	Info	Alternative Water Supply Projects – GRU presented potential location of AWS projects. The approach is to use the NEF V3 model to screen alternatives and develop scenarios that demonstrate that the AWS projects offset additional withdrawals above 30 MGD. Once the projects are screened, we will use the NF

Version 1 groundwater model to verify the benefits of the projects to the Lower Santa Fe River. Both WMD's voiced that the location of the projects are important. We agreed that some projects will likely have more benefits to specific constraints than others. The AWS measures represent projects that are not currently feasible unless needed to get offset and substitution credits for additional allocations above 30 MGD. SRWMD suggested using the Mega Model as a possibility and requested that we submit the corresponding model input and output files for the alternatives we want them to consider. SRWMD is interested in the change in flux at the following locations – Santa Fe at Ft. White, at the Ichetucknee Confluence, and at Hildreth. If we use the NEF V3 model, Trey requested that we perform sensitivity analysis of the western boundary condition to see how much effect this could have on the results.

10	Info	AWS Permit Conditions – Jay indicated that the permit language can be flexible and will depend on the results of the AWS analysis.
15	Info	SRWMD provided GRU with a copy of the revised Interagency Agreements.
16	Info	Submittal schedule – We discussed the following preliminary schedule for the application process. • Meet with SRWMD on modeling (within 2 weeks) • Sit down with WMD staff with a draft application package in May. Tentative date is May 22nd. • Prepare application package for submittal in June
17	Info	GRU asked the WMD staff if there is any other information that needed to be covered before submitting the application.

Gainesville Regional Utilities
CUP Workshop No. 6
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: April 17, 2013

LOCATION: GRU – Admin Building

PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
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Jenn McElroy	GRU		
LANCE HART	SJRWMD	lhart@sjrwmd.com	386.329.4219
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386 329 4205
Patrick Burger	SJRWMD	pburger@sjrwmd.com	386 329 4194
SCOTT LAIDLAW	SJRWMD	SLAIDLAW@SJRWMD.COM	386 312 2388
Debbie Daugherty	GRU		
Rae Hafer	GRU	haferra@gru.com	352-393-1635

JONES EDMUNDS

386-362-1001

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Lindsey Marks	SRWMD	LAM@SRWMD.ORG	"
Kevin Wright	SRWMD	KLW@SRWMD.ORG	"
Marc Minno	SRWMD	MCM@SRWMD.org	"
Rick Hutton	GRU	huttonrh@gru.com	352 393 1218
Fatih Gordu	Jones Edmunds	fgordu@jonesedmunds.com	352 377 5821

Modeling Approach, Other Legal Users, Water Quality, Interagency Agreement

Pre-application Meeting #6
04/17/13

Agenda Topics

- Introductions
- Evaluating Requested Allocation
  - Renewal of 30 MGD
  - SJRWMD Approach
  - SRWMD Approach
- Wetlands
- Alternative Water Supply Strategies
- Interlocal Agreement
- Submittal Schedule

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Renewal of 30 MGD

- The application is going to provide information that supports the renewal of 30 MGD
    - Previously permitted amount
    - Additional permits have been issued since GRU 2009 allocation
    - Initial conservative modeling is showing minimal impact to local and regional constraints
    - Monitoring is confirming the modeling results

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Status of Modeling

- Both Districts have groundwater models under revision
- Completion date of new models is uncertain
- GRU is moving forward with approach to use best available information to demonstrate the renewal amount and potential AWS projects
- GRU's schedule is to complete the modeling analyses and submit the application in late May or early June.

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SJRWMD Approach

- Use NEF v 3
- Follow SJRWMD Modeling Guidelines
- Cumulative Impact Assessment: GRU= 30 MGD, Others= EOP withdrawals
  - Within 0.1' contour limits of influence established above
  - No MFL environmental constraints within limits of influence
- Start AWS Project Scenario Analyses

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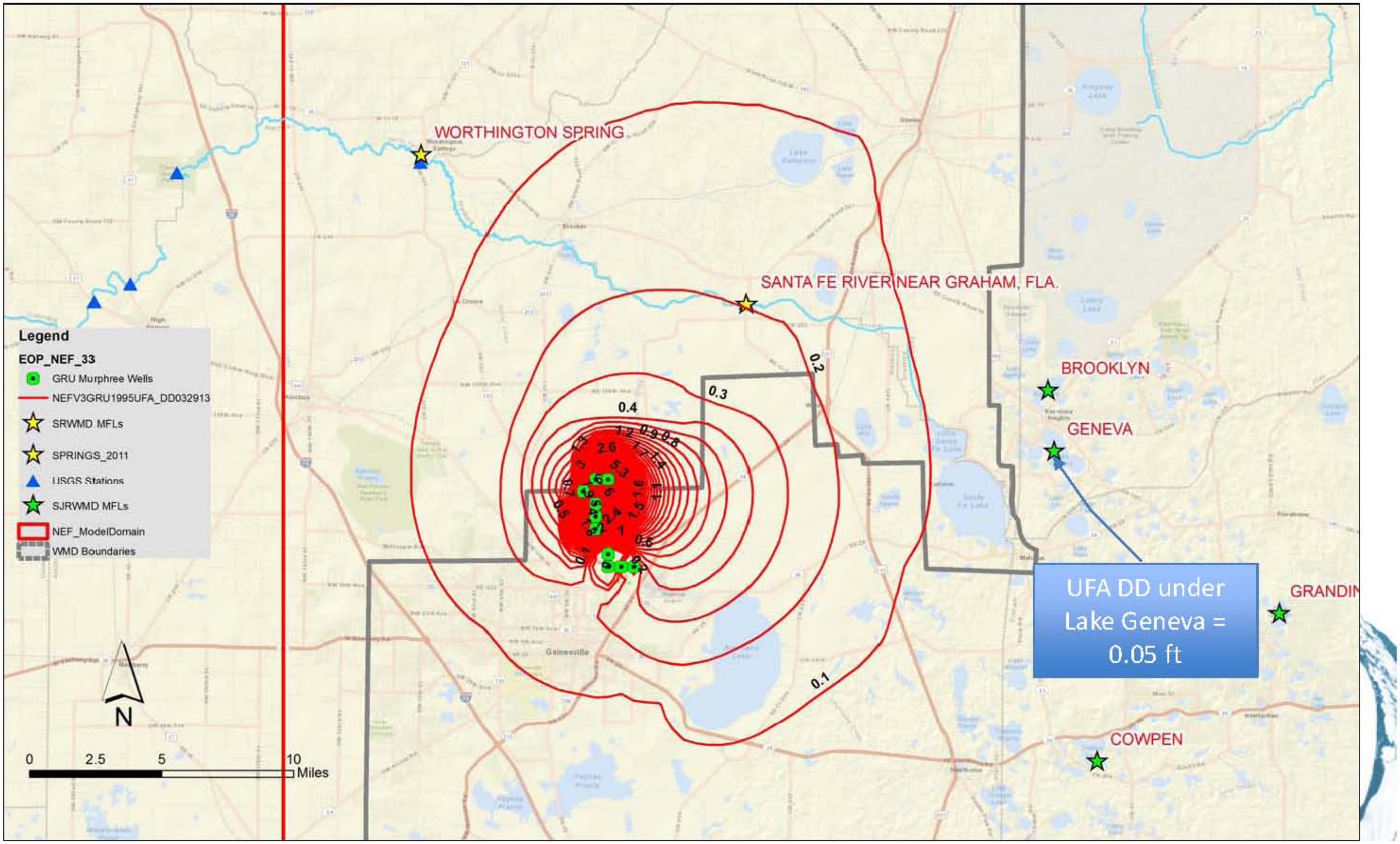
B1

NEF v3.0 – 30 mgd (No Return Flow)



Slide 6

B1 Can we increase size of legend and make map bigger

BBukata, 4/16/2013

SRWMD Approach

- Apply similar process used for other applicants
  - Obtained recent permits within contributing groundwatershed
  - Need more information from SRWMD on the modeling process (Need to set up a meeting)
  - Develop an approach to apply for GRU's permit
- Review monitoring data and pumpage information to demonstrate that GRU's request is permittable

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Evaluating GRU's Potential Impact on Regional UFA Levels

- GRU's pumpage
  - 2006 to 2007 average = 27 MGD
  - 2011 to 2012 average = 23 MGD
- Data Analysis
  - How do regional UFA water levels compare to levels being monitored near the wellfield?
  - Are recent changes in pumping reflected in regional water levels?

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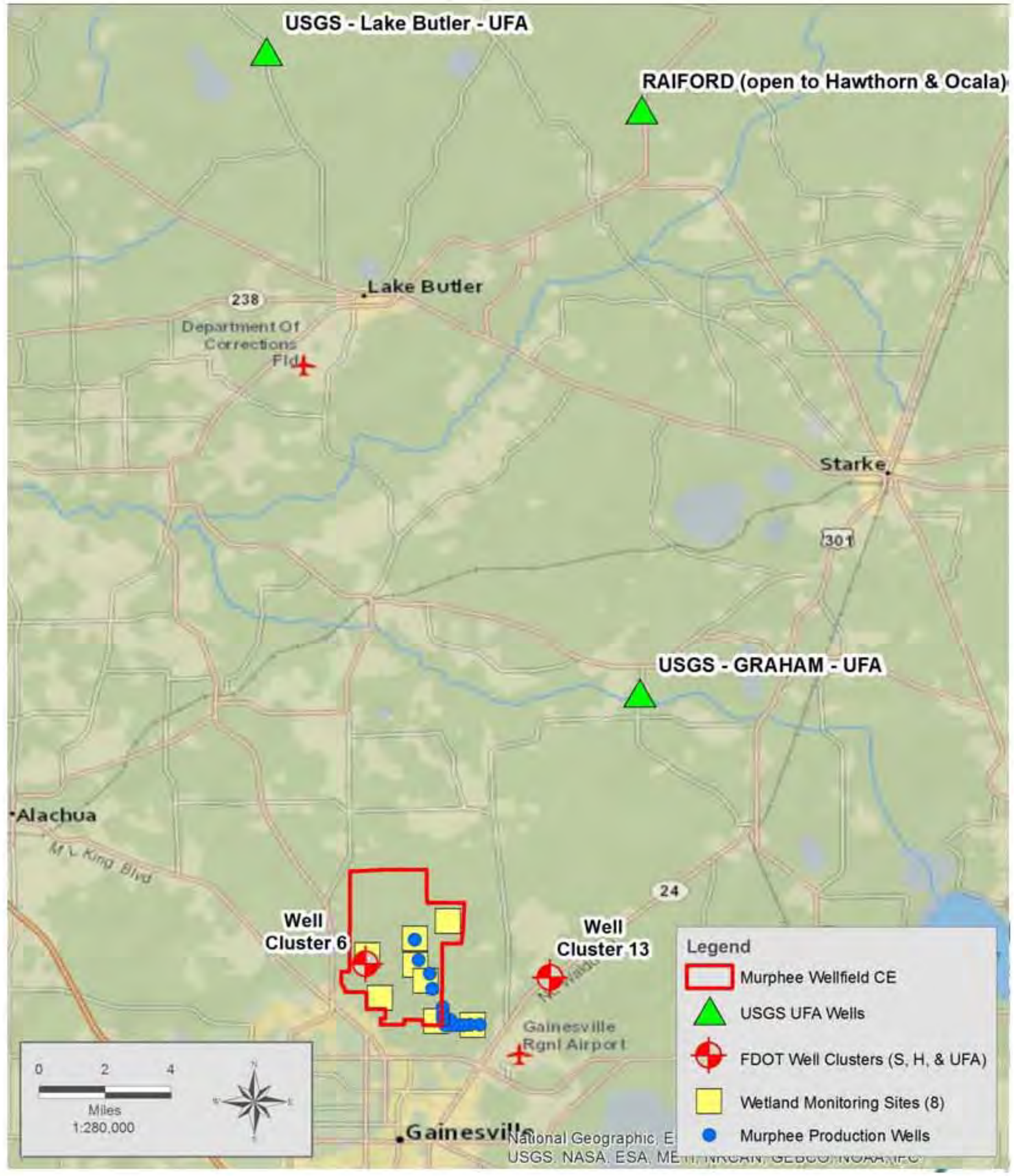
UFA Trends

- Two Well clusters near the wellfield that show different patterns
  - F-13
  - F-6
- Several UFA Regional Monitoring Wells
  - USGS Graham
  - USGS Lake Butler
  - Raiford



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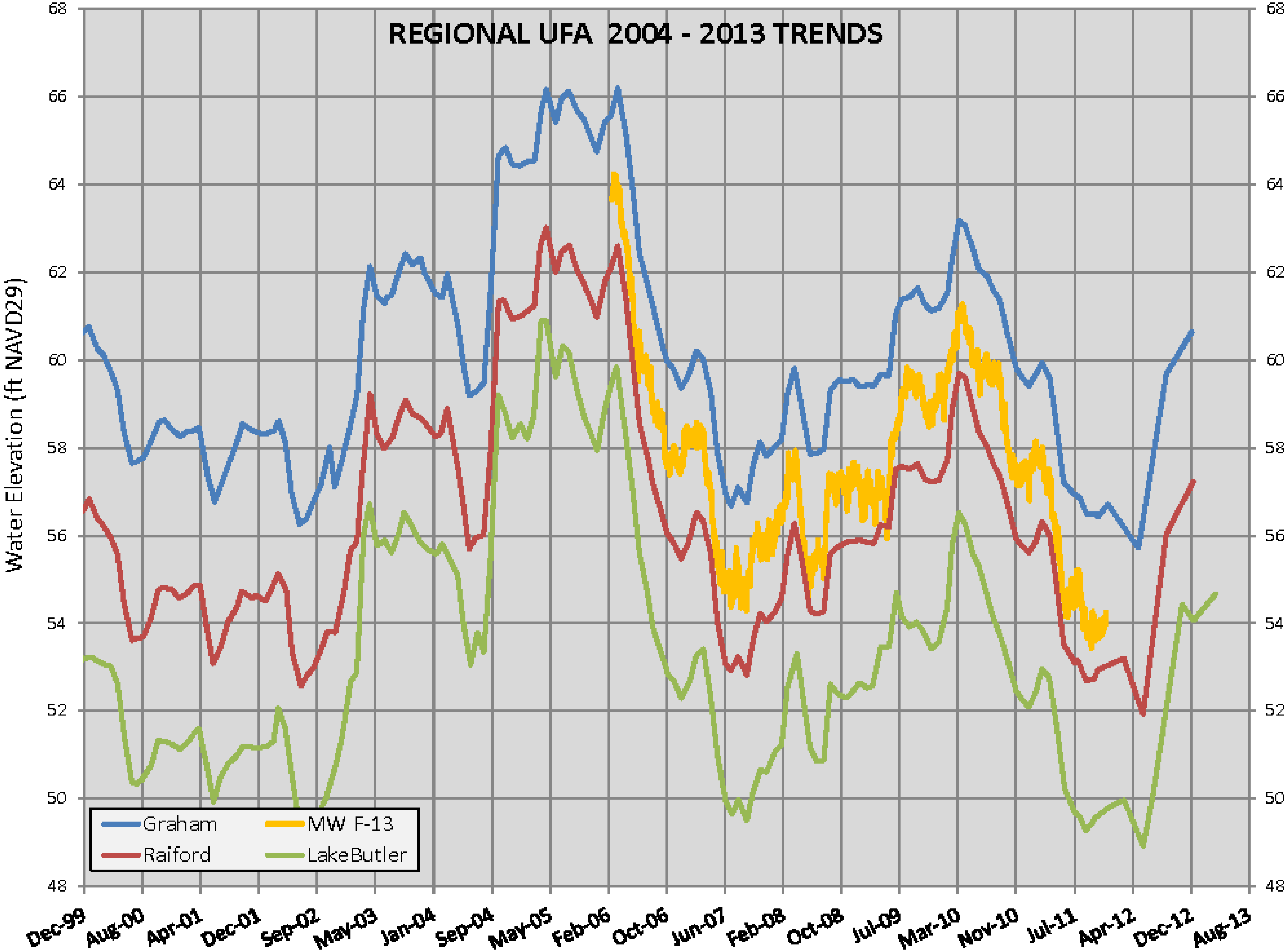
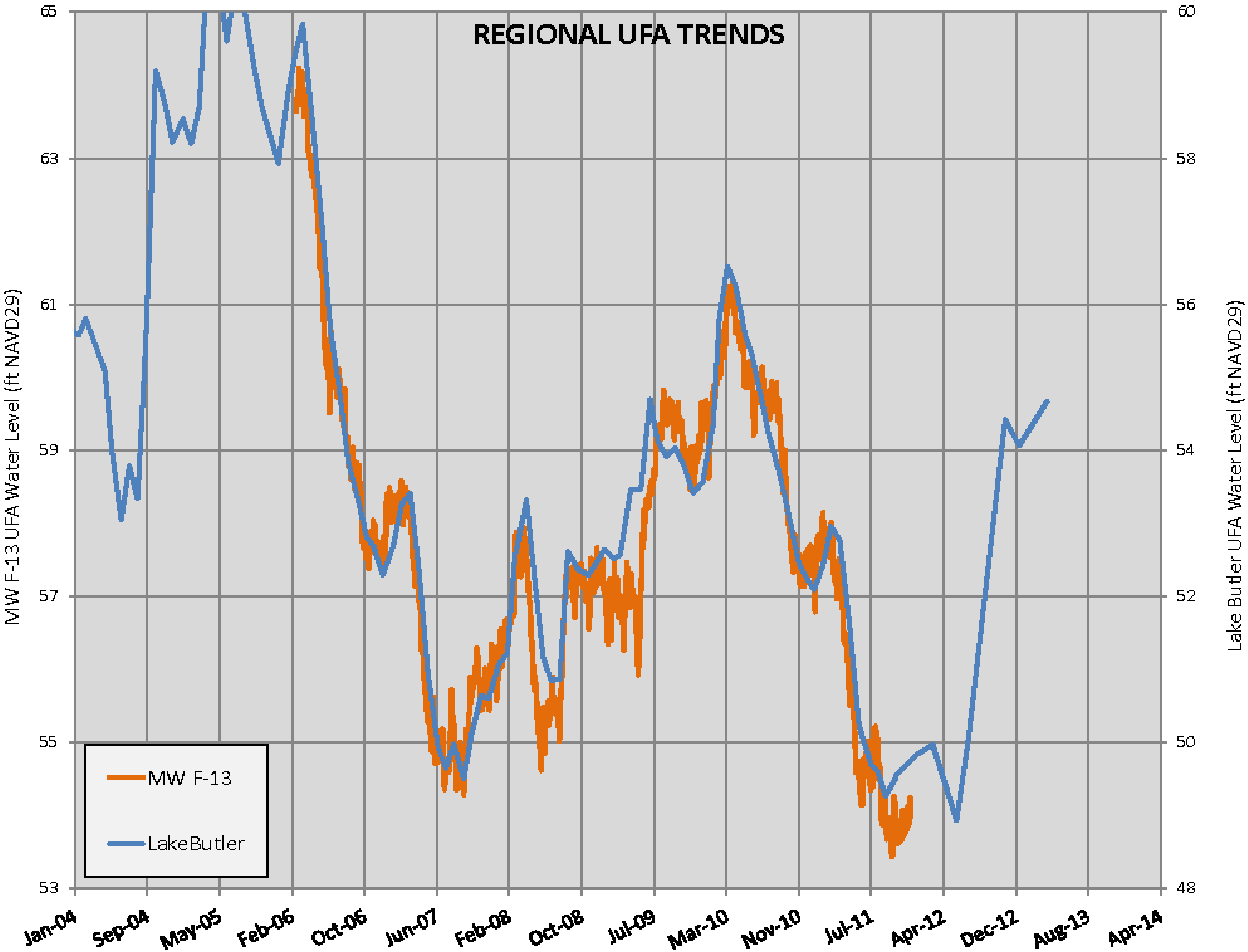
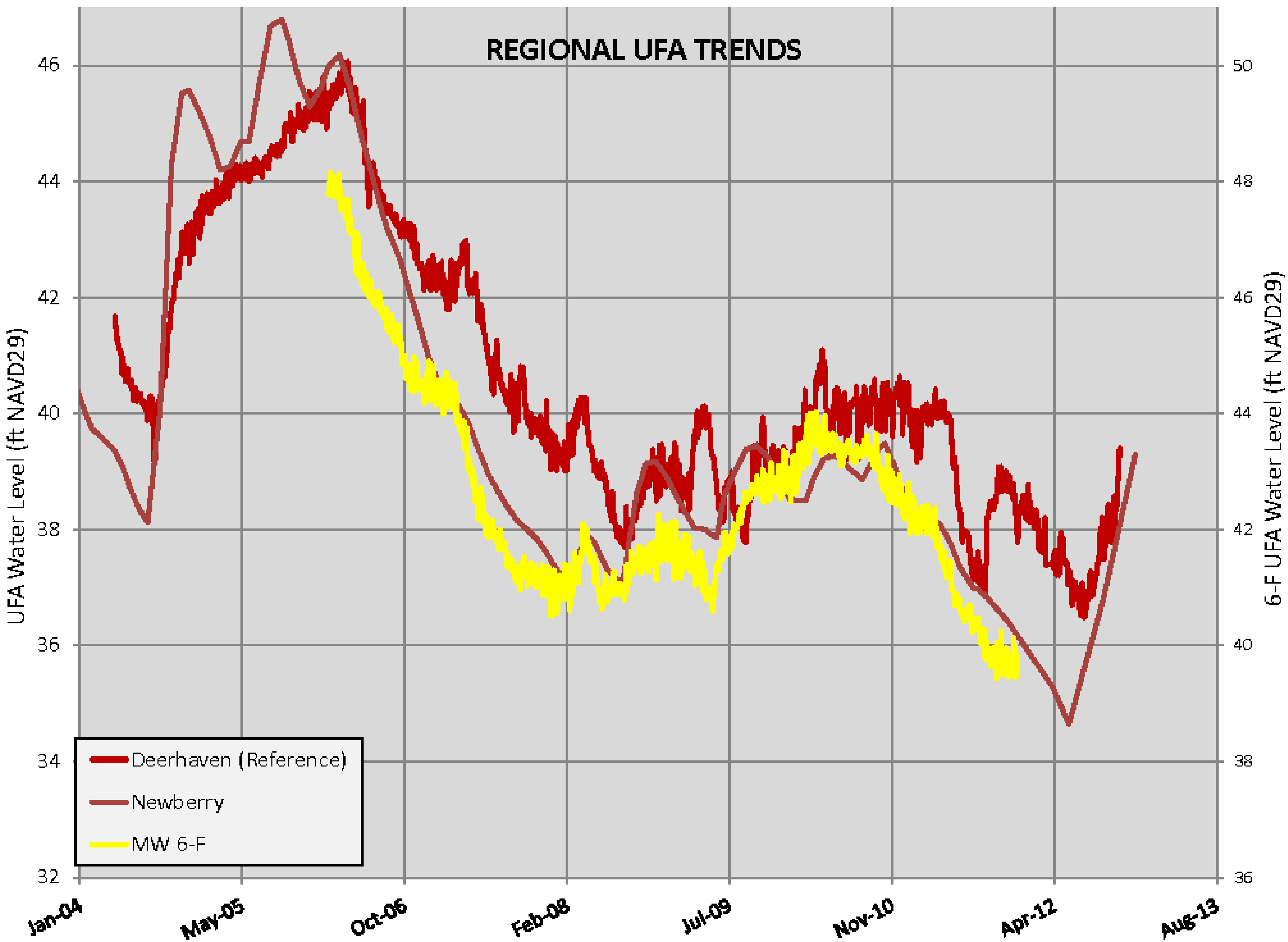


REGIONAL UFA 2004 - 2013 TRENDS
Water Elevation (ft NAVD29)
68
66
64
62
60
58
56
54
52
50
48
Graham
MW F-13
Raiford
LakeButler
Dec-99
Aug-00
Apr-01
Dec-01
Sep-02
May-03
Jan-04
Sep-04
May-05
Feb-06
Oct-06
Jun-07
Feb-08
Oct-08
Jul-09
Mar-10
Nov-10
Jul-11
Apr-12
Dec-12
Aug-13



REGIONAL UFA TRENDS
MW F-13 UFA Water Level (ft NAVD29)
Lake Butler UFA Water Level (ft NAVD29)
65
63
61
59
57
55
53
60
58
56
54
52
50
48
Jan-04
Sep-04
May-05
Feb-06
Oct-06
Jun-07
Feb-08
Oct-08
Jul-09
Mar-10
Nov-10
Jul-11
Apr-12
Dec-12
Aug-13
Apr-14
MW F-13
LakeButler



REGIONAL UFA TRENDS
UFA Water Level (ft NAVD29)
6-F UFA Water Level (ft NAVD29)
46
44
42
40
38
36
34
32
50
48
46
44
42
40
38
36
Jan-04
May-05
Oct-06
Feb-08
Jul-09
Nov-10
Apr-12
Aug-13
Deerhaven (Reference)
Newberry
MW 6-F

GRU's Potential Impact on Regional UFA Levels – Initial Findings

- Approximately 90-100+' of head difference b/w SAS and UFA levels
- Regional wells are showing same trends as wells near the wellfield.
- Effect of 4 MGD of reduction in GRU pumpage does not reach monitoring wells 2 miles from the wellfield.

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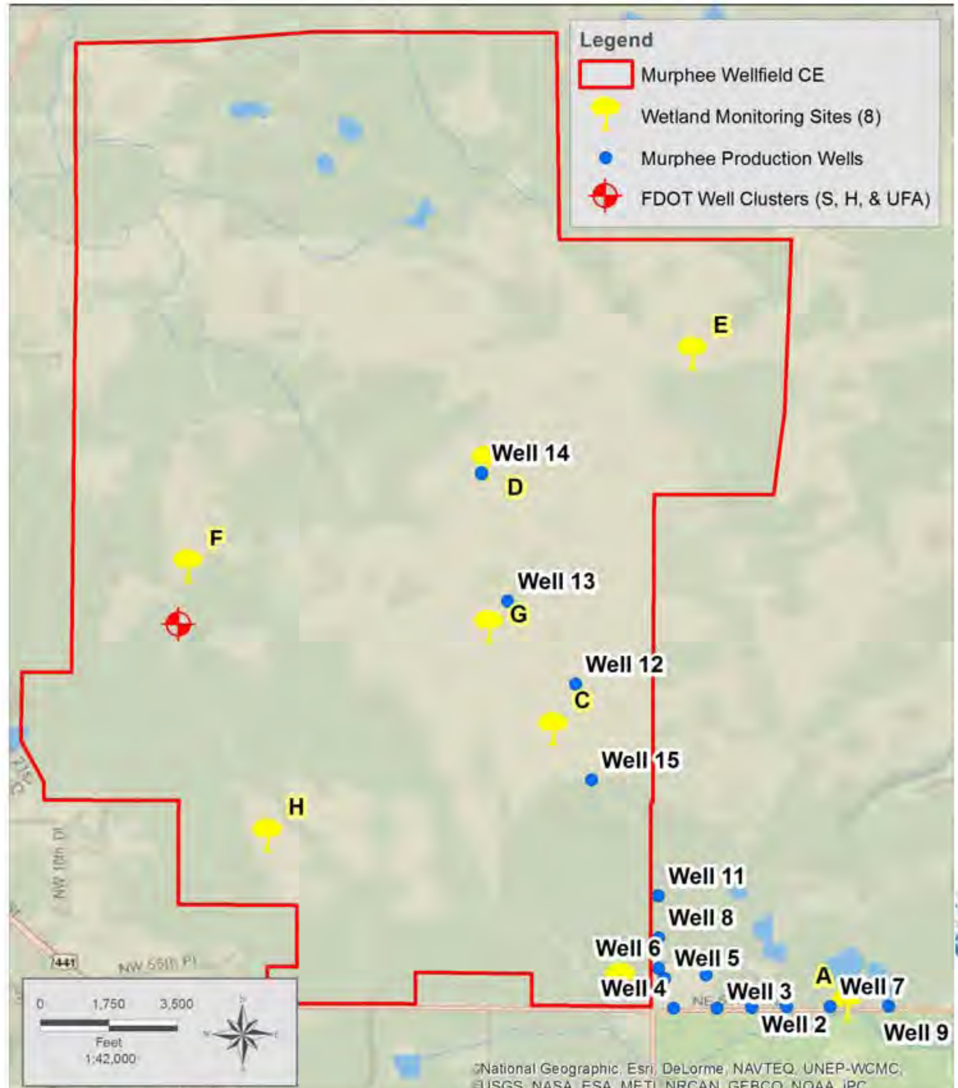
2013 WETLAND ASSESSMENT

- GRU has submitted annual monitoring reports since 2000
  - Wetlands A-D 2000-2003
  - Added Wetlands E and F in 2003
  - Added G and H in 2008
- No observable impacts from pumpage reported



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Recent Site Visits

- Long term surface water level data shows downward trend since 2005
- Wetlands are showing signs of dehydration from prolonged drought

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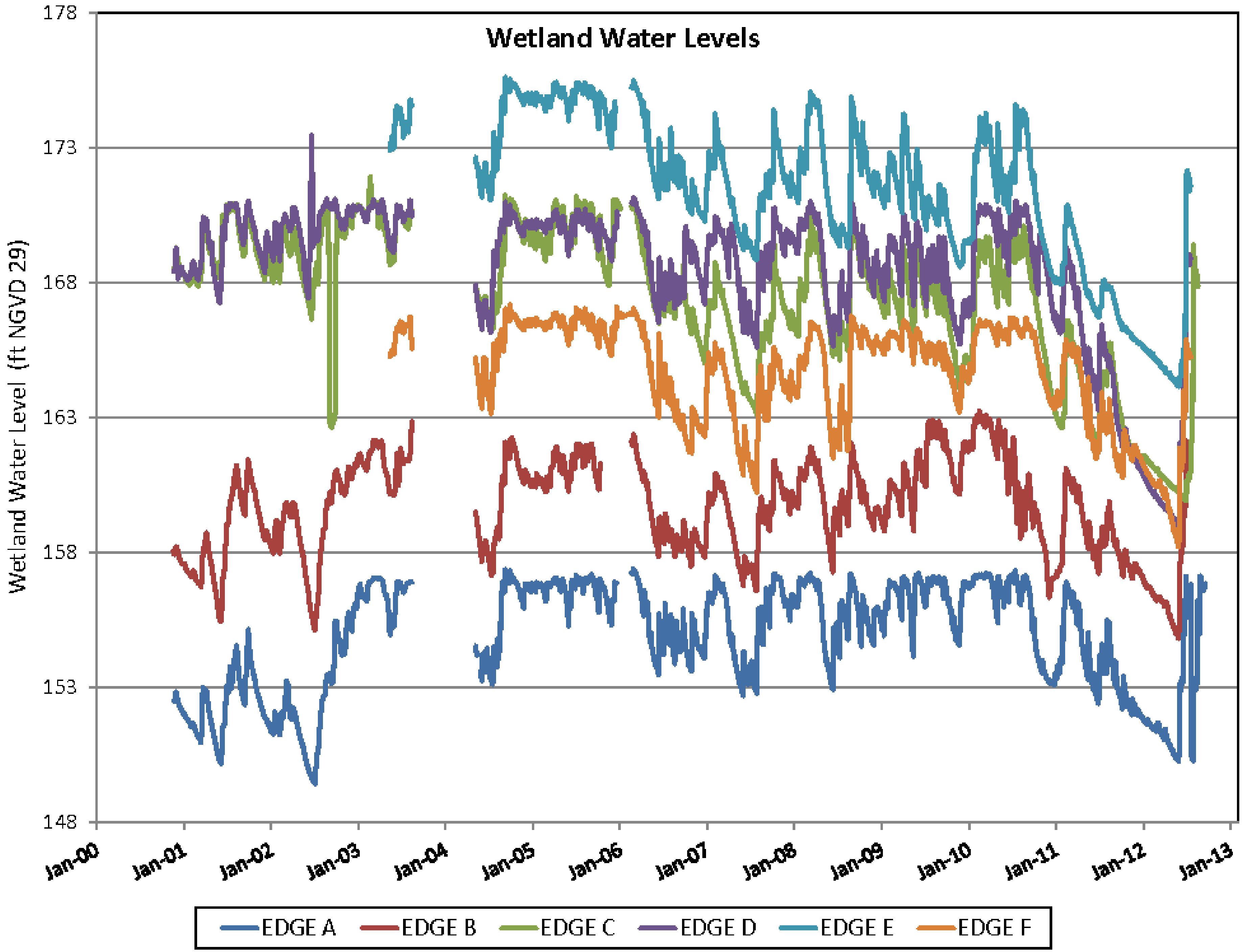
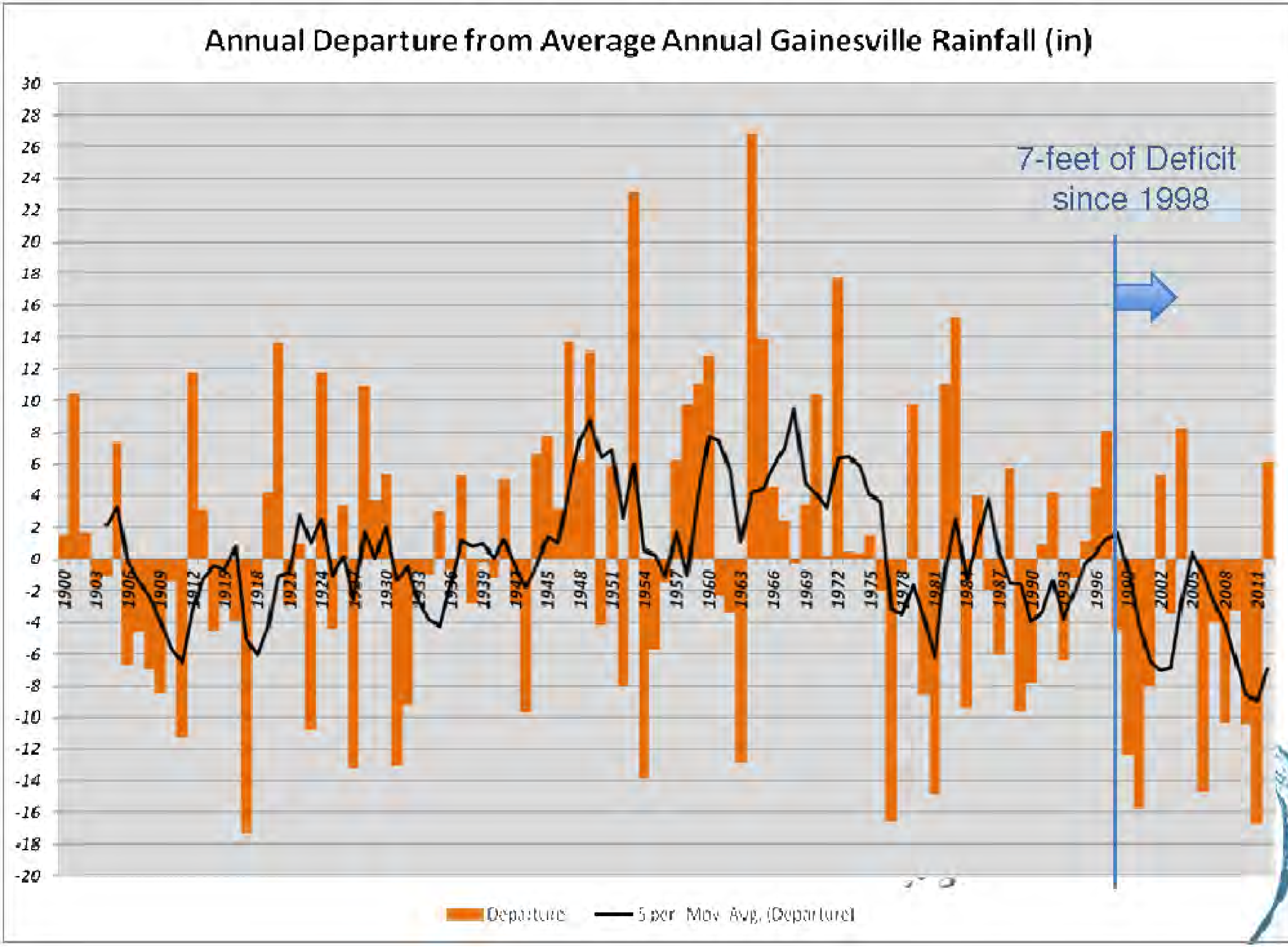


Wetland Water Levels
Wetland Water Level (ft NGVD 29)
178
173
168
163
158
153
148
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
EDGE A
EDGE B
EDGE C
EDGE D
EDGE E
EDGE F


Annual Departure from Average Annual Gainesville Rainfall (in)
7-feet of Deficit since 1998
Departure
5 per. Mov. Avg. (Departure)

Wetland Reasonable Assurance

- NEF Model V3 results show no impact to wetlands since 1995
- Monitoring results are consistent with long term rainfall deficit
- Continue with annual monitoring with modifications

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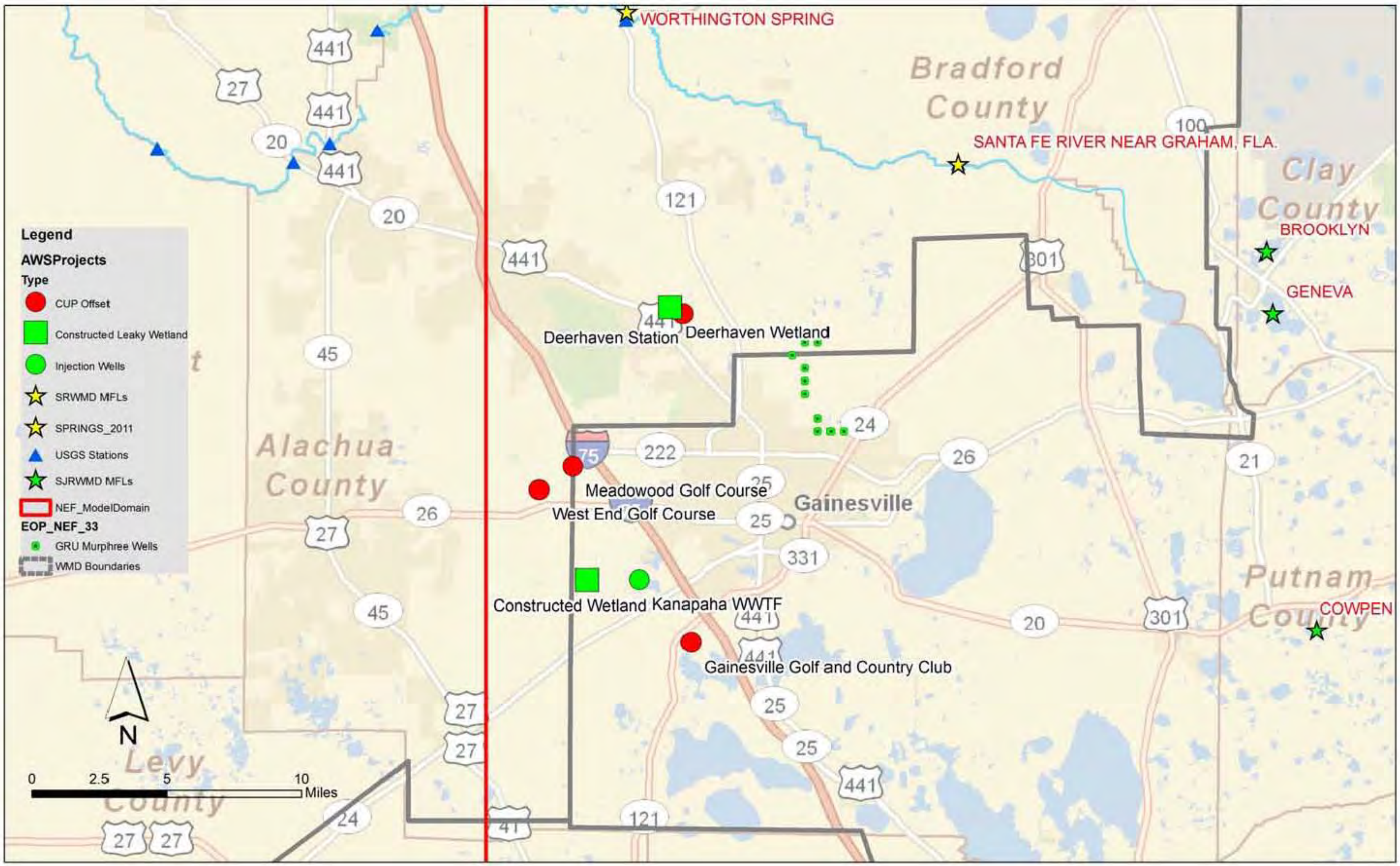
AWS Projects Scenarios (>30 MGD)

- Use NEF V 3 to screen alternatives
- Develop scenarios that demonstrate withdrawals above 30 MGD are allowable
- Use NF V 1 for demonstrating benefits of AWS projects on SRWMD constraints

Possible AWS Projects



Interagency Agreement

- Improve agreement with recognition of duration of permit renewal
- Name GRU as 3rd party beneficiary with notification

Goals of Meeting #6

- Model Selection
  - ☑ Agreed on Model
- Modeling Approach
  - ☑ Agreed to Approach
- Other Legal Users Analysis
  - ☑ Agreed to Previous Analysis
- Interagency Agreement
  - ☑ Agreed to Update Agreement with SRWMD delegating to SJRWMD

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END Presentation

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GRU CUP RENEWAL MEETING MINUTES

JONES EDMUNDS

PURPOSE:	GRU's CUP Renewal Workshop No.7
MEETING DATE:	May 22, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Rae Hafer, Rick Hutton SJRWMD – Jay Lawrence, Lance Hart, Carl Larrabee SRWMD – Carlos Herd, Tim Sagul, Lindsey Marks, Marc Minno Liquid Solutions Group –Rob Denis Jones Edmunds – Brett Goodman, Fatih Gordu

The following is a summary of the meeting discussion. The presentation and sign-in sheet are attached at the end of the meeting minutes.

Item	Action	Description
1	Info	Tony gave a summary of the status and purpose of the meeting.
2	Info	Tim announced that the SRWMD Board has accepted a revised interagency agreement.
3	Info	The final workshop will be on June 19th at Murphree WTP. The purpose will be to review the final application package before it is submitted.
4	Action Jones Edmunds	BJ Bukata will schedule time with Lance and Marc to conduct an on-site visit of wetlands.
5	Info	Regional Groundwater Levels – GRU is continuing to use regional groundwater monitoring data to support the application and modeling. We have developed a more detailed contour map of Alachua County and surrounding areas contributing to the Lower Santa Fe River. The results of the analysis demonstrate: • GRU is returning the water being withdrawn at Murphree back to the same groundwatershed. • The recharge benefits the Lower Santa Fe River. • Local recharge offsets GRU's requested allocation. SRWMD would like a summary on the development of the 1-ft contour map.
6	Info	KWRF Recharge – SJRWMD and SRWMD expressed the desire to understand the connection between the UFA and LFA, specifically at KWRF. We have

gathered information to support that the recharge to the LFA at KWRF is beneficial to the UFA. There is information from USGS studies and past studies that indicate that the layer between the UFA and LFA is leaky. Carlos noted that the USGS investigations are still under review.

Testing at KWRF resulted in estimated leakance values indicative of a good connection between the UFA and LFA. Carlos recommended that we look at other regional monitoring wells and contact Megan Heatherington for more information. We agreed that there is a limited amount of potentiometric data on the Lower Floridan aquifer. Jay noted that the SJRWMD would like to see more supporting data that demonstrates the benefits of recharging the LFA. District staff will likely look at surrounding wells to validate the information presented. GRU is proceeding with a study by the University of Florida that will evaluate some of the benefits of recharging the LFA.

7	Info	Modeling – Tony summarized the approach for demonstrating 30 MGD for each District. There was discussion about the measuring sticks that the District will use to evaluate the requested allocation. Within SJRWMD, the lakes in the Clay-Putnam region will be considered. GRU will submit the request using the 0.1-ft contour to demonstrate their contribution to regional cumulative drawdowns. With current modeling, GRU's influence does not extend to the Clay-Putnam lakes. For SRWMD, the measuring stick(s) to demonstrate that 30 MGD is a reasonable request has not been established. GRU will be providing modeling and groundwater level analyses to support that 30 MGD has been permitted previously and that other renewals and allocations have been permitted using the same tools and methods.
8	Info	Alternative Water Supply Projects - The NEF V3 groundwater model was used to screen alternatives and evaluate benefits for SJRWMD. Once we screened alternatives, we used the NF V1 groundwater model to demonstrate the benefits within the SRWMD. Wetlands and aquifer recharge at KWRF provide approximately a one-for-one offset to additional withdrawals at Murphree. Marc questioned if the leaky wetlands considered increases in evapo-transpiration. GRU noted that previous work by Dr. Knight shows that ET is a small component of the water budget. Carl asked about projects to the east. Current modeling demonstrates that the 0.1-ft contour does not extend to the lakes for allocation up to GRU's demonstratable demand (34 MGD). We discussed that there is a prevention process for the Clay-Putnam lakes and that the End-of-Permit (EOP) analysis with GRU's requested allocation would be different than the planning level analysis being used in the prevention process. The planning level analyses have GRU and other permits at withdrawals higher than EOP allocations. Since GRU's influence does not extend to the Clay-Putnam lakes and GRU is willing to implement AWS projects above 30 MGD, GRU's feels its proposal meets SJRWMD permitting criteria.

Gainesville Regional Utilities
CUP Workshop No. 7
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: May 22, 2013

LOCATION: GRU – Admin Building

PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
Rob Denis	LSG	rob@lsgfl.com	407-349-3900
Brett Goodman	Jones Edmunds	bgoodman@jonesedmunds.com	352-377-5821
Tim Sagul	SRWMD	tjs@srwmd.org	386-362-1001
Lindsey Marks	SRWMD	LAM@srwmd.org	"
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386 329 4205
Lance Hart	SJRWMD	lhart@sjrwmd.com	386-329-4[illegible]
Marc Minno	SRWMD	MCM@srwmd.org	386-647-3156
Rae Hafer	GRU	haferra@gru.com	352-393-1635
Carlos Herd	SRWMD	cdh@srwmd.org	386-362-1001
Rick Hutton	GRU	huttonrh@gru.com	(352)393-1218

JONES EDMUNDS

FATIH GOROU	JONES EDMUNDS	fgordu@jonesedmunds.com	(352) 377-5821
TONY CUNNINGHAM	GRU	CUNNINGHAMA@GRU.com	393-1615
CARL LARRABEE	SJRWMD	clarrabee@sjrwmd.com	(386)329-4222

Finalizing Modeling & AWS Approach, Wetlands, Application

Pre-application Meeting #7
05/23/13

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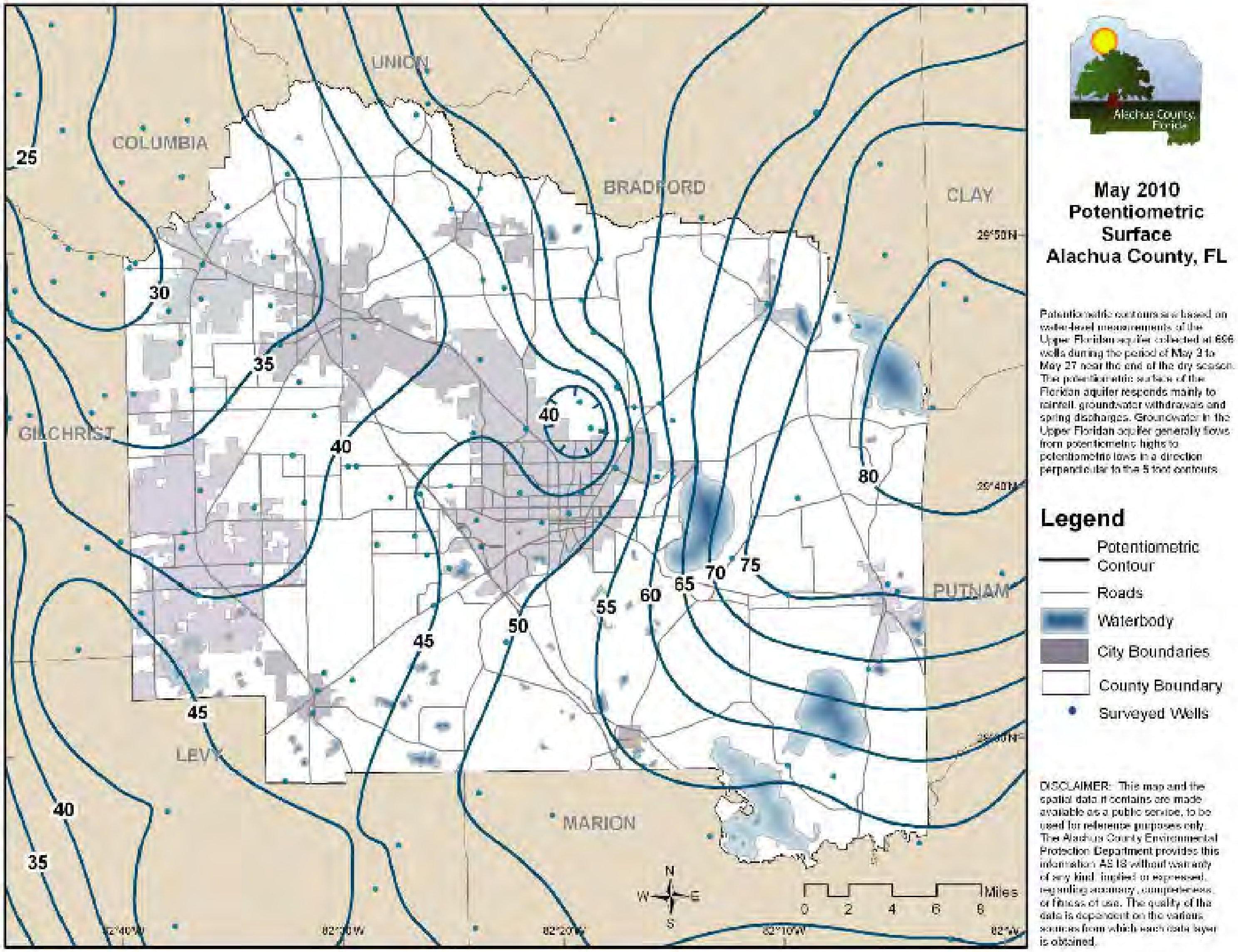
Agenda Topics

- Introductions
- Regional Groundwater Levels
  - GRU Capture Zone
  - Lower Santa Fe Groundwatershed
  - Recharge
- Kanapaha Recharge Wells
- Evaluating Requested Allocation and Alternative Water Supplies
  - SJRWMD Analysis
  - SRWMD Analysis
- Wetlands
  - Schedule Field Visits
- Review Application Contents and Process
- Schedule Final Meeting

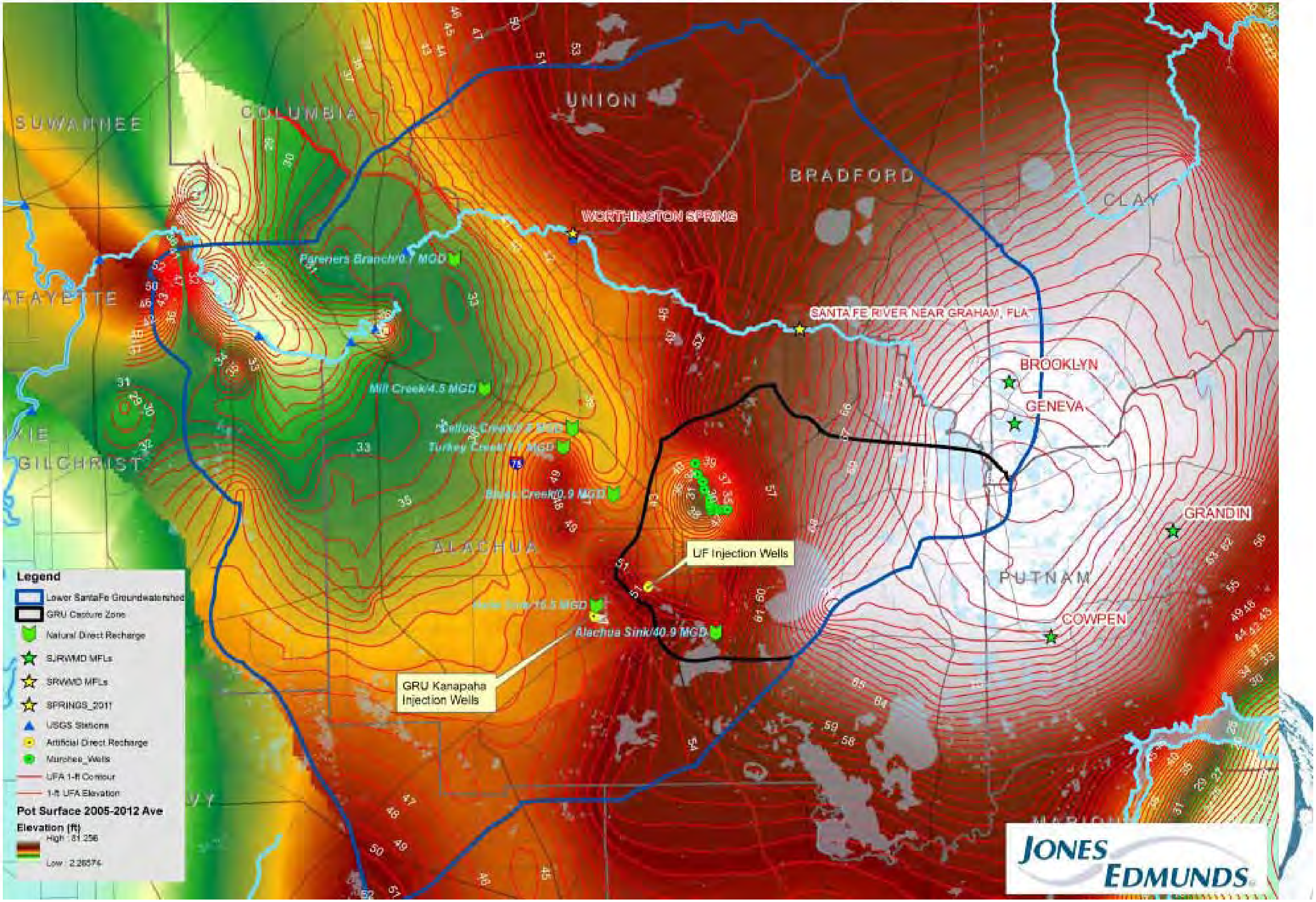
Regional Groundwater Levels Analysis

- Purpose
  - Help better Understand the influence of GRU Withdrawals
  - Help understand influence of regional and local recharge
  - Use measured data to support groundwater modeling results
- Methods
  - Gathered and reviewed data for 233 monitor wells
  - Developed a potentiometric surface representing the most recent period from 2005 to 2012.
  - Generated 1-ft contours from surface using GIS

May 2010 Pot Map (5-ft Contours)



Regional Groundwater Levels and Recharge Features



Regional Groundwater Levels Analysis

- Analysis supports initial modeling results on the western boudary of NEF v3
- GRU capture zone does not reach Lake Geneva
- GRU returns most of its withdrawals to the aquifer within groundwatershed of Lower Santa Fe river through deep well recharge, irrigation and septic tank seepage
- GRU and Local recharge offsets impacts on Lower Santa Fe River
- Water Reclamation Facilities
    - Contributing to the Lower Santa Fe Springshed
    - KWRF recharge providing benefits in the Upper Florida Aquifer

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Kanapaha WRF Recharge Wells

- Four wells discharge reclaimed water that meets the primary and secondary drinking water standards to the LFA
- Monitoring data and previous studies indicate layer between UFA and LFA is leaky
- KWRF recharge providing benefits in the Upper Florida Aquifer

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USGS North-South Section

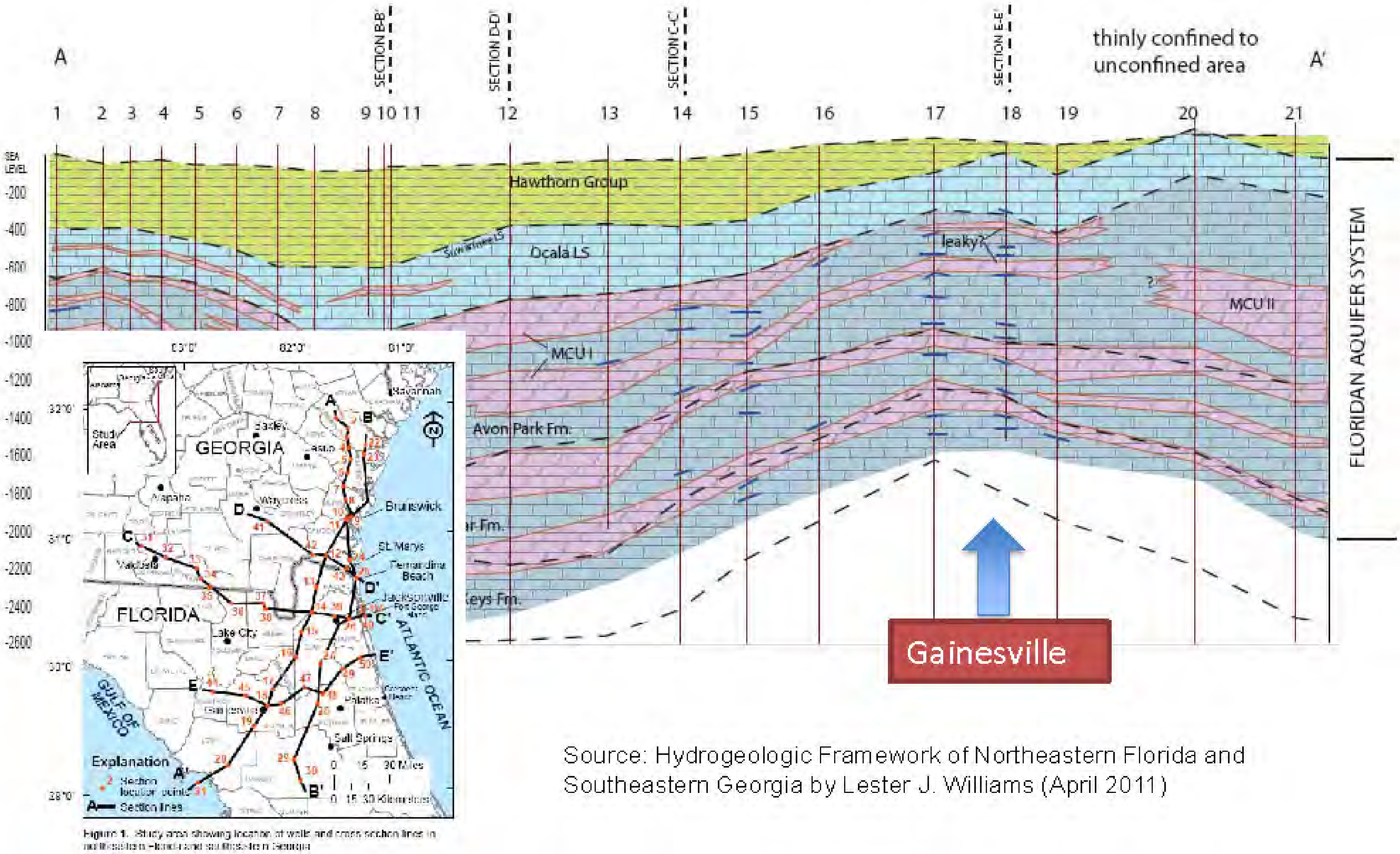


Figure 1. Study area showing location of wells and cross section lines in northeastern Florida and southeastern Georgia

Source: Hydrogeologic Framework of Northeastern Florida and Southeastern Georgia by Lester J. Williams (April 2011)

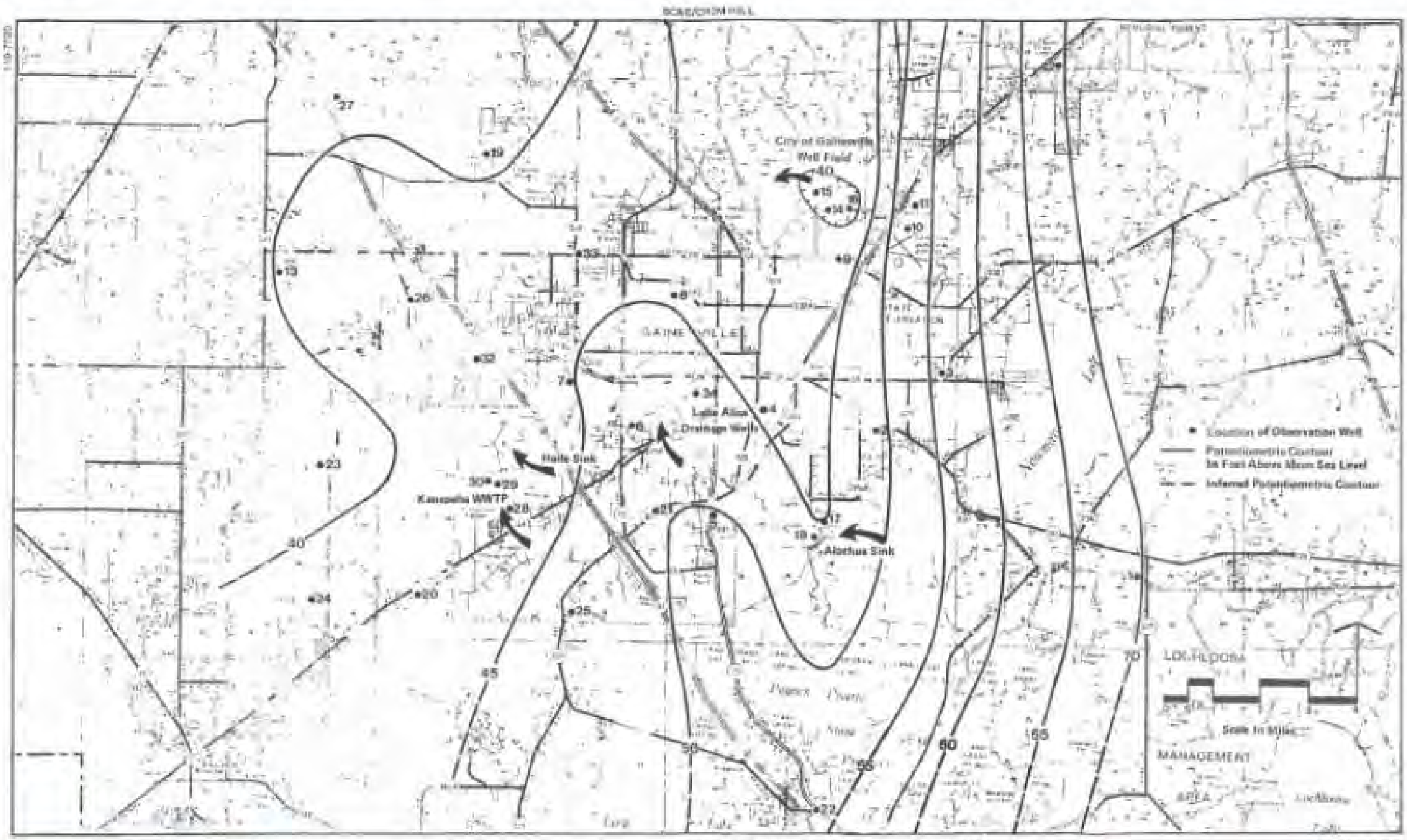
Aquifer Parameters

Table 2-1
AQUIFER TEST RESULTS

Well	Phase	Transmissivity gpd/ft x 10^6	Storage Coefficient	Leakance (Day^{-1})	Method
R-1	Pumping	1.81	8.9×10^{-4}	2.27×10^{-3}	Hantush-Jacob Leaky
R-1	Pumping	1.78	9.5×10^{-4}	($\beta = 5 \times 10^{-2}$)	Hantush Modified
R-1	Pumping	3.13	1.2×10^{-3}	---	Jacob
R-4	Pumping	2.72	1.4×10^{-4}	9.5×10^{-4}	Hantush-Jacob Leaky
R-4	Pumping	0.94	2.9×10^{-5}	($\beta = 1.5$)	Hantush Modified
R-4	Pumping	2.28	5.2×10^{-4}	---	Jacob
R-4	Recovery	2.24	1.3×10^{-2}	---	Jacob

Source: Capacity of Recharge Wells Engineering Report by CH2M Hill (1986)

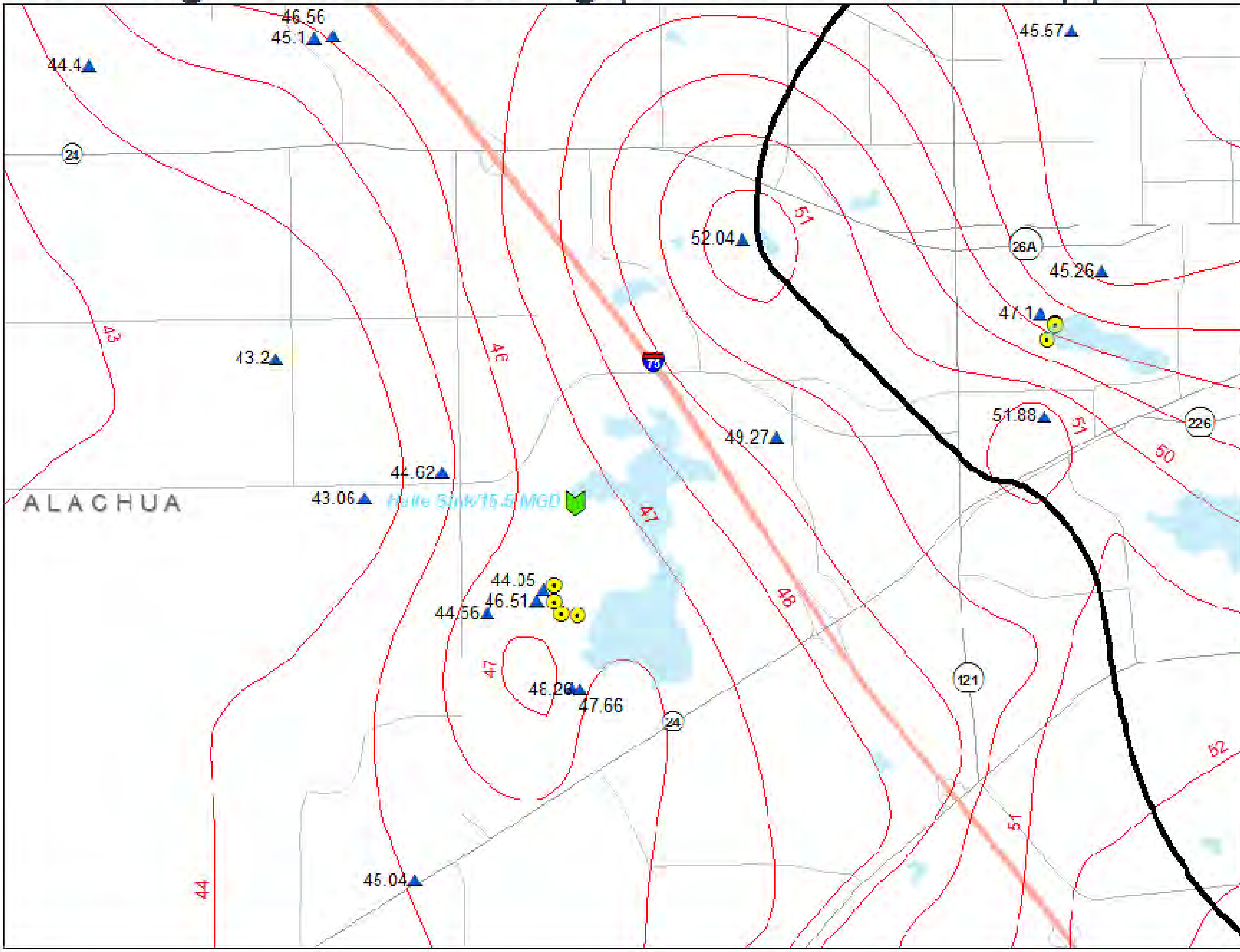
1977 Pot Map (Before the operation of Recharge wells)

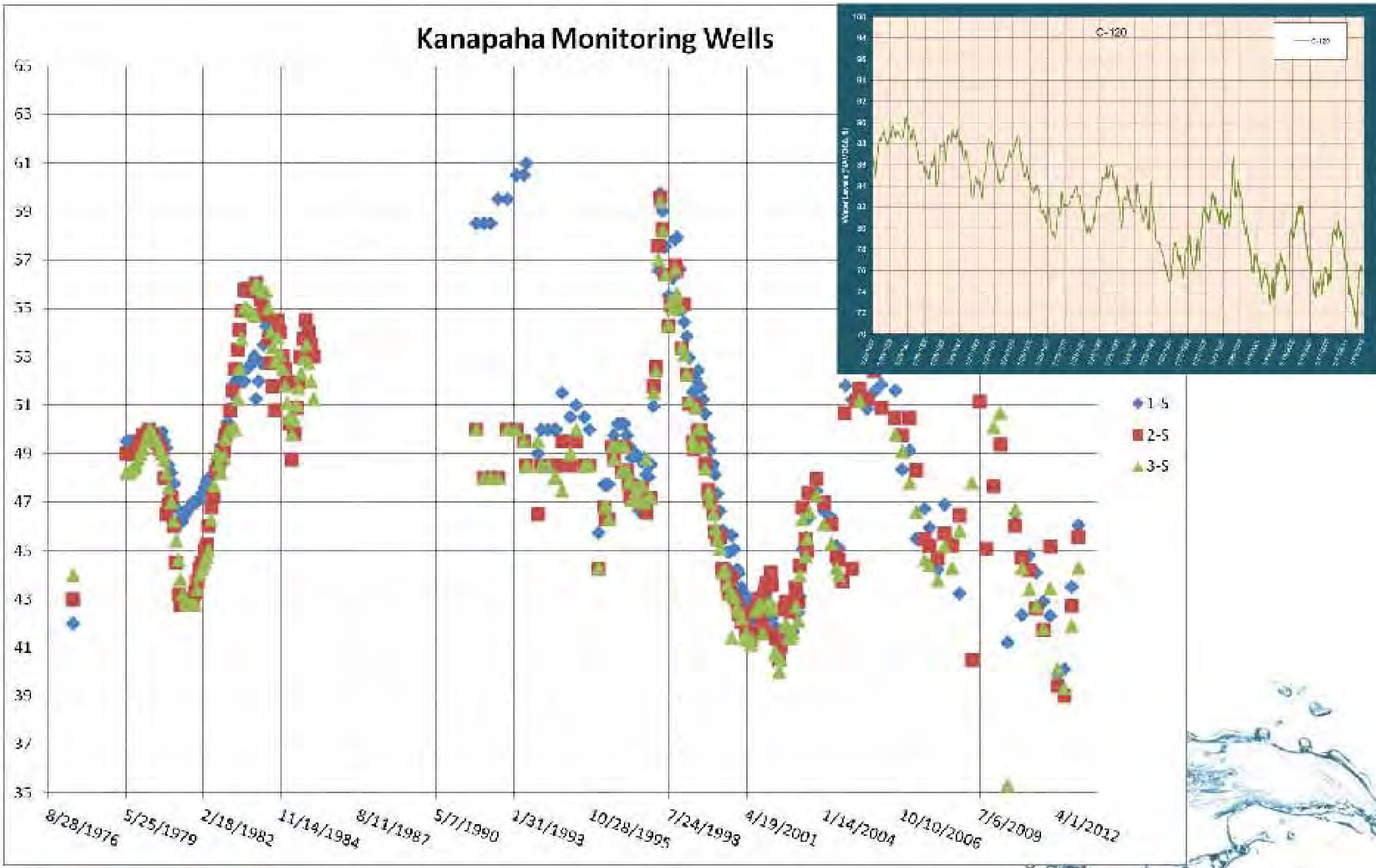


Gainesville urban area potentiometric surface of the Floridan aquifer, July 12-13, 1977.

FIGURE 2-2

Recharge Well Mounding (2005-2012 Pot Map)





Kanapaha Monitoring Wells
65
63
61
59
57
55
53
51
49
47
45
43
41
39
37
35
8/28/1976
5/25/1979
2/18/1982
11/14/1984
8/11/1987
5/7/1990
1/31/1993
10/28/1995
7/24/1998
4/19/2001
1/14/2004
10/10/2006
7/6/2009
4/1/2012
1-S
2-S
3-S
C-120

SJRWMD Analyses

- Using NEF v 3
- Following SJRWMD Modeling Guidelines
- Cumulative Impact Assessment: GRU= 30 MGD, Others= EOP withdrawals
  - Within 0.1' contour limits of influence established above
  - No MFL environmental constraints within limits of influence
- According to regional groundwater levels, GRU capture zone does not reach Lake Geneva

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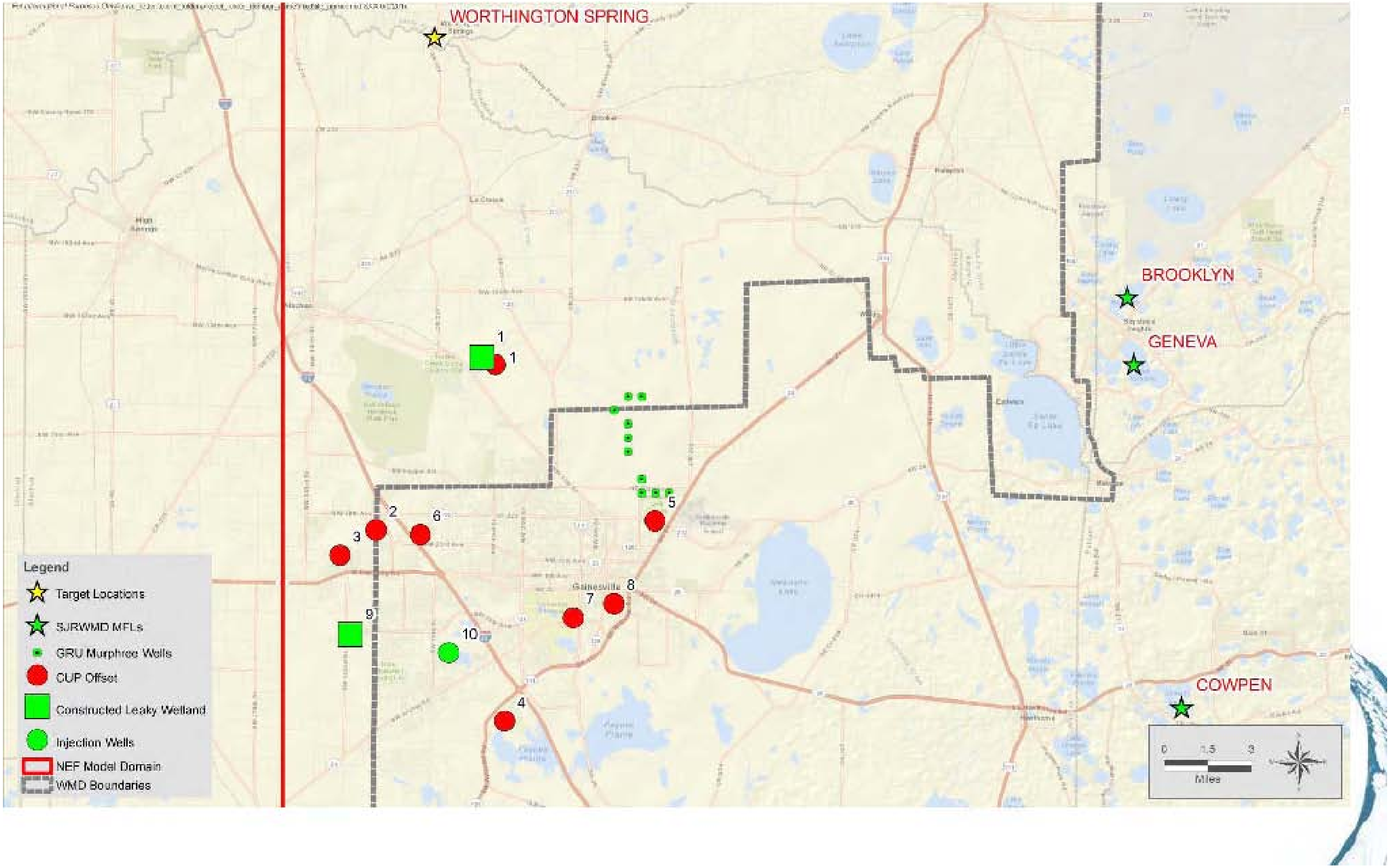
SRWMD Analyses

- The application is going to provide information that supports the renewal of 30 MGD
  - Previously permitted amount
  - Additional permits have been issued since GRU 2009 allocation
  - Same tools and rules in place
  - GRU returns most of its withdrawals to the aquifer within groundwatershed of Lower Santa Fe River through recharge, irrigation and septic tank seepage
  - Groundwater levels support that GRU is not a significant influence on Springs

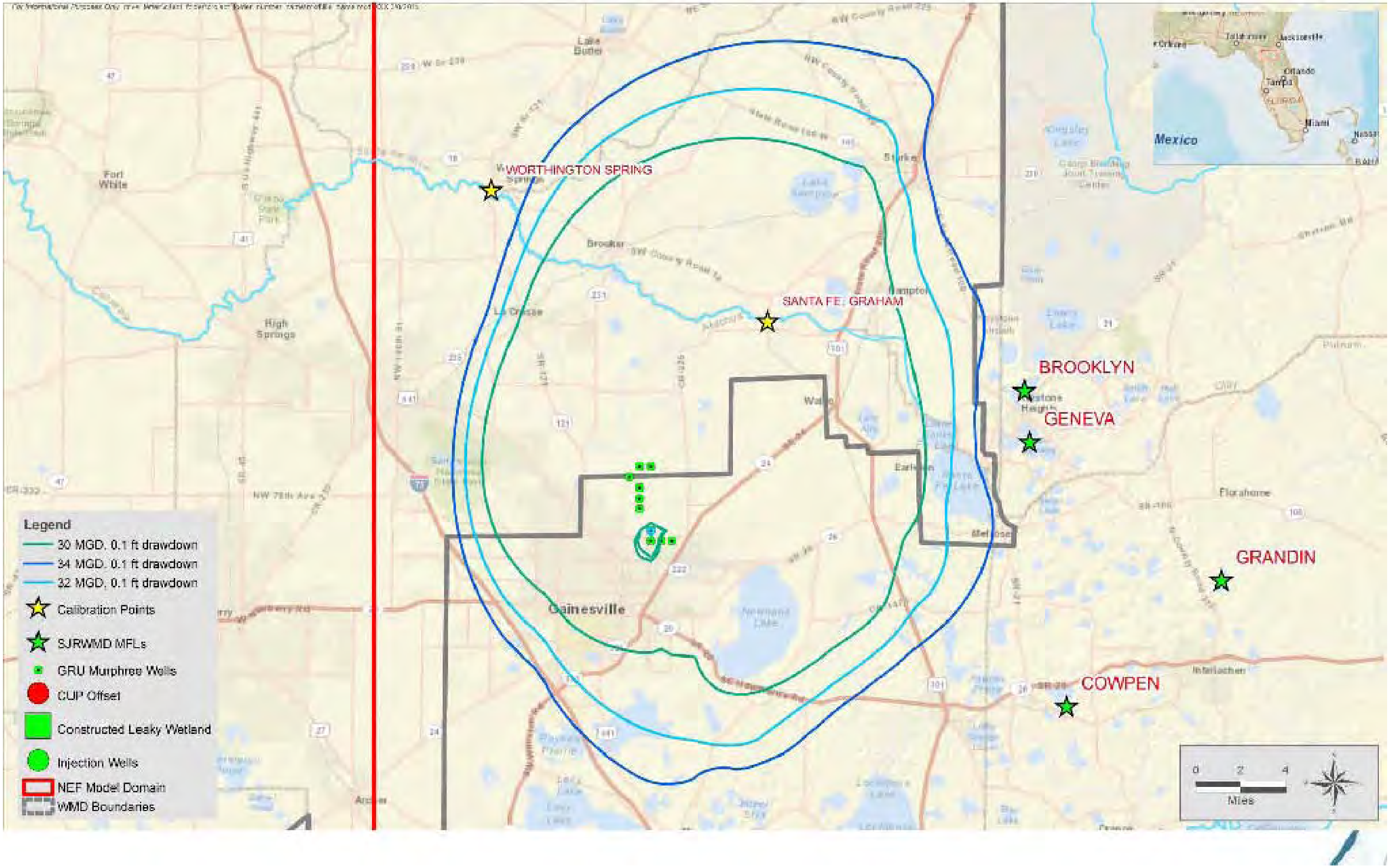
AWS Evaluations

- Use NEF V 3 to evaluate and screen alternatives
- Develop scenarios that demonstrate withdrawals above 30 MGD are allowable
- Use NF V 1 for demonstrating benefits of AWS projects on SRWMD constraints

Map with AWS Projects



0.1-ft Contours for 30, 32 and 34 MGD



SRWMD AWS Evaluations

Scenario		Model Run Description	Map ID	Santa Fe River, Near Graham (Layer 1, Row 108, Column 158)	Worthington Spring (Layer 3, Row 103, Column 145)	Drain Out (MGD)	Δ Drain Out (MGD)	River In (MGD)	Δ River In (MGD)	River Out (MGD)	Δ River Out (MGD)
X	Additional Allocation	Increase withdrawal at the Murphree well field by 2.0 MGD	NA	-0.009	-0.009	679.8	-1.2	0.12	0.000	72.4	-0.1
X		Increase withdrawal at the Murphree well field by 4.0 MGD	NA	-0.018	-0.018	678.6	-2.4	0.12	0.000	72.3	-0.3
C		Baseline - NF Model ran with no changes	NA	NA	NA	681.0	NA	0.12	0.000	72.6	0.0
2	AWS - CUP Offsets	Reduce Deerhaven by 2.0 MGD, (current EOP is 2.3 MGD)	1	0.008	0.008	682.2	1.2	0.12	0.000	72.7	0.1
3		Reduce Deerhaven from 5.1 MGD to 0 MGD	1	0.020	0.019	684.1	3.1	0.12	-0.001	72.9	0.4
4		Reduce withdrawal at Meadowbrook Golf Course from 0.16 MGD to 0 MGD, by reclaimed water offsets	2	0.001	0.001	681.1	0.1	0.12	0.000	72.6	0.01
5		Reduce withdrawal at West End Golf Course from 0.138 MGD to 0 MGD, by reclaimed water offsets	3	0.000	0.000	681.1	0.1	0.12	0.000	72.6	0.01
6		Reduce withdrawal at Gainesville Golf and Country Club from 0.21 MGD to 0 MGD, by reclaimed water offsets	4	0.001	0.001	681.1	0.1	0.12	0.000	72.6	0.01
7		Reduce withdrawal at Ironwood Golf Course from 0.26 to 0 MGD, by reclaimed water offsets	5	0.001	0.001	681.2	0.2	0.12	0.000	72.6	0.02
8		Reduce withdrawal at all Golf Courses from 0.76 MGD to 0 MGD, by reclaimed water offsets	2-5	0.003	0.003	681.5	0.4	0.12	0.000	72.6	0.05
9		Reduce withdrawal at Santa Fe from 0.094 MGD to 0 MGD, by reclaimed water offsets	6	0.000	0.000	681.1	0.1	0.12	0.000	72.6	0.01
11		Reduce withdrawal at Shands/SE Energy Center Expansion from 0.226 MGD to 0 MGD, by reclaimed water offsets	7	0.001	0.001	681.1	0.1	0.12	0.000	72.6	0.01
12		Reduce withdrawal at JR Kelley Generating Plant from 0.693 MGD to 0 MGD, by reclaimed water offsets	8	0.003	0.003	681.4	0.4	0.12	0.000	72.6	0.05
13		Reduce combined CUP withdrawal of 6.618 MGD to 0 MGD	1-8	0.027	0.026	685.2	4.1	0.12	-0.001	73.0	0.5
14	Recharge	Add 2.0 MGD to land application at KWRF	9	0.006	0.005	682.3	1.2	0.12	0.000	72.7	0.1
15		Add 4.0 MGD to land application at KWRF	9	0.011	0.011	683.5	2.5	0.12	0.000	72.8	0.3
18		Increase KWRF LFA recharge to permitted rate of 10 MGD	10	0.015	0.015	683.6	2.5	0.12	0.000	72.8	0.3
19		Increase KWRF LFA recharge to 17.5 MGD to match planned increase in flows	10	0.039	0.039	687.8	6.7	0.12	-0.001	73.3	0.8

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SJRWMD Reasonable Assurance

- No MFL environmental constraints within limits of influence for 30 MGD
- Both NEF model and regional groundwater level analysis indicate that GRU Capture zone does not reach MFL lakes
- Withdrawals above 30 MGD would be offset 1 for 1 with AWS up to 34 MGD
- GRU is okay with condition to participate in Recovery and Prevention process

SRWMD Reasonable Assurance

- 30 MGD is existing allocation
- GRU returns most of its withdrawals to the aquifer within groundwatershed of Lower Santa Fe River
- NF Modeling demonstrates that AWS projects will offset withdrawals above 34 MGD
- GRU okay with condition to participate in Recovery and Prevention process

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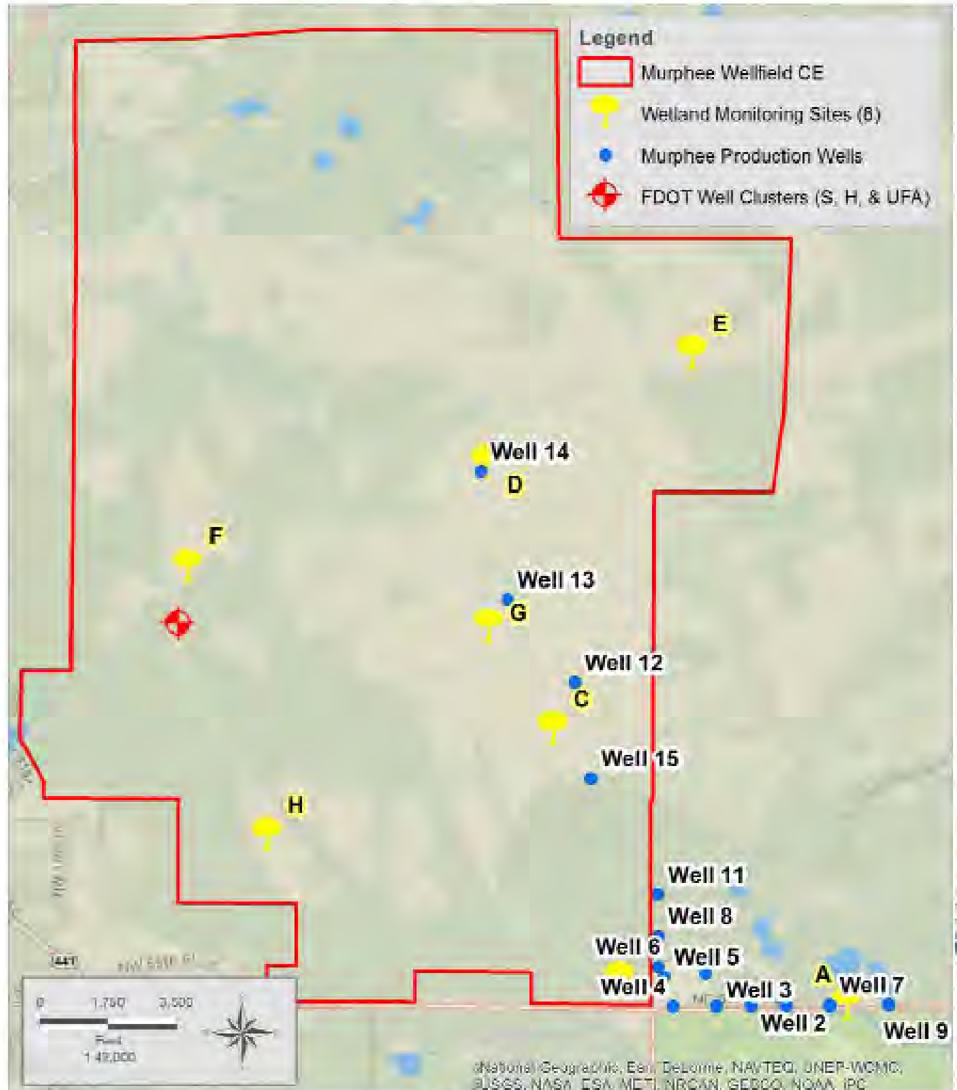
2013 Wetland Assessments

- GRU has submitted annual monitoring reports since 2000
  - Wetlands A-D 2000-2003
  - Added Wetlands E and F in 2003
  - Added G and H in 2008
- No observable impacts from pumpage reported



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Recent Site Visits

- Long term surface water level data shows downward trend since 2005
- Wetlands are showing signs of dehydration from prolonged drought

Wetland Reasonable Assurance

- NEF Model V3 results show no impact to wetlands since 1995
- Significant confinement exists between wetlands and the UFA
- Monitoring results are consistent with long term rainfall deficit
- Continue with annual monitoring with modifications
- Schedule field visits with WMD staff

Application Package

Major Sections / Dividers
Front Material
Cover Letter
Table of Contents
Summary of Reasonable Assurance Memorandum
Final Application Form
Cover Page (Applicant/Agent/Owner)
Site Information / Use Type
Compliance Entity / Secondary Uses
Sources of Water - Table 1
Property Control and Locations
Adjacent Property Owners
Lowest Acceptable Water Source
Water Conservation Plan
Applicant Checklist
Public Supply Water Use Type
Potable Water Supply
Wastewater Disposal
Reuse of Reclaimed Water
Essential Use

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Application Package

Potable Water Supply (Divider)
Summary of Groundwater Sources Table 1 (see application form for format)
Property Ownership Description (see application form)
Location Map (see application form for format)
Service Area Maps (See Application
Copy of Local Government Franchise Agreement
Table 1 and Table 2
GISA Memo explaining Table 1 and 2 Methodologies
Previous 12 Months of MORs
Wastewater Disposal (Divider)
Table 1 and Table 2
Reclaimed Water (Divider)
Reuse Table
Map of Reclaimed Water Existing and Future Service Areas
Explanation of reclaimed water projections to Support Table 1 and Table 2 developed by GISA
Water Conservation (Divider)
Water Conservation Plan
Water Conservation Plan Analysis - EZ Guide Analysis to Support Table 1 and 2 Analysis
Document Programs
Leak Detection
Meter Change Out
Rate Effectiveness
Complete Form 40C-22-0590-3
Document Programs Required by CUP

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Application Package

Existing Legal Users (Divider)
Table of names and addresses of adjacent property owners (see application form - 2640-ft buffer)
Mitigation Plan from previous CUP
Water Quality (Divider)
Summary Water Quality Trends at Production Wells
Summary of Koppers Status
Groundwater Modeling (Separate Notebook)
Groundwate Modeling Technical Memorandum
AWS Scenarios
SJRWMD Groundwater modeling results and files (CD)
SRWMD Groundwater modeling results and files (CD)
Non-MFLs and Review of Wetlands
Summary Memo of Findings and Reasonable Assurance
Workshop Summary (Divider)
Meeting Agenda, Presentations, Minutes

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Application Package

- Finalizing Application in early June
  Review Package with WMD at next workshop
  Submit Application following workshop

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Goals of Meeting #7

- Application Approach
  - ☑ Agreed on overall approach

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END Presentation

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GRU CUP RENEWAL MEETING MINUTES

PURPOSE:	GRU's CUP Renewal Workshop No.8
MEETING DATE:	July 8, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Rae Hafer, Rick Hutton, David Richardson, Jenn McElroy, Rick Davis, Debbie Daugherty SJRWMD – Jay Lawrence, Lance Hart, Carl Larrabee, Mike Register, Brad Purcell SRWMD – Jon Dinges, Carlos Herd, Marc Minno Liquid Solutions Group –Rob Denis Jones Edmunds – Brett Goodman

The following is a summary of the meeting discussion. The presentation and sign-in sheet are attached at the end of the meeting minutes.

Item	**Action**	**Description**
1	Info	Tony gave a summary of the status and purpose of the meeting. The process has taken about a year to get to this point. Over that time, GRU's has met with stakeholders and the SRWMD, SJRWMD, and FDEP to develop an agreeable approach which is a renewal for the currently permitted amount of 30 MGD. GRU is requesting flexibility to withdrawal greater than 30 MGD through offsets or substitutions achieved through implementing alternative water supply projects. GRU has presented technical information in successive meetings with district staff to agree on the elements that will go into the renewal application.
2	Info	The purpose of the meeting is to review the information provided, establish the final actions needed to complete the application and give a preview of the application.
3	Info	The group stepped through the information presented at previous meetings. The following was discussed in more detail: • There maybe some changes with CUPCon such as a flat allocation for 20 years instead of an annual allocation for each year of the permit. • The District staff were in agreement with the demands projections • Since the groundwater modeling has not been reviewed, we agreed to provide the water resource assessement and modeling files to SJRWMD and SRWMD modeling staff for a courtesy review. • If the modeling is acceptable, we will be able move forward with the

application and discuss the permit conditions and monitoring.

4	Action Jones Edmunds	Jones Edmunds will finish up the water resources assessment and prepare the modeling files
5	Info	We discussed the general approach to monitoring. GRU is proposing to make modifications to monitoring sulfates at the production wells and at the wetlands. Sulfates will be monitored annually at each production well. For wetlands, Lance has some recommendations for monitoring. Brad recommended a separate meeting between GRU and District staff to agree on the monitoring once the modeling is accepted. Jones Edmunds has scheduled a field meeting with SRMWD and SJRWMD to visit the wetlands and review the proposed monitoring.
6	Action Jones Edmunds	BJ Bukata with Jones Edmunds to schedule time with Lance and Marc to meet at the wetland monitoring sites.
7	Info	Groundwater modeling evaluating the SJRWMD MFLs indicates that GRU's requested allocation will have *de minimus* impacts on MFLs. Therefore, GRU's permit should not have a specific condition to participate in the prevention and recovery plan for the Clay-Putnam MFL lakes.
8	Info	Demonstrating reasonable assurance for SRWMD was discussed. We discussed the lack of a defined approach to meet SRWMD's requirements to approve the permit. Given the uncertainty with evaluation criteria and the Lower Santa Fe River MFLs, GRU is agreeable to participating in a prevention and recovery strategy, if needed.
9	Info	The application submittal process was discussed. GRU could submit a draft application for review. When the application is officially submitted, the District has to review it in the 30 day window and will not be able to waive the initial review period response requirements.

Gainesville Regional Utilities
CUP Workshop No. 8
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: July 5, 2013

LOCATION: GRU – Murphree WTP

PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
Brett Goodman	Jones Edmunds	bgoodman@jonesedmunds.com	352 377 5821
LANCE HART	SJRWMD	lhart@sjrwmd.com	386.329.4219
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386 329 4205
Mike Register	SJRWMD	mregister@sjrwmd.com	386-329-4212
BRAD PURCELL	SJRWMD	bpurcell@sjrwmd.com	386.329.4274
Rick Hutton	GRU	huttonrh@gru.com	352 393 1218
Rob Denis	LSG	rdenis@liquidsolutionsgroup.com	4073493900
CARL LARRABEE	SJRWMD	clarrabee@sjrwmd.com	(386) 329-4222
Carlos Herd	SRWMD	cdh@srwmd.org	386-362-1001
Jon Dinges	SRWMD	jmd@srwmd.org	386.362.0438

JONES EDMUNDS

Mara Minno	SRWMD	mcm@srwmd.org	386-647-3156
Rae Hafer	GRU	haferra@gru.com	352-393-1635
Debbie Daugherty	GRU	daughertydd@gru.com	352-393-1622
Rick Davis	GRU	davisrj@GRU.com	352-393-6512
David Richardson	GRU		
Jenn McElroy	GRU	mcelroyja@gru.com	352 393 1291

GRU's CUP Application Summary

Pre-application Meeting #8
06/19/13

GRU100
100 YEARS of SERVICE | 1912-2012

Goals

- Renew CUP for 20 yrs at 30 MGD
- SJRWMD, SRWMD, and GRU agree on all components of CUP renewal prior to submitting application
- Approval of revised interagency agreement
- Secure long term CUP that protects environment and provide reliable water supply for GRU's existing and future customers
- Provide flexibility for future uncertainty

Plan for CUP Renewal

- GRU working with both SRWMD and SJRWMD staffs
- Meet future need with existing Floridan aquifer allocation quantity using existing and new conservation & expanded reclaimed water
- Extend/renew the existing 30 mgd CUP another 20 years

Plan for CUP Renewal

- Need means to increase groundwater allocation in future if necessary without environmental impacts.
- Potential means:
  - Reduce or eliminate golf course, agricultural or industrial groundwater use with reclaimed water
  - Partner with agriculture for additional conservation reducing/eliminating groundwater use

GRU100
100 YEARS of SERVICE | 1912-2012

Pre-Application Meeting Topics

- ✓ Demand Projections
- ✓ Water Conservation
- ✓ Reclaimed Water
- ✓ Water Quality
- ✓ Wetlands, Other Legal Users
- ✓ Water Resource Assessment (including MFLs)
- ✓ Alternative Water Supply Projects

Pre-Application Meetings

Topic	12/12/12 (#2)	1/9/13 (#3)	2/13/13 (#4)	3/13/13 (#5)	4/17/13 (#6)	5/23/13 (#7)
Demand Projections	√	√	√			
Water Conservation	√	√	√			
Reclaimed Water	√	√				
Water Quality				√		
Wetlands					√	√
Other Legal Users					√	√
Water Resources Assessment (MFL)			√	√	√	√
AWS Projects			√	√	√	√

GRU100
100 YEARS of SERVICE | 1912-2012

Demand Projections (Meeting 2,3,4)

- Agreed to population projections
- Agreed to demonstrated demand for 34.2 MGD
- Requesting 30 MGD
- Agreed that GRU has made significant progress reducing per capita demands
- Agreed that there is significant uncertainty in demands

Water Conservation (Meeting 2, 3, 4)

- Reviewed existing GRU extensive conservation efforts and corresponding demand reduction
- Agreed to using EZ Guide to determine conservation potential
- Addressed EZ Guide Limitations
- EZ Guide results yield 0.5 MGD of additional conservation over 20 yrs

GRU100
100 YEARS of SERVICE | 1912-2012

Reclaimed Water (Meeting 2,3)

- Agreed to feasibility of providing reclaimed to defined service areas
- Agreed to reclaimed water potable offset in defined service areas
- Agreed to power and I-District potable water offsets
- Additional reclaimed water potable offset 1.03 MGD

GRU 100
100 YEARS of SERVICE | 1912-2012

Water Quality (Meeting 5)

- Agreed to continue to update WMD on Koppers remediation efforts and monitoring
- Sulfate monitoring does not show correlation with pumpage
- Proposal - monitor annually at individual wells and with trend analyses submitted as part of the 10-year compliance report

Wetlands (Meeting 6,7)

- Wetlands are generally in good health
- Indicators of dehydration in forested communities due to rainfall deficit
- Additional lines of evidence confirm that pumping is not contributing to the current condition of the monitored wetlands

Other Legal Users (workshop 5)

- GRU's drawdown, even at higher than permitted rates, are not predicted to cause interference with existing legal uses
- No reports of impacts to existing legal uses due to GRU's withdrawals
- GRU will continue to implement the Claim Investigation, Mitigation, and Reporting provisions of the Well Interference Mitigation Procedure approved by the District

Water Resource Assessment (SJRWMD MFLs - Meeting 4,5,6,7)

- Agreed to groundwater model and methods for evaluating requested allocation
- Agreed to use best available information (re-evaluted MFLs for Lake Geneva and Cowpen)
- Analysis indicates less than a 0.1 ft drawdown at MFL Lakes from GRU at 34 MGD
- Cumulative EOP Analysis indicates no MFL violation with GRU at 34 MGD

GRU 100
100 YEARS of SERVICE | 1912-2012

Water Resource Assessment (SRWMD MFLs) (Meeting 4,5,6,7)

- Staff requested additional analysis to support renewal 30 MGD
  - Existing legal user at 29 MGD since 2001
  - Renewed at 30 MGD in 2009
  - Previously pumped ~28 MGD in 2007
  - Significant allocations since GRU's 2009 Renewal (21 MGD of CUP since GRU Renewal, 12 MGD is new CUP)
  - 2010 Water Supply Assessment indicates no harm to MFLs at 30 MGD

GRU100
100 YEARS of SERVICE | 1912-2012

Water Resource Assessment (SRWMD MFLs) (Meeting 4,5,6,7)

- Staff requested additional analysis to support renewal 30 MGD
  - Analyzed regional groundwater monitoring that shows GRU's capture zone does not reach the Santa Fe River
  - Most of GRU's withdrawals are coming from nearby recharge features
  - All of GRU's withdrawals are beneficially reused

Alternative Water Supplies (Meeting 4,5,6,7)

- Agreed to methodology that AWS projects could be used, if needed, to offset withdrawals greater than 30 MGD
- Agreed to use NF v1 to demonstrate AWS project offsets to fluxes at existing and future MFLs
- Agreed to procedure of demonstrating the benefits of AWS projects

GRU 100
100 YEARS of SERVICE | 1912-2012

Conclusions

- Completed 8 meetings to agree on all components of CUP renewal prior to submitting application
- GRU's application supports the previously presented conclusions
- Renew CUP for 20 yrs at 30 MGD

Path Forward

- Finalize and Submit Application – Week of July 29th
- Post Submittal Review – Week of September 2nd
  - Discuss Permit Conditions
  - Clarify unresolved information
- Respond to RAI, if necessary – Week of September 30th

GRU CUP RENEWAL MEETING MINUTES

PURPOSE:	GRU's CUP Renewal Workshop No.9
MEETING DATE:	October 4, 2013
LOCATION:	GRU Administration Building
PARTICIPANTS:	GRU- Tony Cunningham, Rick Hutton SJRWMD – Jay Lawrence, Patrick Burger, Scott Laidlaw, Tammy Bader, Don Brandes SRWMD – Warren Zwanka, Tim Sagul, Marc Minno, Trey Grubbs Liquid Solutions Group –Rob Denis Jones Edmunds – Brett Goodman

The following is a summary of the meeting discussion. The presentation and sign-in sheet are attached at the end of the meeting minutes.

Item	Action	Description
1	Info	Tony gave a summary of the status and purpose of the meeting. The purpose of the meeting is to go through the final application and establish a schedule for the submittal.
2	Info	The group stepped through presentation from the past workshop (July 2013). GRU's plan is to submit the application within the next two weeks to meet the schedule presented to the City of Gainesville Commission. The following was discussed in more detail: • GRU has been permitted at 29 MGD since 2001 and has been permitted at 30 MGD since 2009. • GRU is requesting 30 MGD for 20 yrs. • GRU is requesting the ability to withdrawal more than 30 MGD through implementing alternative water supply projects. • GRU has made considerable progress with water conservation. LSG evaluated conservation potential using standard the Conserve Florida EZ Guide and the assumptions agreed to in the CFWI planning region. Don noted that the SJRWMD tool could help GRU identify more options to develop a goal based conservation plan. • GRU noted that they are continuing to implement reclaimed water where feasible and indicated that Alachua County is not as supportive of extending reclaimed water to new developments as they once were.

3	Info	The group discussed the status of regional groundwater modeling. SRWMD and SJRWMD staff indicated that the new versions for the NEF and NF models would not be available or required for demonstrating reasonable assurance as part of the application.
4	Info	Since the last workshop, GRU has submitted the groundwater modeling to SRWMD and SJRWMD for a courtesy review prior submitting the application. SJRWMD and SRWMD indicated that they have reviewed the information provided and agree with the modeling results and analyses in the water resources assessment prepared by Jones Edmunds.
5	Info	We discussed potential impacts to MFLs and wetlands • Modeling and past monitoring data indicate that GRU's existing and requested allocations will not impact the surficial aquifer near the wellfield. • Cumulative withdrawal analyses indicate that GRU's drawdown will have *de minimus* impacts on SJRWMD MFLs. Given these results, GRU is not expecting to participate in the Clay-Putnam Recovery and Prevention plan. • We discussed demonstration of reasonable assurance for SRWMD. GRU requested that their application be given the same consideration as other applicants. Demonstration of 30 MGD is based on the following: o GRU is not requesting an increase o GRU has been permitted at 29 MGD since 2001 o GRU has demonstrated recent withdrawals of 28 MGD, o SRWMD has permitted new uses (28 MGD) since 2009. Given the lack of criteria for evaluating impacts on SRWMD MFLs and the uncertainty of the Lower Santa Fe River MFLs, GRU is agreeable to participating in a recovery and prevention plan, if needed.
5	Info	We discussed the general approach to monitoring. GRU is proposing to make modifications to monitoring sulfates at the wells and at the wetlands. Sulfates will be monitored annually at each production well. For wetlands, we are proposing monitoring that meets the intent of Lance's recommendations
6	Info	Tony stepped through the final application. Tammy requested updated service area boundaries. We discussed removing 2012 from the projected use table. GRU will consider the best way to resolve the historic demands and the projected demands without revising the calculations.
7	Action GRU	GRU to provide updated service areas to SJRWMD.
8	Info	The application submittal process was discussed. All agreed that there would likely be a follow up meeting after to application was submitted.

Gainesville Regional Utilities
CUP Workshop No. 9
Sign-In Sheet

JONES EDMUNDS

MEETING DATE: October 4, 2013
LOCATION: GRU – Admin Building
PROJECT No.: 07125-058-01

Attendee	Representing	E-mail	Phone Number
Brett Goodman	Jones Edmunds	bgoodman@jonesedmunds.com	352 377 5821
Tim Sagul	SRWMD	tjs@srwmd.org	386-362-1001
Trey Grubbs	SRWMD	jwg@srwmd.org	386-362-1001
Scott Laidlaw	SJRWMD	SLAIDLAW@SJRWMD.COM	386-227-0226
Marc Minno	SRWMD	mcm@srwmd.org	386-647-3156
Patrick Burger	SJRWMD	pburger@sjrwmd.com	386-329-4494
Jay Lawrence	SJRWMD	jlawrence@sjrwmd.com	386 329 4205
Don Brandes	SJRWMD	dbrandes@sjrwmd.com	386-329-4126
Tammy Bader	SJRWMD	tbader@sjrwmd.com	386-329-4209
WARREN ZWANKA	SRWMD	wpz@srwmd.org	386-362-1001

JONES EDMUNDS

Rob Denis	Liquid Solutions	rob@lsgfl.com	407 3493900
Rick Hutton	GRU	huttonrh@gru.com	352 392 1218
Tony Cunningham	GRU	CUNNINGHAMAL@GRU.com	352-393-1615

GRU's CUP Application Summary

Pre-application Meeting #8
06/19/13

GRU100
100 YEARS of SERVICE | 1912-2012

Goals

- Renew CUP for 20 yrs at 30 MGD
- SJRWMD, SRWMD, and GRU agree on all components of CUP renewal prior to submitting application
- Approval of revised interagency agreement
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- Provide flexibility for future uncertainty

Plan for CUP Renewal

- GRU working with both SRWMD and SJRWMD staffs
- Meet future need with existing Floridan aquifer allocation quantity using existing and new conservation & expanded reclaimed water
- Extend/renew the existing 30 mgd CUP another 20 years

Plan for CUP Renewal

- Need means to increase groundwater allocation in future if necessary without environmental impacts.
- Potential means:
  – Reduce or eliminate golf course, agricultural or industrial groundwater use with reclaimed water
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GRU 100
100 YEARS of SERVICE | 1912-2012

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- ✓ Demand Projections
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GRU100
100 YEARS of SERVICE | 1912-2012

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Water Quality				√		
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GRU100
100 YEARS of SERVICE | 1912-2012

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GRU100
100 YEARS of SERVICE | 1912-2012

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- Additional lines of evidence confirm that pumping is not contributing to the current condition of the monitored wetlands

GRU100
100 YEARS of SERVICE | 1912-2012

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GRU 100
100 YEARS of SERVICE | 1912-2012

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GRU 100
100 YEARS of SERVICE | 1912-2012

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GRU 100
100 YEARS of SERVICE | 1912-2012

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- Agreed to methodology that AWS projects could be used, if needed, to offset withdrawals greater than 30 MGD
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- Agreed to procedure of demonstrating the benefits of AWS projects

Conclusions

- Completed 8 meetings to agree on all components of CUP renewal prior to submitting application
- GRU's application supports the previously presented conclusions
- Renew CUP for 20 yrs at 30 MGD

Path Forward

- Finalize and Submit Application – Week of July 29th
- Post Submittal Review – Week of September 2nd
  - Discuss Permit Conditions
  - Clarify unresolved information
- Respond to RAI, if necessary – Week of September 30th

GRU Section 10

ADDITIONAL INFORMATION

Forecasting Methodologies in Support of GRU's 2013 Consumptive Use Permit Application

Prepared for

Gainesville Regional Utilities
P.O. Box 147051 Station A110
Gainesville, FL 32614-7051

Prepared by

GIS Associates, Inc.
806 NW 16th Avenue, Suite A
Gainesville, Florida 32601

February 21, 2013

I. Introduction

Gainesville Regional Utilities (GRU) is working on a renewal of its Consumptive Use Permit (CUP) with the St. Johns River Water Management District (SJRWMD). Prior to submitting the application, GRU intends to negotiate the details of the permit with relevant staff from SJRWMD and the Suwannee River Water Management District (SRWMD). The first step in that process is to develop a detailed forecast of future water demand that will meet GRU's needs and is agreeable to both SJRWMD and SRWMD. This document describes the methods, data and assumptions used by GIS Associates (GISA) to derive that forecast, which has now been accepted by both districts.

II. Historical Estimates

The basis of GRU's forecast is historical served population and water use estimates for the most recent five year period for which data is available. Because this work began in 2012, the five-year historical period used was 2007 – 2011. These estimates are provided in ***GRU Tables 1 & 2 - GISA v2013-01-10 Final.xlsx***, an Excel spreadsheet accompanying this report, and in Tables 1-A and 1-B below.

Table 1-A: Historic Water Use (part 1 of 2)

Past Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day w/o UF (mgd)	UF Avg. Day (mgd)	Commercial/ Industrial Avg. Day (mgd)
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007	187,911	80,787	88	16.55	6.76	2.51	9.26
2008	192,203	82,703	76	14.55	6.74	2.82	9.56
2009	191,189	82,338	71	13.64	6.33	2.71	9.04
2010	189,495	81,679	68	12.97	5.73	2.39	8.12
2011	189,715	81,842	74	14.13	5.96	2.28	8.24

Data from the preceding *Table 1-A* is documented below. The numbers below correspond to the parenthetical notes in the above table.

(1) The population estimates are for the population served by GRU water. They are estimated by multiplying the number of residential units (2) from GRU's billing data by the estimated household size from the Bureau of Economic and Business Research (BEBR).

(2) The estimated number of dwelling units are for those served by GRU water. They are estimated by multiplying the number of water connections by a "master meter factor", which is the number of dwelling units served per meter. GRU tracks the number of units associated with multi-family master meters as they connect, so they are able to accurately convert water connections to residential dwelling units.

(3) The household per capita usage (gallons used per day per capita) is calculated by dividing the household average daily use (4) by the population served (1).

(4) The household average daily use is the total of GRU residential water billings, plus estimated flows to stopped meters and the reclaimed potable offset for residential irrigation.

(5) The commerical/industrial average daily use (without UF) is the total of GRU water billings to commercial/industrial accounts (including Public Use Irrigation), plus estimated flows to stopped meters and the reclaimed potable offset for commercial/industrial use.

(6) The University of Florida average daily use is determined from billing information gathered through large master meters serving the campus.

(7) The commerical/industrial average daily use is the total of GRU water billings to commercial/industrial accounts (including Public Use Irrigation), plus estimated flows to stopped meters and the reclaimed potable offset for commercial/industrial use, plus the University of Florida average daily use (6).

Table 2-B: Historic Water Use (part 2 of 2)

Past Years Notes ->	Power Plant Avg. Day (mgd) (8)	Water Utility (mgd) (9)	Unaccounted for Water (mgd) (10)	Total Avg. Day + Reclaimed Potable Offset (mgd) (11)	Reclaimed Potable Offset Avg. Day (mgd) (12)	Total Avg. Day (mgd) (13)
2007	0.02	0.90	1.92	28.65	0.90	27.75
2008	0.00	0.86	1.83	26.80	0.90	25.90
2009	0.00	0.72	2.53	25.93	0.90	25.03
2010	0.05	0.70	2.43	24.27	0.90	23.37
2011	0.03	1.37	1.99	25.76	0.90	24.86

Data from the preceding *Table 1-B* is documented below. The numbers below correspond to the parenthetical notes in the above table.

(8) The power plant average daily use is determined from power plant billings from GRU water meters, plus the reclaimed water potable offset for power plant use.

(9) The water utility average daily use is an estimate of water used to operate the water utility. The Water Utility Category consists of well lubrication, leak detection program, lime sludge, unmetered uses (fire protection, public works, parks, street dept., flow testing, inspections, operation, maintenance, new pipe projects). The higher value in 2011 is due to extensive maintenance on the MWTP reactor clarifier #1 that used additional in-plant water. Maintenance of all facilities at MWTP is an ongoing effort that is increasing due to an aging water plant that was placed online in 1975. It is anticipated that in-plant water use will

continue to increase due to this increased maintenance and lube water at the production wells.

(10) The average daily unaccounted for water use is equal to the total average daily use plus reclaimed water potable offset (11) minus all accounted for uses: (4), (7), (8), and (9).

(11) The total average daily use plus reclaimed water potable offset is the total raw water pumped with GRU production wells based on plant flow records, plus historical potable offsets to household, commercial/industrial, and power plant use.

(12) The reclaimed water potable offset average day includes the potable offsets to household, commercial/industrial, and power plant use. There is much more reclaimed water used by GRU, but this is the portion that is the offset to potable use.

(13) The total average daily water use is the total raw water pumped with GRU production wells based on plant flow records.

III. Projected Population Growth

The primary driver of future water demand is population. The basis for GRU's projected population growth is a 2006 model for Alachua County developed by GIS Associates for the SJRWMD. GISA understands that the projections from this model were recalibrated by SJRWMD staff to the latest BEBR projections by simply applying the ratio of the new projections to the old projections evenly to all the projected growth throughout the county model. This method to calibrate the old model to the latest BEBR forecast is not unreasonable in this instance, as GRU reflects a large portion of the county population. The SJRWMD projections were provided to GRU in September of 2012 in support of GRU's CUP application.

The SJRWMD projections did not include seasonal population or provide for the conversion of self-supplied population (people currently getting potable water from their own private wells) to GRU customers. GISA made small adjustments to the SJRWMD projections to address those items. The resulting projections are provided in ***GRU Tables 1 & 2 - GISA v2013-01-10 Final.xlsx***, an Excel spreadsheet accompanying this report, and in *Table 2* on the following page.

Table 2: Projected Population

Year	SJRWMD Permanent Served Population	GISA Seasonal Population Estimate	DSS Population (Based on SJR 2010 Estimate)	DSS Pop Converted to Served (1% Annually)	GISA Total Projected Population	GISA Projected Annual Growth	GISA Served Population Forecast
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2010	191,359	1,306	19,435		192,664		189,495
2011	193,404	1,319	19,240	194	194,918		189,715
2012	195,449	1,333	19,046	194	196,977	2,059	191,774
2013	197,494	1,347	18,852	194	199,036	2,059	193,833
2014	199,539	1,361	18,657	194	201,095	2,059	195,892
2015	201,584	1,375	18,463	194	203,154	2,059	197,951
2016	203,679	1,390	18,269	194	205,263	2,110	200,061
2017	205,775	1,404	18,074	194	207,373	2,110	202,170
2018	207,870	1,418	17,880	194	209,482	2,110	204,280
2019	209,965	1,432	17,686	194	211,592	2,110	206,389
2020	212,061	1,447	17,491	194	213,702	2,110	208,499
2021	214,171	1,461	17,297	194	215,826	2,125	210,624
2022	216,281	1,476	17,102	194	217,951	2,125	212,748
2023	218,391	1,490	16,908	194	220,075	2,125	214,873
2024	220,501	1,504	16,714	194	222,200	2,125	216,997
2025	222,612	1,519	16,519	194	224,325	2,125	219,122
2026	224,409	1,531	16,325	194	226,134	1,810	220,932
2027	226,206	1,543	16,131	194	227,944	1,810	222,741
2028	228,004	1,556	15,936	194	229,754	1,810	224,551
2029	229,801	1,568	15,742	194	231,563	1,810	226,361
2030	231,599	1,580	15,548	194	233,373	1,810	228,170
2031	233,255	1,591	15,353	194	235,041	1,668	229,838
2032	234,912	1,603	15,159	194	236,709	1,668	231,507
2033	236,569	1,614	14,965	194	238,377	1,668	233,175
2034	238,226	1,625	14,770	194	240,045	1,668	n/a
2035	239,883	1,637	14,576	194	241,713	1,668	n/a

Data from the preceding table is documented below. The numbers below correspond to the parenthetical notes in the above table.

(1) The projections of SJRWMD Permanent Served Population were provided by SJRWMD staff for the years 2010 through 2035 in five-year increments. They are output from the 2006 GISA model, which was recalibrated to the latest BEBR projections by SJRWMD staff by applying the ratio of the new projections to the old projections evenly to all the projected growth throughout the county model. They were then reduced based on SJRWMD's 2010 estimate of domestic self-supplied (DSS) population (or population getting their potable water from a private well) to reflect GRU's permanent served population. Years in between the five-year increments provided by SJRWMD were interpolated by GISA.

(2) GRU's seasonal population (not included in the SJRWMD numbers) was estimated using the population-weighted average of the 2010 census data for GRU's current service area. This was only 0.68% of the permanent population.

(3) The domestic self-supplied (DSS) population projections were based on SJRWMD's 2010 estimate for GRU's service area. Because both SJRWMD and GRU assume that new growth within its service area will be served by the utility, this does not increase over time. In fact, it is reduced by 1% of the 2010 value each year to account for conversion to GRU's potable system. This is a common assumption used by SJRWMD for most utilities, and it is further supported by GRU's policy of covering 100% of the costs associated with a new connection within the Gainesville city limits.

(4) This column reflects the annual projected conversion of 1% of the self-supplied population to GRU's system. It is an annual value, not a cumulative one.

(5) This column reflects GISA's projected population, using SJRWMD's estimated served population as a base. Because GRU's 2011 estimate of population served is slightly lower than SJRWMD's 2011 estimate, the projected growth (not total population) from this column is applied to GRU's historical served estimate for 2011.

(6) The projected annual growth from GISA's population forecast for GRU, as described in Item 5 above.

(7) The GISA forecast of population to be served by GRU.

IV. Estimates and Projections of Potable Offsets to Reclaimed Water

GRU supplies reclaimed water (RCW) to its customers, some of which is an offset to potable water use. GRU intends to expand this practice in the future. The estimates and projections of these potable offsets of GRU's reclaimed water use are provided in ***GRU Tables 1 & 2 - GISA v2013-01-10 Final.xlsx***, an Excel spreadsheet accompanying this report, and in *Table 3* on the following page.

Table 3: Potable Offsets to Reclaimed Water

Year	Household Current RCW Potable Offset Avg. Day (mgd)	Com / Ind Current RCW Potable Offset Avg. Day (mgd)	Power Plant (SEC) RCW Potable Offset Avg. Day (mgd)	Total Current RCW Potable Offset Avg. Day (mgd)	New RCW Potable Offset to I-District Avg. Day (mgd)	New SEC (Power Plant) RCW Potable Offset Avg. Day (mgd)	New RCW Potable Offset to Kanapaha & Main St. Avg. Day (mgd)	Total New RCW Potable Offset Avg. Day (mgd)	Total RCW Potable Offset Avg. Day (mgd)
Notes->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2007	0.58	0.25	0.00	0.83	0.00	0.00	0.00	0.00	0.83
2008	0.60	0.25	0.00	0.85	0.00	0.00	0.00	0.00	0.85
2009	0.68	0.28	0.00	0.96	0.00	0.00	0.00	0.00	0.96
2010	0.55	0.30	0.05	0.89	0.00	0.00	0.00	0.00	0.89
2011	0.67	0.34	0.03	1.04	0.00	0.00	0.00	0.00	1.04
2012	0.62	0.28	0.00	0.90	0.00	0.09	0.03	0.13	1.03
2013	0.62	0.28	0.00	0.90	0.00	0.10	0.06	0.16	1.06
2014	0.62	0.28	0.00	0.90	0.03	0.11	0.09	0.23	1.12
2015	0.62	0.28	0.00	0.90	0.03	0.11	0.12	0.26	1.16
2016	0.62	0.28	0.00	0.90	0.03	0.12	0.15	0.30	1.20
2017	0.62	0.28	0.00	0.90	0.04	0.12	0.18	0.35	1.25
2018	0.62	0.28	0.00	0.90	0.05	0.13	0.21	0.39	1.29
2019	0.62	0.28	0.00	0.90	0.05	0.14	0.24	0.44	1.34
2020	0.62	0.28	0.00	0.90	0.06	0.16	0.27	0.49	1.39
2021	0.62	0.28	0.00	0.90	0.07	0.17	0.30	0.54	1.44
2022	0.62	0.28	0.00	0.90	0.08	0.18	0.33	0.59	1.49
2023	0.62	0.28	0.00	0.90	0.08	0.20	0.36	0.64	1.53
2024	0.62	0.28	0.00	0.90	0.10	0.21	0.38	0.69	1.59
2025	0.62	0.28	0.00	0.90	0.10	0.22	0.41	0.73	1.63
2026	0.62	0.28	0.00	0.90	0.10	0.24	0.44	0.77	1.67
2027	0.62	0.28	0.00	0.90	0.10	0.25	0.46	0.81	1.71
2028	0.62	0.28	0.00	0.90	0.10	0.26	0.49	0.85	1.75
2029	0.62	0.28	0.00	0.90	0.10	0.28	0.52	0.89	1.79
2030	0.62	0.28	0.00	0.90	0.10	0.29	0.54	0.93	1.83
2031	0.62	0.28	0.00	0.90	0.10	0.30	0.57	0.97	1.87
2032	0.62	0.28	0.00	0.90	0.10	0.31	0.59	1.00	1.90
2033	0.62	0.28	0.00	0.90	0.10	0.33	0.61	1.03	1.93

Data from the preceding table is documented below. The numbers below correspond to the parenthetical notes in the above table.

(1) The current household RCW potable offsets are actual values for 2007-2011. The 2012-2033 values are the average of the historical values, as these only reflect the current level of household potable offsets.

(2) The current commercial/industrial RCW potable offsets are actual values for 2007-2011. The 2012-2033 values are the average of the historical values, as these only reflect the current level of commercial/industrial potable offsets.

(3) The current power plant RCW potable offsets are actual values for 2007-2011 for GRU's South Energy Center. The projected values for this are found in Column G.

(4) The current total RCW potable offsets are actual values for 2007-2011. The 2012-2033 values are the average of the historical values, as these only reflect the current level of total potable offsets.

(5) The projected future RCW potable offsets associated with Gainesville's Innovation District were projected by GRU to supply existing and projected chilled water plants (for cooling) and landscape irrigation.

(6) The projections of power plant RCW potable offsets (for GRU's South Energy Center) were developed by GRU based on the planned phased development of the center. The historic values for this are found in Column D.

(7) The projections of new RCW potable offsets for GRU's Kanapaha and Main Street reuse service areas were based projected growth in those service areas.

(8) The projections of total new RCW potable offsets reflect the sum of Columns 5, 6 and 7.

(9) The projections of total RCW potable offsets reflect the sum of Columns 4 and 8.

V. Forecast of Future Water Demand

GRU's forecast of water demand is provided in ***GRU Tables 1 & 2 - GISA v2013-01-10 Final.xlsx***, an Excel spreadsheet accompanying this report, and in Tables 4-A and 4-B on the following pages. The details of how each water use category was forecasted are provided in the notes following each of the tables.

Table 4-A: Projected Water Use (part 1 of 2)

Future Years	Population	Units	Household Per Capita Use (gpcd)	Household Avg. Day (mgd)	Commercial/ Industrial Avg. Day w/o UF (mgd)	UF Avg. Day (mgd)	Innovation District Avg. Day (mgd)	Total Commercial/ Industrial Avg. Day (mgd)	Power Plant Avg. Day (mgd)	Water Utility Avg. Day (mgd)
Notes ->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2012	191,774	82,730	76	16.71	6.82	2.84	0.00	9.67	0.10	1.38
2013	193,833	83,619	76	16.87	6.89	2.84	0.05	9.78	0.10	1.39
2014	195,892	84,507	76	17.02	6.96	2.84	0.09	9.89	0.11	1.40
2015	197,951	85,395	76	17.18	7.03	2.84	0.14	10.00	0.12	1.41
2016	200,061	86,305	76	17.34	7.10	2.84	0.18	10.12	0.12	1.42
2017	202,170	87,215	76	17.50	7.17	2.84	0.23	10.23	0.13	1.43
2018	204,280	88,125	76	17.66	7.24	2.84	0.27	10.35	0.13	1.44
2019	206,389	89,035	76	17.82	7.31	2.84	0.32	10.46	0.15	1.45
2020	208,499	89,945	76	17.97	7.38	2.84	0.36	10.58	0.16	1.46
2021	210,624	90,862	76	18.14	7.45	2.84	0.41	10.70	0.17	1.47
2022	212,748	91,778	76	18.30	7.52	2.84	0.45	10.81	0.19	1.48
2023	214,873	92,695	76	18.46	7.59	2.84	0.45	10.88	0.20	1.49
2024	216,997	93,612	76	18.62	7.66	2.84	0.45	10.95	0.21	1.50
2025	219,122	94,528	76	18.78	7.73	2.84	0.45	11.02	0.23	1.51
2026	220,932	95,309	76	18.91	7.79	2.84	0.45	11.08	0.24	1.52
2027	222,741	96,089	76	19.05	7.85	2.84	0.45	11.14	0.25	1.53
2028	224,551	96,870	76	19.19	7.91	2.86	0.45	11.22	0.27	1.54
2029	226,361	97,651	76	19.33	7.97	2.89	0.45	11.31	0.28	1.55
2030	228,170	98,431	76	19.46	8.03	2.91	0.45	11.39	0.29	1.56
2031	229,838	99,151	76	19.59	8.09	2.93	0.45	11.47	0.31	1.57
2032	231,507	99,871	76	19.71	8.14	2.95	0.45	11.54	0.32	1.57
2033	233,175	100,590	76	19.84	8.20	2.97	0.45	11.62	0.33	1.58

Data from the preceding *Table 4-A* is documented below. The numbers below correspond to the parenthetical notes in the above table.

(1) This is the forecast of population served by GRU water. This was projected by adding growth from SJRWMD projections to historic served customers, adding 0.68% seasonal population (per 2010 Census), and 1% per year conversion of current self-supplied population (per SJRWMD's estimate).

(2) The forecasted number of dwelling units are those projected to be served by GRU water. It was calculated by dividing the projected population by the 2011 household size (in *Table 1-A*).

(3) The household per capita usage (gallons used per day per capita) was calculated by taking the five-year average of the household per capitas in *Table 1-A*.

(4) The household average daily use was calculated by multiplying population growth by the household per capita (3), and adding that to the historic peak water use (from *Table 1-A*).

(5) The historical component of the commerical/industrial average daily use (including public use irrigation, but excluding UF) was forecasted by increasing the historic peak water use (from *Table 1-A*) in proportion to population growth (1).

(6) The University of Florida average daily use was held to the currently permitted allocation of 2.84 mgd through the year 2027. Thereafter it was increased in direct proportion to the increase in population. This approach was vetted by Chuck Hogan, with UF Facilities Planning (352-294-0608).

(7) The Innovation District average daily use was projected at 75% of build out (0.6 mgd) in the year 2022 and flat-lined thereafter. The 0.6 mgd buildout forecast is based on iDistrict consultant studies:

   a. Innovation Square Development Framework (Perkins & Will, 2011),

   b. Innovation District Infrastructure Study (Brown & Cullen, 2011), and

   c. GRU's evaluation of likely future densities of commercial zoned properties immediately surrounding the iDistrict.

   This is an unprecendented commercial development that is not reflected in the historic water use. GRU's reduction of the forecasted average daily use (from 0.6 mgd to 0.45 mgd) takes into account flows from existing development in the area, implementation of conservation measures, and the potential for building densities to be lower than projected.

(8) The total commerical/industrial average daily use was calculated by adding Columns (5), (6) and (7).

(9) The power plant average daily potable use was forecasted to increase in proportion to population growth from its 5-year historical average (the 2007 value in *Table 1-B*), plus GRU's forecast for the reclaimed potable offset used in the South Energy Center.

(10) The water utility average daily use was forecasted by increasing the potable historic peak water use (from *Table 1-B*) in proportion to population growth (1). The 2011 peak value represents the "new normal", as in-plant water use will continue to increase due to increased maintenance and lube water at the production wells.

Table 4-B: Projected Water Use (part 2 of 2)

Future Years	Unaccounted for Water (mgd)	Total Avg. Day + Historical Reclaimed Potable Offset (mgd)	Historical Reclaimed Potable Offset Avg. Day (mgd)	New Reclaimed Potable Offset Avg. Day (mgd)	Total Reclaimed Potable Offset Avg. Day (mgd)	New Conservation Avg. Day (mgd)	Total Avg. Day (mgd)	Difference between Forecasted Demand and Requested Groundwater Allocation Avg. Day (mgd)	Requested Groundwater Allocation Avg. Day (mgd)
Notes ->	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
2012	2.62	30.47	0.91	0.13	1.04	0.00	29.43	-0.57	30.00
2013	2.64	30.78	0.91	0.16	1.08	0.03	29.67	-0.33	30.00
2014	2.66	31.08	0.91	0.23	1.14	0.05	29.89	-0.11	30.00
2015	2.68	31.39	0.91	0.26	1.18	0.08	30.13	0.13	30.00
2016	2.70	31.70	0.91	0.30	1.22	0.11	30.38	0.38	30.00
2017	2.72	32.02	0.91	0.35	1.26	0.14	30.62	0.62	30.00
2018	2.75	32.33	0.91	0.39	1.30	0.17	30.86	0.86	30.00
2019	2.77	32.65	0.91	0.44	1.36	0.19	31.10	1.10	30.00
2020	2.79	32.97	0.91	0.49	1.41	0.22	31.34	1.34	30.00
2021	2.81	33.29	0.91	0.54	1.45	0.25	31.58	1.58	30.00
2022	2.83	33.61	0.91	0.59	1.50	0.28	31.83	1.83	30.00
2023	2.85	33.88	0.91	0.64	1.55	0.31	32.03	2.03	30.00
2024	2.87	34.15	0.91	0.69	1.61	0.33	32.21	2.21	30.00
2025	2.88	34.42	0.91	0.73	1.65	0.36	32.42	2.42	30.00
2026	2.90	34.66	0.91	0.77	1.69	0.39	32.59	2.59	30.00
2027	2.91	34.89	0.91	0.81	1.73	0.41	32.76	2.76	30.00
2028	2.93	35.15	0.91	0.85	1.77	0.43	32.95	2.95	30.00
2029	2.95	35.41	0.91	0.89	1.81	0.46	33.15	3.15	30.00
2030	2.97	35.67	0.91	0.93	1.85	0.48	33.34	3.34	30.00
2031	2.98	35.91	0.91	0.97	1.88	0.50	33.53	3.53	30.00
2032	3.00	36.15	0.91	1.00	1.91	0.52	33.71	3.71	30.00
2033	3.34	36.72	0.91	1.03	1.95	0.55	34.22	4.22	30.00

Data from the preceding *Table 4-B* is documented below. The numbers below correspond to the parenthetical notes in the above table.

(11) The average daily unaccounted for water use was forecasted by applying the historic ratio of unaccounted for water to the sum of known potable uses, including Columns (4), (8), (9), and (10). The historic period of record used was 2009-2011, as the 2007 and 2008 ratios are not as accurate due to anomalies associated with an old billing system.

(12) The total average daily use (including the historical RCW offset) is the sum of Columns (4), (8), (9), (10), and (11).

(13) The historical reclaimed potable offset average daily use is the 5-year historical average of the total RCW potable offset (from Table 1).

(14) The new reclaimed potable offset average daily use was based on the forecasted increase in irrigation within its Kanapaha and Main Street reuse service areas, the South Energy Center, and within the Innovation District.

(15) The total reclaimed potable offset average daily use was calculated by adding Columns 13 and 15.

(16) The new conservation average daily use was forecasted by Liquid Solutions Group based on the Conserve Florida EZ Guide. It was calculated to be 1.57% of the 2033 groundwater average day, and indexed to population growth prior to 2033.

(17) The total average daily use was calculated by subtracting Columns (15) and (16) from Column (12).

(18) This reflects the difference between total average daily use (or Forecasted Demand) in Column (17) and the requested groundwater allocation in Column (19).

(19) The requested average daily groundwater allocation is the base allocation GRU intends to request in this permit application.

VI. Projection Comments

(1) Although the 2033 demand forecast is 34.22 mgd, GRU only intends to request 30 mgd of groundwater. Gainesville is a progressive community that strives to be a good steward of the environment. GRU's commitment to hold its current allocation of 30 mgd of groundwater through aggressive future water conservation and reclaimed water use is indicative of this desire to protect our water resources.

(2) The population projections may be conservative (erring on the low side), as they were based on an outdated model built in 2006-2007 by GISA for the SJRWMD in support of water supply planning for an 18-county region. Most of its supporting data dates back to 2006, including its property parcel base, future land use (and associated densities), and transportation infrastructure. The census metrics used by the model were from the 2000 census, and the large development data did not include over 26,000 newly planned units in a number of large new developments within the GRU service area, including:

i. Celebration Pointe
ii. Finley Woods
iii. Innovation District/B & C
iv. Newberry Village
v. Oakmont
vi. Park Ave
vii. Plum Creek - SR 121
viii. Springhill/Haufler DRI

Exhibit B. MORs (January – December 2011)

GAINESVILLE REGIONAL UTILITIES **January, 2011**

DR. WALTER E. MURPHREE

WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	60,902	Estimated
Total Customer Served at End of Month:	176,713	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	10530	10724	21254	19718	26690	15580
2	24.0	0	9820	9564	19384	19923	23170	14540
3	24.0	0	10958	10882	21840	20311	25350	14750
4	24.0	0	10495	10574	21070	20455	24860	15500
5	24.0	0	10590	10629	21219	20540	23940	17320
6	24.0	0	11268	11261	22529	21039	24400	14580
7	24.0	0	10457	10643	21100	20871	24890	15190
8	24.0	0	11174	11127	22301	21302	27910	16230
9	24.0	0	10393	10358	20750	20947	26400	14180
10	24.0	0	11440	11330	22770	21161	24980	15180
11	24.0	0	10565	10595	21160	20204	23060	14410
12	24.0	0	10597	10635	21233	20949	24660	14200
13	24.0	0	10933	10921	21854	21373	25470	15300
14	24.0	0	11128	11071	22199	21243	24780	15890
15	24.0	0	10276	10198	20473	20661	26010	15660
16	24.0	0	10852	10730	21581	20133	26900	14080
17	24.0	0	10277	10361	20638	20252	25780	14830
18	24.0	0	9640	11081	20721	19765	22640	12930
19	24.0	0	10545	10656	21200	20344	23940	13360
20	24.0	0	10033	10221	20255	20667	24910	13420
21	24.0	0	10034	10243	20276	19603	26400	13810
22	24.0	0	9999	10231	20230	20540	27550	13990
23	24.0	0	10324	10379	20703	20137	28190	12740
24	24.0	0	11115	11277	22392	20838	23680	15440
25	24.0	0	10683	10877	21559	20683	25140	15720
26	24.0	0	10256	10353	20610	20578	24170	13560
27	24.0	0	10633	10545	21178	20408	25410	13280
28	24.0	0	10593	10655	21249	20790	25510	14660
29	24.0	0	10666	10849	21515	20430	27390	15430
30	24.0	0	9938	9976	19914	19984	26970	13270
31	24.0	0	11253	11320	22573	21458	26870	15770
Total	744.0	0	327465	330265	657729	637308		
Maximum	24.0	0	11440	11330	22770	21458		
Minimum	24.0	0	9640	9564	19384	19603		
Average	24.0	0	10563	10654	21217	20558		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	0	0		0
2	96	0	0		0
3	96	254	120	6	483.33
4	96	253	23	1	482.91
5	96	253	24	2	487.91
6	96	251	24	3	480
7	96	247	25	5	483.33
8	96	0	0		0
9	96	253	48	4	478.33
10	96	0	0		0
11	96	0	0		0
12	96	0	0		0
13	96	0	0		0
14	96	254	121	6	483.75
15	96	255	24	1	482.5
16	96	253	22	2	485
17	96	253	24	3	480
18	96	207	24	4	482.91
19	96	275	24	5	482.91
20	96	0	0		0
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	227	120	6	482.08
25	96	0	0		0
26	96	252	25	1	484.58
27	96	254	23	2	486.25
28	96	254	24	3	482.91
29	96	254	24	4	484.16
30	96	252	24	5	485
31	96	0	0		0
Maximum	96	275	121		487.91
Minimum	96	0	0		0

SumWashed:
8697.86

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	22688	3290	95	457.7	3000
2	21143	3010	89	397.4	3000
3	23193	3269	83	434.8	3000
4	21912	3072	70	421.9	3000
5	23605	2695	79	433.5	3000
6	24974	3036	77	452.5	4000
7	22014	3191	64	436.0	4000
8	22928	3432	73	467.5	3500
9	20254	2943	71	424.8	4000
10	22410	3243	66	443.1	3000
11	22019	2842	67	417.9	3000
12	23550	2996	65	446.9	3500
13	24320	3064	69	456.8	3500
14	26545	3126	73	472.6	3000
15	23176	2679	85	441.6	4000
16	23057	2820	86	462.8	3500
17	22067	2512	74	430.6	3500
18	22592	2479	75	431.8	4000
19	23411	2768	69	419.1	3000
20	23565	2803	68	396.5	4000
21	23771	2828	68	415.7	3000
22	23256	2823	76	433.0	4000
23	24066	2836	58	428.6	3000
24	25727	2991	58	465.2	3000
25	23538	2925	77	446.1	3000
26	23821	2608	102	429.6	3500
27	24487	3030	86	444.9	3500
28	23521	3078	67	463.9	3500
29	23793	2984	77	430.2	3500
30	20920	3107	68	388.4	4000
31	25760	3521	77	433.7	4000
Total	722083	92001	2310	13525.3	106500
Maximum	26545	3521	102	472.6	4000
Minimum	20254	2479	58	388.4	3000
Average	23293	2968	75	436.3	3435

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	128.0	18.6	0.58	0.64	16.9
2	130.8	18.7	0.53	0.63	18.6
3	127.3	17.9	0.49	0.60	16.5
4	124.8	17.5	0.41	0.61	17.1
5	133.3	15.2	0.46	0.62	17.0
6	132.8	16.3	0.44	0.61	21.3
7	125.1	18.1	0.37	0.61	22.7
8	123.4	18.5	0.41	0.61	18.8
9	117.1	17.0	0.41	0.62	23.1
10	118.0	17.1	0.37	0.60	15.8
11	124.9	16.1	0.40	0.60	17.0
12	133.0	16.9	0.37	0.63	19.8
13	134.0	16.8	0.39	0.64	19.2
14	143.5	16.9	0.41	0.62	16.2
15	134.2	15.8	0.49	0.65	23.4
16	128.1	15.7	0.51	0.65	19.4
17	128.4	14.6	0.44	0.61	20.3
18	130.7	14.3	0.45	0.64	23.1
19	132.4	15.7	0.40	0.59	17.0
20	139.5	16.6	0.39	0.59	23.7
21	140.6	16.7	0.42	0.60	17.7
22	137.8	16.7	0.44	0.64	23.7
23	139.4	16.5	0.34	0.63	17.4
24	137.8	16.0	0.33	0.60	16.1
25	130.9	16.2	0.45	0.60	16.7
26	138.6	15.2	0.59	0.60	20.4
27	138.7	17.3	0.51	0.62	19.8
28	132.8	17.4	0.38	0.64	19.8
29	132.5	16.7	0.45	0.61	19.5
30	126.1	18.8	0.41	0.59	24.1
31	136.4	18.7	0.43	0.57	21.2
Maximum	143.5	18.8	0.59	0.65	24.1
Minimum	117.1	14.3	0.33	0.57	15.8
Average	131.6	16.8	0.44	0.61	19.5

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.70	192	265	5	<2	0.34
2	7.71	192	269	5	<2	0.36
3	7.68	188	268	5	<2	0.36
4	7.65	193	267	5	<2	0.34
5	7.65	202	267	5	<2	0.37
6	7.68	197	276	5	<2	0.36
7	7.67	186	287	5	<2	0.34
8	7.71	185	286	5	<2	0.33
9	7.71	187	274	5	<2	0.35
10	7.68	186	266	5	<2	0.37
11	7.68	183	264	5	<2	0.36
12	7.70	185	273	5	<2	0.38
13	7.70	192	288	5	<2	0.36
14	7.68	202	305	5	<2	0.35
15	7.65	204	281	5	<2	0.35
16	7.64	194	256	5	<2	0.35
17	7.64	199	255	5	<2	0.38
18	7.69	203	247	5	<2	0.36
19	7.72	198	257	5	<2	0.37
20	7.69	205	283	5	<2	0.35
21	7.67	202	277	5	<2	0.36
22	7.68	202	281	5	<2	0.36
23	7.65	201	279	5	<2	0.35
24	7.70	201	264	5	<2	0.37
25	7.65	205	270	5	<2	0.35
26	7.68	203	256	5	<2	0.36
27	7.68	194	283	5	<2	0.33
28	7.69	194	286	5	<2	0.35
29	7.65	201	275	5	<2	0.37
30	7.72	187	272	5	<2	0.36
31	7.67	189	282	5	<2	0.38
Maximum	7.72	205	305	5	<2	0.38
Minimum	7.64	183	247	5	<2	0.33
Average	7.68	195	273	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.19	31	48	151
2	10.14	28	47	152
3	10.18	29	48	149
4	10.17	29	46	148
5	10.18	32	52	148
6	10.20	30	47	152
7	10.20	29	46	172
8	10.22	29	43	170
9	10.18	27	45	152
10	10.13	27	45	148
11	10.15	29	47	148
12	10.19	29	48	157
13	10.13	28	47	167
14	10.25	32	51	171
15	10.22	31	50	156
16	10.20	31	53	129
17	10.21	32	53	128
18	10.18	33	57	136
19	10.17	31	52	140
20	10.20	32	53	159
21	10.26	31	49	153
22	10.16	30	49	151
23	10.16	29	49	148
24	10.17	30	50	136
25	10.18	29	49	135
26	10.22	35	57	139
27	10.22	31	51	163
28	10.15	29	50	166
29	10.19	32	56	149
30	10.23	27	45	155
31	10.11	28	49	156
Maximum	10.26	35	57	172
Minimum	10.11	27	43	128
Average	10.18	30	49	151

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.70	6	44	153	1.07	<1
2	8.70	4	40	151	1.06	<1
3	8.70	3	42	153	1.04	<1
4	8.67	5	43	157	1.06	<1
5	8.69	3	43	152	1.07	<1
6	8.69	4	46	140	1.04	<1
7	8.69	5	41	164	1.05	<1
8	8.64	4	38	168	1.08	<1
9	8.64	4	39	174	1.10	<1
10	8.66	3	40	156	1.07	<1
11	8.68	5	42	151	1.03	<1
12	8.67	4	43	158	1.02	<1
13	8.68	4	42	158	1.03	<1
14	8.65	4	43	170	1.07	<1
15	8.63	4	42	167	1.09	<1
16	8.69	3	47	140	1.02	<1
17	8.71	4	48	135	1.02	<1
18	8.72	4	50	144	1.00	<1
19	8.68	4	50	132	1.01	<1
20	8.62	5	50	146	1.02	<1
21	8.62	4	46	149	1.04	<1
22	8.61	4	45	149	1.11	<1
23	8.62	2	44	147	1.08	<1
24	8.65	3	45	149	1.06	<1
25	8.68	3	44	144	1.06	<1
26	8.73	5	46	138	1.04	<1
27	8.68	6	52	136	1.01	<1
28	8.64	5	46	163	1.05	<1
29	8.66	5	46	160	1.04	<1
30	8.65	3	45	153	1.04	<1
31	8.67	3	40	157	1.04	<1
Maximum	8.73	6	52	174	1.11	<1
Minimum	8.61	2	38	132	1.00	<1
Average	8.67	4	44	152	1.05	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.82	0.17	0.00
2	0.83	0.17	0.50
3	0.82	0.18	0.00
4	0.79	0.21	0.00
5	0.80	0.20	0.50
6	0.81	0.19	0.10
7	0.79	0.15	0.00
8	0.79	0.15	0.00
9	0.82	0.18	0.00
10	0.83	0.18	0.20
11	0.78	0.18	0.00
12	0.80	0.18	0.00
13	0.83	0.18	0.00
14	0.81	0.21	0.00
15	0.81	0.21	0.00
16	0.81	0.18	0.00
17	0.82	0.20	0.70
18	0.82	0.20	0.20
19	0.82	0.19	0.10
20	0.80	0.19	0.30
21	0.79	0.19	0.10
22	0.82	0.19	0.10
23	0.81	0.19	0.00
24	0.81	0.22	0.00
25	0.81	0.24	2.50
26	0.82	0.23	0.20
27	0.80	0.21	0.00
28	0.81	0.21	0.00
29	0.84	0.22	0.00
30	0.82	0.22	0.00
31	0.81	0.22	0.00
Maximum	0.84	0.24	2.50
Minimum	0.78	0.15	0.00
Average	0.81	0.20	0.18
Total			5.50

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	19.72	60.70	96.76	88.14	93.84	52.53	84.17	79.50
2	19.93	61.07	96.74	88.31	93.73	52.75	83.86	79.69
3	20.30	61.26	96.14	88.02	93.56	52.89	83.79	79.62
4	20.46	60.50	94.99	87.28	92.28	52.08	82.78	78.62
5	20.54	61.14	95.24	87.01	92.33	52.71	82.60	78.85
6	21.04	61.60	96.17	88.08	93.43	52.87	83.93	79.48
7	20.87	61.67	96.13	87.95	93.41	53.23	83.79	79.54
8	21.30	61.50	95.57	87.32	92.38	52.74	82.66	79.28
9	20.95	61.48	95.54	87.92	92.66	52.63	83.10	79.31
10	21.16	60.93	94.89	86.71	92.07	52.42	82.54	78.70
11	20.20	60.95	96.00	87.89	93.12	52.59	83.67	79.16
12	20.95	61.58	96.05	87.80	92.79	52.84	83.39	79.55
13	21.37	61.50	95.61	87.15	92.78	52.79	83.05	79.38
14	21.24	62.07	96.18	88.00	93.24	53.22	93.32	79.82
15	20.66	60.97	95.87	87.71	92.73	52.17	83.08	78.94
16	20.13	60.18	95.03	86.62	91.86	51.46	82.16	78.19
17	20.25	60.90	95.70	87.76	82.75	52.11	83.30	78.93
18	19.76	60.94	95.83	87.77	93.12	52.42	83.54	79.18
19	20.35	61.18	96.06	88.09	93.39	52.58	84.01	79.35
20	20.67	61.31	95.58	87.54	92.62	52.88	83.20	79.38
21	19.60	61.43	96.57	88.71	93.70	53.07	84.28	79.80
22	20.54	61.23	96.24	87.93	93.38	52.56	83.75	79.38
23	20.13	61.09	96.14	88.26	92.35	52.58	83.85	79.42
24	20.84	61.06	95.60	87.51	92.53	52.56	83.00	78.97
25	20.68	61.42	95.75	87.48	92.91	53.01	83.28	79.40
26	20.58	61.47	95.69	87.71	92.86	52.80	93.20	79.40
27	20.41	61.38	96.02	87.82	93.41	53.11	83.61	79.52
28	20.79	61.62	96.07	87.88	93.37	53.03	83.73	79.50
29	20.43	61.04	95.95	87.84	93.07	52.46	83.41	79.14
30	19.98	60.69	95.54	87.58	92.72	52.18	83.20	79.04
31	21.46	61.58	95.49	87.12	92.49	52.85	82.59	79.22
Maximum	21.46	62.07	96.76	88.71	93.84	53.23	93.32	79.82
Minimum	19.60	60.18	94.89	86.62	82.75	51.46	82.16	78.19
Average	20.56	61.21	95.84	87.71	92.61	52.65	83.99	79.27
Total	637.30							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	19.72	60.70	92.01	69.87	91.87
2	19.93	61.07	91.74	70.03	91.84
3	20.30	61.26	92.01	70.02	92.04
4	20.46	60.50	90.14	69.40	90.89
5	20.54	61.14	90.51	69.07	90.42
6	21.04	61.60	91.92	70.02	92.03
7	20.87	61.67	91.80	69.99	91.94
8	21.30	61.50	90.63	69.24	90.67
9	20.95	61.48	91.02	69.88	91.19
10	21.16	60.93	90.40	68.75	90.47
11	20.20	60.95	91.73	69.87	91.70
12	20.95	61.58	91.43	69.54	91.51
13	21.37	61.50	90.98	69.29	91.11
14	21.24	62.07	91.50	69.77	91.42
15	20.66	60.97	90.99	69.27	91.05
16	20.13	60.18	90.17	68.43	90.21
17	20.25	60.90	91.44	69.58	91.35
18	19.76	60.94	91.47	69.54	91.61
19	20.35	61.18	92.04	70.04	91.89
20	20.67	61.31	91.13	69.32	91.36
21	19.60	61.43	92.33	70.00	92.49
22	20.54	61.23	91.78	69.54	91.71
23	20.13	61.09	91.93	70.22	91.96
24	20.84	61.06	90.92	69.40	90.93
25	20.68	61.42	91.16	69.37	91.08
26	20.58	61.47	91.10	69.56	91.30
27	20.41	61.38	91.54	69.91	91.43
28	20.79	61.62	91.79	69.86	91.82
29	20.43	61.04	91.45	69.69	91.50
30	19.98	60.69	91.15	69.86	91.30
31	21.46	61.58	90.57	68.93	90.76
Maximum	21.46	62.07	92.33	70.22	92.49
Minimum	19.60	60.18	90.14	68.43	90.21
Average	20.56	61.21	91.32	69.59	91.38
Total	637.30				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	19.72	60.70	69.56	0.00	19.72
2	19.92	61.07	69.81	0.00	20.16
3	20.31	61.26	69.67	0.00	20.55
4	20.45	60.50	68.78	0.00	21.03
5	20.54	61.14	69.07	0.00	20.89
6	21.04	61.60	69.60	0.00	21.12
7	20.87	61.67	69.71	0.00	20.87
8	21.30	61.50	69.48	0.00	21.53
9	20.95	61.48	69.56	0.00	21.54
10	21.16	60.93	68.92	0.00	21.45
11	20.20	60.95	69.32	0.00	20.47
12	20.95	61.58	69.69	0.00	21.23
13	21.37	61.50	69.46	0.00	21.87
14	21.24	62.07	70.04	0.00	21.63
15	20.66	60.97	69.30	0.00	21.01
16	20.13	60.18	68.65	0.00	20.44
17	20.25	60.90	69.30	0.00	20.53
18	19.76	60.94	69.47	0.00	20.15
19	20.34	61.18	69.50	0.00	20.62
20	20.67	61.31	69.47	0.00	20.67
21	19.60	61.43	70.02	0.00	20.03
22	20.54	61.23	69.53	0.00	20.54
23	20.14	61.09	69.48	0.00	20.55
24	20.84	61.06	69.24	0.00	21.32
25	20.68	61.42	69.56	0.00	21.20
26	20.58	61.47	69.59	0.00	21.36
27	20.41	61.38	69.62	0.00	21.39
28	20.79	61.62	69.74	0.00	21.21
29	20.43	61.04	69.34	0.00	20.90
30	19.98	60.69	69.07	0.00	20.82
31	21.46	61.58	69.42	0.00	21.85
Maximum	21.46	62.07	70.04	0.00	21.87
Minimum	19.60	60.18	68.65	0.00	19.72
Average	20.56	61.21	69.45	0.00	20.92
Total	637.31				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.00	27.51	42.08	0.00	0.00	0.46
2	0.23	26.74	42.25	0.00	0.00	0.46
3	0.23	26.99	42.41	1.95	0.00	0.44
4	0.57	22.51	42.24	0.00	4.67	0.44
5	0.33	25.08	40.95	0.00	1.90	0.65
6	0.08	26.18	42.03	0.00	0.62	0.65
7	0.00	27.38	42.42	0.00	0.00	0.65
8	0.23	26.92	41.58	0.00	1.87	0.65
9	0.58	22.55	42.30	4.03	0.75	0.44
10	0.28	25.17	40.90	0.72	0.00	0.65
11	0.26	26.29	42.59	0.00	0.00	0.65
12	0.28	25.93	42.42	0.00	0.00	0.65
13	0.48	25.66	41.53	0.00	3.94	0.65
14	0.39	23.53	42.05	0.00	0.00	0.65
15	0.35	23.75	41.87	2.77	0.00	0.65
16	0.30	23.77	40.96	0.00	0.00	0.65
17	0.27	24.17	42.15	0.00	2.23	0.65
18	0.38	24.50	42.50	0.00	1.20	0.65
19	0.27	25.05	42.22	1.22	1.05	0.65
20	0.00	27.23	41.91	0.00	0.00	0.65
21	0.43	25.53	43.55	0.00	3.56	0.44
22	0.00	27.18	41.54	0.00	0.00	0.65
23	0.40	22.24	42.89	0.00	3.22	0.44
24	0.48	21.65	41.79	0.00	0.47	0.65
25	0.50	24.47	41.45	3.20	0.00	0.65
26	0.77	22.06	42.34	1.36	3.02	0.65
27	0.95	24.03	42.08	0.00	0.00	0.65
28	0.40	27.16	42.00	0.00	0.00	0.65
29	0.46	26.65	41.90	0.92	0.00	0.44
30	0.83	21.37	42.70	0.00	4.11	0.65
31	0.39	25.49	40.76	2.22	0.00	0.65
Maximum	0.95	27.51	43.55	4.03	4.67	0.65
Minimum	0.00	21.37	40.76	0.00	0.00	0.44
Average	0.36	24.99	42.01	0.59	1.05	0.60
Total				18.39	32.61	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **January, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** | PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **60,902** | Total Population Served at End of Month: **176,713**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** | Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** | Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** | Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** | Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant
III. Daily Data for the Month/Year of:	**January, 2011**

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	21,253,750	26,690,000									0.46	
2	X	24.0	19,384,167	23,170,000									0.46	
3	X	24.0	21,840,417	25,350,000									0.44	
4	X	24.0	21,069,583	24,860,000									0.44	
5	X	24.0	21,218,750	23,940,000									0.65	
6	X	24.0	22,528,750	24,400,000									0.65	
7	X	24.0	21,100,417	24,890,000									0.65	
8	X	24.0	22,300,833	27,910,000									0.65	
9	X	24.0	20,750,417	26,400,000									0.44	
10	X	24.0	22,770,417	24,980,000									0.65	
11	X	24.0	21,160,417	23,060,000									0.65	
12	X	24.0	21,232,500	24,660,000									0.65	
13	X	24.0	21,854,167	25,470,000									0.65	
14	X	24.0	22,199,167	24,780,000									0.65	
15	X	24.0	20,473,333	26,010,000									0.65	
16	X	24.0	21,581,250	26,900,000									0.65	
17	X	24.0	20,637,500	25,780,000									0.65	
18	X	24.0	20,721,250	22,640,000									0.65	
19	X	24.0	21,200,417	23,940,000									0.65	
20	X	24.0	20,254,583	24,910,000									0.65	
21	X	24.0	20,276,250	26,400,000									0.44	
22	X	24.0	20,229,583	27,550,000									0.65	
23	X	24.0	20,702,500	28,190,000									0.44	
24	X	24.0	22,391,667	23,680,000									0.65	
25	X	24.0	21,559,167	25,140,000									0.65	
26	X	24.0	20,609,583	24,170,000									0.65	
27	X	24.0	21,177,917	25,410,000									0.65	
28	X	24.0	21,248,750	25,510,000									0.65	
29	X	24.0	21,514,583	27,390,000									0.44	
30	X	24.0	19,913,750	26,970,000									0.65	
31	X	24.0	22,573,333	26,870,000									0.65	
Total			657,729,167											
Average			21,217,070											
Maximum			22,770,417											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**January, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO4 or mg/L of silicate as SiO2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	21,253,750	1.03	1.36	0.46	
2	X	24	19,384,167	1.03	1.35	0.46	
3	X	24	21,840,417	1.00	1.42	0.44	
4	X	24	21,069,583	1.01	1.08	0.44	
5	X	24	21,218,750	1.02	1.10	0.65	
6	X	24	22,528,750	1.01	1.25	0.65	
7	X	24	21,100,417	1.02	1.34	0.65	
8	X	24	22,300,833	1.04	1.31	0.65	
9	X	24	20,750,417	1.07	1.25	0.44	
10	X	24	22,770,417	1.02	1.34	0.65	
11	X	24	21,160,417	0.99	1.28	0.65	
12	X	24	21,232,500	1.00	1.38	0.65	
13	X	24	21,854,167	1.00	1.37	0.65	
14	X	24	22,199,167	1.05	1.22	0.65	
15	X	24	20,473,333	1.05	1.36	0.65	
16	X	24	21,581,250	0.96	1.29	0.65	
17	X	24	20,637,500	0.97	1.33	0.65	
18	X	24	20,721,250	0.97	1.34	0.65	
19	X	24	21,200,417	0.98	1.07	0.65	
20	X	24	20,254,583	0.99	1.34	0.65	
21	X	24	20,276,250	1.01	1.31	0.44	
22	X	24	20,229,583	1.05	1.33	0.65	
23	X	24	20,702,500	1.03	1.32	0.44	
24	X	24	22,391,667	1.04	1.36	0.65	
25	X	24	21,559,167	1.03	1.42	0.65	
26	X	24	20,609,583	1.00	1.23	0.65	
27	X	24	21,177,917	0.97	1.05	0.65	
28	X	24	21,248,750	1.03	1.45	0.65	
29	X	24	21,514,583	1.01	1.32	0.44	
30	X	24	19,913,750	0.99	1.38	0.65	
31	X	24	22,573,333	1.00	1.13	0.65	
Total			657,729,167				
Average			21,217,070				
Maximum			22,770,417				

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: 0.96 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 1.05 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of:	January, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 393-6512**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**
III. Check Sample Results for the Month/Year:	**January, 2011**

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.80
Distribution Sample 2	Bouleware		0.86

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fluoide Data fro the Month/Year: **January, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	21,253,750	458	0.64	0.82
2	24.0	19,384,167	397	0.63	0.83
3	24.0	21,840,417	435	0.60	0.82
4	24.0	21,069,583	422	0.61	0.79
5	24.0	21,218,750	433	0.62	0.80
6	24.0	22,528,750	453	0.61	0.81
7	24.0	21,100,417	436	0.61	0.79
8	24.0	22,300,833	467	0.61	0.79
9	24.0	20,750,417	425	0.62	0.82
10	24.0	22,770,417	443	0.60	0.83
11	24.0	21,160,417	418	0.60	0.78
12	24.0	21,232,500	447	0.63	0.80
13	24.0	21,854,167	457	0.64	0.83
14	24.0	22,199,167	473	0.62	0.81
15	24.0	20,473,333	442	0.65	0.81
16	24.0	21,581,250	463	0.65	0.81
17	24.0	20,637,500	431	0.61	0.82
18	24.0	20,721,250	432	0.64	0.82
19	24.0	21,200,417	419	0.59	0.82
20	24.0	20,254,583	397	0.59	0.80
21	24.0	20,276,250	416	0.60	0.79
22	24.0	20,229,583	433	0.64	0.82
23	24.0	20,702,500	429	0.63	0.81
24	24.0	22,391,667	465	0.60	0.81
25	24.0	21,559,167	446	0.60	0.81
26	24.0	20,609,583	430	0.60	0.82
27	24.0	21,177,917	445	0.62	0.80
28	24.0	21,248,750	464	0.64	0.81
29	24.0	21,514,583	430	0.61	0.84
30	24.0	19,913,750	388	0.59	0.82
31	24.0	22,573,333	434	0.57	0.81
Total	744.0	657,729,167	13,525	19.05	25.13
Average	24.0	21,217,070	436	0.61	0.81

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

January, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	1/1	1/2	1/3	1/4	1/5	1/6	1/7	1/8	1/9	1/10	1/11	1/12	1/13	1/14	1/15
1	ON												13:00			
	OFF												9:00	3:00		
2	ON													3:00		
	OFF				20:00									9:00		
3	ON															
	OFF															
4	ON													3:00		
	OFF													9:00		
5	ON						8:00							9:00		
	OFF										6:00					6:00
6	ON					9:00						5:00				
	OFF					13:00							16:00			
7	ON		17:00			20:00			15:00					9:00	11:00	11:00
	OFF	19:00			16:00		8:00					5:00		18:00		7:00
8	ON					13:00				19:00		13:00	14:00			
	OFF					9:00			23:00			8:00	9:00	3:00		
9	ON						13:00					13:00				11:00
	OFF											8:00		9:00		
10	ON															
	OFF															
11	ON					9:00							9:00			
	OFF					13:00							14:00			
12	ON										6:00	13:00				
	OFF						8:00					5:00		3:00		
13	ON						8:00						9:00			
	OFF						13:00						14:00			
14	ON				20:00	13:00						8:00		9:00		
	OFF					9:00	8:00					13:00				
15	ON													3:00		
	OFF															
16	ON											8:00				
	OFF											13:00				

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement

P.O. Box 1429

Palatka, Florida 32077

FLOW RATE RECORD

January, 2011

Permit Number: 2-001-006NGM   Issued To: Gainesville Regional Utilities

WELL	STATUS	1/16	1/17	1/18	1/19	1/20	1/21	1/22	1/23	1/24	1/25	1/26	1/27	1/28	1/29
1	ON														18:00
	OFF														
2	ON										15:00				
	OFF														16:00
3	ON														
	OFF														
4	ON								18:00						
	OFF												7:00		
5	ON												6:00		
	OFF													11:00	
6	ON				16:00										16:00
	OFF								18:00						
7	ON														16:00
	OFF												7:00		
8	ON	20:00											7:00		
	OFF			3:00										11:00	
9	ON											19:00			
	OFF				16:00										16:00
10	ON														
	OFF														
11	ON														
	OFF														
12	ON		18:00												
	OFF			12:00											
13	ON														
	OFF														
14	ON													11:00	
	OFF												6:00		18:00
15	ON			14:00										11:00	
	OFF	20:00									15:00				
16	ON														
	OFF														

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
January, 2011

Permit Number: 2-001-006NGM 2-001-006NGM   **Issued To:** Gainesville Regional Utilities

WELL	STATUS	1/30	1/31
1	ON		
	OFF		
2	ON		
	OFF		
3	ON		
	OFF		
4	ON		
	OFF		
5	ON		
	OFF		
6	ON		
	OFF		
7	ON		
	OFF		3:00
8	ON		
	OFF		
9	ON		12:00
	OFF		
10	ON		
	OFF		
11	ON		
	OFF		
12	ON	19:00	
	OFF		
13	ON		
	OFF		
14	ON		
	OFF		
15	ON		
	OFF		
16	ON		
	OFF		

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	60,693	Estimated
Total Customer Served at End of Month:	176,106	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	10214	10271	20485	20521	26150	14500
2	24.0	0	10742	11004	21746	20941	24170	15010
3	24.0	0	9974	10111	20085	19324	22770	10720
4	24.0	0	9808	9835	19643	19383	22140	13240
5	24.0	0	10625	10775	21400	20764	27260	13420
6	24.0	0	10580	10507	21087	20514	26930	14630
7	24.0	0	9871	9850	19721	19300	24570	12880
8	24.0	0	10524	10689	21213	20326	24870	12170
9	24.0	0	9975	9712	19687	19793	23190	12190
10	24.0	0	10780	10479	21258	19798	25090	13570
11	24.0	0	9580	9265	18845	19439	25200	12580
12	24.0	0	9776	9938	19713	18898	22390	13320
13	24.0	0	10145	10080	20225	19837	25380	9390
14	24.0	0	10294	10579	20873	20536	24500	13670
15	24.0	0	10367	10553	20920	20780	25870	14190
16	24.0	0	10838	11068	21906	21028	26680	14150
17	24.0	0	10575	10698	21273	21003	25740	14410
18	24.0	0	11278	11254	22532	21293	25310	15120
19	24.0	0	10987	11080	22067	21949	28410	16660
20	24.0	0	10798	10930	21728	21170	27770	15330
21	24.0	0	11339	11425	22763	22495	27170	17240
22	24.0	0	11554	11645	23199	22020	27630	16190
23	24.0	0	10811	10697	21508	22300	25320	17440
24	24.0	0	11748	11870	23618	22441	26630	16070
25	24.0	0	10772	10906	21678	22349	26750	16200
26	24.0	0	12293	12137	24430	23274	28790	17960
27	24.0	0	12741	12677	25418	23465	27820	17030
28	24.0	0	11321	11358	22679	22837	28380	16870
Total	672.0	0	300309	301391	601700	587778		
Maximum	24.0	0	12741	12677	25418	23465		
Minimum	24.0	0	9580	9265	18845	18898		
Average	24.0	0	10725	10764	21489	20992		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	0	0		0
2	96	0	0		0
3	96	0	0		0
4	96	254	120	6	485.83
5	96	0	0		0
6	96	253	48	1	484.16
7	96	253	24	2	484.16
8	96	255	26	3	482.08
9	96	254	24	4	480.83
10	96	254	22	5	484.16
11	96	0	0		0
12	96	0	0		0
13	96	0	0		0
14	96	0	0		0
15	96	254	121	6	484.16
16	96	0	0		0
17	96	254	49	1	482.91
18	96	252	23	2	484.16
19	96	251	24	3	456.25
20	96	251	24	4	483.33
21	96	252	24	5	484.58
22	96	0	0		0
23	96	0	0		0
24	96	0	0		0
25	96	0	0		0
26	96	254	120	6	484.16
27	96	0	0		0
28	96	250	48	1	0.4825
Maximum	96	255	121		485.83
Minimum	96	0	0		0

SumWashed:
6261.2525

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	24594	3344	90	403.3	2000
2	26254	3493	92	433.9	3000
3	24185	3258	77	393.6	3400
4	23228	3197	78	392.2	2000
5	25331	3628	65	453.9	3000
6	25133	3400	68	419.4	4000
7	23561	3030	62	393.8	2500
8	26500	2956	52	427.6	3500
9	24188	3277	62	382.5	3000
10	24870	3378	65	412.5	3000
11	21243	3159	69	367.6	3000
12	20699	2706	65	399.0	3500
13	20855	2860	56	406.5	3500
14	21857	3137	54	425.4	4000
15	21820	2960	68	441.1	4000
16	23147	3202	67	445.6	2500
17	22537	3081	76	438.2	3000
18	22671	3816	75	465.3	3500
19	22307	3528	70	460.4	3000
20	21050	3456	64	428.6	4000
21	21711	3519	67	456.3	2500
22	22655	3730	92	454.4	4500
23	21374	3495	88	435.7	3000
24	23325	3862	83	428.1	2500
25	21858	3518	85	355.2	3500
26	23541	3853	82	406.4	3000
27	24135	3975	65	423.7	3000
28	21950	3564	74	364.6	4000
Total	646579	94384	2010	11714.6	89400
Maximum	26500	3975	92	465.3	4500
Minimum	20699	2706	52	355.2	2000
Average	23092	3371	72	418.4	3193

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	144.0	19.6	0.52	0.59	11.7
2	144.8	19.3	0.53	0.61	16.5
3	144.4	19.5	0.58	0.61	17.9
4	141.8	19.5	0.48	0.61	12.2
5	141.9	20.3	0.37	0.62	16.8
6	141.8	19.4	0.40	0.60	22.7
7	142.4	18.5	0.39	0.60	15.2
8	149.7	16.6	0.30	0.60	19.8
9	147.5	20.0	0.38	0.57	18.3
10	140.1	19.1	0.39	0.56	16.9
11	135.2	20.1	0.43	0.58	19.1
12	125.9	16.5	0.41	0.60	21.3
13	123.7	17.0	0.34	0.61	20.7
14	124.1	18.0	0.32	0.61	23.0
15	125.1	17.0	0.39	0.62	22.9
16	126.7	17.5	0.38	0.61	13.7
17	127.1	17.4	0.43	0.61	16.9
18	120.6	20.3	0.42	0.61	18.6
19	121.5	19.2	0.38	0.62	16.3
20	116.4	19.1	0.36	0.62	22.1
21	114.4	18.5	0.36	0.62	13.2
22	117.2	19.3	0.50	0.61	23.3
23	119.2	19.5	0.47	0.59	16.7
24	118.5	19.6	0.45	0.54	12.7
25	121.0	19.5	0.45	0.47	19.4
26	115.5	18.9	0.42	0.47	14.7
27	113.8	18.8	0.33	0.49	14.2
28	116.3	18.9	0.39	0.49	21.1
Maximum	149.7	20.3	0.58	0.62	23.3
Minimum	113.8	16.5	0.30	0.47	11.7
Average	129.3	18.8	0.41	0.58	17.8

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.73	190	281	5	<2	0.37
2	7.75	193	268	5	<2	0.38
3	7.72	187	279	5	<2	0.37
4	7.70	195	287	5	<2	0.35
5	7.65	194	291	5	<2	0.35
6	7.68	185	288	5	<2	0.35
7	7.68	188	267	5	<2	0.35
8	7.75	166	291	4	<2	0.39
9	7.75	188	300	5	<2	0.35
10	7.69	185	288	5	<2	0.37
11	7.68	189	288	5	<2	0.36
12	7.66	188	246	5	<2	0.36
13	7.72	190	237	5	<2	0.37
14	7.61	192	280	5	<2	0.37
15	7.73	197	284	5	<2	0.35
16	7.70	200	260	5	<2	0.35
17	7.68	198	274	5	<2	0.35
18	7.72	221	295	6	<2	0.34
19	7.70	190	270	5	<2	0.35
20	7.71	189	268	5	<2	0.36
21	7.70	186	265	5	<2	0.37
22	7.69	187	283	5	<2	0.38
23	7.67	191	280	5	<2	0.37
24	7.70	187	294	5	<2	0.37
25	7.70	197	261	5	<2	0.35
26	7.68	197	262	5	<2	0.35
27	7.66	190	252	5	<2	0.36
28	7.69	193	272	5	<2	0.37
Maximum	7.75	221	300	6	<2	0.39
Minimum	7.61	166	237	4	<2	0.34
Average	7.70	191	275	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.21	28	45	159
2	10.14	27	47	147
3	10.24	29	47	162
4	10.19	29	50	167
5	10.23	29	48	180
6	10.18	26	44	166
7	10.18	25	45	142
8	10.10	26	44	172
9	10.22	27	43	182
10	10.22	28	45	173
11	10.13	29	47	176
12	10.21	32	55	138
13	10.18	31	55	122
14	10.12	27	48	158
15	10.20	29	48	158
16	10.16	30	50	149
17	10.24	32	52	149
18	10.18	28	47	172
19	10.18	29	48	161
20	10.25	30	51	145
21	10.15	28	48	148
22	10.16	27	49	162
23	10.19	29	51	163
24	10.14	27	47	170
25	10.18	30	51	149
26	10.12	29	49	154
27	10.13	29	51	136
28	10.18	28	48	151
Maximum	10.25	32	55	182
Minimum	10.10	25	43	122
Average	10.18	28	48	158

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.68	4	42	161	0.99	<1
2	8.67	3	40	153	0.99	<1
3	8.63	3	43	156	0.96	<1
4	8.61	4	42	162	1.01	<1
5	8.70	5	41	162	1.10	<1
6	8.63	2	36	177	1.21	<1
7	8.68	4	38	162	1.26	<1
8	8.69	5	38	164	1.23	<1
9	8.66	4	41	175	1.22	<1
10	8.67	4	39	182	1.20	<1
11	8.55	4	42	177	1.21	<1
12	8.66	6	43	158	1.23	<1
13	8.73	4	46	135	1.22	<1
14	8.72	3	47	136	1.21	<1
15	8.73	4	43	169	1.24	<1
16	8.73	5	43	164	1.23	<1
17	8.67	3	45	148	1.28	<1
18	8.60	5	44	157	1.34	<1
19	8.62	4	42	174	1.34	<1
20	8.75	4	41	156	1.26	<1
21	8.70	3	42	147	1.28	<1
22	8.68	3	41	164	1.33	<1
23	8.71	4	44	161	1.30	<1
24	8.68	3	42	167	1.25	<1
25	8.61	4	41	157	1.27	<1
26	8.67	4	44	152	1.27	<1
27	8.66	3	46	147	1.27	<1
28	8.65	3	48	143	1.30	<1
Maximum	8.75	6	48	182	1.34	<1
Minimum	8.55	2	36	135	0.96	<1
Average	8.67	4	42	160	1.21	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.80	0.22	0.00
2	0.80	0.22	0.00
3	0.80	0.22	2.50
4	0.79	0.23	0.20
5	0.81	0.23	0.10
6	0.82	0.24	0.10
7	0.79	0.23	2.21
8	0.82	0.24	0.00
9	0.80	0.23	1.00
10	0.80	0.22	0.60
11	0.79	0.22	0.00
12	0.80	0.22	0.00
13	0.81	0.22	0.00
14	0.81	0.22	0.00
15	0.80	0.23	0.00
16	0.82	0.24	0.00
17	0.81	0.23	0.00
18	0.79	0.21	0.00
19	0.80	0.20	0.00
20	0.82	0.18	0.00
21	0.81	0.16	0.00
22	0.80	0.16	0.00
23	0.80	0.16	0.00
24	0.79	0.16	0.00
25	0.72	0.16	0.00
26	0.70	0.19	0.00
27	0.70	0.20	0.00
28	0.71	0.18	0.00
Maximum	0.82	0.24	2.50
Minimum	0.70	0.16	0.00
Average	0.79	0.21	0.24
Total			6.71

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens	Newberry	Sonnys	Turkey Ck	Archer Rd	ESHS
			LS30	LS19	LS93	LS87	LS156	LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	20.52	61.11	95.54	87.74	92.69	52.74	83.30	78.82
2	20.94	60.73	95.18	87.20	92.39	50.71	82.82	78.44
3	15.81	61.35	96.62	88.63	94.08	53.09	84.63	79.74
4	19.39	60.84	96.11	88.35	93.52	52.57	84.23	79.10
5	20.77	62.15	96.49	88.11	93.43	53.54	83.95	79.92
6	20.52	61.98	96.27	88.20	93.52	53.01	83.82	79.92
7	19.30	60.90	96.18	89.09	93.45	52.45	84.13	79.14
8	20.33	61.72	96.37	88.20	93.50	53.34	83.89	79.97
9	19.79	61.02	96.05	88.00	93.44	52.63	83.96	79.32
10	19.80	61.03	96.48	88.38	93.90	52.85	84.27	79.59
11	19.45	61.35	96.68	88.65	93.93	53.08	84.52	79.94
12	18.90	60.36	96.69	88.50	93.98	52.24	84.41	79.38
13	19.84	60.85	96.00	87.58	93.19	52.20	83.49	79.20
14	20.54	62.01	96.89	88.75	94.08	53.80	84.38	80.43
15	20.78	61.32	95.75	87.53	92.93	52.86	83.14	79.25
16	21.03	61.17	95.57	87.49	92.63	52.66	83.30	79.17
17	21.01	61.34	95.65	87.31	92.74	52.90	83.19	79.52
18	21.30	61.68	95.53	87.19	92.38	53.11	82.83	79.50
19	21.95	62.47	96.06	87.48	92.76	53.72	82.74	80.22
20	21.17	61.38	95.61	87.13	92.47	52.70	82.66	79.44
21	22.50	61.71	95.09	86.84	91.75	52.84	82.14	79.24
22	22.02	61.97	95.48	87.20	92.52	53.29	82.91	79.71
23	22.30	61.81	95.50	86.95	92.01	53.12	82.07	79.47
24	22.44	61.82	95.38	86.91	92.15	52.92	82.47	79.39
25	22.35	61.66	95.24	86.57	92.01	53.23	82.18	79.34
26	23.27	61.55	94.49	85.82	91.08	52.43	80.84	78.85
27	23.47	61.55	94.53	85.55	90.96	52.34	80.68	78.76
28	22.83	61.42	94.29	85.93	91.26	52.58	81.19	78.68
Maximum	23.47	62.47	96.89	89.09	94.08	53.80	84.63	80.43
Minimum	15.81	60.36	94.29	85.55	90.96	50.71	80.68	78.44
Average	20.87	61.44	95.78	87.55	92.81	52.82	83.15	79.41
Total	584.29							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	20.52	61.11	90.78	69.80	91.34
2	20.94	60.73	90.71	69.15	90.89
3	15.81	61.35	92.78	70.62	92.68
4	19.39	60.84	92.24	70.60	92.40
5	20.77	62.15	91.92	70.19	91.76
6	20.52	61.98	91.74	70.19	91.81
7	19.30	60.90	92.36	70.63	92.29
8	20.33	61.72	91.88	70.23	91.76
9	19.79	61.02	92.03	70.27	91.99
10	19.80	61.03	92.25	70.19	92.36
11	19.45	61.35	92.60	70.75	92.55
12	18.90	60.36	92.45	70.55	92.50
13	19.84	60.85	91.40	69.69	91.37
14	20.54	62.01	92.37	70.65	92.38
15	20.78	61.32	91.01	69.79	91.30
16	21.03	61.17	91.19	69.91	91.47
17	21.01	61.34	91.06	69.72	91.25
18	21.30	61.68	90.74	69.37	90.82
19	21.95	62.47	90.59	69.40	90.78
20	21.17	61.38	90.50	69.40	90.73
21	22.50	61.71	89.98	68.84	90.10
22	22.02	61.97	90.67	69.50	90.96
23	22.30	61.81	90.96	68.95	89.99
24	22.44	61.82	90.22	68.96	90.55
25	22.35	61.66	89.94	68.50	89.90
26	23.27	61.55	88.45	67.87	88.87
27	23.47	61.55	88.27	67.57	88.59
28	22.83	61.42	89.01	67.94	89.22
Maximum	23.47	62.47	92.78	70.75	92.68
Minimum	15.81	60.36	88.27	67.57	88.59
Average	20.87	61.44	91.08	69.62	91.16
Total	584.29				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	20.52	61.11	69.28	0.00	20.95
2	20.94	60.73	68.77	0.00	21.24
3	19.32	61.35	69.95	0.00	19.69
4	19.38	60.84	69.43	0.00	20.15
5	20.76	62.15	70.18	0.00	20.90
6	20.51	61.98	70.24	0.00	20.97
7	19.30	60.90	69.61	0.00	19.88
8	20.33	61.72	69.98	0.00	20.78
9	19.79	61.02	69.48	0.00	20.43
10	19.80	61.03	69.55	0.00	20.14
11	19.44	61.35	69.98	0.00	19.78
12	18.90	60.36	69.38	0.00	19.71
13	19.84	60.85	69.37	0.00	20.51
14	20.54	62.01	70.24	0.00	21.03
15	20.78	61.32	69.45	0.00	21.19
16	21.03	61.17	69.19	0.00	21.26
17	21.00	61.34	69.43	0.00	21.30
18	21.29	61.68	69.66	0.00	21.69
19	21.95	62.47	70.28	0.00	22.23
20	21.17	61.38	69.52	0.00	21.69
21	22.50	61.71	69.27	0.00	22.94
22	22.02	61.97	69.70	0.00	22.33
23	22.30	61.81	69.48	0.00	22.97
24	22.44	61.82	69.45	0.00	22.70
25	22.35	61.66	69.27	0.00	22.57
26	23.27	61.55	68.83	0.00	23.56
27	23.47	61.55	68.85	0.00	23.85
28	22.84	61.42	68.80	0.00	23.60
Maximum	23.47	62.47	70.28	0.00	23.85
Minimum	18.90	60.36	68.77	0.00	19.69
Average	20.99	61.44	69.52	0.00	21.43
Total	587.78				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.43	26.23	42.61	0.00	0.00	0.65
2	0.29	23.17	41.14	0.00	2.28	0.65
3	0.53	26.89	43.07	0.00	0.00	0.65
4	0.76	22.54	43.34	2.70	2.32	0.65
5	0.14	25.31	41.94	0.05	0.00	0.65
6	0.46	23.54	42.71	1.71	0.00	0.87
7	0.57	22.41	43.50	0.00	0.00	0.65
8	0.48	26.20	42.19	0.00	0.00	0.65
9	0.62	24.70	42.79	0.00	1.82	0.65
10	0.36	26.94	42.18	0.00	0.00	0.65
11	0.34	26.90	43.15	0.00	0.00	0.65
12	0.81	22.30	43.06	0.00	0.00	0.65
13	0.67	23.38	41.81	2.16	0.00	0.65
14	0.49	26.10	42.73	0.00	1.87	0.65
15	0.42	25.26	41.60	0.00	0.00	0.65
16	0.25	25.89	41.80	0.00	0.64	0.65
17	0.29	26.03	41.85	0.00	0.00	0.65
18	0.39	21.97	41.51	0.00	3.12	0.65
19	0.28	26.66	41.34	0.00	2.13	0.65
20	0.51	24.25	41.98	0.00	1.75	0.65
21	0.43	22.63	40.89	2.07	1.47	0.65
22	0.30	25.68	41.39	0.00	0.00	0.65
23	0.68	21.01	40.71	0.00	0.00	0.65
24	0.25	26.16	41.04	0.00	2.03	0.65
25	0.21	24.26	40.42	0.00	1.68	0.65
26	0.29	25.64	39.76	0.00	2.30	0.65
27	0.38	25.84	39.68	0.00	0.00	0.65
28	0.75	23.66	40.21	0.00	5.90	0.65
Maximum	0.81	26.94	43.50	2.70	5.90	0.87
Minimum	0.14	21.01	39.68	0.00	0.00	0.65
Average	0.44	24.70	41.80	0.31	1.05	0.66
Total				8.69	29.31	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

I. General Information for the Month/Year of: **February, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **60,693**	Total Population Served at End of Month: **176,106**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Richard J. Davis Printed or Typed Name	A1635 License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: February, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	20,485,417	26,150,000									0.65	
2	X	24.0	21,745,833	24,170,000									0.65	
3	X	24.0	20,085,000	22,770,000									0.65	
4	X	24.0	19,642,500	22,140,000									0.65	
5	X	24.0	21,400,000	27,260,000									0.65	
6	X	24.0	21,086,667	26,930,000									0.87	
7	X	24.0	19,721,250	24,570,000									0.65	
8	X	24.0	21,212,917	24,870,000									0.65	
9	X	24.0	19,687,083	23,190,000									0.65	
10	X	24.0	21,258,333	25,090,000									0.65	
11	X	24.0	18,845,000	25,200,000									0.65	
12	X	24.0	19,713,333	22,390,000									0.65	
13	X	24.0	20,225,000	25,380,000									0.65	
14	X	24.0	20,872,917	24,500,000									0.65	
15	X	24.0	20,920,000	25,870,000									0.65	
16	X	24.0	21,905,833	26,680,000									0.65	
17	X	24.0	21,272,917	25,740,000									0.65	
18	X	24.0	22,531,667	25,310,000									0.65	
19	X	24.0	22,067,083	28,410,000									0.65	
20	X	24.0	21,728,333	27,770,000									0.65	
21	X	24.0	22,763,333	27,170,000									0.65	
22	X	24.0	23,198,750	27,630,000									0.65	
23	X	24.0	21,508,333	25,320,000									0.65	
24	X	24.0	23,617,917	26,630,000									0.65	
25	X	24.0	21,677,500	26,750,000									0.65	
26	X	24.0	24,430,000	28,790,000									0.65	
27	X	24.0	25,418,333	27,820,000									0.65	
28	X	24.0	22,678,750	28,380,000									0.65	
29														
30														
31														
Total			601,700,000											
Average			21,489,286											
Maximum			25,418,333											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**February, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO4 or mg/L of silicate as SiO2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:*
☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration
☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	20,485,417	0.93	1.3	0.65	
2	X	24	21,745,833	0.94	1.44	0.65	
3	X	24	20,085,000	0.92	1.23	0.65	
4	X	24	19,642,500	0.97	1.32	0.65	
5	X	24	21,400,000	0.78	1.44	0.65	
6	X	24	21,086,667	1.1	1.33	0.87	
7	X	24	19,721,250	1.18	1.3	0.65	
8	X	24	21,212,917	1.15	1.07	0.65	
9	X	24	19,687,083	1.13	1.29	0.65	
10	X	24	21,258,333	1.05	1.21	0.65	
11	X	24	18,845,000	1.16	1.28	0.65	
12	X	24	19,713,333	1.19	1.37	0.65	
13	X	24	20,225,000	1.05	1.3	0.65	
14	X	24	20,872,917	1.08	1.26	0.65	
15	X	24	20,920,000	1.14	1.22	0.65	
16	X	24	21,905,833	1.18	1.28	0.65	
17	X	24	21,272,917	1.22	1.22	0.65	
18	X	24	22,531,667	1.18	1.25	0.65	
19	X	24	22,067,083	1.3	1.37	0.65	
20	X	24	21,728,333	1.21	1.3	0.65	
21	X	24	22,763,333	1.22	1.27	0.65	
22	X	24	23,198,750	1.25	1.35	0.65	
23	X	24	21,508,333	1.24	1.26	0.65	
24	X	24	23,617,917	1.26	1.26	0.65	
25	X	24	21,677,500	1.22	1.19	0.65	
26	X	24	24,430,000	1.26	1.36	0.65	
27	X	24	25,418,333	1.29	1.33	0.65	
28	X	24	22,678,750	1.29	1.37	0.65	
29			-				
30			-				
31			-				
Total			601,700,000				
Average			19,409,677				
Maximum			25,418,333				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **0.78** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **1.07** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **NO**
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: February, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 393-6512**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	**A1635**

PWS Identification Number: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Check Sample Results for the Month/Year: February, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.822
Distribution Sample 2	Bouleware		0.825

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fluoide Data fro the Month/Year: **February, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	20,485,417	403	0.59	0.80
2	24.0	21,745,833	434	0.61	0.80
3	24.0	20,085,000	394	0.61	0.80
4	24.0	19,642,500	392	0.61	0.79
5	24.0	21,400,000	454	0.62	0.81
6	24.0	21,086,667	419	0.60	0.82
7	24.0	19,721,250	394	0.60	0.79
8	24.0	21,212,917	428	0.60	0.82
9	24.0	19,687,083	382	0.57	0.80
10	24.0	21,258,333	412	0.56	0.80
11	24.0	18,845,000	368	0.58	0.79
12	24.0	19,713,333	399	0.60	0.80
13	24.0	20,225,000	406	0.61	0.81
14	24.0	20,872,917	425	0.61	0.81
15	24.0	20,920,000	441	0.62	0.80
16	24.0	21,905,833	446	0.61	0.82
17	24.0	21,272,917	438	0.61	0.81
18	24.0	22,531,667	465	0.61	0.79
19	24.0	22,067,083	460	0.62	0.80
20	24.0	21,728,333	429	0.62	0.82
21	24.0	22,763,333	456	0.62	0.81
22	24.0	23,198,750	454	0.61	0.80
23	24.0	21,508,333	436	0.59	0.80
24	24.0	23,617,917	428	0.54	0.79
25	24.0	21,677,500	355	0.47	0.72
26	24.0	24,430,000	406	0.47	0.70
27	24.0	25,418,333	424	0.49	0.70
28	24.0	22,678,750	365	0.49	0.71
29					
30					
31					
Total	672.0	601,700,000	11,715	16.32	22.14
Average	24.0	21,489,286	418	0.58	0.79

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
February, 2011

Permit Number: **2-001-006NGM**   **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	5.04	0.00	0.00	0.83	0.00	2.27	0.00	0.00	0.50	0.00	0.00	4.03	0.00	0.00	7.08	0.00	19.75
2	5.04	0.00	0.00	4.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04	0.00	0.00	7.08	0.00	21.13
3	5.04	0.00	0.00	0.92	0.00	2.24	0.00	0.00	0.00	0.00	0.00	4.04	0.00	0.00	7.07	0.00	19.31
4	5.04	0.00	0.00	0.00	0.00	2.75	0.00	0.00	0.00	0.00	0.00	4.04	0.00	0.00	7.06	0.00	18.89
5	5.04	0.00	0.00	0.00	4.06	1.30	0.00	2.17	0.00	0.00	0.00	1.93	0.00	0.00	7.04	0.00	21.54
6	5.04	0.00	0.00	0.00	0.00	0.00	3.19	4.20	0.00	0.00	0.00	0.99	0.00	0.00	7.03	0.00	20.46
7	5.04	2.44	0.00	0.00	0.00	0.45	3.20	0.17	0.00	0.00	0.00	0.67	0.00	0.00	7.08	0.00	19.06
8	2.74	1.86	0.00	0.00	0.00	2.68	1.18	1.87	0.00	0.00	1.12	0.00	1.18	2.52	5.77	0.95	21.87
9	0.00	4.41	0.00	3.20	0.00	2.68	0.54	1.46	0.00	0.00	0.00	0.00	0.00	0.00	7.03	0.00	19.32
10	0.00	2.63	0.00	4.86	0.00	2.65	3.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.04	0.00	20.42
11	0.00	0.00	0.00	4.94	0.00	2.58	3.15	0.00	0.18	0.00	0.00	0.15	0.00	0.00	6.78	0.00	17.78
12	5.04	0.00	0.00	4.92	0.00	0.00	0.00	0.00	4.69	0.00	0.00	4.09	0.00	0.00	0.00	0.00	18.75
13	4.83	0.00	0.00	4.72	0.00	0.45	0.00	0.00	4.70	0.00	0.00	4.08	0.00	0.00	0.00	0.00	18.78
14	2.72	0.63	0.00	1.82	4.65	0.99	1.21	2.53	1.80	0.00	0.00	2.14	0.00	3.27	0.00	0.00	21.78
15	0.00	0.00	0.00	0.00	2.93	0.46	3.05	1.70	2.49	0.00	0.34	2.16	0.26	3.02	4.04	0.20	20.64
16	0.00	0.00	0.00	0.00	0.00	0.91	3.18	0.00	4.63	0.00	0.00	1.33	0.00	4.54	7.04	0.00	21.62
17	0.00	1.84	0.00	0.00	2.94	0.80	1.07	0.00	4.71	0.00	0.00	1.01	0.00	3.75	5.48	0.00	21.61
18	0.00	4.35	0.00	0.00	6.43	0.00	0.00	0.00	4.70	0.00	0.00	0.00	0.00	0.00	7.05	0.00	22.53
19	0.00	4.37	0.00	2.70	0.00	0.00	0.00	0.00	4.72	0.00	0.00	1.11	0.00	0.00	7.06	0.00	19.97
20	0.00	4.41	0.00	0.00	0.00	0.00	1.56	0.70	4.67	0.00	0.00	4.02	0.00	0.00	5.88	0.00	21.25
21	0.00	4.31	0.00	0.00	0.00	1.42	3.08	4.19	4.55	0.00	0.00	4.06	0.00	0.00	0.00	0.00	21.61
22	0.00	4.28	0.00	0.00	0.00	2.66	2.15	4.15	4.56	0.00	0.00	4.07	0.00	0.00	0.00	0.00	21.88
23	0.00	4.35	0.00	0.00	0.00	2.13	0.00	4.16	4.70	0.00	0.00	4.07	0.00	0.00	0.00	0.00	19.41
24	0.00	4.29	0.00	0.00	5.21	0.00	0.51	4.09	4.65	0.00	0.00	4.06	0.00	0.00	0.00	0.00	22.81
25	0.00	4.32	0.00	0.00	0.00	0.50	3.05	4.20	4.55	0.00	0.00	4.07	0.00	0.00	0.00	0.00	20.70
26	2.14	4.24	0.00	0.00	0.00	2.02	2.99	4.13	4.50	0.00	0.00	4.07	0.00	0.00	0.00	0.00	24.09
27	5.03	4.09	0.00	0.00	0.00	0.00	2.42	4.18	4.47	0.00	0.00	4.09	0.00	0.00	0.00	0.00	24.27
28	5.04	4.12	0.00	3.05	0.00	0.94	0.00	4.13	0.33	0.00	0.00	4.06	0.00	0.00	0.00	0.00	21.68
Total	62.82	60.95	0.00	36.94	26.22	32.85	38.76	48.03	70.12	0.00	1.45	72.40	1.47	17.13	112.62	1.15	582.90

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

February, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	2/1	2/2	2/3	2/4	2/5	2/6	2/7	2/8	2/9	2/10	2/11	2/12	2/13	2/14	2/15
1	ON											23:00				
	OFF								9:00						9:00	
2	ON							10:00	22:00						9:00	
	OFF								9:00		15:00				13:00	
3	ON															
	OFF															
4	ON	20:00								8:00						
	OFF			4:00											9:00	
5	ON					11:00									9:00	
	OFF					23:00										10:00
6	ON			4:00				20:00						20:00		20:00
	OFF	20:00				11:00						23:00			9:00	
7	ON									20:00					9:00	11:00
	OFF								9:00			23:00				10:00
8	ON					11:00			13:00						9:00	
	OFF							1:00		8:00						10:00
9	ON											23:00				11:00
	OFF	3:00													9:00	
10	ON															
	OFF															
11	ON															
	OFF															
12	ON						18:00					23:00				11:00
	OFF					11:00		4:00							13:00	
13	ON								9:00							11:00
	OFF								13:00							12:00
14	ON								13:00						13:00	
	OFF								22:00							11:00
15	ON								13:00							10:00
	OFF								9:00			23:00				
16	ON								9:00							11:00
	OFF								13:00							12:00

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

February, 2011

Permit Number: **Permit** 2-001-006NGM   Issued To: Gainesville Regional Utilities

WELL	STATUS	2/16	2/17	2/18	2/19	2/20	2/21	2/22	2/23	2/24	2/25	2/26	2/27	2/28
1	ON											18:00		
	OFF													
2	ON		14:00											
	OFF													
3	ON													
	OFF													
4	ON				10:00									9:00
	OFF				23:00									
5	ON		8:00						19:00					
	OFF				7:00					20:00				
6	ON		8:00				11:00				19:00			11:00
	OFF	8:00	14:00						19:00			18:00		20:00
7	ON					12:00				20:00				
	OFF		8:00					17:00					20:00	
8	ON					20:00								
	OFF													
9	ON													
	OFF													2:00
10	ON													
	OFF													
11	ON													
	OFF													
12	ON		14:00		17:00									
	OFF	8:00	20:00											
13	ON													
	OFF													
14	ON	8:00												
	OFF		14:00											
15	ON		14:00											
	OFF		8:00			20:00								
16	ON													
	OFF													

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	60,944	Estimated
Total Customer Served at End of Month:	176,835	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	11013	11063	22076	21587	25620	16200
2	24.0	0	11469	11478	22947	22268	28630	16200
3	24.0	0	11854	11997	23850	22904	27750	18280
4	24.0	0	11099	11128	22227	21746	25740	17010
5	24.0	0	10434	10319	20753	21752	28810	17060
6	24.0	0	11155	11113	22268	20504	26310	16070
7	24.0	0	9975	9960	19935	20095	25590	14790
8	24.0	0	10706	10751	21458	20622	24200	15020
9	24.0	0	10698	10805	21503	21160	26090	15750
10	24.0	0	9716	9831	19548	18955	22610	13460
11	24.0	0	10100	10308	20408	19664	24330	14370
12	24.0	0	9963	10098	20060	20904	27020	16250
13	24.0	0	10916	11221	22137	21715	30030	13860
14	24.0	0	12053	12328	24380	23196	28100	17170
15	24.0	0	12089	12270	24359	23460	28980	16960
16	24.0	0	12148	12197	24345	24595	29360	19090
17	24.0	0	9534	14056	23590	24321	30380	18690
18	24.0	0	13525	13425	26950	24705	30620	19070
19	24.0	0	12459	12475	24935	25510	31880	18270
20	24.0	0	13381	13076	26457	25510	32380	17420
21	24.0	0	12794	12863	25657	25199	30830	17230
22	24.0	0	12834	12641	25475	25088	30610	17310
23	24.0	0	13300	13383	26683	25917	32330	17690
24	24.0	0	13443	13863	27306	26350	31430	21490
25	24.0	0	12703	12755	25458	25672	30690	19820
26	24.0	0	13277	13363	26640	26000	31730	19130
27	24.0	0	12785	12877	25662	25493	31580	18180
28	24.0	0	12383	12228	24611	21245	28720	10400
29	24.0	0	9529	9616	19145	21543	27510	16020
30	24.0	0	12265	12319	24584	23583	27860	17930
31	24.0	0	10664	10573	21236	20702	25200	15100
Total	744.0	0	360265	366378	726643	711961		
Maximum	24.0	0	13525	14056	27306	26350		
Minimum	24.0	0	9529	9616	19145	18955		
Average	24.0	0	11621	11819	23440	22966		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	255	26	2	482.5
2	96	254	24	3	479.16
3	96	255	24	4	481.25
4	96	253	22	5	485
5	96	0	0		0
6	96	0	0		0
7	96	0	0		0
8	96	0	0		0
9	96	252	120	6	482.5
10	96	0	0		0
11	96	253	48	1	485.41
12	96	251	8	2 3	968.75
13	96	222	10	4	1110
14	96	230	31	5	482.91
15	96	0	0		0
16	96	0	0		0
17	96	0	0		0
18	96	0	0		0
19	96	0	0		0
20	96	250	142	6	481.66
21	96	0	0		0
22	96	251	48	1	483.33
23	96	253	25	2	477.08
24	96	268	23	3	445.41
25	96	281	24	4	480.83
26	96	274	24	5	455
27	96	0	0		0
28	96	0	0		0
29	96	0	0		0
30	96	0	0		0
31	96	252	120	6	453.75
Maximum	96	281	142		1110
Minimum	96	0	0		0

SumWashed:
8734.54

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	21167	3042	89	340.0	4000
2	25018	3551	75	387.4	4500
3	26790	3777	70	419.4	4000
4	23672	3494	69	386.1	4000
5	22144	3421	66	359.8	2500
6	24827	3842	71	390.8	2500
7	22107	3375	68	346.3	3000
8	21354	3575	74	368.9	4000
9	22189	3575	95	372.1	3000
10	19939	3217	83	334.2	3000
11	21968	3252	74	350.1	3000
12	21141	3207	68	340.3	3500
13	23123	3543	65	384.9	3500
14	25351	3953	69	433.7	4000
15	24371	4062	85	434.4	4000
16	25655	4137	102	434.5	4000
17	26750	3810	88	402.2	4000
18	27769	4304	92	442.9	4000
19	25616	4146	83	404.8	5000
20	27260	4502	80	420.1	3000
21	26701	4407	95	411.0	5000
22	25930	4396	110	392.2	3000
23	27040	4326	96	440.2	5000
24	26937	4662	97	447.7	4000
25	25284	4456	83	406.0	4000
26	27556	4812	90	440.4	5000
27	27310	4488	92	456.5	4000
28	25255	4178	73	409.6	3000
29	19893	3178	43	322.8	4000
30	25972	4192	74	418.5	3000
31	22184	3800	74	347.5	4000
Total	758273	120679	2494	12245.5	116500
Maximum	27769	4812	110	456.5	5000
Minimum	19893	3042	43	322.8	2500
Average	24460	3893	80	395.0	3758

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	115.0	16.4	0.49	0.46	21.7
2	130.7	18.6	0.41	0.50	23.5
3	133.6	19.0	0.37	0.53	20.1
4	127.8	18.9	0.38	0.53	21.6
5	127.9	19.7	0.36	0.53	14.4
6	133.7	20.7	0.42	0.53	13.5
7	133.0	20.3	0.40	0.54	18.0
8	119.5	20.0	0.43	0.51	22.4
9	123.8	20.0	0.54	0.51	16.7
10	122.6	19.7	0.52	0.51	18.4
11	129.0	19.1	0.45	0.51	17.6
12	126.4	19.2	0.39	0.51	20.9
13	125.3	19.2	0.36	0.52	19.0
14	124.7	19.4	0.36	0.54	19.7
15	120.0	20.0	0.43	0.54	19.7
16	126.3	20.4	0.50	0.54	19.7
17	136.9	19.5	0.44	0.51	20.3
18	123.5	19.2	0.45	0.52	17.8
19	122.7	20.0	0.39	0.48	24.0
20	123.8	20.5	0.38	0.48	13.6
21	125.1	20.6	0.45	0.47	23.4
22	122.1	20.7	0.52	0.46	14.1
23	121.7	19.5	0.45	0.48	22.5
24	118.2	20.5	0.44	0.50	17.6
25	119.2	21.0	0.39	0.47	18.8
26	124.0	21.7	0.42	0.48	22.5
27	127.8	21.0	0.43	0.53	18.7
28	123.1	20.4	0.42	0.51	14.6
29	101.0	15.7	0.24	0.39	25.1
30	126.7	20.5	0.38	0.51	14.6
31	125.3	21.5	0.43	0.50	22.6
Maximum	136.9	21.7	0.54	0.54	25.1
Minimum	101.0	15.7	0.24	0.39	13.5
Average	124.5	19.8	0.42	0.50	19.3

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.72	176	267	5	<2	0.42
2	7.64	196	285	5	<2	0.35
3	7.67	193	283	5	<2	0.35
4	7.70	188	279	5	<2	0.35
5	7.68	186	279	5	<2	0.36
6	7.72	186	288	5	<2	0.36
7	7.60	189	293	5	<2	0.36
8	7.79	183	294	5	<2	0.35
9	7.74	189	294	5	<2	0.36
10	7.78	187	281	5	<2	0.35
11	7.72	184	275	5	<2	0.36
12	7.76	184	270	5	<2	0.34
13	7.70	185	263	5	<2	0.35
14	7.69	184	265	5	<2	0.35
15	7.70	185	272	5	<2	0.36
16	7.70	187	266	5	<2	0.34
17	7.72	181	277	5	<2	0.35
18	7.70	189	265	5	<2	0.36
19	7.77	188	271	5	<2	0.37
20	7.68	185	262	5	<2	0.36
21	7.70	184	270	5	<2	0.36
22	7.67	190	279	5	<2	0.34
23	7.69	180	276	5	<2	0.38
24	7.66	183	277	5	<2	0.35
25	7.67	185	303	5	<2	0.37
26	7.66	187	280	5	<2	0.34
27	7.62	186	294	5	<2	0.34
28	7.61	185	267	5	<2	0.36
29	7.67	187	257	5	<2	0.36
30	7.68	184	271	5	<2	0.34
31	7.66	192	283	5	<2	0.35
Maximum	7.79	196	303	5	<2	0.42
Minimum	7.60	176	257	5	<2	0.34
Average	7.69	186	277	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.20	29	50	157
2	10.12	28	47	166
3	10.17	29	50	161
4	10.17	28	46	170
5	10.14	28	46	167
6	10.15	26	44	174
7	10.24	26	44	174
8	10.16	29	46	173
9	10.18	28	44	172
10	10.19	28	46	168
11	10.21	29	48	159
12	10.22	27	44	157
13	10.16	25	45	149
14	10.20	27	45	150
15	10.13	28	47	158
16	10.12	26	45	155
17	10.19	30	49	162
18	10.22	30	48	156
19	10.11	29	51	164
20	10.20	28	47	152
21	10.18	28	47	157
22	10.18	30	47	163
23	10.16	29	47	165
24	10.15	27	43	164
25	10.10	27	43	181
26	10.10	26	42	192
27	10.15	26	42	176
28	10.24	29	45	152
29	10.13	26	47	150
30	10.13	29	46	164
31	10.14	28	44	166
Maximum	10.24	30	51	192
Minimum	10.10	25	42	149
Average	10.17	28	46	164

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.73	5	43	163	1.29	<1
2	8.61	3	46	163	1.33	<1
3	8.62	6	45	162	1.34	<1
4	8.68	4	42	165	1.33	<1
5	8.66	5	41	156	1.33	<1
6	8.68	3	42	164	1.34	<1
7	8.59	2	40	170	1.22	<1
8	8.53	3	36	183	1.36	<1
9	8.73	5	42	180	1.31	<1
10	8.77	5	38	179	1.29	<1
11	8.69	4	42	169	1.30	<1
12	8.69	4	39	162	1.32	<1
13	8.68	3	42	160	1.31	<1
14	8.72	3	41	152	1.29	<1
15	8.70	4	39	161	1.31	<1
16	8.70	4	40	159	1.30	<1
17	8.64	4	43	160	1.24	<1
18	8.69	5	44	163	1.18	<1
19	8.71	4	42	158	1.17	<1
20	8.72	2	44	154	1.20	<1
21	8.65	3	41	157	1.29	<1
22	8.65	4	43	162	1.32	<1
23	8.68	4	42	169	1.30	<1
24	8.70	5	40	162	1.24	<1
25	8.64	5	40	169	1.24	<1
26	8.60	4	43	185	1.27	<1
27	8.67	3	37	188	1.23	<1
28	8.66	3	40	168	1.24	<1
29	8.68	5	43	158	1.20	<1
30	8.69	5	42	161	1.21	<1
31	8.66	4	39	162	1.20	<1
Maximum	8.77	6	46	188	1.36	<1
Minimum	8.53	2	36	152	1.17	<1
Average	8.67	4	41	165	1.27	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.70	0.16	0.00
2	0.69	0.17	0.00
3	0.70	0.20	0.00
4	0.71	0.21	0.00
5	0.71	0.21	0.00
6	0.71	0.21	0.40
7	0.74	0.15	0.00
8	0.71	0.15	0.00
9	0.72	0.17	0.70
10	0.72	0.18	1.00
11	0.72	0.21	0.00
12	0.71	0.22	0.00
13	0.69	0.21	0.00
14	0.71	0.20	0.00
15	0.72	0.20	0.00
16	0.73	0.20	0.00
17	0.77	0.20	0.00
18	0.72	0.20	0.00
19	0.70	0.20	0.00
20	0.70	0.18	0.00
21	0.72	0.16	0.00
22	0.71	0.17	0.00
23	0.72	0.17	0.00
24	0.71	0.20	0.00
25	0.70	0.19	0.00
26	0.70	0.16	0.00
27	0.69	0.16	0.00
28	0.73	0.16	0.20
29	0.74	0.16	0.20
30	0.70	0.16	0.50
31	0.72	0.18	1.00
Maximum	0.77	0.22	1.00
Minimum	0.69	0.15	0.00
Average	0.71	0.18	0.13
Total			4.00

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	21.59	61.26	95.11	86.62	92.09	52.58	82.41	79.00
2	22.27	61.65	95.03	86.41	91.75	52.78	82.13	79.22
3	22.90	61.97	95.29	86.41	91.87	53.04	81.86	79.46
4	21.75	62.00	95.85	87.41	92.73	53.38	82.87	79.90
5	21.75	61.64	96.00	86.98	92.60	52.75	82.34	79.48
6	20.50	60.51	95.91	86.71	92.61	51.99	82.31	79.09
7	20.10	61.03	96.74	87.97	93.85	52.77	83.97	79.90
8	20.63	60.80	96.22	87.49	93.15	52.43	83.16	79.35
9	21.16	60.82	95.55	86.89	92.44	52.20	82.44	78.93
10	18.96	60.75	97.24	88.52	94.56	52.72	84.88	80.07
11	19.66	61.19	96.79	88.38	93.92	52.78	84.20	79.48
12	20.90	60.98	96.22	87.44	92.92	52.31	82.77	79.13
13	21.71	60.82	94.99	86.57	91.79	51.86	81.65	78.64
14	23.20	62.06	94.78	86.30	91.29	53.04	81.24	79.28
15	23.46	62.28	94.93	86.47	91.50	53.21	81.60	79.19
16	24.59	62.34	94.14	85.58	90.40	53.05	80.30	78.98
17	24.32	61.28	93.83	85.07	90.07	51.97	79.94	78.11
18	24.70	62.64	94.32	85.67	90.78	53.34	80.57	79.21
19	25.51	62.35	93.40	84.55	89.44	52.55	78.62	78.61
20	25.51	61.80	93.11	83.94	89.12	52.18	78.09	78.37
21	25.20	62.33	93.66	84.95	89.96	52.77	79.71	78.52
22	25.09	62.35	94.17	85.50	90.43	53.05	80.12	78.72
23	25.92	62.70	93.80	85.21	90.26	52.99	79.62	78.87
24	26.35	63.09	93.53	84.50	89.58	53.24	78.68	78.96
25	25.67	62.83	93.91	85.15	90.03	53.38	79.71	79.06
26	26.00	62.71	93.60	84.69	89.88	52.77	78.85	78.82
27	25.49	62.15	93.39	84.68	89.46	52.34	78.88	78.31
28	20.77	61.94	94.62	86.27	91.07	52.88	81.04	78.99
29	21.54	60.30	94.48	86.31	91.55	51.87	81.60	78.28
30	23.58	62.15	95.09	86.55	91.93	53.21	81.92	79.50
31	20.71	60.87	95.68	87.67	93.00	52.77	83.41	79.05
Maximum	26.35	63.09	97.24	88.52	94.56	53.38	84.88	80.07
Minimum	18.96	60.30	93.11	83.94	89.12	51.86	78.09	78.11
Average	22.95	61.73	94.88	86.22	91.48	52.72	81.32	79.05
Total	711.49							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	21.59	61.26	90.20	68.47	90.31
2	22.27	61.65	89.62	68.52	89.64
3	22.90	61.97	89.62	68.18	89.72
4	21.75	62.00	90.75	69.37	90.74
5	21.75	61.64	89.92	68.88	90.12
6	20.50	60.51	89.95	68.40	90.04
7	20.10	61.03	91.76	69.92	91.63
8	20.63	60.80	90.90	69.07	91.14
9	21.16	60.82	90.07	68.85	90.24
10	18.96	60.75	92.76	70.54	93.06
11	19.66	61.19	92.14	70.06	92.16
12	20.90	60.98	90.51	68.99	90.69
13	21.71	60.82	89.34	68.62	89.53
14	23.20	62.06	89.08	68.09	89.27
15	23.46	62.28	89.32	68.72	89.58
16	24.59	62.34	87.82	67.68	87.97
17	24.32	61.28	87.47	67.02	87.74
18	24.70	62.64	88.17	67.52	88.34
19	25.51	62.35	86.01	66.46	86.54
20	25.51	61.80	85.48	66.07	85.88
21	25.20	62.33	87.30	66.91	87.55
22	25.09	62.35	87.29	67.51	88.16
23	25.92	62.70	87.09	67.25	87.52
24	26.35	63.09	86.09	66.36	86.59
25	25.67	62.83	87.21	66.71	87.41
26	26.00	62.71	86.20	66.63	86.63
27	25.49	62.15	82.63	66.61	86.65
28	20.77	61.94	88.70	67.90	89.04
29	21.54	60.30	89.32	68.26	89.64
30	23.58	62.15	89.61	68.57	89.81
31	20.71	60.87	91.25	69.59	91.48
Maximum	26.35	63.09	92.76	70.54	93.06
Minimum	18.96	60.30	82.63	66.07	85.88
Average	22.95	61.73	88.83	68.12	89.19
Total	711.49				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	21.59	61.26	69.23	0.00	21.86
2	22.27	61.65	69.36	0.00	22.89
3	22.90	61.97	69.49	0.00	23.01
4	21.75	62.00	69.95	0.00	22.22
5	21.75	61.64	69.82	0.00	21.97
6	20.50	60.51	69.27	0.00	20.91
7	20.10	61.03	69.85	0.00	20.74
8	20.63	60.80	69.38	0.00	21.15
9	21.16	60.82	69.11	0.00	21.97
10	18.96	60.75	69.93	0.00	19.29
11	19.66	61.19	70.03	0.00	19.92
12	20.90	60.98	69.42	0.00	20.93
13	21.71	60.82	68.68	0.00	22.61
14	23.20	62.06	69.15	0.00	23.99
15	23.46	62.28	69.29	0.00	23.83
16	24.59	62.34	68.95	0.00	25.41
17	24.32	61.28	68.03	0.00	24.76
18	24.70	62.64	69.12	0.00	24.73
19	25.51	62.35	68.50	0.00	25.94
20	25.51	61.80	68.05	0.00	26.24
21	25.20	62.33	68.61	0.00	25.68
22	25.09	62.35	68.64	0.00	25.49
23	25.92	62.70	68.63	0.00	26.78
24	26.35	63.09	68.79	0.00	27.01
25	25.67	62.83	68.85	0.00	25.79
26	26.00	62.71	68.74	0.00	26.50
27	25.49	62.15	68.33	0.00	26.24
28	20.77	61.94	69.07	0.00	21.61
29	21.54	60.30	68.04	0.00	22.08
30	23.58	62.15	69.26	0.00	23.61
31	20.71	60.87	69.05	0.00	20.89
Maximum	26.35	63.09	70.03	0.00	27.01
Minimum	18.96	60.30	68.03	0.00	19.29
Average	22.95	61.73	69.05	0.00	23.42
Total	711.49				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.27	25.77	40.81	0.00	0.00	0.65
2	0.60	24.59	41.22	0.00	3.33	0.65
3	0.11	27.05	40.00	0.00	0.00	0.65
4	0.49	24.61	41.60	2.08	0.12	0.65
5	0.22	26.19	41.17	0.00	0.60	0.65
6	0.40	25.87	40.68	0.00	0.00	0.65
7	0.63	26.47	41.98	1.45	0.00	0.61
8	0.51	26.07	41.49	0.00	2.15	0.61
9	0.80	22.54	40.95	0.00	4.41	0.61
10	0.33	26.02	42.87	0.00	0.75	0.61
11	0.23	27.40	42.91	0.00	0.00	0.61
12	0.02	27.00	41.44	0.00	0.18	0.61
13	0.87	22.88	40.58	3.08	0.00	0.61
14	0.78	24.04	40.23	0.00	3.35	0.61
15	0.36	25.13	40.50	0.00	2.98	0.61
16	0.80	23.89	39.62	0.00	0.00	0.61
17	0.43	24.26	38.81	0.00	3.52	0.61
18	0.02	27.00	38.93	0.00	0.20	0.55
19	0.44	25.10	38.04	0.00	3.38	0.61
20	0.71	23.81	38.01	0.00	5.74	0.61
21	0.47	25.30	38.66	0.00	1.93	0.61
22	0.39	25.32	38.96	0.00	0.40	0.61
23	0.85	23.38	39.22	3.31	0.00	0.61
24	0.64	23.91	38.46	0.00	5.17	0.61
25	0.12	26.79	38.24	0.00	0.00	0.61
26	0.50	25.94	38.24	0.00	2.05	0.61
27	0.73	24.05	38.55	0.00	2.53	0.61
28	0.36	26.13	40.05	1.77	0.00	0.61
29	0.53	20.32	40.89	0.00	4.17	0.61
30	0.03	27.14	40.13	0.00	0.00	0.83
31	0.20	26.20	42.01	0.00	0.62	0.61
Maximum	0.87	27.40	42.91	3.31	5.74	0.83
Minimum	0.02	20.32	38.01	0.00	0.00	0.55
Average	0.45	25.17	40.17	0.38	1.53	0.62
Total				11.69	47.58	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

I. General Information for the Month/Year of: March, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **60,944**	Total Population Served at End of Month: **176,835**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: March, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)

☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	22,075,833	25,620,000									0.65	
2	X	24.0	22,947,083	28,630,000									0.65	
3	X	24.0	23,850,417	27,750,000									0.65	
4	X	24.0	22,227,083	25,740,000									0.65	
5	X	24.0	20,752,917	28,810,000									0.65	
6	X	24.0	22,267,500	26,310,000									0.65	
7	X	24.0	19,934,583	25,590,000									0.61	
8	X	24.0	21,457,500	24,200,000									0.61	
9	X	24.0	21,502,500	26,090,000									0.61	
10	X	24.0	19,547,500	22,610,000									0.61	
11	X	24.0	20,407,917	24,330,000									0.61	
12	X	24.0	20,060,417	27,020,000									0.61	
13	X	24.0	22,136,667	30,030,000									0.61	
14	X	24.0	24,380,000	28,100,000									0.61	
15	X	24.0	24,358,750	28,980,000									0.61	
16	X	24.0	24,345,417	29,360,000									0.61	
17	X	24.0	23,590,417	30,380,000									0.61	
18	X	24.0	26,950,000	30,620,000									0.55	
19	X	24.0	24,934,583	31,880,000									0.61	
20	X	24.0	26,457,083	32,380,000									0.61	
21	X	24.0	25,657,083	30,830,000									0.61	
22	X	24.0	25,475,000	30,610,000									0.61	
23	X	24.0	26,683,333	32,330,000									0.61	
24	X	24.0	27,305,833	31,430,000									0.61	
25	X	24.0	25,458,333	30,690,000									0.61	
26	X	24.0	26,640,000	31,730,000									0.61	
27	X	24.0	25,662,083	31,580,000									0.61	
28	X	24.0	24,611,250	28,720,000									0.61	
29	X	24.0	19,145,417	27,510,000									0.61	
30	X	24.0	24,583,750	27,860,000									0.83	
31	X	24.0	21,236,250	25,200,000									0.61	
Total			726,642,500											
Average			23,440,081											
Maximum			27,305,833											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year: March, 2011

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C. Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	22,075,833	1.25	1.2	0.65	
2	X	24	22,947,083	1.28	1.23	0.65	
3	X	24	23,850,417	1.32	1.45	0.65	
4	X	24	22,227,083	1.3	1.28	0.65	
5	X	24	20,752,917	1.3	1.22	0.65	
6	X	24	22,267,500	1.31	1.29	0.65	
7	X	24	19,934,583	1.3	1.28	0.61	
8	X	24	21,457,500	1.26	1.27	0.61	
9	X	24	21,502,500	1.26	1.26	0.61	
10	X	24	19,547,500	1.25	1.29	0.61	
11	X	24	20,407,917	1.28	1.26	0.61	
12	X	24	20,060,417	1.29	1.19	0.61	
13	X	24	22,136,667	1.28	1.32	0.61	
14	X	24	24,380,000	1.24	1.21	0.61	
15	X	24	24,358,750	1.26	1.24	0.61	
16	X	24	24,345,417	1.26	1.35	0.61	
17	X	24	23,590,417	1.15	1.15	0.61	
18	X	24	26,950,000	1.13	1.13	0.55	
19	X	24	24,934,583	1.14	1.38	0.61	
20	X	24	26,457,083	1.12	0.54	0.61	
21	X	24	25,657,083	1.26	1.24	0.61	
22	X	24	25,475,000	1.28	1.29	0.61	
23	X	24	26,683,333	1.2	1.38	0.61	
24	X	24	27,305,833	1.21	1.08	0.61	
25	X	24	25,458,333	1.19	1.34	0.61	
26	X	24	26,640,000	1.25	1.17	0.61	
27	X	24	25,662,083	1.18	1.2	0.61	
28	X	24	24,611,250	1.18	1.45	0.61	
29	X	24	19,145,417	1.1	1.36	0.61	
30	X	24	24,583,750	1.17	1.3	0.83	
31	X	24	21,236,250	1.17	1.28	0.61	
Total			726,642,500				
Average			23,440,081				
Maximum			27,305,833				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: 1.1 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 0.54 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: March, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 393-6512**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	**A1635**

PWS Identification Number: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Check Sample Results for the Month/Year: March, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.697
Distribution Sample 2	Bouleware		0.697

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fluoide Data fro the Month/Year: **March, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	22,075,833	340	0.46	0.70
2	24.0	22,947,083	387	0.50	0.69
3	24.0	23,850,417	419	0.53	0.70
4	24.0	22,227,083	386	0.53	0.71
5	24.0	20,752,917	360	0.53	0.71
6	24.0	22,267,500	391	0.53	0.71
7	24.0	19,934,583	346	0.54	0.74
8	24.0	21,457,500	369	0.51	0.71
9	24.0	21,502,500	372	0.51	0.72
10	24.0	19,547,500	334	0.51	0.72
11	24.0	20,407,917	350	0.51	0.72
12	24.0	20,060,417	340	0.51	0.71
13	24.0	22,136,667	385	0.52	0.69
14	24.0	24,380,000	434	0.54	0.71
15	24.0	24,358,750	434	0.54	0.72
16	24.0	24,345,417	434	0.54	0.73
17	24.0	23,590,417	402	0.51	0.77
18	24.0	26,950,000	443	0.52	0.72
19	24.0	24,934,583	405	0.48	0.70
20	24.0	26,457,083	420	0.48	0.70
21	24.0	25,657,083	411	0.47	0.72
22	24.0	25,475,000	392	0.46	0.71
23	24.0	26,683,333	440	0.48	0.72
24	24.0	27,305,833	448	0.50	0.71
25	24.0	25,458,333	406	0.47	0.70
26	24.0	26,640,000	440	0.48	0.70
27	24.0	25,662,083	457	0.53	0.69
28	24.0	24,611,250	410	0.51	0.73
29	24.0	19,145,417	323	0.39	0.74
30	24.0	24,583,750	418	0.51	0.70
31	24.0	21,236,250	348	0.50	0.72
Total	744.0	726,642,500	12,245	15.60	22.10
Average	24.0	23,440,081	395	0.50	0.71

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
March, 2011

Permit Number: 2-001-006NGM **Issued To: Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	2.66	3.46	0.00	1.67	2.21	1.24	2.10	1.36	0.00	0.00	1.19	3.31	1.17	2.04	0.00	0.75	23.17
2	1.32	4.31	0.00	0.00	6.32	1.56	1.94	0.00	2.05	0.00	0.00	4.06	0.00	1.41	0.00	0.00	22.97
3	1.31	4.30	0.00	0.00	6.31	1.36	1.56	0.00	4.61	0.00	0.79	4.06	0.00	0.00	0.00	0.00	24.31
4	1.32	4.31	0.00	0.00	6.37	0.60	1.61	0.00	4.61	0.00	0.00	3.80	0.00	0.00	0.00	0.00	22.62
5	1.31	4.33	0.00	0.00	6.43	0.00	1.53	0.00	4.61	0.00	0.00	0.00	0.00	0.00	3.45	0.00	21.66
6	1.31	4.34	0.00	0.00	6.43	0.00	0.00	0.67	4.70	0.00	0.00	0.00	0.00	0.00	5.94	0.00	23.39
7	1.30	4.30	0.00	0.00	6.31	0.00	0.00	4.11	4.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.69
8	1.30	3.56	0.00	0.00	6.29	0.00	0.00	4.10	4.66	0.00	0.00	2.20	0.00	0.00	0.00	0.00	22.12
9	3.73	0.00	0.00	3.15	2.27	0.41	0.00	4.16	1.66	0.00	0.00	1.43	0.00	0.00	4.60	0.00	21.41
10	5.04	0.00	0.00	0.50	0.00	1.87	0.00	0.93	2.26	0.00	0.00	1.26	0.00	0.00	7.08	0.00	18.94
11	4.26	0.00	0.00	0.00	0.00	2.74	0.00	0.00	4.73	0.00	0.00	0.00	1.28	0.00	7.10	0.00	20.11
12	5.04	0.00	0.00	0.00	0.00	2.75	0.00	0.00	4.71	0.00	0.00	0.00	0.00	0.00	7.14	0.00	19.64
13	5.04	0.00	0.00	0.00	0.00	2.28	1.82	0.70	4.59	0.00	0.00	0.00	0.00	0.00	7.12	0.00	21.56
14	5.04	0.00	0.00	0.00	0.00	0.00	3.01	4.17	4.49	0.00	0.00	0.00	0.00	0.00	7.11	0.00	23.82
15	5.04	0.00	0.00	0.00	0.00	0.00	3.00	4.17	4.48	0.00	0.00	0.00	0.00	0.00	7.12	0.00	23.82
16	5.04	0.00	0.00	0.00	0.00	0.00	3.01	4.15	4.48	0.00	0.00	0.00	0.00	0.00	7.14	0.00	23.83
17	5.04	0.00	0.00	0.00	0.00	1.56	2.34	1.73	4.52	0.00	0.00	1.01	0.00	0.00	7.11	0.00	23.32
18	5.04	0.00	0.00	4.34	0.00	2.61	2.31	0.00	4.47	0.00	0.00	0.07	0.00	0.00	7.07	0.00	25.91
19	5.04	0.00	0.00	2.71	0.00	2.68	0.00	0.00	4.66	0.00	0.00	2.16	0.00	0.00	7.08	0.00	24.33
20	5.04	0.00	0.00	4.82	0.00	2.66	1.53	0.00	4.55	0.00	0.00	0.00	0.00	0.00	7.07	0.00	25.67
21	5.04	1.94	0.00	4.77	0.00	2.65	3.09	0.00	0.19	0.00	0.00	0.00	0.00	0.00	7.04	0.00	24.71
22	4.78	4.02	0.00	4.74	0.00	2.65	1.25	0.00	0.30	0.00	0.00	0.00	0.00	0.00	7.02	0.00	24.76
23	1.32	3.30	0.00	3.71	0.00	0.89	1.35	1.79	4.59	0.00	1.39	0.00	1.37	0.00	6.99	0.93	27.62
24	1.31	2.94	0.00	4.83	0.00	0.00	3.05	4.07	4.48	0.00	0.00	0.00	0.00	0.00	7.02	0.00	27.71
25	1.33	0.00	0.00	1.83	3.77	0.11	1.25	4.11	4.63	0.00	0.00	2.20	0.00	0.00	6.99	0.00	26.21
26	1.35	0.00	0.00	0.00	6.13	2.56	1.62	4.00	4.60	0.00	0.00	0.00	0.00	0.00	7.00	0.00	27.27
27	1.36	2.71	0.00	0.00	6.04	2.54	3.03	3.28	4.47	0.00	0.00	2.16	0.00	0.00	0.20	0.00	25.77
28	1.94	4.16	0.00	0.00	6.23	1.26	2.53	0.00	4.47	0.00	0.00	4.07	0.00	0.00	0.00	0.00	24.66
29	4.38	1.36	0.00	0.00	3.23	0.74	1.32	1.31	3.72	0.00	0.00	3.14	0.00	0.00	0.00	0.00	19.20
30	5.04	0.00	0.00	0.00	3.09	0.00	2.47	4.07	4.45	0.00	0.00	1.34	0.00	0.00	3.29	0.00	23.76
31	5.04	0.00	0.00	0.00	0.00	0.00	0.00	4.20	4.65	0.00	0.00	0.00	0.00	0.00	7.06	0.00	20.95
Total	103.09	53.33	0.00	37.07	77.43	37.72	46.71	57.09	120.06	0.00	3.36	36.32	3.85	3.44	144.75	1.68	725.89

ST. JOHN'S WATER MANAGEMENT DISTRICT — **Division of Enforcement**

Dept. of Resource Management — **P.O. Box 1429**

C O N D I T I O N   C O M P L I A N C E — **Palatka, Florida 32077**

FLOW RATE RECORD

March, 2011

Permit Number: 2-001-006NGM — **Issued To:** Gainesville Regional Utilities

WELL	STATUS	3/1	3/2	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13	3/14	3/15
1	ON									8:00		13:00				
	OFF	9:00										8:00				
2	ON	13:00														
	OFF	9:00							20:00							
3	ON															
	OFF															
4	ON									8:00						
	OFF	8:00									2:00					
5	ON	20:00														
	OFF									8:00						
6	ON	13:00		11:00						20:00	20:00					
	OFF		13:00		6:00						13:00			20:00		
7	ON	9:00		11:00										10:00		
	OFF		20:00			12:00										
8	ON						20:00							20:00		
	OFF	8:00									5:00					
9	ON		13:00								13:00					
	OFF									8:00						
10	ON															
	OFF															
11	ON	9:00		8:00												
	OFF	13:00		11:00												
12	ON	13:00							11:00		12:00					
	OFF	9:00			22:00					8:00	20:00					
13	ON	9:00										8:00				
	OFF	13:00										13:00				
14	ON	13:00	8:00													
	OFF	20:00	13:00													
15	ON					12:00				8:00						
	OFF						20:00									
16	ON	9:00														
	OFF	13:00														

ST. JOHN'S WATER MANAGEMENT DISTRICT — Division of Enforcement

Dept. of Resource Management — P.O. Box 1429

C O N D I T I O N   C O M P L I A N C E — Palatka, Florida 32077

FLOW RATE RECORD

March, 2011

Permit Number: 2-001-006NGM   **Issued To:** Gainesville Regional Utilities

WELL	STATUS	3/16	3/17	3/18	3/19	3/20	3/21	3/22	3/23	3/24	3/25	3/26	3/27	3/28	3/29
1	ON													20:00	12:00
	OFF							22:00							8:00
2	ON						12:00		13:00				8:00		
	OFF								8:00	17:00					8:00
3	ON														
	OFF														
4	ON			1:00	11:00				13:00						
	OFF			22:00					8:00		10:00				
5	ON										10:00				
	OFF														
6	ON		10:00								23:00				5:00
	OFF								8:00					12:00	16:00
7	ON		15:00			12:00			14:00			11:00			14:00
	OFF		10:00	19:00				20:00			10:00			20:00	
8	ON								14:00						16:00
	OFF		10:00										20:00		
9	ON							22:00							12:00
	OFF						1:00								8:00
10	ON														
	OFF														
11	ON								8:00						
	OFF								13:00						
12	ON		18:00		11:00						10:00		11:00		14:00
	OFF			1:00	23:00						23:00				8:00
13	ON								8:00						
	OFF								13:00						
14	ON														
	OFF														
15	ON														
	OFF												Well 15 Off		
16	ON								8:00						
	OFF								13:00						

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
March, 2011

Permit Number: 2-001-006 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	3/30	3/31
1	ON		
	OFF		
2	ON		
	OFF		
3	ON		
	OFF		
4	ON		
	OFF		
5	ON		
	OFF	13:00	
6	ON		
	OFF		
7	ON		
	OFF	20:00	
8	ON		
	OFF		
9	ON		
	OFF		
10	ON		
	OFF		
11	ON		
	OFF		
12	ON		
	OFF	8:00	
13	ON		
	OFF		
14	ON		
	OFF		
15	ON	13:00	
	OFF		
16	ON		
	OFF		

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	60,895	Estimated
Total Customer Served at End of Month:	176,692	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	10721	10563	21284	21258	28300	15410
2	24.0	0	11340	11244	22584	22583	25800	17160
3	24.0	0	11939	12208	24146	24104	27910	16920
4	24.0	0	13000	12991	25992	23860	28190	17390
5	24.0	0	10468	10666	21134	21664	25310	16760
6	24.0	0	11613	11695	23308	22413	28630	15640
7	24.0	0	12096	12147	24243	23786	29850	17240
8	24.0	0	12393	12304	24696	24580	29790	19020
9	24.0	0	13168	13138	26306	25823	31270	18890
10	24.0	0	13203	13187	26389	25796	32130	18510
11	24.0	0	12929	12883	25812	24963	31020	19320
12	24.0	0	12211	12173	24385	23985	30440	19440
13	24.0	0	12755	12892	25647	25570	30490	19000
14	24.0	0	13272	13423	26695	26688	31610	21010
15	24.0	0	13036	13140	26175	24883	29890	18540
16	24.0	0	13389	13484	26873	26123	31010	18390
17	24.0	0	12893	12919	25812	26365	32370	18280
18	24.0	0	13675	13725	27400	25928	31530	18140
19	24.0	0	13155	13088	26243	26705	32230	21540
20	24.0	0	14215	14504	28719	27137	35010	18130
21	24.0	0	11996	12036	24032	24680	30170	16670
22	24.0	0	13537	13663	27199	26003	31040	20230
23	24.0	0	14253	14390	28643	27430	33310	19390
24	24.0	0	13273	13408	26681	26367	31570	18780
25	24.0	0	13469	13396	26865	26451	32120	18530
26	24.0	0	13766	13667	27433	26724	31750	21590
27	24.0	0	14820	14805	29624	28077	37080	19300
28	24.0	0	13466	13598	27064	26214	32120	16680
29	24.0	0	10828	10656	21483	22190	24850	15470
30	24.0	0	13062	13020	26083	25320	28830	18490
Total	720.0	0	383941	385009	768950	753669		
Maximum	24.0	0	14820	14805	29624	28077		
Minimum	24.0	0	10468	10563	21134	21258		
Average	24.0	0	12798	12834	25632	25122		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	0	0		0
2	96	252	48	1	483.33
3	96	252	24	2	485.41
4	96	251	22	3	481.25
5	96	256	29	4	483.75
6	96	252	19	5	457.5
7	96	0	0		0
8	96	0	0		0
9	96	0	0		0
10	96	0	0		0
11	96	252	160	6	484.16
12	96	0	0		0
13	96	252	48	1	483.75
14	96	255	26	2	485.83
15	96	254	23	3	450.83
16	96	249	24	4	481.66
17	96	252	24	5	492.91
18	96	160	26	6	483.75
19	96	0	0		0
20	96	0	0		0
21	96	0	0		0
22	96	0	0		0
23	96	230	120	1	483.75
24	96	228	24	2	484.16
25	96	228	23	3	480.41
26	96	232	24	4	480.83
27	96	230	24	5	485.41
28	96	229	24	6	485.41
29	96	0	0		0
30	96	0	0		0
Maximum	96	256	160		492.91
Minimum	96	0	0		0

SumWashed:
8654.1

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	23118	3965	93	347.4	4000
2	24104	4158	82	371.9	3000
3	25788	4379	88	399.7	3500
4	25776	4337	93	408.3	3500
5	21728	3355	84	348.2	3000
6	24706	4193	87	390.5	3000
7	24734	4428	98	381.6	4000
8	26934	4352	96	374.9	4000
9	30225	4319	90	412.4	3500
10	30580	4186	92	397.4	3000
11	28606	4049	91	383.4	4500
12	26258	3817	97	365.5	3500
13	27226	4117	110	395.3	4000
14	27446	4451	110	387.9	3000
15	28955	4342	100	386.5	4500
16	30734	4365	101	412.3	3500
17	28373	4529	110	399.7	4000
18	27748	4765	100	416.0	5000
19	27476	4690	113	390.6	4000
20	30176	4844	109	430.0	4000
21	25668	4316	105	366.8	3000
22	30756	4825	113	429.7	5000
23	33618	4665	105	437.4	4000
24	31834	4116	115	403.7	3000
25	30943	4151	116	389.0	5000
26	28973	4210	103	397.9	5000
27	31609	4604	97	435.6	5000
28	29989	4299	106	396.4	4500
29	23814	4042	98	342.0	4000
30	30277	4407	99	392.8	3000
Total	838172	129275	2999	11790.9	116000
Maximum	33618	4844	116	437.4	5000
Minimum	21728	3355	82	342.0	3000
Average	27939	4309	100	393.0	3867

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	130.2	22.3	0.53	0.49	22.5
2	128.0	22.1	0.43	0.50	15.9
3	127.3	21.6	0.44	0.50	17.4
4	119.0	20.0	0.47	0.49	16.1
5	119.5	18.2	0.46	0.47	17.0
6	127.1	21.6	0.46	0.50	15.4
7	122.6	22.0	0.49	0.47	19.8
8	131.0	21.2	0.47	0.46	19.4
9	137.9	19.8	0.42	0.47	16.0
10	138.9	19.0	0.43	0.46	13.6
11	132.8	18.8	0.44	0.45	20.9
12	129.1	18.8	0.48	0.45	17.2
13	127.3	19.2	0.52	0.46	18.7
14	123.3	20.0	0.49	0.45	13.5
15	132.7	19.9	0.48	0.44	20.6
16	137.1	19.5	0.46	0.47	15.6
17	132.3	21.1	0.50	0.46	18.6
18	121.5	20.9	0.46	0.46	21.9
19	125.6	21.4	0.51	0.46	18.3
20	125.8	20.4	0.48	0.44	16.7
21	128.2	21.6	0.51	0.45	15.0
22	135.6	21.3	0.52	0.48	22.0
23	140.8	19.6	0.46	0.47	16.7
24	143.2	18.5	0.52	0.46	13.5
25	138.1	18.5	0.53	0.45	22.3
26	126.8	18.4	0.46	0.44	21.9
27	128.0	18.7	0.41	0.44	20.2
28	133.1	19.1	0.49	0.44	19.9
29	133.2	22.6	0.53	0.46	22.3
30	139.2	20.4	0.47	0.45	13.8
Maximum	143.2	22.6	0.53	0.50	22.5
Minimum	119.0	18.2	0.41	0.44	13.5
Average	130.5	20.2	0.48	0.46	18.1

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.68	184	274	5	<2	0.35
2	7.63	186	277	5	<2	0.33
3	7.65	186	288	5	<2	0.35
4	7.63	186	275	5	<2	0.35
5	7.67	188	290	5	<2	0.37
6	7.68	185	284	5	<2	0.35
7	7.67	184	292	5	<2	0.36
8	7.62	190	291	5	<2	0.34
9	7.69	193	280	5	<2	0.37
10	7.60	204	279	5	<2	0.37
11	7.61	197	277	5	<2	0.38
12	7.61	205	282	5	<2	0.36
13	7.62	203	288	5	<2	0.36
14	7.62	200	299	5	<2	0.36
15	7.65	198	299	5	<2	0.36
16	7.66	193	284	5	<2	0.36
17	7.65	191	287	5	<2	0.37
18	7.68	183	300	5	<2	0.37
19	7.63	185	288	5	<2	0.37
20	7.62	181	287	5	<2	0.36
21	7.67	179	284	5	<2	0.36
22	7.65	181	279	5	<2	0.34
23	7.63	192	282	5	<2	0.38
24	7.63	205	271	5	<2	0.38
25	7.65	200	261	5	<2	0.38
26	7.62	194	256	5	<2	0.36
27	7.65	194	271	5	<2	0.35
28	7.62	196	283	5	<2	0.34
29	7.67	193	286	5	<2	0.35
30	7.67	195	278	5	<2	0.34
Maximum	7.69	205	300	5	<2	0.38
Minimum	7.60	179	256	5	<2	0.33
Average	7.64	192	282	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.20	27	42	166
2	10.16	27	42	168
3	10.18	26	40	166
4	10.21	28	45	161
5	10.12	26	43	174
6	10.17	29	44	171
7	10.18	27	42	182
8	10.07	26	42	176
9	10.13	29	48	165
10	10.16	29	49	150
11	10.18	29	46	150
12	10.12	31	51	164
13	10.17	29	47	164
14	10.14	28	45	174
15	10.11	28	46	172
16	10.08	28	48	158
17	10.23	28	46	170
18	10.18	26	44	175
19	10.16	27	44	170
20	10.15	28	45	174
21	10.18	28	45	168
22	10.12	27	44	172
23	10.09	29	49	162
24	10.18	30	52	143
25	10.20	31	52	137
26	10.21	33	54	139
27	10.11	31	52	151
28	10.09	29	48	156
29	10.21	29	46	172
30	10.09	29	49	166
Maximum	10.23	33	54	182
Minimum	10.07	26	40	137
Average	10.15	28	46	164

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.62	4	37	165	1.27	<1
2	8.62	4	36	167	1.22	<1
3	8.65	2	37	167	1.20	<1
4	8.68	3	39	163	1.19	<1
5	8.62	4	36	181	1.18	<1
6	8.62	4	41	167	1.18	<1
7	8.65	4	38	173	1.15	<1
8	8.63	4	36	179	1.14	<1
9	8.70	4	37	175	1.13	<1
10	8.66	4	44	156	1.15	<1
11	8.66	3	42	152	1.18	<1
12	8.63	4	40	159	1.19	<1
13	8.66	4	45	162	1.20	<1
14	8.68	4	39	167	1.18	<1
15	8.65	5	43	168	1.14	<1
16	8.61	4	41	166	1.20	<1
17	8.66	3	42	158	1.19	<1
18	8.68	4	41	178	1.21	<1
19	8.67	4	38	172	1.24	<1
20	8.66	4	42	179	1.27	<1
21	8.63	4	38	174	1.27	<1
22	8.66	4	38	176	1.28	<1
23	8.68	4	39	162	1.24	<1
24	8.72	4	48	153	1.22	<1
25	8.67	4	49	146	1.21	<1
26	8.69	6	48	147	1.21	<1
27	8.64	5	47	146	1.23	<1
28	8.59	4	45	161	1.31	<1
29	8.58	3	41	162	1.29	<1
30	8.63	4	40	166	1.27	<1
Maximum	8.72	6	49	181	1.31	<1
Minimum	8.58	2	36	146	1.13	<1
Average	8.65	4	41	165	1.21	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.72	0.19	0.00
2	0.67	0.23	0.00
3	0.68	0.24	0.00
4	0.72	0.22	0.00
5	0.73	0.20	0.00
6	0.75	0.19	0.70
7	0.73	0.19	0.00
8	0.69	0.19	0.00
9	0.68	0.19	0.00
10	0.71	0.19	0.00
11	0.72	0.18	0.00
12	0.70	0.17	0.00
13	0.69	0.20	0.00
14	0.75	0.20	0.00
15	0.70	0.23	0.00
16	0.67	0.20	0.00
17	0.70	0.17	0.00
18	0.71	0.20	0.00
19	0.67	0.22	0.00
20	0.69	0.22	0.00
21	0.72	0.22	0.00
22	0.73	0.22	0.00
23	0.67	0.20	0.00
24	0.71	0.18	0.00
25	0.70	0.22	0.00
26	0.72	0.21	0.00
27	0.72	0.19	0.00
28	0.72	0.17	0.60
29	0.71	0.17	0.40
30	0.69	0.17	0.00
Maximum	0.75	0.24	0.70
Minimum	0.67	0.17	0.00
Average	0.71	0.20	0.06
Total			1.70

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	21.25	61.50	95.97	87.73	93.15	52.58	83.61	79.20
2	22.58	61.66	95.09	87.01	92.01	52.63	81.83	79.01
3	24.10	61.78	94.15	85.48	90.41	52.43	79.95	78.64
4	23.78	62.53	94.49	86.19	91.06	53.40	80.92	79.18
5	21.66	61.08	95.22	86.55	92.02	52.39	82.03	75.95
6	22.41	61.77	95.08	86.84	91.95	52.73	82.09	78.93
7	23.79	62.19	94.86	86.64	91.58	53.26	81.44	79.27
8	24.58	62.34	94.23	85.68	90.88	53.16	80.90	78.81
9	25.82	62.58	93.48	84.84	89.75	52.69	79.20	78.70
10	25.80	62.45	93.74	85.03	90.03	52.69	79.30	78.68
11	24.96	62.49	94.14	85.44	90.66	53.34	80.53	79.04
12	23.99	62.26	94.76	86.05	91.19	52.94	81.00	78.92
13	25.57	62.50	93.63	84.90	89.80	52.76	79.02	78.71
14	26.69	63.19	93.23	83.91	89.09	53.15	78.07	78.80
15	24.88	62.97	94.73	86.23	91.09	53.63	80.93	79.45
16	26.12	63.21	93.92	84.80	89.81	53.20	78.80	79.32
17	26.36	62.46	93.47	84.36	89.39	52.32	78.11	78.63
18	25.93	62.50	93.29	84.62	89.59	52.74	79.06	78.18
19	26.70	62.95	93.13	84.27	89.43	53.01	78.63	78.63
20	27.14	63.36	93.01	83.76	88.82	53.14	77.57	78.79
21	24.68	62.61	94.70	86.15	91.25	52.94	81.21	79.11
22	26.00	63.29	94.52	85.74	90.93	53.38	80.69	79.29
23	27.43	63.20	93.49	84.16	89.26	52.72	78.05	78.92
24	26.37	62.71	93.81	84.35	89.63	52.55	79.39	78.85
25	26.45	63.04	93.72	85.12	89.90	53.20	79.39	79.00
26	26.72	63.00	93.71	84.46	89.78	53.00	79.16	78.65
27	28.08	63.85	92.98	84.13	88.63	53.43	77.66	78.95
28	26.22	63.94	94.36	85.24	90.42	54.09	79.45	79.76
29	22.19	61.97	96.23	87.97	93.19	53.37	83.50	79.84
30	25.32	63.07	94.68	85.90	90.85	53.39	80.15	79.59
Maximum	28.08	63.94	96.23	87.97	93.19	54.09	83.61	79.84
Minimum	21.25	61.08	92.98	83.76	88.63	52.32	77.57	75.95
Average	25.12	62.61	94.19	85.45	90.52	53.01	80.05	78.89
Total	753.58							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	21.25	61.50	91.32	69.44	91.61
2	22.58	61.66	89.51	68.93	89.78
3	24.10	61.78	87.48	67.19	87.81
4	23.78	62.53	88.57	68.20	88.74
5	21.66	61.08	89.75	68.53	90.00
6	22.41	61.77	89.73	68.53	89.83
7	23.79	62.19	89.01	68.64	89.51
8	24.58	62.34	85.55	67.69	88.82
9	25.82	62.58	86.64	66.74	84.02
10	25.80	62.45	86.70	66.98	87.13
11	24.96	62.49	88.06	67.28	88.24
12	23.99	62.26	88.64	67.60	88.92
13	25.57	62.50	86.50	66.62	86.85
14	26.69	63.19	85.35	65.71	85.54
15	24.88	62.97	88.56	68.06	88.81
16	26.12	63.21	86.23	66.61	86.63
17	26.36	62.46	85.41	66.11	85.85
18	25.93	62.50	86.58	66.49	86.78
19	26.70	62.95	85.93	66.16	86.27
20	27.14	63.36	84.78	65.30	85.21
21	24.68	62.61	88.82	67.96	89.14
22	26.00	63.29	88.22	67.42	88.55
23	27.43	63.20	85.26	65.82	85.77
24	26.37	62.71	85.53	65.91	85.98
25	26.45	63.04	86.85	66.79	87.12
26	26.72	63.00	86.64	66.08	86.83
27	28.08	63.85	84.93	65.88	85.51
28	26.22	63.94	86.80	66.94	87.26
29	22.19	61.97	91.24	69.73	91.34
30	25.32	63.07	87.64	67.55	88.06
Maximum	28.08	63.94	91.32	69.73	91.61
Minimum	21.25	61.08	84.78	65.30	84.02
Average	25.12	62.61	87.41	67.23	87.73
Total	753.58				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	21.25	61.50	69.44	0.00	21.58
2	22.58	61.66	69.20	0.00	23.02
3	24.10	61.78	68.67	0.00	24.62
4	23.78	62.53	69.11	0.00	24.57
5	21.66	61.08	68.76	0.00	21.78
6	22.41	61.77	69.18	0.00	23.04
7	23.79	62.19	69.02	0.00	24.33
8	24.58	62.34	68.78	0.00	24.65
9	25.82	62.58	68.55	0.00	26.07
10	25.80	62.45	68.50	0.00	26.57
11	24.96	62.49	68.82	0.00	25.70
12	23.99	62.26	69.06	0.00	24.23
13	25.57	62.50	68.59	0.00	26.52
14	26.69	63.19	68.79	0.00	27.24
15	24.88	62.97	69.28	0.00	24.88
16	26.12	63.21	69.14	0.00	26.26
17	26.36	62.46	68.43	0.00	27.24
18	25.93	62.50	68.39	0.00	26.64
19	26.70	62.95	68.57	0.00	27.18
20	27.14	63.36	68.53	0.00	27.48
21	24.68	62.61	69.28	0.00	25.20
22	26.00	63.29	69.29	0.00	26.23
23	27.43	63.20	68.76	0.00	27.79
24	26.37	62.71	68.84	0.00	26.93
25	26.45	63.04	68.73	0.00	27.48
26	26.72	63.00	69.09	0.00	26.77
27	28.08	63.85	69.53	0.00	28.54
28	26.22	63.94	69.65	0.00	26.56
29	22.19	61.97	69.65	0.00	22.48
30	25.32	63.07	69.51	0.00	25.88
Maximum	28.08	63.94	69.65	0.00	28.54
Minimum	21.25	61.08	68.39	0.00	21.58
Average	25.12	62.61	68.97	0.00	25.58
Total	753.58				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.33	27.37	41.97	0.00	0.00	0.83
2	0.44	23.82	41.53	0.00	0.10	0.61
3	0.52	25.06	39.05	0.00	0.00	0.61
4	0.71	24.71	40.26	2.07	0.00	0.75
5	0.11	25.53	40.80	0.00	0.18	0.61
6	0.62	25.24	41.22	0.00	3.20	0.61
7	0.55	25.44	40.49	0.00	0.00	0.61
8	0.07	27.07	39.25	0.00	0.13	0.61
9	0.24	24.76	38.47	0.77	1.15	0.61
10	0.77	24.18	38.85	0.00	3.85	0.61
11	0.75	23.79	39.30	0.00	2.61	0.61
12	0.24	25.55	39.74	0.00	0.35	0.61
13	0.94	23.28	38.96	0.00	6.55	0.61
14	0.56	24.97	37.19	0.00	3.65	0.61
15	0.00	27.70	39.91	0.00	0.00	0.61
16	0.15	27.06	38.44	0.00	0.28	0.61
17	0.86	23.33	37.93	0.00	2.86	0.61
18	0.70	24.10	38.28	0.00	1.98	0.61
19	0.47	24.59	38.22	0.00	3.72	0.61
20	0.34	23.59	36.56	0.00	2.55	0.61
21	0.50	25.01	40.78	0.00	0.00	0.61
22	0.22	26.23	39.63	0.00	1.78	0.40
23	0.35	25.75	37.77	0.00	2.54	0.61
24	0.56	24.58	38.26	0.00	0.27	0.43
25	1.01	23.01	38.97	0.00	6.84	0.61
26	0.05	27.08	38.77	0.00	0.18	0.61
27	0.45	25.00	41.55	0.00	3.40	0.54
28	0.35	25.32	38.53	0.00	2.55	0.54
29	0.29	27.60	41.91	0.00	0.00	0.54
30	0.56	26.85	39.53	0.33	0.00	0.54
						0.00
Maximum	1.01	27.70	41.97	2.07	6.84	0.83
Minimum	0.00	23.01	36.56	0.00	0.00	0.00
Average	0.46	25.25	39.40	0.11	1.69	0.58
Total				3.17	50.72	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **April, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **60,895**	Total Population Served at End of Month: **176,692**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: April, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	21,284,167	28,300,000									0.83	
2	X	24.0	22,584,167	25,800,000									0.61	
3	X	24.0	24,146,250	27,910,000									0.61	
4	X	24.0	25,991,667	28,190,000									0.75	
5	X	24.0	21,134,167	25,310,000									0.61	
6	X	24.0	23,307,917	28,630,000									0.61	
7	X	24.0	24,242,917	29,850,000									0.61	
8	X	24.0	24,696,250	29,790,000									0.61	
9	X	24.0	26,305,833	31,270,000									0.61	
10	X	24.0	26,389,167	32,130,000									0.61	
11	X	24.0	25,812,083	31,020,000									0.61	
12	X	24.0	24,384,583	30,440,000									0.61	
13	X	24.0	25,646,667	30,490,000									0.61	
14	X	24.0	26,694,583	31,610,000									0.61	
15	X	24.0	26,175,417	29,890,000									0.61	
16	X	24.0	26,873,333	31,010,000									0.61	
17	X	24.0	25,812,083	32,370,000									0.61	
18	X	24.0	27,400,000	31,530,000									0.61	
19	X	24.0	26,242,917	32,230,000									0.61	
20	X	24.0	28,719,167	35,010,000									0.61	
21	X	24.0	24,032,083	30,170,000									0.61	
22	X	24.0	27,199,167	31,040,000									0.40	
23	X	24.0	28,642,500	33,310,000									0.61	
24	X	24.0	26,680,833	31,570,000									0.43	
25	X	24.0	26,865,417	32,120,000									0.61	
26	X	24.0	27,432,917	31,750,000									0.61	
27	X	24.0	29,624,167	37,080,000									0.54	
28	X	24.0	27,063,750	32,120,000									0.54	
29	X	24.0	21,483,333	24,850,000									0.54	
30	X	24.0	26,082,500	28,830,000									0.54	
31														
Total			768,950,000											
Average			25,631,667											
Maximum			29,624,167											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year: April, 2011

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO4 or mg/L of silicate as SiO2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	21,284,167	1.22	1.41	0.83	
2	X	24	22,584,167	1.15	1.36	0.61	
3	X	24	24,146,250	1.17	1.42	0.61	
4	X	24	25,991,667	1.13	1.16	0.75	
5	X	24	21,134,167	1.12	1.08	0.61	
6	X	24	23,307,917	1.14	1.28	0.61	
7	X	24	24,242,917	1.11	1.03	0.61	
8	X	24	24,696,250	1.11	1.22	0.61	
9	X	24	26,305,833	1.10	1.31	0.61	
10	X	24	26,389,167	1.10	1.33	0.61	
11	X	24	25,812,083	1.10	1.29	0.61	
12	X	24	24,384,583	1.16	1.26	0.61	
13	X	24	25,646,667	1.15	1.32	0.61	
14	X	24	26,694,583	1.20	1.27	0.61	
15	X	24	26,175,417	1.07	1.31	0.61	
16	X	24	26,873,333	1.15	1.37	0.61	
17	X	24	25,812,083	1.14	1.29	0.61	
18	X	24	27,400,000	1.18	1.27	0.61	
19	X	24	26,242,917	1.19	1.04	0.61	
20	X	24	28,719,167	1.21	1.12	0.61	
21	X	24	24,032,083	1.24	1.26	0.61	
22	X	24	27,199,167	1.25	1.31	0.40	
23	X	24	28,642,500	1.21	1.27	0.61	
24	X	24	26,680,833	1.18	1.39	0.43	
25	X	24	26,865,417	1.18	1.32	0.61	
26	X	24	27,432,917	1.18	1.28	0.61	
27	X	24	29,624,167	1.18	1.21	0.54	
28	X	24	27,063,750	1.24	1.19	0.54	
29	X	24	21,483,333	1.27	1.32	0.54	
30	X	24	26,082,500	1.22	1.21	0.54	
31			-				
Total			768,950,000				
Average			24,804,839				
Maximum			29,624,167				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: 1.07 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 1.03 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO

  If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of:	April, 2011					
A. Public Water System (PWS) Information						
PWS Name:	**Gainesville Regional Utilities**	PWS Identification Number:	**2010946**			
PWS Type:	☑ Community	☐ Non-Transient Non-Community	☐ Transient Non-Community	☐ Consecutive		
PWS Owner:	**Gainesville Regional Utilities**					
Contact Person:	**Richard J. Davis**	Contact Person's Title:	**Water Plant Manager**			
Contact Person's Mailing Address:	**PO Box 147117 MS 43**	City: **Gainesville**	State: **Florida**	Zip Code: **32614**		
Contact Person's Telephone Number:	**(352) 393-6512**	Contact Person's Fax Number:	**(352) 334-2891**			
Contact Person's E-Mail Address:	**DavisRJ@gru.com**					
B. Water Treatment Plant Information						
Plant Name:	**Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number:	**(352) 393-6512**			
Plant Address:	**1600 NE 53 Ave.**	City: **Gainesville**	State: **Florida**	Zip Code: **32614**		

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	**A1635**

PWS Identification Number: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Check Sample Results for the Month/Year: April, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.716
Distribution Sample 2	Bouleware		0.706

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fluoide Data fro the Month/Year: **April, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	21,284,167	347	0.49	0.72
2	24.0	22,584,167	372	0.50	0.67
3	24.0	24,146,250	400	0.50	0.68
4	24.0	25,991,667	408	0.49	0.72
5	24.0	21,134,167	348	0.47	0.73
6	24.0	23,307,917	390	0.50	0.75
7	24.0	24,242,917	382	0.47	0.73
8	24.0	24,696,250	375	0.46	0.69
9	24.0	26,305,833	412	0.47	0.68
10	24.0	26,389,167	397	0.46	0.71
11	24.0	25,812,083	383	0.45	0.72
12	24.0	24,384,583	365	0.45	0.70
13	24.0	25,646,667	395	0.46	0.69
14	24.0	26,694,583	388	0.45	0.75
15	24.0	26,175,417	387	0.44	0.70
16	24.0	26,873,333	412	0.47	0.67
17	24.0	25,812,083	400	0.46	0.70
18	24.0	27,400,000	416	0.46	0.71
19	24.0	26,242,917	391	0.46	0.67
20	24.0	28,719,167	430	0.44	0.69
21	24.0	24,032,083	367	0.45	0.72
22	24.0	27,199,167	430	0.48	0.73
23	24.0	28,642,500	437	0.47	0.67
24	24.0	26,680,833	404	0.46	0.71
25	24.0	26,865,417	389	0.45	0.70
26	24.0	27,432,917	398	0.44	0.72
27	24.0	29,624,167	436	0.44	0.72
28	24.0	27,063,750	396	0.44	0.72
29	24.0	21,483,333	342	0.46	0.71
30	24.0	26,082,500	393	0.45	0.69
31					
Total	720.0	768,950,000	11,791	13.87	21.17
Average	24.0	25,631,667	393	0.46	0.71

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
April, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	5.04	0.00	0.00	0.00	0.00	0.00	0.00	4.21	4.64	0.00	0.00	0.00	0.00	0.00	7.06	0.00	20.95
2	5.04	0.00	0.00	0.00	0.00	1.33	0.00	4.17	4.62	0.00	0.00	0.00	0.00	0.00	7.07	0.00	22.24
3	5.04	0.68	0.00	0.00	0.00	2.21	0.00	4.10	4.60	0.00	0.00	0.00	0.00	0.00	6.90	0.00	23.54
4	5.04	3.22	0.00	0.00	0.00	1.16	1.34	4.07	1.61	0.00	1.24	0.00	1.27	0.00	5.39	0.00	24.34
5	2.25	1.51	0.00	0.00	1.08	1.01	1.46	3.08	2.09	0.00	0.00	1.53	1.18	1.52	4.88	0.93	22.51
6	1.33	4.30	0.00	0.00	1.26	0.44	3.18	4.15	2.01	0.00	0.00	1.59	0.00	0.00	6.86	0.00	25.14
7	1.33	2.59	0.00	0.00	2.21	2.63	3.20	4.09	1.92	0.00	0.00	2.11	0.00	0.00	5.69	0.00	25.77
8	1.20	0.00	0.00	0.00	6.19	1.31	3.09	4.01	4.61	0.00	0.00	4.03	0.00	0.00	0.00	0.00	24.46
9	0.82	0.00	0.00	0.00	6.30	0.00	2.42	4.05	4.65	0.00	0.00	4.03	0.00	4.08	0.00	0.00	26.35
10	0.88	0.00	0.00	0.00	6.35	0.00	0.00	4.09	4.78	0.00	0.00	4.03	0.00	6.71	0.00	0.00	26.84
11	0.92	2.81	0.00	0.00	6.31	0.42	0.00	3.40	1.80	0.00	0.00	4.06	0.00	6.69	0.00	0.00	26.40
12	1.30	4.31	0.00	0.00	6.27	2.29	0.00	0.00	0.00	0.00	0.00	3.62	0.00	6.74	0.70	0.00	25.24
13	1.28	4.33	0.00	0.00	6.23	2.58	0.00	0.00	0.00	0.00	0.00	1.79	0.00	6.70	3.79	0.00	26.70
14	1.28	4.32	0.00	0.00	6.24	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.68	6.76	0.00	27.83
15	1.40	4.28	0.00	0.00	6.24	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.68	6.77	0.00	27.41
16	1.46	4.32	0.00	0.00	6.41	0.00	0.00	0.00	2.80	0.00	0.00	0.00	0.00	6.69	6.77	0.00	28.45
17	1.46	4.25	0.00	0.00	6.28	0.00	0.74	2.35	4.62	0.00	0.00	0.00	0.00	0.20	6.77	0.00	26.67
18	1.44	4.16	0.00	0.00	6.18	0.00	2.00	2.81	4.55	0.00	0.00	0.00	0.00	0.00	6.80	0.00	27.94
19	2.05	4.18	0.00	0.00	2.67	1.53	2.52	2.34	4.53	0.00	0.00	0.00	0.00	0.00	6.80	0.00	26.61
20	5.04	1.27	0.00	0.00	2.46	0.85	0.00	3.95	4.58	0.00	0.00	0.00	0.00	0.40	6.74	1.34	26.64
21	5.04	0.00	0.00	0.00	0.00	0.44	0.86	4.12	4.60	0.00	1.63	0.00	0.00	0.00	6.75	0.00	23.43
22	5.04	0.00	0.00	0.00	0.00	2.61	2.98	4.05	4.45	0.00	0.00	0.00	0.00	0.00	6.73	0.00	25.87
23	5.04	0.00	0.00	0.00	0.00	2.16	1.20	4.05	4.54	0.00	0.00	0.00	0.00	3.98	6.72	0.00	27.70
24	5.04	0.00	0.00	0.00	0.00	0.22	0.00	2.93	4.64	0.00	0.00	0.00	0.00	6.69	6.69	0.00	26.21
25	5.04	2.38	0.00	0.00	0.00	1.14	0.00	0.00	4.62	0.00	0.00	0.00	0.00	6.67	6.69	0.00	26.55
26	5.03	4.14	0.00	0.00	0.00	0.00	0.00	0.00	4.59	0.00	0.00	0.00	0.00	6.68	6.65	0.00	27.10
27	3.20	4.10	0.00	0.00	4.81	0.00	0.00	0.00	4.61	0.00	0.00	0.06	0.00	6.67	6.70	0.00	30.16
28	1.31	4.28	0.00	0.00	6.38	0.00	0.00	0.00	3.28	0.00	0.00	0.27	0.00	6.68	6.25	0.00	28.44
29	1.32	4.33	0.00	0.00	6.44	0.00	0.00	0.00	3.23	0.00	0.00	0.00	0.00	0.49	6.74	0.00	22.55
30	1.32	4.28	0.00	0.00	6.40	0.00	0.00	0.00	3.15	0.00	0.00	0.00	0.00	5.48	6.73	0.00	27.36
Total	82.99	74.03	0.00	0.00	102.73	28.89	25.01	70.00	100.12	0.00	2.86	27.17	2.48	96.42	162.41	2.27	777.38

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
April, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	4/1	4/2	4/3	4/4	4/5	4/6	4/7	4/8	4/9	4/10	4/11	4/12	4/13	4/14	4/15
1	ON															
	OFF					7:00										
2	ON			20:00	13:00	22:00						8:00				
	OFF				8:00	7:00		15:00								
3	ON															
	OFF															
4	ON															
	OFF															
5	ON					8:00		20:00								
	OFF					13:00										
6	ON		12:00		14:00		20:00					20:00	13:00			
	OFF			20:00		13:00			12:00				10:00			19:00
7	ON				14:00											
	OFF									19:00						
8	ON					13:00										
	OFF					7:00						20:00				
9	ON					15:00		14:00								
	OFF				9:00		11:00					9:00				
10	ON															
	OFF															
11	ON				9:00											
	OFF				13:00											
12	ON					13:00	11:00	12:00					13:00			
	OFF					22:00	20:00						10:00	11:00		
13	ON				8:00	9:00										
	OFF				13:00	14:00										
14	ON					9:00				9:00						
	OFF					14:00										
15	ON				13:00	14:00							10:00	11:00		
	OFF				8:00	7:00		20:00					13:00			
16	ON				8:00											
	OFF				13:00											

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

April, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	4/16	4/17	4/18	4/19	4/20	4/21	4/22	4/23	4/24	4/25	4/26	4/27	4/28	4/29	4/30
1	ON				20:00											
	OFF												12:00			
2	ON										10:00					
	OFF					8:00										
3	ON															
	OFF															
4	ON															
	OFF															
5	ON					8:00							6:00			
	OFF				10:00	18:00										
6	ON				10:00		20:00			22:00						
	OFF					8:00			20:00		10:00					
7	ON		11:00	8:00			17:00									
	OFF		17:00		20:00				10:00							
8	ON		10:00		10:00											
	OFF			17:00						17:00						
9	ON	10:00													8:00	
	OFF													17:00		16:00
10	ON															
	OFF															
11	ON						8:00									
	OFF						14:00									
12	ON				Well 12 On									4:00		
	OFF				Well 12 Off									6:00		
13	ON															
	OFF															
14	ON					8:00			10:00							4:00
	OFF		1:00			10:00									2:00	
15	ON													6:00		
	OFF													4:00		
16	ON					8:00										
	OFF					15:00										

GAINESVILLE REGIONAL UTILITIES **May, 2011**
DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	61,278	Estimated
Total Customer Served at End of Month:	177,804	Estimated

Lead Operator's Signature : ____________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	13171	13302	26473	26005	32900	18250
2	24.0	0	13394	13628	27021	25996	31090	21900
3	24.0	0	13433	13392	26825	26007	29930	21460
4	24.0	0	13730	13725	27455	26670	34320	18970
5	24.0	0	13813	13986	27800	27367	33030	22720
6	24.0	0	12384	12353	24737	24330	29760	18750
7	24.0	0	13390	13430	26820	26229	30410	18290
8	24.0	0	13590	13730	27319	26827	32540	18520
9	24.0	0	14390	14515	28905	27769	31520	23500
10	24.0	0	14036	14085	28122	26758	31850	20070
11	24.0	0	15475	15631	31107	30282	37780	23790
12	24.0	0	15177	14480	29657	29959	35400	21140
13	24.0	0	15030	15091	30121	28382	34990	21040
14	24.0	0	12457	12426	24883	25120	32250	16910
15	24.0	0	12151	12054	24205	22208	29380	15570
16	24.0	0	11458	11748	23205	23128	29650	16140
17	24.0	0	12515	12484	24999	23480	28460	15300
18	24.0	0	12895	12858	25754	25890	36080	17530
19	24.0	0	14286	14178	28464	27340	36910	20740
20	24.0	0	13069	13080	26149	25968	31980	19290
21	24.0	0	13735	13685	27421	27476	35850	20230
22	24.0	0	14470	14673	29143	28472	35310	20870
23	24.0	0	14298	14105	28402	27990	34340	23790
24	24.0	0	14653	14627	29280	27353	34190	19350
25	24.0	0	14912	14938	29849	29776	36560	23740
26	24.0	0	15419	15366	30785	29659	37970	21510
27	24.0	0	13486	13658	27144	25869	32640	19410
28	24.0	0	12816	13008	25824	25875	32040	19300
29	24.0	0	13246	13318	26564	26780	34490	19500
30	24.0	0	14267	14326	28593	27738	33510	23920
31	24.0	0	14174	14138	28312	27510	32930	20590
Total	744.0	0	425321	426016	851338	830215		
Maximum	24.0	0	15475	15631	31107	30282		
Minimum	24.0	0	11458	11748	23205	22208		
Average	24.0	0	13720	13742	27463	26781		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings Total	Maximum	Minimum	Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
1	96	0	0		0
2	96	0	0		0
3	96	228	120	1	482.08
4	96	232	25	2	482.08
5	96	232	25	3	480.41
6	96	230	23	4	471.66
7	96	230	24	5	483.33
8	96	230	24	6	482.91
9	96	0	0		0
10	96	0	0		0
11	96	0	0		0
12	96	0	0		0
13	96	230	121	1	482.91
14	96	229	24	2	482.08
15	96	228	23	3	481.66
16	96	233	27	4	480.41
17	96	230	20	5	481.66
18	96	224	24	6	482.91
19	96	0	0		0
20	96	0	0		0
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	252	144	1	465.41
25	96	252	24	2	484.41
26	96	252	24	3	481.66
27	96	250	25	4	483.33
28	96	253	24	5	483.75
29	96	252	23	6	484.16
30	96	0	0		0
31	96	0	0		0
Maximum	96	253	144		484.41
Minimum	96	0	0		0

SumWashed:
8656.82

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	31014	4369	98	409.5	5000
2	29342	4431	104	408.0	5000
3	27505	4256	107	403.0	5000
4	26715	4146	112	422.9	5000
5	26179	4130	113	425.6	5000
6	23074	4194	90	372.2	4000
7	25486	4287	100	420.1	4500
8	25402	4665	72	449.9	3500
9	26669	4988	94	420.0	4000
10	26119	4887	107	460.6	4500
11	31638	4850	112	441.9	5000
12	30680	4356	113	487.3	5500
13	30212	4557	105	489.3	6000
14	24293	3628	88	392.6	4000
15	24269	3633	93	362.8	4000
16	23977	3391	94	346.8	3500
17	25851	3956	99	407.5	4500
18	26280	4241	104	425.9	5000
19	29724	4518	98	420.5	5000
20	28350	4920	116	396.0	5000
21	29739	4684	115	401.8	4000
22	31529	4389	94	428.9	5000
23	29137	4641	106	400.1	4000
24	30255	4781	111	410.2	5000
25	30543	4944	116	426.5	5000
26	32343	5005	116	446.5	5000
27	28367	4149	102	406.7	5000
28	27135	4215	108	396.0	4000
29	27600	4329	105	389.5	4000
30	30394	4625	99	408.9	4000
31	30067	4567	112	412.0	5000
Total	869888	136733	3201	12889.6	143000
Maximum	32343	5005	116	489.3	6000
Minimum	23074	3391	72	346.8	3500
Average	28061	4411	103	415.8	4613

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	140.6	19.8	0.45	0.45	22.6
2	130.4	19.7	0.48	0.47	22.2
3	123.0	19.1	0.49	0.45	22.3
4	116.8	18.1	0.50	0.45	21.8
5	113.1	18.0	0.50	0.48	21.6
6	111.9	20.3	0.45	0.48	19.4
7	114.1	19.2	0.46	0.46	20.1
8	111.6	20.5	0.32	0.48	15.4
9	110.6	20.7	0.40	0.44	16.6
10	111.4	20.9	0.48	0.49	19.2
11	121.1	18.5	0.44	0.41	19.3
12	124.2	17.6	0.45	0.50	22.2
13	120.0	18.2	0.44	0.48	23.9
14	116.9	17.4	0.42	0.49	19.3
15	120.5	17.9	0.50	0.45	19.8
16	123.9	17.5	0.49	0.45	18.1
17	124.0	19.0	0.50	0.46	21.6
18	122.7	19.9	0.48	0.49	23.3
19	125.3	19.0	0.43	0.43	21.1
20	130.1	22.6	0.53	0.44	22.9
21	130.0	20.5	0.50	0.44	17.5
22	129.9	18.0	0.39	0.46	20.6
23	123.1	19.6	0.45	0.43	16.9
24	123.9	19.6	0.49	0.42	20.5
25	122.8	20.0	0.47	0.42	20.1
26	126.1	19.6	0.47	0.43	19.5
27	125.3	18.3	0.47	0.46	22.1
28	126.4	19.6	0.50	0.46	18.6
29	124.7	19.6	0.47	0.44	18.1
30	127.5	19.4	0.43	0.43	16.8
31	127.6	19.4	0.49	0.42	21.2
Maximum	140.6	22.6	0.53	0.50	23.9
Minimum	110.6	17.4	0.32	0.41	15.4
Average	122.6	19.3	0.46	0.45	20.1

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.59	202	285	5	<2	0.35
2	7.64	198	273	5	<2	0.37
3	7.66	199	282	5	<2	0.36
4	7.66	194	276	5	<2	0.36
5	7.64	186	259	5	<2	0.38
6	7.69	187	273	5	<2	0.35
7	7.65	189	262	5	<2	0.35
8	7.64	188	273	5	<2	0.36
9	7.64	183	284	5	<2	0.35
10	7.63	183	275	5	<2	0.34
11	7.61	191	279	5	<2	0.34
12	7.65	190	265	5	<2	0.37
13	7.64	189	267	5	<2	0.36
14	7.66	191	266	5	<2	0.38
15	7.66	189	277	5	<2	0.40
16	7.64	197	252	5	<2	0.39
17	7.72	193	263	5	<2	0.37
18	7.66	197	271	5	<2	0.35
19	7.64	194	289	5	<2	0.35
20	7.65	183	304	5	<2	0.35
21	7.67	193	297	5	<2	0.35
22	7.62	203	280	5	<2	0.39
23	7.62	196	280	5	<2	0.39
24	7.62	191	275	5	<2	0.36
25	7.67	191	284	5	<2	0.39
26	7.68	200	283	5	<2	0.39
27	7.70	192	271	5	<2	0.34
28	7.67	192	274	5	<2	0.35
29	7.60	191	270	5	<2	0.38
30	7.61	192	268	5	<2	0.39
31	7.65	189	280	5	<2	0.36
Maximum	7.72	203	304	5	<2	0.40
Minimum	7.59	183	252	5	<2	0.34
Average	7.65	192	275	5	<2	0.37

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.17	28	52	155
2	10.18	30	53	149
3	10.15	31	52	156
4	10.15	31	50	155
5	10.17	31	49	153
6	10.18	29	45	161
7	10.16	30	48	144
8	10.15	28	45	161
9	10.14	28	46	162
10	10.15	27	45	162
11	10.11	29	47	161
12	10.13	32	53	151
13	10.16	30	48	152
14	10.10	28	47	149
15	10.11	30	51	145
16	10.12	30	52	134
17	10.21	32	49	141
18	10.15	31	48	150
19	10.14	27	43	164
20	10.17	26	41	187
21	10.17	28	43	176
22	10.14	30	51	146
23	10.14	30	49	149
24	10.13	28	45	155
25	10.13	29	47	162
26	10.13	30	47	162
27	10.11	30	48	153
28	10.11	29	45	155
29	10.13	30	49	148
30	10.12	29	48	147
31	10.10	30	48	158
Maximum	10.21	32	53	187
Minimum	10.10	26	41	134
Average	10.14	29	48	155

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.66	3	50	163	1.22	<1
2	8.68	3	45	156	1.22	<1
3	8.68	5	42	159	1.22	<1
4	8.70	5	44	151	1.22	<1
5	8.69	4	43	157	1.21	<1
6	8.66	4	43	158	1.23	<1
7	8.68	5	42	149	1.23	<1
8	8.68	3	42	162	1.20	<1
9	8.64	3	37	162	1.20	<1
10	8.63	3	40	163	1.27	<1
11	8.64	6	40	167	1.25	<1
12	8.68	3	44	156	1.21	<1
13	8.69	5	45	157	1.23	<1
14	8.68	4	41	151	1.22	<1
15	8.70	3	45	149	1.22	<1
16	8.67	3	45	147	1.21	<1
17	8.67	5	45	137	1.21	<1
18	8.68	4	43	140	1.23	<1
19	8.66	4	41	158	1.21	<1
20	8.64	3	37	175	1.27	<1
21	8.65	5	36	183	1.23	<1
22	8.65	3	42	163	1.20	<1
23	8.62	3	43	148	1.20	<1
24	8.65	3	40	155	1.20	<1
25	8.67	3	40	158	1.21	<1
26	8.68	5	41	166	1.20	<1
27	8.66	5	42	161	1.18	<1
28	8.65	5	40	156	1.21	<1
29	8.65	5	44	153	1.19	<1
30	8.66	2	44	148	1.19	<1
31	8.61	4	43	155	1.22	<1
Maximum	8.70	6	50	183	1.27	<1
Minimum	8.61	2	36	137	1.18	<1
Average	8.66	4	42	157	1.22	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.66	0.12	0.00
2	0.69	0.12	0.00
3	0.74	0.19	0.00
4	0.71	0.21	0.00
5	0.72	0.20	0.00
6	0.73	0.19	0.10
7	0.69	0.18	0.00
8	0.68	0.20	0.00
9	0.66	0.21	0.00
10	0.66	0.21	0.00
11	0.65	0.21	0.00
12	0.69	0.21	0.00
13	0.72	0.22	0.00
14	0.78	0.22	1.65
15	0.74	0.20	1.50
16	0.72	0.17	0.00
17	0.69	0.14	0.00
18	0.76	0.16	0.00
19	0.73	0.17	0.00
20	0.73	0.17	0.00
21	0.70	0.17	0.00
22	0.73	0.17	0.00
23	0.73	0.17	0.00
24	0.73	0.19	0.00
25	0.71	0.17	0.00
26	0.71	0.19	0.00
27	0.74	0.20	0.00
28	0.77	0.19	0.00
29	0.72	0.18	0.00
30	0.71	0.17	0.00
31	0.77	0.17	0.00
Maximum	0.78	0.22	1.65
Minimum	0.65	0.12	0.00
Average	0.72	0.18	0.10
Total			3.25

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	26.01	62.41	93.73	84.62	89.84	52.46	78.96	78.71
2	26.00	62.91	93.89	85.00	89.94	53.24	78.97	79.12
3	26.00	63.13	94.58	85.33	90.57	53.38	79.83	79.47
4	26.82	63.07	93.69	84.39	89.58	52.79	78.06	78.92
5	27.37	63.83	93.92	84.19	89.72	53.48	78.13	79.61
6	24.33	63.28	95.90	86.61	92.17	53.91	81.61	80.09
7	26.23	63.12	94.76	84.82	90.54	52.87	79.24	79.58
8	26.83	63.51	94.52	85.01	90.11	53.32	78.48	79.63
9	27.77	63.67	93.30	84.08	89.11	53.51	78.28	78.90
10	26.76	63.29	93.37	84.23	89.45	53.20	78.46	79.12
11	30.28	64.31	91.80	82.03	87.28	53.33	75.43	78.50
12	29.96	64.84	92.82	83.06	88.18	53.81	76.42	79.48
13	28.35	64.38	93.54	84.22	89.47	53.80	78.55	79.47
14	25.12	63.07	94.32	84.89	90.07	53.21	78.72	79.42
15	22.21	62.70	96.17	87.81	92.88	53.84	82.97	80.22
16	23.13	62.33	95.28	86.73	91.95	53.37	81.63	79.74
17	23.48	63.12	95.78	87.01	92.31	53.86	81.87	80.00
18	25.89	63.71	94.05	84.74	89.92	53.47	78.53	79.56
19	27.34	63.93	94.25	84.47	90.01	53.70	78.82	79.65
20	25.97	63.27	94.62	85.73	91.03	53.66	80.47	79.25
21	27.48	63.44	93.20	83.67	88.79	53.06	77.17	79.03
22	28.47	63.40	92.76	83.28	88.30	52.84	76.56	78.70
23	27.99	64.10	93.40	84.41	89.04	53.97	78.41	79.33
24	27.35	63.93	93.83	85.12	90.03	53.79	79.14	80.19
25	29.77	65.18	93.16	84.17	88.90	54.33	77.21	79.75
26	29.66	64.71	92.20	82.49	87.46	53.73	75.71	78.97
27	25.87	63.98	94.81	86.10	91.21	54.42	80.89	80.06
28	25.86	63.58	94.69	85.44	90.81	53.76	79.87	79.69
29	26.78	63.42	94.34	85.51	90.54	53.31	79.61	79.36
30	27.74	63.59	93.43	84.31	89.33	53.15	78.22	78.90
31	27.51	64.14	93.85	84.89	89.89	53.87	79.23	79.42
Maximum	30.28	65.18	96.17	87.81	92.88	54.42	82.97	80.22
Minimum	22.21	62.33	91.80	82.03	87.28	52.46	75.43	78.50
Average	26.78	63.59	94.00	84.79	89.95	53.50	78.89	79.41
Total	830.31							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	26.01	62.41	86.24	66.56	86.72
2	26.00	62.91	86.03	66.90	86.70
3	26.00	63.13	87.19	66.69	87.37
4	26.82	63.07	85.27	66.16	85.71
5	27.37	63.83	85.15	64.26	85.70
6	24.33	63.28	89.16	68.14	89.29
7	26.23	63.12	86.41	66.44	86.74
8	26.83	63.51	85.49	66.55	86.14
9	27.77	63.67	85.50	65.86	85.79
10	26.76	63.29	85.80	66.27	85.68
11	30.28	64.31	82.43	63.93	82.84
12	29.96	64.84	83.41	65.05	83.93
13	28.35	64.38	85.93	65.83	85.97
14	25.12	63.07	85.99	66.74	86.42
15	22.21	62.70	90.76	69.55	90.87
16	23.13	62.33	89.29	68.20	89.28
17	23.48	63.12	89.43	68.69	89.69
18	25.89	63.71	85.72	66.34	85.98
19	27.34	63.93	86.15	66.33	86.35
20	25.97	63.27	87.66	67.70	88.31
21	27.48	63.44	82.24	65.65	84.84
22	28.47	63.40	83.60	65.23	84.19
23	27.99	64.10	86.95	66.14	86.11
24	27.35	63.93	88.39	67.11	86.89
25	29.77	65.18	84.23	66.30	84.72
26	29.66	64.71	82.73	64.34	83.14
27	25.87	63.98	88.40	67.89	88.58
28	25.86	63.58	87.26	67.27	87.48
29	26.78	63.42	86.87	67.54	87.30
30	27.74	63.59	85.52	65.86	85.73
31	27.51	64.14	86.57	66.69	86.89
Maximum	30.28	65.18	90.76	69.55	90.87
Minimum	22.21	62.33	82.24	63.93	82.84
Average	26.78	63.59	86.19	66.52	86.50
Total	830.31				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	26.01	62.41	68.61	0.00	26.78
2	26.00	62.91	68.98	0.00	26.96
3	26.01	63.13	69.30	0.00	26.44
4	26.67	63.07	68.83	0.00	27.51
5	27.37	63.83	69.36	0.00	28.26
6	24.33	63.28	70.21	0.00	24.55
7	26.23	63.12	69.43	0.00	26.28
8	26.83	63.51	69.44	0.00	27.91
9	27.77	63.67	68.82	0.00	28.50
10	26.76	63.29	68.78	0.00	27.35
11	30.28	64.31	68.21	0.00	31.09
12	29.96	64.84	68.95	0.00	30.88
13	28.38	64.38	69.07	0.00	28.40
14	25.12	63.07	69.57	0.00	25.32
15	22.21	62.70	70.31	0.00	22.36
16	23.13	62.33	69.56	0.00	23.81
17	23.48	63.12	70.20	0.00	23.56
18	25.89	63.71	69.86	0.00	26.35
19	27.34	63.93	69.28	0.00	27.57
20	25.97	63.27	69.27	0.00	26.07
21	27.48	63.44	68.85	0.00	27.79
22	28.47	63.40	68.35	0.00	29.50
23	27.99	64.10	69.06	0.00	28.74
24	27.35	63.93	69.23	0.00	27.82
25	29.78	65.18	69.28	0.00	30.85
26	29.66	64.71	68.75	0.00	30.32
27	25.87	63.98	69.88	0.00	26.12
28	25.88	63.58	69.68	0.00	25.92
29	26.78	63.42	69.18	0.00	27.67
30	27.74	63.59	68.78	0.00	28.56
31	27.51	64.14	69.32	0.00	27.98
Maximum	30.28	65.18	70.31	0.00	31.09
Minimum	22.21	62.33	68.21	0.00	22.36
Average	26.78	63.59	69.24	0.00	27.33
Total	830.21				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.77	23.99	38.49	0.00	1.85	0.54
2	0.94	23.50	38.82	0.00	3.06	0.54
3	0.42	25.54	38.27	0.00	2.68	0.54
4	0.99	23.57	38.65	0.00	3.30	0.54
5	0.88	23.69	37.96	0.00	6.13	0.54
6	0.23	26.22	39.66	1.48	0.00	0.54
7	0.05	27.40	38.27	0.00	0.00	0.54
8	1.06	22.97	38.67	0.00	2.88	0.54
9	0.72	24.19	37.44	0.00	2.52	0.54
10	0.58	24.75	38.18	1.25	0.00	0.54
11	0.85	22.05	34.91	0.00	2.93	0.54
12	0.91	23.60	36.62	0.00	3.01	0.54
13	0.02	26.98	37.22	0.00	0.00	0.54
14	0.25	23.91	39.04	0.00	1.47	0.54
15	0.20	25.20	42.32	0.00	0.08	0.60
16	0.66	24.98	40.36	0.00	3.17	0.60
17	0.08	26.33	41.13	0.00	0.00	0.60
18	0.44	24.94	39.76	0.00	3.50	0.60
19	0.23	26.62	37.57	0.00	0.00	0.60
20	0.10	27.22	39.57	0.78	0.00	0.60
21	0.31	22.71	37.79	1.50	0.98	0.60
22	1.01	20.95	36.18	0.00	4.01	0.60
23	0.73	23.72	37.56	0.00	5.79	0.60
24	0.47	24.26	38.43	0.00	0.38	0.60
25	1.03	22.62	37.77	0.00	8.15	0.58
26	0.67	19.49	35.53	0.00	2.45	0.58
27	0.25	26.50	39.51	0.00	1.90	0.58
28	0.06	27.20	39.21	0.00	0.20	0.58
29	0.86	23.18	38.91	0.00	3.52	0.36
30	0.80	23.28	36.88	0.00	2.83	0.58
31	0.45	25.68	38.48	0.00	0.12	0.58
Maximum	1.06	27.40	42.32	1.50	8.15	0.60
Minimum	0.02	19.49	34.91	0.00	0.00	0.36
Average	0.55	24.43	38.36	0.16	2.16	0.56
Total				5.01	66.91	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: May, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** | PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **61,278** | Total Population Served at End of Month: **177,804**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** | Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** | Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** | Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** | Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: May, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)

☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	26,473,333	32,900,000									0.54	
2	X	24.0	27,021,250	31,090,000									0.54	
3	X	24.0	26,825,000	29,930,000									0.54	
4	X	24.0	27,455,417	34,320,000									0.54	
5	X	24.0	27,799,583	33,030,000									0.54	
6	X	24.0	24,736,667	29,760,000									0.54	
7	X	24.0	26,820,417	30,410,000									0.54	
8	X	24.0	27,319,167	32,540,000									0.54	
9	X	24.0	28,905,417	31,520,000									0.54	
10	X	24.0	28,121,667	31,850,000									0.54	
11	X	24.0	31,106,667	37,780,000									0.54	
12	X	24.0	29,656,667	35,400,000									0.54	
13	X	24.0	30,120,833	34,990,000									0.54	
14	X	24.0	24,882,917	32,250,000									0.54	
15	X	24.0	24,204,583	29,380,000									0.60	
16	X	24.0	23,205,417	29,650,000									0.60	
17	X	24.0	24,999,167	28,460,000									0.60	
18	X	24.0	25,753,750	36,080,000									0.60	
19	X	24.0	28,463,750	36,910,000									0.60	
20	X	24.0	26,148,750	31,980,000									0.60	
21	X	24.0	27,420,833	35,850,000									0.60	
22	X	24.0	29,142,917	35,310,000									0.60	
23	X	24.0	28,402,083	34,340,000									0.60	
24	X	24.0	29,280,000	34,190,000									0.60	
25	X	24.0	29,849,167	36,560,000									0.58	
26	X	24.0	30,785,000	37,970,000									0.58	
27	X	24.0	27,143,750	32,640,000									0.58	
28	X	24.0	25,824,167	32,040,000									0.58	
29	X	24.0	26,564,167	34,490,000									0.36	
30	X	24.0	28,592,917	33,510,000									0.58	
31	X	24.0	28,312,083	32,930,000									0.58	
Total			851,337,500											
Average			27,462,500											
Maximum			31,106,667											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year: May, 2011

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	26,473,333	1.18	1.26	0.54	
2	X	24	27,021,250	1.17	1.29	0.54	
3	X	24	26,825,000	1.2	1.2	0.54	
4	X	24	27,455,417	1.17	1.22	0.54	
5	X	24	27,799,583	1.15	1.27	0.54	
6	X	24	24,736,667	1.19	1.25	0.54	
7	X	24	26,820,417	1.19	0.78	0.54	
8	X	24	27,319,167	1.18	1.24	0.54	
9	X	24	28,905,417	1.01	1.28	0.54	
10	X	24	28,121,667	1.22	1.18	0.54	
11	X	24	31,106,667	1.19	1.15	0.54	
12	X	24	29,656,667	1.16	1.31	0.54	
13	X	24	30,120,833	1.17	1.17	0.54	
14	X	24	24,882,917	1.2	1.27	0.54	
15	X	24	24,204,583	1.2	1.27	0.60	
16	X	24	23,205,417	1.15	1.07	0.60	
17	X	24	24,999,167	1.17	1.28	0.60	
18	X	24	25,753,750	1.19	1.25	0.60	
19	X	24	28,463,750	1.16	1.22	0.60	
20	X	24	26,148,750	1.16	0.75	0.60	
21	X	24	27,420,833	1.18	1.29	0.60	
22	X	24	29,142,917	1.14	1.05	0.60	
23	X	24	28,402,083	1.18	1.12	0.60	
24	X	24	29,280,000	1.16	1.23	0.60	
25	X	24	29,849,167	1.17	1.24	0.58	
26	X	24	30,785,000	1.16	1.11	0.58	
27	X	24	27,143,750	1.13	1.21	0.58	
28	X	24	25,824,167	1.18	1.23	0.58	
29	X	24	26,564,167	1.16	1.37	0.36	
30	X	24	28,592,917	1.16	1.36	0.58	
31	X	24	28,312,083	1.17	1.21	0.58	
Total			851,337,500				
Average			27,462,500				
Maximum			31,106,667				

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: ______ mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? ______ If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum? 1.01
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? NO If yes . . .
    - What was the date and duration of this **treatment technique violation?** ______ (date) ______ (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 0.75 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum? ______
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? ______ If yes . . .
    - What was the date and duration of this **treatment technique violation?** ______ (date) ______ (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service? ______
    - Date the equipment failed: ______
    - Date the equipment was returned to service: ______

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of:	May, 2011

A. Public Water System (PWS) Information

PWS Name: Gainesville Regional Utilities	PWS Identification Number: 2010946
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: Gainesville Regional Utilities	
Contact Person: Richard J. Davis	Contact Person's Title: Water Plant Manager
Contact Person's Mailing Address: PO Box 147117 MS 43	City: Gainesville State: Florida Zip Code: 32614
Contact Person's Telephone Number: (352) 393-6512	Contact Person's Fax Number: (352) 334-2891
Contact Person's E-Mail Address: DavisRJ@gru.com	

B. Water Treatment Plant Information

Plant Name: Dr. Walter E. Murphree Water Treatment Plant	Plant Telephone Number: (352) 393-6512
Plant Address: 1600 NE 53 Ave.	City: Gainesville State: Florida Zip Code: 32614

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Check Sample Results for the Month/Year:	May, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.669
Distribution Sample 2	Bouleware		0.689

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Fluoide Data fro the Month/Year: **May, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	26,473,333	410	0.45	0.66
2	24.0	27,021,250	408	0.47	0.69
3	24.0	26,825,000	403	0.45	0.74
4	24.0	27,455,417	423	0.45	0.71
5	24.0	27,799,583	426	0.48	0.72
6	24.0	24,736,667	372	0.48	0.73
7	24.0	26,820,417	420	0.46	0.69
8	24.0	27,319,167	450	0.48	0.68
9	24.0	28,905,417	420	0.44	0.66
10	24.0	28,121,667	461	0.49	0.66
11	24.0	31,106,667	442	0.41	0.65
12	24.0	29,656,667	487	0.50	0.69
13	24.0	30,120,833	489	0.48	0.72
14	24.0	24,882,917	393	0.49	0.78
15	24.0	24,204,583	363	0.45	0.74
16	24.0	23,205,417	347	0.45	0.72
17	24.0	24,999,167	407	0.46	0.69
18	24.0	25,753,750	426	0.49	0.76
19	24.0	28,463,750	421	0.43	0.73
20	24.0	26,148,750	396	0.44	0.73
21	24.0	27,420,833	402	0.44	0.70
22	24.0	29,142,917	429	0.46	0.73
23	24.0	28,402,083	400	0.43	0.73
24	24.0	29,280,000	410	0.42	0.73
25	24.0	29,849,167	426	0.42	0.71
26	24.0	30,785,000	447	0.43	0.71
27	24.0	27,143,750	407	0.46	0.74
28	24.0	25,824,167	396	0.46	0.77
29	24.0	26,564,167	390	0.44	0.72
30	24.0	28,592,917	409	0.43	0.71
31	24.0	28,312,083	412	0.42	0.77
Total	744.0	851,337,500	12,890	14.04	22.17
Average	24.0	27,462,500	416	0.45	0.72

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
May, 2011

Permit Number: 2-001-006NGM   Issued To: Gainesville Regional Utilities

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	1.31	4.34	0.00	0.00	5.35	0.00	0.00	0.69	2.73	0.00	0.00	0.00	0.00	6.65	6.70	0.00	27.76
2	1.30	3.58	0.00	0.00	0.00	0.45	0.52	4.14	4.66	0.00	0.00	0.00	0.00	6.66	6.72	0.00	28.04
3	1.91	0.00	0.00	0.00	0.00	1.27	1.91	4.15	4.60	0.00	0.00	0.00	0.00	6.67	6.70	0.00	27.22
4	5.04	0.00	0.00	0.00	0.89	1.13	0.00	3.36	4.61	0.00	1.23	0.00	0.00	6.64	4.01	0.00	26.90
5	5.04	0.00	0.00	0.00	0.00	1.33	1.18	3.30	3.59	0.00	0.00	0.19	1.29	3.48	6.74	0.96	27.10
6	5.04	0.00	0.00	0.00	0.00	2.31	2.99	1.90	4.44	0.00	0.00	0.00	0.00	0.00	6.77	0.00	23.45
7	5.04	0.00	0.00	0.00	2.94	1.30	3.00	0.00	4.44	0.00	0.00	0.00	0.00	2.61	6.48	0.00	25.81
8	5.04	0.00	0.00	0.00	6.07	2.52	2.92	0.00	4.41	0.00	0.00	0.00	0.00	0.00	5.17	0.00	26.14
9	5.04	0.00	0.00	0.00	6.03	2.52	2.93	0.00	4.40	0.00	0.00	0.00	0.00	0.00	6.74	0.00	27.66
10	5.04	0.00	0.00	0.00	6.08	1.59	2.53	0.55	4.42	0.00	0.00	0.00	0.00	0.00	6.72	0.00	26.92
11	4.78	0.00	0.00	0.00	5.82	0.55	2.01	3.73	4.11	0.00	0.00	0.00	0.00	5.33	3.98	0.00	30.31
12	3.56	0.70	0.00	0.00	0.63	2.61	2.98	3.99	4.39	0.00	0.00	3.28	0.00	6.66	0.00	0.00	28.81
13	3.85	4.06	0.00	0.00	0.00	2.61	0.97	4.01	4.47	0.00	0.00	0.92	4.11	2.13	1.92	0.00	29.04
14	3.52	4.08	0.00	0.00	0.00	1.53	0.00	4.05	4.52	0.00	0.00	0.00	6.04	0.00	0.00	0.00	23.74
15	3.73	3.48	0.00	0.00	0.00	1.54	0.00	3.91	4.57	0.00	0.00	0.00	6.04	0.00	0.00	0.00	23.27
16	5.04	3.39	0.00	0.00	0.00	2.25	0.00	0.68	4.54	0.00	0.00	0.00	6.05	0.00	0.00	0.00	21.95
17	5.04	4.09	0.00	0.00	0.00	0.00	0.00	4.10	4.50	0.00	0.00	0.00	6.04	0.00	0.00	0.00	23.78
18	3.24	2.19	0.00	0.00	0.00	0.00	0.00	4.13	4.57	0.00	0.00	0.00	6.01	0.00	5.26	0.00	25.40
19	1.31	4.27	0.00	0.38	2.89	1.15	1.45	3.98	1.54	0.00	1.14	2.63	2.00	3.14	2.24	0.96	29.09
20	1.33	4.17	0.00	0.00	6.07	1.26	3.18	3.93	0.01	0.00	0.00	0.00	0.00	0.01	6.79	0.00	26.74
21	1.33	4.23	0.00	0.00	0.92	2.20	2.90	4.05	0.00	0.00	0.00	0.00	0.57	5.72	6.10	0.00	28.02
22	3.09	4.13	0.00	0.00	0.99	2.64	2.43	3.39	2.55	0.00	0.00	0.00	5.99	3.40	0.00	0.00	28.61
23	1.36	4.10	0.00	0.00	6.09	2.12	3.01	0.66	4.45	0.00	0.00	0.00	6.03	0.00	0.00	0.00	27.81
24	1.33	4.10	0.00	0.00	6.12	0.00	2.99	3.92	4.41	0.00	0.00	0.00	6.02	0.00	0.00	0.00	28.89
25	1.30	2.98	0.00	0.00	6.19	0.00	2.13	2.21	4.47	0.00	0.00	0.00	6.00	0.00	4.51	0.00	29.78
26	1.29	4.20	0.00	0.00	6.25	0.86	1.06	0.00	2.99	0.00	0.00	0.00	5.95	1.67	6.98	0.00	31.26
27	4.84	2.93	0.00	0.00	6.05	2.53	3.08	0.00	0.00	0.00	0.00	0.00	1.38	4.74	0.29	0.00	25.83
28	5.02	2.12	0.00	0.00	6.07	2.53	3.09	0.00	0.00	0.00	0.00	0.00	5.41	0.00	0.00	0.00	24.25
29	5.03	0.00	0.00	0.00	6.11	2.57	2.15	0.00	2.90	0.00	0.00	0.00	6.04	0.00	0.00	0.00	24.81
30	5.04	0.00	0.00	0.00	6.10	2.15	2.51	0.66	4.40	0.00	0.00	0.00	6.03	0.00	0.00	0.00	26.89
31	5.04	0.00	0.00	0.00	6.09	0.06	2.92	3.89	4.36	0.00	0.00	1.43	1.75	1.62	0.00	0.00	27.15
Total	109.84	67.15	0.00	0.38	99.74	45.58	56.82	73.38	110.06	0.00	2.36	8.52	88.75	67.11	100.83	1.92	832.44

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

May, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	5/1	5/2	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15
1	ON			20:00								4:00		8:00		8:00
	OFF											3:00	14:00		14:00	
2	ON												20:00			
	OFF		20:00													20:00
3	ON															
	OFF															
4	ON															
	OFF															
5	ON				8:00			13:00				4:00				
	OFF	20:00			13:00							3:00	3:00			
6	ON		20:00		8:00	8:00		2:00				20:00				10:00
	OFF			11:00	23:00		21:00				15:00				14:00	
7	ON		20:00			15:00						8:00				
	OFF			15:00							21:00			8:00		
8	ON	20:00			13:00	13:00					21:00	4:00				
	OFF				8:00	8:00	11:00					3:00				23:00
9	ON	10:00				14:00						4:00				
	OFF					8:00						3:00				
10	ON															
	OFF															
11	ON				8:00											
	OFF				13:00											
12	ON					14:00							5:00			
	OFF					15:00								12:00		
13	ON					8:00								8:00		
	OFF					13:00										
14	ON							3:00				5:00				
	OFF					14:00		13:00						8:00		
15	ON				8:00				6:00					1:00		
	OFF				23:00							15:00		8:00		
16	ON					8:00										
	OFF					13:00										

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

May, 2011

Permit Number: 2-001-006NGM   **Issued To:** Gainesville Regional Utilities

WELL	STATUS	5/16	5/17	5/18	5/19	5/20	5/21	5/22	5/23	5/24	5/25	5/26	5/27	5/28	5/29
1	ON							12:00					1:00		
	OFF			12:00				23:00							
2	ON	4:00		22:00							20:00			5:00	
	OFF			11:00							13:00		18:00	17:00	
3	ON														
	OFF														
4	ON				7:00										
	OFF				9:00										
5	ON				13:00			20:00							
	OFF						4:00								
6	ON				2:00		4:00					16:00			
	OFF	20:00			13:00				20:00						
7	ON				13:00			5:00				16:00			
	OFF						22:00				17:00				17:00
8	ON	20:00							20:00						
	OFF							20:00			14:00				
9	ON							10:00							8:00
	OFF				8:00							16:00			
10	ON														
	OFF														
11	ON				8:00										
	OFF				13:00										
12	ON				8:00										
	OFF														
13	ON						22:00							3:00	
	OFF				8:00								6:00		
14	ON				13:00							10:00	6:00		
	OFF							12:00				16:00	22:00		
15	ON			5:00	23:00						9:00				
	OFF				8:00		22:00						1:00		
16	ON				8:00										
	OFF				13:00										

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
May, 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

WELL	STATUS	5/30	5/31
1	ON		
	OFF		
2	ON		
	OFF		
3	ON		
	OFF		
4	ON		
	OFF		
5	ON		
	OFF		
6	ON		15:00
	OFF	20:00	16:00
7	ON	4:00	
	OFF		
8	ON		
	OFF	20:00	
9	ON		
	OFF		
10	ON		
	OFF		
11	ON		
	OFF		
12	ON		16:00
	OFF		
13	ON		
	OFF		7:00
14	ON		7:00
	OFF		13:00
15	ON		
	OFF		
16	ON		
	OFF		

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	61,472	Estimated
Total Customer Served at End of Month:	178,367	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	14959	14858	29817	29204	35860	20570
2	24.0	0	15098	15016	30114	29695	35380	20680
3	24.0	0	14550	14639	29188	28613	31950	23480
4	24.0	0	15163	15408	30572	29957	33620	21530
5	24.0	0	14951	15106	30058	30135	36320	21930
6	24.0	0	13840	13953	27794	26532	34420	19940
7	24.0	0	13248	12560	25807	24155	29060	17600
8	24.0	0	14368	14363	28731	28222	34560	21710
9	24.0	0	14357	13960	28317	28417	33670	20820
10	24.0	0	14452	14367	28818	27360	32990	20920
11	24.0	0	14981	14787	29768	28713	34520	20950
12	24.0	0	13354	13395	26749	27206	32080	19080
13	24.0	0	13473	13363	26837	25759	33140	19270
14	24.0	0	12582	12678	25259	24543	29220	18340
15	24.0	0	14225	14172	28396	28566	34820	22410
16	24.0	0	13945	14008	27953	27320	36550	20110
17	24.0	0	14311	14251	28562	26461	32720	17830
18	24.0	0	12752	12762	25513	25568	33440	17060
19	24.0	0	13655	13900	27555	26883	32890	18960
20	24.0	0	14236	14374	28610	27497	32550	21130
21	24.0	0	14548	14623	29170	28063	33380	20190
22	24.0	0	15316	15406	30722	30065	36890	23220
23	24.0	0	13806	13916	27722	27057	36630	20370
24	24.0	0	12842	12974	25815	24842	28920	19760
25	24.0	0	13016	13247	26263	26036	30100	19760
26	24.0	0	14883	14772	29655	27744	33470	20200
27	24.0	0	13213	13063	26276	25497	32030	19670
28	24.0	0	11928	11703	23631	22419	25170	18030
29	24.0	0	12156	12053	24209	23479	28240	17830
30	24.0	0	11411	11223	22634	22402	26780	17810
Total	720.0	0	415616	414900	830516	808410		
Maximum	24.0	0	15316	15408	30722	30135		
Minimum	24.0	0	11411	11223	22634	22402		
Average	24.0	0	13854	13830	27684	26947		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings Total	Maximum	Minimum	Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
1	96	0	0		0
2	96	0	0		0
3	96	0	0		0
4	96	252	144	1	484.16
5	96	252	22	2	484.58
6	96	253	24	3	479.58
7	96	251	24	4	484.16
8	96	253	23	5	484.16
9	96	254	24	6	480
10	96	0	0		0
11	96	0	0		0
12	96	0	0		0
13	96	0	0		0
14	96	0	0		0
15	96	254	143	1	480.83
16	96	259	29	2	467.5
17	96	254	20	3	481.25
18	96	252	23	4	481.25
19	96	252	25	5	484.16
20	96	251	23	6	482.08
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	0	0		0
25	96	0	0		0
26	96	253	144	1	482.08
27	96	248	24	2	482.08
28	96	252	23	3	480.83
29	96	252	23	4	481.66
30	96	253	25	5	483.75
Maximum	96	259	144		484.58
Minimum	96	0	0		0

SumWashed:
8184.11

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	32493	4985	124	427.2	5000
2	31345	4949	115	415.6	4000
3	31332	4601	112	396.5	4500
4	31759	4914	151	459.7	4500
5	29447	5043	108	454.4	5000
6	28551	4777	104	401.5	4000
7	28754	4605	83	371.4	4000
8	29844	4931	130	441.0	5000
9	29960	4940	132	420.8	4500
10	27852	5080	116	439.2	5000
11	29485	4744	100	436.9	5000
12	28045	3823	96	375.1	4000
13	30187	4185	100	374.1	5500
14	26492	3866	82	383.3	4500
15	30716	4432	113	408.4	5000
16	30621	4620	108	412.2	5000
17	29501	4468	107	417.1	4500
18	27318	3813	107	383.7	5000
19	29760	4265	100	418.8	4000
20	30783	4585	100	433.1	4500
21	30078	4788	99	462.2	5000
22	34504	5003	110	472.3	5000
23	31886	4834	112	430.8	4000
24	27718	4421	101	406.0	4000
25	27013	4448	103	402.5	4000
26	31256	4700	118	414.8	4500
27	28431	4542	93	361.9	4500
28	24946	4201	89	373.1	4000
29	24654	4315	101	393.4	4000
30	23416	4045	93	369.4	3000
Total	878147	136922	3209	12356.5	134500
Maximum	34504	5080	151	472.3	5500
Minimum	23416	3813	82	361.9	3000
Average	29272	4564	107	411.9	4483

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	130.7	20.0	0.51	0.43	20.1
2	124.8	19.7	0.47	0.42	15.9
3	128.9	18.9	0.47	0.40	18.5
4	124.9	19.4	0.60	0.44	17.6
5	117.5	20.1	0.43	0.45	19.9
6	121.7	20.8	0.47	0.41	17.3
7	134.3	21.5	0.41	0.42	18.6
8	124.9	20.7	0.55	0.46	20.9
9	126.9	20.9	0.56	0.46	19.1
10	115.6	21.2	0.51	0.46	20.8
11	118.9	19.1	0.42	0.45	20.1
12	125.4	17.1	0.42	0.39	17.9
13	134.6	18.9	0.47	0.42	24.6
14	125.7	18.4	0.40	0.46	21.4
15	129.9	18.7	0.47	0.44	21.1
16	131.6	19.9	0.47	0.44	21.4
17	124.0	18.8	0.49	0.45	18.9
18	128.2	17.9	0.50	0.45	23.5
19	129.0	18.5	0.45	0.45	17.4
20	129.3	19.3	0.44	0.46	18.9
21	123.8	19.7	0.42	0.49	20.6
22	134.7	19.5	0.44	0.46	19.5
23	137.6	20.9	0.50	0.47	17.3
24	128.8	20.5	0.49	0.47	18.6
25	123.3	20.3	0.48	0.46	18.3
26	126.3	19.0	0.51	0.42	18.2
27	129.9	20.9	0.44	0.43	20.5
28	126.6	21.3	0.48	0.48	20.3
29	122.1	21.4	0.52	0.49	19.8
30	124.3	21.5	0.50	0.49	15.9
Maximum	137.6	21.5	0.60	0.49	24.6
Minimum	115.6	17.1	0.40	0.39	15.9
Average	126.8	19.8	0.48	0.45	19.4

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.64	183	276	5	<2	0.36
2	7.64	185	278	5	<2	0.34
3	7.70	192	267	5	<2	0.35
4	7.68	189	270	5	<2	0.34
5	7.64	181	279	5	<2	0.35
6	7.61	187	295	5	<2	0.34
7	7.60	186	297	5	<2	0.34
8	7.68	186	275	5	<2	0.35
9	7.64	185	294	5	<2	0.35
10	7.69	181	279	5	<2	0.32
11	7.71	195	268	5	<2	0.34
12	7.60	199	249	5	<2	0.38
13	7.61	189	244	5	<2	0.37
14	7.41	182	262	5	<2	0.37
15	7.62	197	268	5	<2	0.35
16	7.64	186	275	5	<2	0.34
17	7.65	193	273	5	<2	0.36
18	7.67	190	258	5	<2	0.36
19	7.63	195	250	5	<2	0.38
20	7.61	192	276	5	<2	0.37
21	7.62	190	279	5	<2	0.35
22	7.64	182	279	5	<2	0.37
23	7.64	187	291	5	<2	0.35
24	7.66	187	272	5	<2	0.34
25	7.63	185	268	5	<2	0.35
26	7.65	189	283	5	<2	0.36
27	7.62	184	280	5	<2	0.35
28	7.63	190	280	5	<2	0.35
29	7.66	184	286	5	<2	0.34
30	7.63	185	290	5	<2	0.34
Maximum	7.71	199	297	5	<2	0.38
Minimum	7.41	181	244	5	<2	0.32
Average	7.63	188	275	5	<2	0.35

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.15	28	43	165
2	10.18	28	44	160
3	10.06	29	48	156
4	10.24	31	49	151
5	10.09	26	43	161
6	10.16	27	43	182
7	10.10	27	43	186
8	10.15	28	44	164
9	10.15	29	44	178
10	10.16	29	44	165
11	10.12	31	48	148
12	10.06	30	54	124
13	10.20	31	48	130
14	10.13	28	47	154
15	10.15	31	50	151
16	10.13	29	46	161
17	10.15	30	47	154
18	10.16	32	53	140
19	10.07	29	50	143
20	10.17	29	45	155
21	10.09	28	45	160
22	10.07	28	44	168
23	10.18	27	44	177
24	10.09	28	45	151
25	10.09	30	47	148
26	10.09	27	44	153
27	10.13	27	43	158
28	10.14	28	44	165
29	10.11	28	44	167
30	10.15	27	42	173
Maximum	10.24	32	54	186
Minimum	10.06	26	42	124
Average	10.13	29	46	158

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.62	5	40	159	1.24	<1
2	8.65	4	38	166	1.22	<1
3	8.65	4	40	162	1.21	<1
4	8.72	6	43	149	1.20	<1
5	8.67	3	41	158	1.19	<1
6	8.64	3	40	169	1.21	<1
7	8.65	5	37	189	1.21	<1
8	8.65	4	40	178	1.23	<1
9	8.65	5	38	171	1.22	<1
10	8.62	4	38	174	1.26	<1
11	8.64	5	40	155	1.24	<1
12	8.67	4	47	139	1.18	<1
13	8.69	4	50	131	1.20	<1
14	8.66	5	42	147	1.20	<1
15	8.68	5	44	147	1.20	<1
16	8.64	4	43	157	1.20	<1
17	8.64	4	42	164	1.19	<1
18	8.65	5	45	150	1.18	<1
19	8.70	4	51	135	1.06	<1
20	8.67	3	42	148	1.05	<1
21	8.62	4	41	156	1.05	<1
22	8.63	4	42	172	1.03	<1
23	8.66	6	39	176	1.05	<1
24	8.64	5	40	163	1.04	<1
25	8.65	5	40	149	1.01	<1
26	8.65	3	41	155	1.06	<1
27	8.66	3	39	157	1.06	<1
28	8.70	7	38	168	1.11	<1
29	8.68	5	36	167	1.16	<1
30	8.67	4	37	165	1.22	<1
Maximum	8.72	7	51	189	1.26	<1
Minimum	8.62	3	36	131	1.01	<1
Average	8.66	4	41	159	1.16	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.76	0.17	0.00
2	0.75	0.17	0.00
3	0.72	0.17	0.00
4	0.69	0.16	0.00
5	0.71	0.14	0.00
6	0.71	0.15	1.50
7	0.66	0.19	0.00
8	0.71	0.20	0.00
9	0.73	0.17	0.00
10	0.74	0.13	0.00
11	0.76	0.13	0.00
12	0.74	0.13	0.00
13	0.75	0.14	0.00
14	0.68	0.14	0.00
15	0.72	0.19	0.00
16	0.76	0.17	0.50
17	0.76	0.18	0.00
18	0.76	0.19	0.00
19	0.71	0.18	0.00
20	0.73	0.16	0.00
21	0.72	0.14	0.10
22	0.77	0.10	0.10
23	0.75	0.10	1.30
24	0.74	0.10	0.00
25	0.74	0.10	0.00
26	0.75	0.18	0.00
27	0.69	0.20	3.00
28	0.67	0.19	0.50
29	0.70	0.16	0.30
30	0.73	0.15	0.30
Maximum	0.77	0.20	3.00
Minimum	0.66	0.10	0.00
Average	0.73	0.16	0.25
Total			7.60

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	29.21	64.78	93.09	83.56	88.56	53.91	76.99	79.36
2	29.70	64.74	92.52	82.96	87.84	53.77	76.29	79.21
3	28.61	64.17	93.34	84.10	89.37	53.80	78.29	79.28
4	29.96	64.27	92.31	82.34	87.42	53.17	75.14	78.99
5	30.13	64.37	92.19	82.48	87.58	53.28	76.69	78.80
6	26.51	64.02	94.33	85.36	90.58	54.04	80.01	79.74
7	24.15	62.91	94.81	86.43	91.34	53.94	81.10	79.46
8	28.22	65.18	93.78	85.10	89.42	54.96	78.49	80.24
9	28.41	64.47	93.24	83.91	88.71	54.20	77.15	79.48
10	27.36	64.11	93.73	84.72	89.64	54.12	78.76	79.48
11	28.72	64.65	93.48	83.32	88.48	53.92	75.35	79.71
12	27.21	64.50	93.32	85.81	90.07	54.38	out of service	80.01
13	25.76	63.98	95.30	86.65	91.77	54.54	83.69	80.21
14	24.54	62.43	94.41	86.31	91.13	53.26	81.22	79.05
15	28.57	64.35	93.30	84.17	89.19	53.79	78.44	79.43
16	27.32	63.84	92.55	83.50	88.13	53.52	76.83	78.99
17	26.46	64.08	93.78	85.10	89.84	54.18	79.30	79.56
18	25.57	63.11	93.24	83.75	88.49	53.64	76.56	79.16
19	26.89	63.88	93.43	84.47	89.11	54.02	77.61	79.45
20	27.50	64.48	93.86	85.00	89.74	54.58	79.04	79.63
21	28.06	64.70	92.90	83.95	88.43	54.09	77.36	79.33
22	30.07	65.53	91.72	83.10	87.01	54.55	75.53	79.40
23	27.05	63.64	93.03	84.29	86.69	53.68	77.81	78.96
24	24.84	63.10	94.60	86.04	91.73	53.78	79.84	79.53
25	26.04	63.37	94.39	85.18	91.07	53.75	76.39	79.71
26	27.75	63.81	92.49	84.03	89.01	53.39	75.93	78.82
27	25.50	64.19	95.20	86.71	91.73	54.71	81.60	80.29
28	22.42	62.47	95.83	87.70	92.83	53.89	83.25	79.90
29	23.48	63.05	95.81	87.70	92.60	54.21	82.53	80.23
30	22.40	62.56	96.03	87.94	92.93	53.95	82.99	80.10
Maximum	30.13	65.53	96.03	87.94	92.93	54.96	83.69	80.29
Minimum	22.40	62.43	91.72	82.34	86.69	53.17	75.14	78.80
Average	26.95	63.96	93.73	84.86	89.68	53.97	78.63	79.52
Total	808.40							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	29.21	64.78	84.03	65.64	84.45
2	29.70	64.74	83.27	65.15	83.78
3	28.61	64.17	85.52	65.68	85.77
4	29.96	64.27	81.98	64.48	82.69
5	30.13	64.37	82.64	64.52	83.08
6	26.51	64.02	87.34	66.98	87.58
7	24.15	62.91	88.72	68.13	89.05
8	28.22	65.18	85.68	67.25	86.38
9	28.41	64.47	84.24	65.79	84.74
10	27.36	64.11	85.99	66.32	86.36
11	28.72	64.65	83.34	65.21	83.93
12	27.21	64.50	85.98	67.50	86.55
13	25.76	63.98	88.89	68.41	89.20
14	24.54	62.43	88.78	68.46	89.23
15	28.57	64.35	85.57	66.03	85.94
16	27.32	63.84	83.91	65.53	84.59
17	26.46	64.08	86.74	66.99	87.09
18	25.57	63.11	83.52	65.32	84.20
19	26.89	63.88	84.64	66.50	85.31
20	27.50	64.48	86.28	66.81	86.66
21	28.06	64.70	84.62	65.74	85.12
22	30.07	65.53	82.51	65.17	83.39
23	27.05	63.64	85.13	66.30	84.44
24	24.84	63.10	87.62	67.81	88.31
25	26.04	63.37	83.98	66.70	85.42
26	27.75	63.81	83.54	65.81	84.63
27	25.50	64.19	89.13	68.51	89.50
28	22.42	62.47	90.96	69.72	91.26
29	23.48	63.05	90.18	69.39	90.62
30	22.40	62.56	90.63	69.57	91.09
Maximum	30.13	65.53	90.96	69.72	91.26
Minimum	22.40	62.43	81.98	64.48	82.69
Average	26.95	63.96	85.85	66.71	86.35
Total	808.40				

KELLY PUMP STATION REPORT

Date	DSFR mgd	DSPS psi	JKPS psi	JKFR mgd	Repumps plus DSFR mgd
1	29.20	64.78	69.22	0.00	30.05
2	29.70	64.74	68.93	0.00	30.72
3	28.61	64.17	68.90	0.00	28.96
4	29.96	64.27	68.43	0.00	30.53
5	30.14	64.37	68.42	0.00	31.16
6	26.53	64.02	69.44	0.00	26.77
7	24.15	62.91	69.55	0.00	24.39
8	28.22	65.18	69.83	0.00	29.01
9	28.42	64.47	69.16	0.00	29.35
10	27.36	64.11	69.33	0.00	27.59
11	28.71	64.65	69.35	0.00	29.31
12	27.21	64.50	69.91	0.00	27.87
13	25.76	63.98	69.93	0.00	25.83
14	24.54	62.43	68.93	0.00	25.24
15	28.57	64.35	69.03	0.00	29.31
16	27.32	63.84	68.93	0.00	28.16
17	26.46	64.08	69.41	0.00	26.55
18	25.57	63.11	68.89	0.00	25.59
19	26.88	63.88	69.13	0.00	27.85
20	27.50	64.48	69.39	0.00	28.10
21	28.06	64.70	69.17	0.00	28.50
22	30.07	65.53	68.93	0.00	30.97
23	27.06	63.64	68.79	0.00	27.40
24	24.84	63.10	69.35	0.00	25.10
25	26.04	63.37	69.33	0.00	26.30
26	27.74	63.81	68.71	0.00	28.64
27	25.50	64.19	70.15	0.00	25.70
28	22.42	62.47	69.87	0.00	22.52
29	23.48	63.05	70.03	0.00	23.60
30	22.40	62.56	70.03	0.00	22.67
Maximum	30.14	65.53	70.15	0.00	31.16
Minimum	22.40	62.43	68.42	0.00	22.52
Average	26.95	63.96	69.28	0.00	27.46
Total	808.41				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.84	24.06	37.03	0.00	3.36	0.58
2	1.01	23.06	36.49	0.00	7.74	0.58
3	0.35	25.65	36.90	2.63	0.00	0.58
4	0.57	24.58	35.10	0.00	4.00	0.58
5	1.00	22.34	35.61	3.12	4.50	0.58
6	0.30	25.34	38.12	0.00	2.37	0.58
7	0.23	26.91	40.53	1.83	0.00	0.58
8	0.77	24.17	38.77	0.00	3.35	0.58
9	0.91	23.16	37.21	0.00	6.98	0.58
10	0.22	26.68	38.23	0.00	1.75	0.58
11	0.58	24.27	36.53	0.00	2.49	0.58
12	0.65	24.91	39.00	0.21	1.79	0.58
13	0.07	27.16	40.04	0.00	0.08	0.58
14	0.70	22.90	40.37	0.00	1.38	0.42
15	0.73	24.27	37.61	0.00	2.52	0.42
16	0.84	22.12	38.18	0.00	1.56	0.59
17	0.08	26.79	38.50	0.00	0.56	0.58
18	0.02	27.63	37.53	0.00	0.00	0.58
19	0.95	23.04	37.74	0.00	3.44	0.58
20	0.59	25.28	37.88	0.00	4.61	0.58
21	0.42	25.61	37.76	0.00	3.35	0.58
22	0.88	22.79	35.95	0.00	4.30	0.58
23	0.35	26.04	38.25	0.00	2.61	0.58
24	0.29	24.97	39.83	0.00	0.00	0.58
25	0.26	23.44	38.33	0.00	2.02	0.58
26	0.87	23.74	37.51	0.00	3.23	0.58
27	0.19	26.77	40.27	0.00	0.00	0.58
28	0.10	26.48	41.97	0.00	0.00	0.58
29	0.12	26.68	41.44	0.00	0.95	0.58
30	0.26	25.58	41.90	0.00	0.30	0.58
						0.00
Maximum	1.01	27.63	41.97	3.12	7.74	0.59
Minimum	0.02	22.12	35.10	0.00	0.00	0.00
Average	0.51	24.88	38.35	0.26	2.31	0.55
Total				7.79	69.24	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **June, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **61,472**	Total Population Served at End of Month: **178,367**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: June, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	29,816,667	35,860,000									0.58	
2	X	24.0	30,114,167	35,380,000									0.58	
3	X	24.0	29,188,333	31,950,000									0.58	
4	X	24.0	30,571,667	33,620,000									0.58	
5	X	24.0	30,057,500	36,320,000									0.58	
6	X	24.0	27,793,750	34,420,000									0.58	
7	X	24.0	25,807,083	29,060,000									0.58	
8	X	24.0	28,731,250	34,560,000									0.58	
9	X	24.0	28,316,667	33,670,000									0.58	
10	X	24.0	28,818,333	32,990,000									0.58	
11	X	24.0	29,767,917	34,520,000									0.58	
12	X	24.0	26,748,750	32,080,000									0.58	
13	X	24.0	26,836,667	33,140,000									0.58	
14	X	24.0	25,259,167	29,220,000									0.42	
15	X	24.0	28,396,250	34,820,000									0.42	
16	X	24.0	27,952,917	36,550,000									0.59	
17	X	24.0	28,562,083	32,720,000									0.58	
18	X	24.0	25,513,333	33,440,000									0.58	
19	X	24.0	27,555,000	32,890,000									0.58	
20	X	24.0	28,610,000	32,550,000									0.58	
21	X	24.0	29,170,000	33,380,000									0.58	
22	X	24.0	30,722,083	36,890,000									0.58	
23	X	24.0	27,722,083	36,630,000									0.58	
24	X	24.0	25,815,417	28,920,000									0.58	
25	X	24.0	26,263,333	30,100,000									0.58	
26	X	24.0	29,655,000	33,470,000									0.58	
27	X	24.0	26,275,833	32,030,000									0.58	
28	X	24.0	23,631,250	25,170,000									0.58	
29	X	24.0	24,209,167	28,240,000									0.58	
30	X	24.0	22,634,167	26,780,000									0.58	
31														
Total			830,515,833											
Average			27,683,861											
Maximum			30,722,083											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**June, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO4 or mg/L of silicate as SiO2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:*
☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration
☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
				Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*			
1	X	24	29,816,667	1.19	1.27	0.58	
2	X	24	30,114,167	1.16	1.39	0.58	
3	X	24	29,188,333	1.17	1.29	0.58	
4	X	24	30,571,667	1.15	1.2	0.58	
5	X	24	30,057,500	1.15	1.34	0.58	
6	X	24	27,793,750	1.16	1.34	0.58	
7	X	24	25,807,083	1.12	1.12	0.58	
8	X	24	28,731,250	1.19	1.28	0.58	
9	X	24	28,316,667	1.16	1.27	0.58	
10	X	24	28,818,333	1.21	1.2	0.58	
11	X	24	29,767,917	1.21	1.2	0.58	
12	X	24	26,748,750	1.11	1.32	0.58	
13	X	24	26,836,667	1.12	1.16	0.58	
14	X	24	25,259,167	1.15	1.08	0.42	
15	X	24	28,396,250	1.18	1.31	0.42	
16	X	24	27,952,917	1.12	1.08	0.59	
17	X	24	28,562,083	1.09	0.97	0.58	
18	X	24	25,513,333	1.09	1.20	0.58	
19	X	24	27,555,000	0.99	1.24	0.58	
20	X	24	28,610,000	1.03	1.27	0.58	
21	X	24	29,170,000	1.03	1.21	0.58	
22	X	24	30,722,083	0.96	1.10	0.58	
23	X	24	27,722,083	1.00	1.11	0.58	
24	X	24	25,815,417	1.01	1.00	0.58	
25	X	24	26,263,333	0.96	1.02	0.58	
26	X	24	29,655,000	0.96	1.28	0.58	
27	X	24	26,275,833	0.98	1.34	0.58	
28	X	24	23,631,250	1.06	1.32	0.58	
29	X	24	24,209,167	0.99	1.33	0.58	
30	X	24	22,634,167	1.12	0.96	0.58	
31			-				
Total			830,515,833				
Average			26,790,833				
Maximum			30,722,083				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: 0.96 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 0.96 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO

  If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: June, 2011

A. Public Water System (PWS) Information

PWS Name: Gainesville Regional Utilities		PWS Identification Number: 2010946	
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive			
PWS Owner: Gainesville Regional Utilities			
Contact Person: Richard J. Davis	Contact Person's Title: Water Plant Manager		
Contact Person's Mailing Address: PO Box 147117 MS 43	City: Gainesville	State: Florida	Zip Code: 32614
Contact Person's Telephone Number: (352) 393-6512	Contact Person's Fax Number: (352) 334-2891		
Contact Person's E-Mail Address: DavisRJ@gru.com			

B. Water Treatment Plant Information

Plant Name: Dr. Walter E. Murphree Water Treatment Plant		Plant Telephone Number: (352) 393-6512	
Plant Address: 1600 NE 53 Ave.	City: Gainesville	State: Florida	Zip Code: 32614

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

PWS Identification Number: 2010946 Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Check Sample Results for the Month/Year: June, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.714
Distribution Sample 2	Bouleware		0.725

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Fluoide Data fro the Month/Year: **June, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	29,816,667	427	0.43	0.76
2	24.0	30,114,167	416	0.42	0.75
3	24.0	29,188,333	396	0.40	0.72
4	24.0	30,571,667	460	0.44	0.69
5	24.0	30,057,500	454	0.45	0.71
6	24.0	27,793,750	402	0.41	0.71
7	24.0	25,807,083	371	0.42	0.66
8	24.0	28,731,250	441	0.46	0.71
9	24.0	28,316,667	421	0.46	0.73
10	24.0	28,818,333	439	0.46	0.74
11	24.0	29,767,917	437	0.45	0.76
12	24.0	26,748,750	375	0.39	0.74
13	24.0	26,836,667	374	0.42	0.75
14	24.0	25,259,167	383	0.46	0.68
15	24.0	28,396,250	408	0.44	0.72
16	24.0	27,952,917	412	0.44	0.76
17	24.0	28,562,083	417	0.45	0.76
18	24.0	25,513,333	384	0.45	0.76
19	24.0	27,555,000	419	0.45	0.71
20	24.0	28,610,000	433	0.46	0.73
21	24.0	29,170,000	462	0.49	0.72
22	24.0	30,722,083	472	0.46	0.77
23	24.0	27,722,083	431	0.47	0.75
24	24.0	25,815,417	406	0.47	0.74
25	24.0	26,263,333	403	0.46	0.74
26	24.0	29,655,000	415	0.42	0.75
27	24.0	26,275,833	362	0.43	0.69
28	24.0	23,631,250	373	0.48	0.67
29	24.0	24,209,167	393	0.49	0.70
30	24.0	22,634,167	369	0.49	0.73
31					
Total	720.0	830,515,833	12,356	13.41	21.80
Average	24.0	27,683,861	412	0.45	0.73

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
June, 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	5.03	0.00	0.00	0.00	5.90	2.25	2.88	3.82	4.35	0.00	0.00	4.10	0.00	0.00	0.00	0.00	28.33
2	5.04	0.00	0.00	0.00	5.87	2.48	2.87	3.80	4.37	0.00	0.00	4.07	0.00	0.00	0.00	0.00	28.50
3	4.03	0.00	0.00	0.33	2.20	2.57	2.91	3.89	4.41	0.00	0.00	4.07	0.00	3.70	0.00	0.00	28.12
4	4.84	0.00	0.00	0.00	0.00	2.66	2.95	4.00	4.42	0.00	0.00	0.22	0.00	4.29	6.65	0.00	30.04
5	5.03	0.00	0.00	2.11	0.97	2.07	2.90	3.91	4.38	0.00	0.00	0.00	0.00	0.00	7.05	0.00	28.42
6	3.22	0.00	0.00	0.00	5.72	2.02	1.83	3.70	2.80	0.00	0.00	1.21	0.00	0.00	6.38	0.00	26.87
7	0.99	2.49	0.00	2.89	2.19	0.91	0.00	4.01	2.76	0.00	0.00	3.05	0.00	0.00	7.09	0.00	26.38
8	3.16	4.01	0.00	4.17	0.00	1.34	0.00	3.94	4.55	0.00	0.00	0.00	0.00	0.00	7.14	0.00	28.30
9	1.32	4.07	0.00	3.16	0.00	2.57	0.49	3.92	4.57	0.00	0.00	0.00	0.00	0.00	7.09	0.00	27.20
10	1.34	4.03	0.00	4.74	0.00	2.57	2.95	1.85	4.42	0.00	0.00	0.00	0.00	0.00	7.05	0.00	28.95
11	1.31	4.09	0.00	4.85	0.00	0.48	3.00	0.00	4.43	0.00	0.00	0.00	0.00	5.49	7.02	0.00	30.68
12	1.28	4.13	0.00	4.88	0.00	0.44	3.00	0.00	4.47	0.00	0.00	2.53	0.00	6.69	0.01	0.00	27.43
13	1.28	4.14	0.00	2.41	0.00	2.25	2.63	1.40	4.50	0.00	0.00	4.07	0.00	4.33	0.00	0.00	27.01
14	1.28	4.21	0.00	0.00	0.00	1.76	1.04	3.20	4.61	0.00	1.22	3.20	1.24	2.98	0.00	0.96	25.69
15	1.91	4.13	0.00	1.40	0.83	2.33	1.23	3.18	4.59	0.00	0.00	4.05	0.00	3.69	0.00	0.00	27.35
16	5.02	0.87	0.00	2.29	4.68	0.69	1.08	3.84	4.50	0.00	0.00	3.39	0.96	0.00	0.00	0.00	27.34
17	5.04	0.00	0.00	1.46	4.47	0.71	2.24	3.88	4.45	0.00	0.00	0.00	6.04	0.00	0.00	0.00	28.28
18	5.04	0.00	0.00	3.45	0.00	0.00	2.27	2.12	4.45	0.00	0.00	0.00	6.03	0.00	0.00	0.00	23.37
19	5.04	3.21	0.00	2.70	2.18	0.30	0.00	1.95	4.54	0.00	0.00	0.00	6.03	0.00	0.00	0.00	25.95
20	4.03	3.48	0.00	0.00	6.03	0.42	0.25	3.86	4.51	0.00	0.00	0.00	1.90	3.43	0.00	0.00	27.91
21	5.02	3.91	0.00	0.00	6.00	0.17	0.00	3.82	4.48	0.00	0.00	1.78	2.99	0.00	0.00	0.00	28.17
22	1.79	2.18	0.00	1.98	1.67	2.54	2.61	2.82	3.10	0.00	1.52	3.56	0.00	0.00	4.22	0.00	27.98
23	1.28	4.06	0.00	4.71	0.00	2.54	3.13	3.84	0.00	0.00	1.61	4.04	0.00	0.00	2.23	0.00	27.45
24	4.65	3.94	0.00	4.72	0.00	0.27	3.04	3.91	0.00	0.00	0.00	4.07	0.00	0.00	0.00	0.00	24.60
25	5.02	3.92	0.00	4.31	0.00	0.31	3.04	3.90	0.00	0.00	0.00	4.09	0.00	0.00	0.00	0.00	24.60
26	2.55	3.97	0.00	4.66	0.00	2.56	2.97	1.84	2.86	0.00	0.00	4.08	0.00	0.00	3.63	0.00	29.13
27	1.29	2.56	0.00	1.55	0.00	0.92	2.01	2.63	4.51	0.00	0.00	4.06	0.00	0.00	7.02	0.00	26.54
28	1.29	0.00	0.00	1.15	0.00	0.00	3.09	4.16	4.53	0.00	0.00	4.04	0.00	0.00	7.06	0.00	25.33
29	1.30	0.00	0.00	3.63	0.00	0.00	3.10	4.11	4.51	0.00	0.00	1.39	0.00	0.00	7.14	0.00	25.17
30	1.93	0.00	0.00	4.29	0.00	0.00	3.16	4.08	1.96	0.00	0.00	0.00	0.00	0.00	7.16	0.00	22.58
Total	91.33	67.40	0.00	71.85	48.68	40.11	62.68	95.39	112.04	0.00	4.34	65.11	25.22	34.60	93.94	0.96	813.64

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

June, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	6/1	6/2	6/3	6/4	6/5	6/6	6/7	6/8	6/9	6/10	6/11	6/12	6/13	6/14	6/15
1	ON				1:00				4:00							20:00
	OFF			18:00			16:00		16:00							
2	ON							10:00								
	OFF															
3	ON															
	OFF															
4	ON			9:00		5:00		10:00								13:00
	OFF			11:00		20:00								12:00		
5	ON					20:00										9:00
	OFF			9:00				9:00								13:00
6	ON	2:00				10:00	22:00		11:00				20:00	12:00	16:00	13:00
	OFF					5:00	18:00	9:00				4:00		8:00	8:00	11:00
7	ON									20:00				20:00		10:00
	OFF													17:00	8:00	20:00
8	ON													16:00	13:00	14:00
	OFF										11:00				8:00	9:00
9	ON							10:00								
	OFF															
10	ON															
	OFF															
11	ON														8:00	
	OFF														13:00	
12	ON						17:00						9:00		13:00	
	OFF				1:00			18:00							8:00	
13	ON														8:00	
	OFF														13:00	
14	ON			11:00								4:00			13:00	
	OFF				19:00									16:00		14:00
15	ON				1:00		18:00									
	OFF						16:00						1:00			
16	ON														8:00	
	OFF														13:00	

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
June, 2011

Permit Number: **2-001-006NGM**   **Issued To:** **Gainesville Regional Utilities**

WELL	STATUS	6/16	6/17	6/18	6/19	6/20	6/21	6/22	6/23	6/24	6/25	6/26	6/27	6/28	6/29	6/30
1	ON					22:00				2:00						20:00
	OFF					16:00		3:00				8:00				
2	ON					20:00		17:00								
	OFF	5:00				17:00		6:00					15:00			
3	ON															
	OFF															
4	ON			5:00				7:00							8:00	
	OFF	10:00			15:00								9:00			
5	ON	5:00			16:00											
	OFF		18:00					7:00								
6	ON		7:00			20:00	23:00				21:00					
	OFF	5:00	13:00				1:00			2:00			8:00			
7	ON	15:00	13:00			20:00		3:00					20:00			
	OFF		7:00	19:00		22:00							12:00			
8	ON				15:00			15:00					8:00			
	OFF			13:00				9:00				12:00				
9	ON											8:00				
	OFF								7:00							10:00
10	ON															
	OFF															
11	ON							8:00	8:00							
	OFF							15:00	14:00							
12	ON						13:00	6:00								
	OFF	20:00						3:00							8:00	
13	ON	20:00					1:00									
	OFF					8:00	13:00									
14	ON					8:00										
	OFF					20:00										
15	ON							3:00				12:00				
	OFF								8:00							
16	ON							8:00								
	OFF							15:00								

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month : 61,562
Total Customer Served at End of Month: 178,628

Lead Operator's Signature : ____________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	12032	12201	24233	22433	26620	17650
2	24.0	0	12440	12356	24797	24159	28950	18480
3	24.0	0	12556	12428	24984	23614	31070	18110
4	24.0	0	12808	12853	25661	24028	29790	18300
5	24.0	0	13217	13324	26541	25073	29270	19210
6	24.0	0	14443	14590	29032	27978	35600	22890
7	24.0	0	12953	13107	26059	25755	33870	21020
8	24.0	0	11658	11809	23467	21392	25960	17090
9	24.0	0	10956	10864	21820	21746	24350	17280
10	24.0	0	11887	11822	23708	21444	24470	17000
11	24.0	0	11120	11089	22209	21704	24830	16830
12	24.0	0	11316	11253	22569	22190	27170	17580
13	24.0	0	13170	13172	26342	24565	29520	18380
14	24.0	0	12944	13100	26043	25038	30520	19880
15	24.0	0	12139	12213	24352	22813	28120	18680
16	24.0	0	11375	11379	22754	22790	27110	18850
17	24.0	0	12597	12299	24896	24227	28840	19590
18	24.0	0	12961	12988	25949	24775	30790	18770
19	24.0	0	13276	13250	26526	25574	29490	20080
20	24.0	0	14529	14785	29313	27874	36170	20050
21	24.0	0	14808	14772	29579	28378	36640	24280
22	24.0	0	13583	13565	27148	26407	31680	20500
23	24.0	0	13715	13745	27460	27644	33100	20770
24	24.0	0	14440	14455	28896	26662	33340	18470
25	24.0	0	12687	12797	25484	23620	29710	18280
26	24.0	0	11172	11285	22457	22124	27980	17540
27	24.0	0	12751	12622	25373	23651	30900	17070
28	24.0	0	12015	12086	24102	24609	27670	18360
29	24.0	0	13630	13637	27268	25257	29450	20020
30	24.0	0	13708	13750	27458	27565	34210	20930
31	24.0	0	13438	13378	26815	24215	27350	17570
Total	744.0	0	396322	396970	793292	759302		
Maximum	24.0	0	14808	14785	29579	28378		
Minimum	24.0	0	10956	10864	21820	21392		
Average	24.0	0	12785	12805	25590	24494		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	253	24	5	484.54
2	96	0	0		0
3	96	0	0		0
4	96	0	0		0
5	96	0	0		0
6	96	0	0		0
7	96	255	145	1	477.08
8	96	256	23	2	480.41
9	96	252	23	3	482.91
10	96	253	24	4	484.16
11	96	251	24	5	485
12	96	252	25	6	503.33
13	96	0	0		0
14	96	0	0		0
15	96	0	0		0
16	96	0	0		0
17	96	0	0		0
18	96	249	142	1	480.41
19	96	253	27	2	481.66
20	96	252	23	3	480.83
21	96	252	24	4	473.75
22	96	253	24	5	486.66
23	96	253	26	6	482.91
24	96	0	0		0
25	96	0	0		0
26	96	0	0		0
27	96	0	0		0
28	96	0	0		0
29	96	254	142	1	477.08
30	96	250	24	2	486.25
31	96	252	24	3	481.25
Maximum	96	256	145		503.33
Minimum	96	0	0		0

SumWashed:
7728.23

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	24028	4169	102	396.5	3000
2	24470	4166	108	407.3	3500
3	24405	4239	88	378.6	4000
4	25022	4337	86	388.2	4000
5	26114	4625	87	418.5	3000
6	30807	4870	96	472.5	4500
7	25616	4279	89	443.2	3500
8	23480	4011	80	372.8	4000
9	22128	3909	82	394.3	3000
10	23085	3974	78	417.5	3000
11	21105	3730	81	385.3	3500
12	22111	3835	84	407.3	4500
13	28042	4096	94	490.9	4000
14	26377	4623	98	322.3	4000
15	24586	4419	97	292.5	3500
16	22871	4182	91	400.1	4500
17	24647	4563	87	391.0	3000
18	24839	4581	85	413.5	4000
19	25175	4648	110	418.7	4000
20	29811	4529	129	455.5	5000
21	30628	4607	129	459.3	5000
22	27349	3942	112	414.6	4000
23	28634	3859	93	401.4	4000
24	29469	4091	74	412.3	5000
25	27771	3747	90	385.5	4000
26	25281	3279	87	351.9	4000
27	26482	3502	91	387.6	3500
28	25563	3585	96	378.5	4000
29	30123	4247	102	406.5	5000
30	29631	4581	93	404.2	5000
31	27749	4565	84	400.9	4000
Total	807399	129792	2905	12469.1	123000
Maximum	30807	4870	129	490.9	5000
Minimum	21105	3279	74	292.5	3000
Average	26045	4187	94	402.2	3968

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	118.9	20.6	0.54	0.49	14.8
2	118.5	20.2	0.54	0.49	16.9
3	117.2	20.4	0.45	0.46	19.2
4	117.0	20.3	0.43	0.45	18.7
5	118.0	20.9	0.42	0.47	13.6
6	127.2	20.1	0.41	0.49	18.6
7	117.9	19.7	0.42	0.50	16.1
8	120.1	20.5	0.45	0.47	20.4
9	121.6	21.5	0.45	0.54	16.5
10	116.8	20.1	0.44	0.52	15.2
11	113.9	20.1	0.45	0.52	18.9
12	117.3	20.4	0.45	0.53	23.9
13	127.8	18.8	0.46	0.55	18.2
14	121.5	21.3	0.47	0.37	18.4
15	121.0	21.8	0.51	0.37	17.2
16	120.5	22.1	0.48	0.53	23.7
17	118.7	22.0	0.43	0.50	14.4
18	114.8	21.2	0.41	0.49	18.5
19	113.8	21.0	0.52	0.49	18.1
20	122.0	18.5	0.55	0.46	20.5
21	124.2	18.7	0.55	0.46	20.3
22	120.7	17.3	0.51	0.46	17.7
23	125.2	16.8	0.41	0.45	17.5
24	122.4	16.9	0.33	0.43	20.7
25	130.7	17.6	0.46	0.46	18.8
26	133.6	17.0	0.47	0.47	21.4
27	125.3	16.5	0.46	0.46	16.5
28	127.4	17.8	0.47	0.46	19.9
29	132.5	18.7	0.48	0.45	22.0
30	129.5	20.0	0.40	0.43	21.8
31	124.3	20.5	0.42	0.46	17.9
Maximum	133.6	22.1	0.55	0.55	23.9
Minimum	113.8	16.5	0.33	0.37	13.6
Average	121.9	19.7	0.46	0.47	18.6

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.62	187	284	5	<2	0.34
2	7.70	185	258	5	<2	0.34
3	7.61	185	257	5	<2	0.37
4	7.64	184	264	5	<2	0.35
5	7.71	185	280	5	<2	0.36
6	7.67	187	263	5	<2	0.34
7	7.65	185	296	5	<2	0.32
8	7.70	181	283	5	<2	0.31
9	7.70	183	287	5	<2	0.30
10	7.69	187	278	5	<2	0.31
11	7.64	172	260	5	<2	0.31
12	7.73	178	256	5	<2	0.30
13	7.66	182	274	5	<2	0.42
14	7.66	184	289	5	<2	0.31
15	7.68	180	290	5	<2	0.29
16	7.60	182	291	5	<2	0.31
17	7.58	181	301	5	<2	0.32
18	7.59	182	295	5	<2	0.32
19	7.64	182	285	5	<2	0.31
20	7.59	191	284	5	<2	0.33
21	7.59	193	278	5	<2	0.32
22	7.61	193	269	5	<2	0.33
23	7.63	197	257	5	<2	0.34
24	7.58	191	262	5	<2	0.34
25	7.60	190	279	5	<2	0.35
26	7.59	193	291	5	<2	0.34
27	7.63	189	248	5	<2	0.36
28	7.61	192	260	5	<2	0.35
29	7.58	192	277	5	<2	0.35
30	7.59	188	277	5	<2	0.32
31	7.59	183	277	5	<2	0.33
Maximum	7.73	197	301	5	<2	0.42
Minimum	7.58	172	248	5	<2	0.29
Average	7.63	186	276	5	<2	0.33

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.16	29	45	167
2	10.12	29	46	146
3	10.09	28	46	143
4	10.13	28	46	149
5	10.07	28	45	159
6	10.11	28	45	150
7	10.17	30	46	171
8	10.15	28	43	169
9	10.21	30	44	172
10	10.14	27	45	157
11	10.17	28	46	146
12	10.12	27	43	151
13	10.08	27	45	160
14	10.11	26	42	180
15	10.13	27	42	175
16	10.12	27	42	178
17	10.11	26	41	184
18	10.10	24	40	174
19	10.11	27	43	170
20	10.07	29	47	163
21	10.07	30	49	159
22	10.09	30	49	148
23	10.09	32	54	136
24	10.08	29	50	140
25	10.13	29	49	146
26	10.17	30	46	165
27	10.16	32	54	135
28	10.13	31	52	142
29	10.14	29	48	151
30	10.10	27	43	160
31	10.07	26	43	161
Maximum	10.21	32	54	184
Minimum	10.07	24	40	135
Average	10.12	28	46	158

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.64	5	39	170	1.24	<1
2	8.66	5	38	157	1.23	<1
3	8.66	3	43	146	1.18	<1
4	8.67	4	40	147	1.18	<1
5	8.67	3	37	159	1.19	<1
6	8.67	3	38	155	1.17	<1
7	8.66	5	40	168	1.16	<1
8	8.67	5	38	164	1.17	<1
9	8.69	5	38	169	1.17	<1
10	8.66	3	38	169	1.18	<1
11	8.64	2	39	157	1.17	<1
12	8.68	4	38	152	1.17	<1
13	8.69	5	40	149	1.14	<1
14	8.69	5	39	172	1.12	<1
15	8.65	5	38	174	1.16	<1
16	8.64	5	36	175	1.15	<1
17	8.64	4	37	180	1.14	<1
18	8.68	5	37	183	1.09	<1
19	8.64	4	35	172	1.16	<1
20	8.62	4	40	169	1.14	<1
21	8.63	6	44	162	1.13	<1
22	8.63	4	41	158	1.14	<1
23	8.68	6	46	142	1.12	<1
24	8.68	4	47	140	1.05	<1
25	8.66	6	44	144	1.09	<1
26	8.67	4	44	158	1.09	<1
27	8.68	5	44	148	1.08	<1
28	8.71	6	51	142	1.06	<1
29	8.65	6	45	143	1.11	<1
30	8.63	6	43	150	1.11	<1
31	8.60	2	40	163	1.13	<1
Maximum	8.71	6	51	183	1.24	<1
Minimum	8.60	2	35	140	1.05	<1
Average	8.66	4	41	159	1.14	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.75	0.14	0.10
2	0.78	0.12	0.00
3	0.77	0.12	0.00
4	0.72	0.12	0.00
5	0.73	0.12	0.00
6	0.70	0.12	0.00
7	0.69	0.12	0.30
8	0.69	0.11	0.70
9	0.65	0.14	1.00
10	0.71	0.13	1.00
11	0.71	0.11	0.30
12	0.71	0.14	0.00
13	0.72	0.15	0.00
14	0.69	0.15	0.00
15	0.45	0.15	0.10
16	0.65	0.15	0.00
17	0.71	0.15	0.00
18	0.71	0.17	0.00
19	0.79	0.17	0.00
20	0.75	0.19	0.00
21	0.71	0.15	0.00
22	0.70	0.13	0.10
23	0.73	0.15	0.00
24	0.71	0.17	0.20
25	0.69	0.17	0.70
26	0.68	0.17	0.70
27	0.70	0.17	0.40
28	0.70	0.17	0.00
29	0.75	0.16	0.00
30	0.74	0.10	0.00
31	0.70	0.15	0.00
Maximum	0.79	0.19	1.00
Minimum	0.45	0.10	0.00
Average	0.71	0.14	0.18
Total			5.60

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens	Newberry	Sonnys	Turkey Ck	Archer Rd	ESHS
			LS30	LS19	LS93	LS87	LS156	LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	22.43	62.55	95.76	87.66	92.80	53.76	83.26	79.78
2	24.16	63.47	95.20	86.89	91.59	54.14	81.53	79.91
3	23.62	64.03	96.62	87.90	93.15	54.58	82.78	80.77
4	24.03	63.99	96.42	97.97	93.02	54.66	82.82	80.74
5	25.08	63.61	94.74	86.24	91.16	54.22	81.05	79.87
6	27.98	63.82	92.88	84.19	88.65	53.71	77.66	78.88
7	25.75	63.63	94.56	85.68	90.67	54.01	79.89	79.78
8	21.39	63.39	95.12	89.02	94.08	54.58	84.52	80.74
9	21.75	62.98	96.75	88.43	93.61	54.17	83.79	80.55
10	21.45	63.32	97.09	88.99	94.03	54.50	84.22	80.99
11	21.70	63.02	96.97	88.96	93.97	54.46	84.53	80.57
12	22.19	62.24	95.69	87.53	92.34	53.53	82.76	79.64
13	24.57	63.18	95.02	86.74	91.69	53.89	81.56	79.60
14	25.03	63.28	94.80	86.57	91.35	54.13	81.33	79.76
15	22.81	62.43	95.57	87.53	92.49	53.84	82.93	79.79
16	22.79	61.83	94.93	86.56	91.44	52.98	81.35	79.27
17	24.22	62.87	95.13	86.61	91.51	53.56	80.99	79.75
18	24.78	64.18	95.73	87.53	92.14	55.04	82.19	80.68
19	25.58	63.63	94.70	86.37	91.22	54.15	80.81	79.82
20	27.87	64.62	93.39	84.53	89.11	54.25	78.10	79.59
21	28.38	64.81	93.19	83.67	88.74	54.44	77.37	79.74
22	26.41	63.52	93.81	85.09	89.99	53.79	79.58	79.34
23	27.64	63.54	92.77	83.31	88.43	53.13	76.64	79.01
24	26.67	63.91	94.07	84.85	89.97	53.98	78.89	79.89
25	23.63	63.26	95.28	86.64	91.75	54.14	81.62	79.82
26	22.13	63.03	96.52	88.23	93.40	54.46	83.56	80.46
27	23.65	63.54	95.95	87.64	92.68	54.41	82.85	80.54
28	24.61	63.04	94.70	86.12	91.17	53.58	81.16	79.48
29	25.26	63.44	94.66	86.31	91.15	54.05	81.31	79.81
30	27.56	64.11	93.83	84.60	89.69	53.88	78.72	79.72
31	24.21	63.34	95.19	87.12	91.97	54.06	81.87	80.16
Maximum	28.38	64.81	97.09	97.97	94.08	55.04	84.53	80.99
Minimum	21.39	61.83	92.77	83.31	88.43	52.98	76.64	78.88
Average	24.49	63.41	95.07	86.95	91.58	54.07	81.34	79.95
Total	759.31							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	22.43	62.55	90.92	69.57	91.23
2	24.16	63.47	89.01	68.85	89.67
3	23.62	64.03	90.20	69.63	90.73
4	24.03	63.99	90.35	69.66	90.76
5	25.08	63.61	88.48	68.34	88.97
6	27.98	63.82	84.89	66.08	85.52
7	25.75	63.63	87.24	67.40	87.78
8	21.39	63.39	92.34	70.65	92.55
9	21.75	62.98	91.47	70.21	91.79
10	21.45	63.32	91.89	70.63	92.14
11	21.70	63.02	92.18	70.68	92.43
12	22.19	62.24	90.33	69.30	90.23
13	24.57	63.18	89.03	68.71	89.47
14	25.03	63.28	88.86	68.50	89.30
15	22.81	62.43	90.65	69.46	90.93
16	22.79	61.83	88.91	68.43	89.33
17	24.22	62.87	88.37	68.24	88.86
18	24.78	64.18	89.87	69.50	90.08
19	25.58	63.63	88.33	68.29	88.69
20	27.87	64.62	85.23	66.27	85.87
21	28.38	64.81	84.33	65.67	84.94
22	26.41	63.52	86.95	66.68	79.19
23	27.64	63.54	83.63	65.50	84.42
24	26.67	63.91	86.01	66.44	86.29
25	23.63	63.26	89.16	68.58	89.53
26	22.13	63.03	91.31	70.09	91.38
27	23.65	63.54	90.33	69.58	90.73
28	24.61	63.04	88.62	68.25	89.04
29	25.26	63.44	88.85	67.96	89.01
30	27.56	64.11	85.93	66.28	86.44
31	24.22	63.34	89.50	68.83	89.94
Maximum	28.38	64.81	92.34	70.68	92.55
Minimum	21.39	61.83	83.63	65.50	79.19
Average	24.49	63.41	88.81	68.46	88.94
Total	759.32				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	22.43	62.55	69.83	0.00	22.44
2	24.16	63.47	69.95	0.00	24.46
3	23.61	64.03	70.95	0.00	23.85
4	24.03	63.99	70.70	0.00	24.29
5	25.07	63.61	69.74	0.00	25.56
6	27.98	63.82	68.58	0.00	28.93
7	25.75	63.63	69.56	0.00	25.95
8	21.39	63.39	71.14	0.00	21.39
9	21.75	62.98	70.72	0.00	21.75
10	21.44	63.32	71.16	0.00	21.45
11	21.70	63.02	70.66	0.00	21.75
12	22.19	62.24	69.61	0.00	22.94
13	24.56	63.18	69.55	0.00	24.97
14	25.04	63.28	69.35	0.00	25.20
15	22.81	62.43	69.56	0.00	22.81
16	22.79	61.83	69.24	0.00	23.35
17	24.23	62.87	69.61	0.00	24.98
18	24.77	64.18	70.43	0.00	25.50
19	25.57	63.63	69.58	0.00	25.98
20	27.87	64.62	69.44	0.00	28.38
21	28.38	64.81	69.39	0.00	28.89
22	26.41	63.52	69.06	0.00	26.43
23	27.64	63.54	68.73	0.00	28.22
24	26.66	63.91	69.45	0.00	27.02
25	23.62	63.26	69.97	0.00	23.81
26	22.12	63.03	70.41	0.00	22.54
27	23.65	63.54	70.34	0.00	23.72
28	24.61	63.04	69.48	0.00	25.01
29	25.26	63.44	69.50	0.00	25.26
30	27.56	64.11	69.38	0.00	27.85
31	24.22	63.34	69.90	0.00	24.22
Maximum	28.38	64.81	71.16	0.00	28.93
Minimum	21.39	61.83	68.58	0.00	21.39
Average	24.49	63.41	69.84	0.00	24.80
Total	759.30				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.01	27.10	42.03	0.00	0.00	0.58
2	0.30	25.45	40.73	0.00	2.08	0.44
3	0.23	26.68	41.93	1.17	0.00	0.91
4	0.26	26.21	41.52	0.00	1.78	0.91
5	0.48	25.43	40.54	0.00	0.00	0.91
6	0.94	22.30	37.28	0.00	7.36	0.91
7	0.19	24.57	39.04	0.00	1.44	0.91
8	0.00	27.60	43.62	0.00	0.00	1.13
9	0.00	27.60	42.82	0.00	0.00	0.91
10	0.01	27.60	43.28	0.00	0.00	0.91
11	0.07	27.49	43.18	0.00	0.15	0.69
12	0.74	24.72	41.43	0.00	0.17	0.69
13	0.40	25.88	40.38	0.00	0.00	0.69
14	0.16	26.67	39.84	0.00	0.00	0.91
15	0.01	27.40	41.53	0.00	0.00	0.91
16	0.56	22.74	40.88	0.00	0.00	0.69
17	0.73	22.96	39.98	0.00	3.02	0.69
18	0.69	24.50	41.05	2.80	2.93	0.91
19	0.39	25.95	39.95	0.00	0.00	0.91
20	0.48	25.30	38.21	0.00	0.00	0.91
21	0.49	25.33	37.41	0.00	0.00	0.81
22	0.06	27.15	38.33	0.00	0.50	0.81
23	0.56	24.44	37.65	0.03	4.40	0.81
24	0.36	25.40	37.17	0.00	2.69	0.81
25	0.19	26.84	40.45	0.03	1.40	0.81
26	0.40	25.79	42.17	0.00	0.00	0.58
27	0.07	27.16	41.08	0.00	0.00	0.58
28	0.40	22.86	40.16	0.02	0.00	0.58
29	0.00	27.16	39.72	0.00	0.00	0.58
30	0.29	26.88	37.86	2.26	0.00	0.58
31	0.00	27.60	40.87	0.00	0.00	0.58
Maximum	0.94	27.60	43.62	2.80	7.36	1.13
Minimum	0.00	22.30	37.17	0.00	0.00	0.44
Average	0.31	25.83	40.39	0.20	0.90	0.78
Total				6.31	27.92	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

I. General Information for the Month/Year of: **July, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** — PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **61,562** — Total Population Served at End of Month: **178,628**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** — Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** — City: **Gainesville** — State: **Florida** — Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** — Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** — Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** — City: **Gainesville** — State: **Florida** — Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** — Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: July, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines) ☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	24,232,500	26,620,000									0.58	
2	X	24.0	24,796,667	28,950,000									0.44	
3	X	24.0	24,984,167	31,070,000									0.91	
4	X	24.0	25,660,833	29,790,000									0.91	
5	X	24.0	26,540,833	29,270,000									0.91	
6	X	24.0	29,032,083	35,600,000									0.91	
7	X	24.0	26,059,167	33,870,000									0.91	
8	X	24.0	23,467,083	25,960,000									1.13	
9	X	24.0	21,820,000	24,350,000									0.91	
10	X	24.0	23,708,333	24,470,000									0.91	
11	X	24.0	22,209,167	24,830,000									0.69	
12	X	24.0	22,568,750	27,170,000									0.69	
13	X	24.0	26,341,667	29,520,000									0.69	
14	X	24.0	26,043,333	30,520,000									0.91	
15	X	24.0	24,351,667	28,120,000									0.91	
16	X	24.0	22,754,167	27,110,000									0.69	
17	X	24.0	24,895,833	28,840,000									0.69	
18	X	24.0	25,948,750	30,790,000									0.91	
19	X	24.0	26,526,250	29,490,000									0.91	
20	X	24.0	29,313,333	36,170,000									0.91	
21	X	24.0	29,579,167	36,640,000									0.81	
22	X	24.0	27,147,500	31,680,000									0.81	
23	X	24.0	27,459,583	33,100,000									0.81	
24	X	24.0	28,895,833	33,340,000									0.81	
25	X	24.0	25,483,750	29,710,000									0.81	
26	X	24.0	22,457,083	27,980,000									0.58	
27	X	24.0	25,372,500	30,900,000									0.58	
28	X	24.0	24,101,667	27,670,000									0.58	
29	X	24.0	27,267,500	29,450,000									0.58	
30	X	24.0	27,457,500	34,210,000									0.58	
31	X	24.0	26,815,000	27,350,000									0.58	
Total			793,291,667											
Average			25,590,054											
Maximum			29,579,167											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**July, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	24,232,500	1.16	1.22	0.58	
2	X	24	24,796,667	1.19	1.22	0.44	
3	X	24	24,984,167	1.14	1.39	0.91	
4	X	24	25,660,833	1.16	1.31	0.91	
5	X	24	26,540,833	1.16	1.41	0.91	
6	X	24	29,032,083	1.14	1.27	0.91	
7	X	24	26,059,167	1.13	0.70	0.91	
8	X	24	23,467,083	1.13	1.33	1.13	
9	X	24	21,820,000	1.15	1.27	0.91	
10	X	24	23,708,333	1.15	1.37	0.91	
11	X	24	22,209,167	1.14	1.22	0.69	
12	X	24	22,568,750	1.14	1.10	0.69	
13	X	24	26,341,667	1.11	1.21	0.69	
14	X	24	26,043,333	1.08	1.28	0.91	
15	X	24	24,351,667	1.14	1.35	0.91	
16	X	24	22,754,167	1.13	1.32	0.69	
17	X	24	24,895,833	1.08	1.38	0.69	
18	X	24	25,948,750	1.07	1.34	0.91	
19	X	24	26,526,250	1.11	1.18	0.91	
20	X	24	29,313,333	1.06	0.85	0.91	
21	X	24	29,579,167	1.10	1.04	0.81	
22	X	24	27,147,500	1.04	1.01	0.81	
23	X	24	27,459,583	1.07	1.26	0.81	
24	X	24	28,895,833	1.04	1.22	0.81	
25	X	24	25,483,750	1.03	1.24	0.81	
26	X	24	22,457,083	1.05	1.20	0.58	
27	X	24	25,372,500	1.05	1.27	0.58	
28	X	24	24,101,667	1.03	1.15	0.58	
29	X	24	27,267,500	1.03	1.20	0.58	
30	X	24	27,457,500	1.07	1.23	0.58	
31	X	24	26,815,000	1.07	1.00	0.58	
Total			793,291,667				
Average			25,590,054				
Maximum			29,579,167				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **1.03** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **0.70** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **NO**
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: July, 2011

A. Public Water System (PWS) Information

PWS Name: Gainesville Regional Utilities		PWS Identification Number: 2010946	
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive			
PWS Owner: Gainesville Regional Utilities			
Contact Person: Richard J. Davis	Contact Person's Title: Water Plant Manager		
Contact Person's Mailing Address: PO Box 147117 MS 43	City: Gainesville	State: Florida	Zip Code: 32614
Contact Person's Telephone Number: (352) 393-6512	Contact Person's Fax Number: (352) 334-2891		
Contact Person's E-Mail Address: DavisRJ@gru.com			

B. Water Treatment Plant Information

Plant Name: Dr. Walter E. Murphree Water Treatment Plant		Plant Telephone Number: (352) 393-6512	
Plant Address: 1600 NE 53 Ave.	City: Gainesville	State: Florida	Zip Code: 32614

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

PWS Identification Number: 2010946 — Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Check Sample Results for the Month/Year: July, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.682
Distribution Sample 2	Bouleware		0.690

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Flruoide Data fro the Month/Year: **July, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	24,232,500	396	0.49	0.75
2	24.0	24,796,667	407	0.49	0.78
3	24.0	24,984,167	379	0.46	0.77
4	24.0	25,660,833	388	0.45	0.72
5	24.0	26,540,833	418	0.47	0.73
6	24.0	29,032,083	472	0.49	0.70
7	24.0	26,059,167	443	0.50	0.69
8	24.0	23,467,083	373	0.47	0.69
9	24.0	21,820,000	394	0.54	0.65
10	24.0	23,708,333	417	0.52	0.71
11	24.0	22,209,167	385	0.52	0.71
12	24.0	22,568,750	407	0.53	0.71
13	24.0	26,341,667	491	0.55	0.72
14	24.0	26,043,333	322	0.37	0.69
15	24.0	24,351,667	293	0.37	0.45
16	24.0	22,754,167	400	0.53	0.65
17	24.0	24,895,833	391	0.50	0.71
18	24.0	25,948,750	414	0.49	0.71
19	24.0	26,526,250	419	0.49	0.79
20	24.0	29,313,333	456	0.46	0.75
21	24.0	29,579,167	459	0.46	0.71
22	24.0	27,147,500	415	0.46	0.70
23	24.0	27,459,583	401	0.45	0.73
24	24.0	28,895,833	412	0.43	0.71
25	24.0	25,483,750	386	0.46	0.69
26	24.0	22,457,083	352	0.47	0.68
27	24.0	25,372,500	388	0.46	0.70
28	24.0	24,101,667	379	0.46	0.70
29	24.0	27,267,500	407	0.45	0.75
30	24.0	27,457,500	404	0.43	0.74
31	24.0	26,815,000	401	0.46	0.70
Total	744.0	793,291,667	12,469	14.64	21.89
Average	24.0	25,590,054	402	0.47	0.71

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
July, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	5.04	0.00	0.00	4.43	0.00	0.00	3.10	2.99	0.00	0.00	0.00	0.00	0.00	0.00	7.15	0.00	22.71
2	5.04	0.00	0.00	4.87	0.00	0.00	2.98	0.00	3.97	0.00	0.00	0.00	0.00	0.00	7.14	0.00	24.00
3	5.04	0.00	0.00	4.87	0.00	0.00	2.45	0.00	4.42	0.00	0.00	0.00	0.00	0.00	7.13	0.00	23.91
4	4.42	0.00	0.00	4.86	0.00	1.32	0.00	0.00	4.57	0.00	0.00	2.82	0.00	0.00	7.06	0.00	25.04
5	1.30	2.80	0.00	4.26	0.00	2.21	0.00	0.00	4.62	0.00	0.00	4.02	0.00	0.00	7.03	0.00	26.23
6	3.84	4.08	0.00	3.21	0.00	0.00	0.00	2.04	4.54	0.00	0.00	4.02	0.00	0.00	7.00	0.00	28.73
7	5.04	1.33	0.00	2.11	1.08	0.00	0.00	3.97	2.54	0.00	1.43	1.41	0.00	0.00	5.39	0.85	25.15
8	5.04	0.00	0.00	3.82	0.00	0.00	0.00	4.00	1.75	0.00	0.00	0.00	0.00	0.00	7.01	0.00	21.62
9	5.04	0.00	0.00	0.80	0.00	0.00	0.00	4.05	0.00	0.00	0.00	0.00	0.00	0.00	7.04	0.00	16.94
10	5.04	0.00	0.00	4.83	0.00	0.00	0.00	1.94	4.19	0.00	0.00	0.00	0.00	0.00	7.06	0.00	23.06
11	5.04	0.00	0.00	4.27	0.00	0.00	0.00	0.00	4.60	0.00	0.00	0.00	0.00	0.00	7.06	0.00	20.97
12	5.04	0.11	0.00	4.87	0.00	0.36	0.00	0.00	4.59	0.00	0.00	0.00	0.00	0.00	7.06	0.00	22.03
13	5.04	1.87	0.00	1.58	2.49	0.48	2.08	0.05	1.51	0.00	0.00	0.00	1.79	1.73	6.99	0.00	25.61
14	5.04	3.07	0.00	0.00	6.21	0.00	3.06	0.00	0.00	0.00	0.00	0.91	0.00	0.00	6.99	0.00	25.28
15	5.04	2.26	0.00	0.00	6.23	0.00	3.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.99	0.00	23.60
16	5.04	0.00	0.00	0.00	6.30	0.50	3.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.99	0.00	21.99
17	5.04	0.00	0.00	0.00	6.11	2.55	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.99	0.00	23.81
18	5.04	0.00	0.00	0.00	6.20	0.91	3.01	0.00	2.85	0.00	0.00	0.00	0.00	0.00	6.97	0.00	24.97
19	5.04	0.00	0.00	0.00	6.21	0.61	2.25	0.00	4.45	0.00	0.00	0.00	0.00	0.23	6.93	0.00	25.71
20	5.04	0.00	0.00	0.00	6.26	0.00	0.00	0.65	4.59	0.00	0.00	0.00	0.00	6.68	5.75	0.00	28.97
21	5.04	0.00	0.00	0.00	6.26	0.00	0.00	0.07	4.60	0.00	0.00	0.00	0.00	6.62	6.80	0.00	29.40
22	5.04	0.00	0.00	0.70	3.02	0.00	0.00	1.44	4.60	0.00	0.00	0.00	0.00	6.65	3.30	0.00	24.77
23	5.01	3.60	0.00	3.17	0.00	2.16	0.00	0.00	4.56	0.00	0.00	0.00	0.00	6.67	0.00	0.00	25.16
24	3.52	3.11	0.00	3.50	0.00	2.57	1.18	2.58	4.54	0.00	0.00	0.00	0.00	6.69	0.00	0.00	27.70
25	1.27	3.60	0.00	0.00	0.00	2.62	3.02	4.05	4.56	0.00	0.00	0.00	0.00	6.66	0.00	0.00	25.78
26	2.45	0.69	0.00	0.00	2.63	1.07	1.69	2.46	2.52	0.00	0.00	0.00	2.38	3.55	3.03	0.00	22.47
27	4.42	0.00	0.00	4.18	0.00	1.51	2.98	0.00	4.45	0.00	0.00	0.00	6.03	0.00	0.00	0.00	23.57
28	1.29	0.00	0.00	4.65	0.00	2.68	3.08	1.00	4.53	0.00	0.00	0.00	6.03	0.00	0.00	0.00	23.27
29	1.28	0.00	0.00	3.39	0.00	2.59	3.03	3.99	4.51	0.00	0.00	0.00	6.02	0.00	0.00	0.00	24.81
30	1.29	1.38	0.00	3.37	0.00	2.52	3.06	3.95	3.46	0.00	0.00	0.00	2.00	0.00	4.65	0.00	25.68
31	1.28	4.10	0.00	4.35	0.00	0.00	3.05	3.98	2.84	0.00	0.00	0.00	0.00	0.00	6.99	0.00	26.59
Total	127.12	32.01	0.00	76.08	59.00	26.65	49.34	43.22	98.35	0.00	1.43	13.24	24.28	45.47	162.50	0.85	759.54

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

CONDITION COMPLIANCE

Division of Enforcement

P.O. Box 1429

Palatka, Florida 32077

FLOW RATE RECORD

July, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15
1	ON						7:00									
	OFF				20:00											
2	ON					8:00							23:00	20:00	14:00	
	OFF							8:00						8:00	8:00	14:00
3	ON															
	OFF															
4	ON							13:00								
	OFF						16:00							8:00		
5	ON							9:00						15:00		
	OFF							13:00								
6	ON				12:00								20:00			
	OFF					20:00								8:00		
7	ON													8:00		
	OFF			20:00												
8	ON						12:00									
	OFF	18:00									12:00					
9	ON		2:00						1:00		2:00					
	OFF							19:00	10:00					8:00		
10	ON															
	OFF															
11	ON							8:00								
	OFF							14:00								
12	ON				7:00										8:00	
	OFF							8:00							14:00	
13	ON													7:00		
	OFF													14:00		
14	ON													8:00		
	OFF													15:00		
15	ON							13:00								
	OFF							8:00								
16	ON							8:00								
	OFF							13:00								

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement

P.O. Box 1429

Palatka, Florida 32077

FLOW RATE RECORD

July, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29
1	ON											16:00			
	OFF									14:00			20:00		
2	ON								2:00		3:00				
	OFF									19:00		4:00			
3	ON														
	OFF														
4	ON							12:00					3:00		
	OFF									20:00					
5	ON											6:00			
	OFF							12:00				15:00			
6	ON	19:00			9:00				4:00			20:00	20:00		
	OFF			9:00	13:00							6:00	10:00		
7	ON				13:00							15:00			
	OFF				8:00							4:00			
8	ON					20:00				8:00				18:00	
	OFF							20:00				15:00			
9	ON			8:00								15:00			
	OFF											4:00			
10	ON														
	OFF														
11	ON														
	OFF														
12	ON														
	OFF														
13	ON											15:00			
	OFF														
14	ON				23:00										
	OFF											15:00			
15	ON						1:00					4:00			
	OFF					20:00		11:00				15:00			
16	ON														
	OFF														

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
July, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	7/30	7/31
1	ON		
	OFF		
2	ON	16:00	
	OFF		
3	ON		
	OFF		
4	ON		
	OFF		
5	ON		
	OFF		
6	ON		
	OFF		
7	ON		
	OFF		
8	ON		
	OFF		
9	ON	21:00	
	OFF	16:00	15:00
10	ON		
	OFF		
11	ON		
	OFF		
12	ON		
	OFF		
13	ON		
	OFF	8:00	
14	ON		
	OFF		
15	ON	8:00	
	OFF		
16	ON		
	OFF		

GAINESVILLE REGIONAL UTILITIES	August, 2011	Page 1

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	64,623	Estimated
Total Customer Served at End of Month:	187,510	Estimated

Lead Operator's Signature : ____________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	11717	11608	23325	21858	24800	14650
2	24.0	0	12018	11841	23859	22071	25940	18240
3	24.0	0	11893	12177	24070	23078	27110	17430
4	24.0	0	12879	13144	26023	24871	29510	18530
5	24.0	0	12850	12803	25653	23689	28230	18580
6	24.0	0	12904	12703	25607	23790	29230	19060
7	24.0	0	12871	12740	25611	22685	24990	15760
8	24.0	0	11712	11696	23408	20813	27070	13110
9	24.0	0	10898	10967	21864	21005	25490	16750
10	24.0	0	12259	12343	24603	22002	26210	15480
11	24.0	0	12232	12305	24537	23524	27460	18170
12	24.0	0	12421	12472	24893	23279	25380	19040
13	24.0	0	12167	12179	24346	24551	27540	18620
14	24.0	0	13314	13225	26540	24198	31280	16680
15	24.0	0	12908	13081	25989	25086	31270	16250
16	24.0	0	13936	13920	27856	25899	29910	19420
17	24.0	0	14182	14231	28413	27489	36950	19870
18	24.0	0	13994	13791	27785	25775	34010	19600
19	24.0	0	12529	12397	24926	24933	27770	19570
20	24.0	0	13831	13931	27762	26547	31070	22130
21	24.0	0	13698	13665	27363	26286	30320	21070
22	24.0	0	13050	12986	26037	25194	30170	19110
23	24.0	0	13169	13465	26634	25052	31320	18190
24	24.0	0	14165	14325	28489	26903	33230	18970
25	24.0	0	13673	13896	27569	26830	32640	20750
26	24.0	0	12623	12757	25380	25938	29600	20660
27	24.0	0	16261	16242	32503	29813	32230	25240
28	24.0	0	14685	14719	29404	28885	34350	21350
29	24.0	0	15376	15411	30787	28326	33370	23240
30	24.0	0	13998	13920	27918	26654	33700	22240
31	24.0	0	14695	14800	29495	27330	35750	20160
Total	744.0	0	408907	409740	818646	774352		
Maximum	24.0	0	16261	16242	32503	29813		
Minimum	24.0	0	10898	10967	21864	20813		
Average	24.0	0	13191	13217	26408	24979		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	252	24	4	481.66
2	96	252	24	5	446.66
3	96	251	24	6	484.16
4	96	0	0		0
5	96	0	0		0
6	96	0	0		0
7	96	0	0		0
8	96	0	0		0
9	96	253	144	1	482.91
10	96	255	26	2	453.33
11	96	253	22	3	480
12	96	253	24	4	464.16
13	96	252	24	5	460
14	96	252	24	6	485
15	96	0	0		0
16	96	0	0		0
17	96	0	0		0
18	96	0	0		0
19	96	0	0		0
20	96	252	144	1	485
21	96	250	24	2	486
22	96	251	24	3	481.25
23	96	253	24	4	482.5
24	96	253	24	5	484.58
25	96	253	24	6	483.75
26	96	0	0		0
27	96	0	0		0
28	96	0	0		0
29	96	0	0		0
30	96	0	0		0
31	96	252	144	1	482.08
Maximum	96	255	144		486
Minimum	96	0	0		0

SumWashed:
7623.04

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	25481	4156	96	348.7	4000
2	25178	4152	100	398.7	4000
3	27466	3872	102	399.9	4000
4	27150	4222	105	418.1	4000
5	28747	4204	115	410.4	4000
6	27431	4147	91	410.4	4000
7	28580	4127	91	402.7	5000
8	28582	3647	99	374.2	3500
9	25514	2811	98	366.6	4000
10	24922	3513	96	395.1	5000
11	26898	3386	94	391.2	4500
12	30861	3623	94	339.5	5000
13	29121	3723	97	385.4	4500
14	32350	4202	109	383.2	5000
15	31014	4076	88	380.5	4000
16	32811	4335	106	418.9	5000
17	32021	4206	110	410.6	5000
18	30843	3993	91	388.2	5000
19	27708	4172	104	394.1	5000
20	29580	4031	103	425.4	3000
21	27038	3935	92	390.9	5000
22	24905	4206	105	400.5	4500
23	28363	4237	120	408.0	4500
24	32175	4366	108	467.6	5500
25	32267	4327	113	405.6	4000
26	25945	4298	103	377.9	4000
27	33681	4832	107	523.3	6000
28	29033	4702	106	466.1	5000
29	30599	4691	117	447.4	5000
30	27694	4010	118	405.5	4000
31	28830	4661	103	435.2	5000
Total	892788	126863	3182	12569.7	140000
Maximum	33681	4832	120	523.3	6000
Minimum	24905	2811	88	339.5	3000
Average	28800	4092	103	405.5	4516

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	131.1	21.4	0.53	0.46	20.6
2	126.5	21.1	0.54	0.48	20.1
3	134.3	19.0	0.53	0.50	19.9
4	125.1	19.5	0.51	0.48	18.4
5	134.4	19.6	0.58	0.48	18.7
6	128.4	19.4	0.46	0.48	18.7
7	133.8	19.3	0.48	0.49	23.4
8	146.7	18.6	0.57	0.49	17.9
9	140.4	15.4	0.56	0.50	21.9
10	121.6	17.1	0.52	0.48	24.4
11	131.5	16.5	0.48	0.48	22.0
12	148.7	17.5	0.48	0.42	24.1
13	147.2	18.3	0.47	0.48	22.2
14	146.0	19.0	0.54	0.46	22.6
15	143.1	18.8	0.42	0.44	18.5
16	140.9	18.8	0.49	0.45	21.5
17	135.3	17.8	0.48	0.45	21.1
18	133.2	17.3	0.42	0.43	21.6
19	133.3	20.1	0.50	0.43	24.1
20	127.8	17.4	0.47	0.45	13.0
21	118.4	17.3	0.42	0.45	21.9
22	114.6	19.4	0.50	0.45	20.7
23	128.1	19.1	0.57	0.47	20.3
24	134.6	18.4	0.48	0.48	23.1
25	139.6	18.9	0.51	0.43	17.4
26	122.7	20.3	0.48	0.43	18.9
27	124.6	17.9	0.43	0.48	22.1
28	118.4	19.2	0.44	0.48	20.4
29	119.2	18.3	0.50	0.46	19.5
30	119.2	17.2	0.53	0.45	17.2
31	117.4	19.0	0.45	0.45	20.3
Maximum	148.7	21.4	0.58	0.50	24.4
Minimum	114.6	15.4	0.42	0.42	13.0
Average	131.2	18.6	0.50	0.46	20.5

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.59	177	286	5	<2	0.33
2	7.60	187	297	5	<2	0.34
3	7.58	191	297	5	<2	0.34
4	7.60	189	283	5	<2	0.34
5	7.59	194	277	5	<2	0.34
6	7.62	210	280	6	<2	0.33
7	7.64	192	277	5	<2	0.35
8	7.60	192	281	5	<2	0.34
9	7.62	188	269	5	<2	0.36
10	7.60	194	263	5	<2	0.33
11	7.56	188	285	5	<2	0.33
12	7.64	190	260	5	<2	0.34
13	7.57	189	262	5	<2	0.36
14	7.55	190	277	5	<2	0.36
15	7.56	196	285	5	<2	0.35
16	7.63	185	275	5	<2	0.34
17	7.60	188	259	5	<2	0.34
18	7.58	196	260	5	<2	0.33
19	7.61	180	273	5	<2	0.33
20	7.63	190	260	5	<2	0.35
21	7.61	193	260	5	<2	0.37
22	7.63	181	272	5	<2	0.36
23	7.56	191	284	5	<2	0.35
24	7.56	193	283	5	<2	0.34
25	7.59	190	276	5	<2	0.35
26	7.63	181	286	5	<2	0.35
27	7.60	187	271	5	<2	0.34
28	7.61	184	270	5	<2	0.34
29	7.57	184	276	5	<2	0.37
30	7.67	191	263	5	<2	0.35
31	7.64	183	284	5	<2	0.33
Maximum	7.67	210	297	6	<2	0.37
Minimum	7.55	177	259	5	<2	0.33
Average	7.60	189	275	5	<2	0.34

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.10	26	42	171
2	10.16	27	43	181
3	10.12	28	46	163
4	10.13	29	47	156
5	10.13	29	48	154
6	10.13	31	49	156
7	10.10	26	45	152
8	10.14	29	47	154
9	10.19	30	48	154
10	10.12	31	51	144
11	10.15	30	49	145
12	10.14	29	47	145
13	10.14	30	48	146
14	10.27	27	44	152
15	10.13	27	46	155
16	10.15	28	45	157
17	10.14	29	47	145
18	10.11	31	51	142
19	10.17	27	43	157
20	10.17	31	48	143
21	10.18	30	49	135
22	10.14	25	43	157
23	10.06	29	46	163
24	10.09	27	46	158
25	10.09	28	48	156
26	10.19	25	41	170
27	10.09	30	49	158
28	10.10	26	42	155
29	10.01	26	44	151
30	10.12	29	49	143
31	10.09	27	44	164
Maximum	10.27	31	51	181
Minimum	10.01	25	41	135
Average	10.13	28	46	154

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.62	3	37	170	1.19	<1
2	8.66	6	37	177	1.21	<1
3	8.66	5	39	168	1.20	<1
4	8.66	5	41	161	1.15	<1
5	8.68	5	42	161	1.21	<1
6	8.69	6	43	159	1.15	<1
7	8.69	4	43	156	1.22	<1
8	8.62	3	41	156	1.14	<1
9	8.67	4	41	159	1.20	<1
10	8.66	5	45	149	1.23	<1
11	8.63	4	44	147	1.21	<1
12	8.64	5	45	142	1.22	<1
13	8.64	5	44	143	1.20	<1
14	8.66	3	42	150	1.23	<1
15	8.68	3	41	156	1.20	<1
16	8.70	6	39	161	1.11	<1
17	8.65	4	41	152	1.14	<1
18	8.70	5	43	142	1.25	<1
19	8.66	5	43	145	1.21	<1
20	8.70	7	40	148	1.18	<1
21	8.66	4	46	138	1.20	<1
22	8.64	3	43	148	1.17	<1
23	8.63	4	39	160	1.23	<1
24	8.69	4	39	159	1.20	<1
25	8.69	5	45	160	1.20	<1
26	8.66	5	41	161	1.18	<1
27	8.65	6	40	167	1.29	<1
28	8.62	3	42	154	1.13	<1
29	8.64	3	42	158	1.11	<1
30	8.65	4	40	151	1.21	<1
31	8.65	4	45	151	1.19	<1
Maximum	8.70	7	46	177	1.29	<1
Minimum	8.62	3	37	138	1.11	<1
Average	8.66	4	42	155	1.19	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.68	0.15	0.60
2	0.67	0.11	3.00
3	0.73	0.14	0.00
4	0.74	0.16	0.00
5	0.74	0.16	0.00
6	0.76	0.16	0.00
7	0.73	0.16	0.00
8	0.73	0.16	0.20
9	0.72	0.18	3.10
10	0.76	0.19	0.00
11	0.71	0.16	0.00
12	0.67	0.14	0.00
13	0.75	0.15	0.00
14	0.77	0.16	0.00
15	0.70	0.16	0.00
16	0.73	0.16	0.00
17	0.75	0.16	0.00
18	0.73	0.16	0.00
19	0.72	0.16	0.00
20	0.75	0.19	0.40
21	0.78	0.20	0.00
22	0.70	0.14	0.00
23	0.77	0.17	0.00
24	0.76	0.20	0.00
25	0.74	0.16	0.00
26	0.72	0.14	0.00
27	0.70	0.14	0.00
28	0.73	0.14	0.00
29	0.78	0.14	0.00
30	0.78	0.14	0.00
31	0.74	0.14	0.00
Maximum	0.78	0.20	3.10
Minimum	0.67	0.11	0.00
Average	0.73	0.16	0.24
Total			7.30

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	21.86	63.27	96.41	88.31	93.59	54.64	83.79	80.60
2	22.06	63.21	96.22	88.23	93.29	54.41	83.79	80.47
3	23.09	62.47	95.32	87.30	92.19	53.91	82.32	79.82
4	24.87	63.51	94.35	86.06	90.79	54.11	80.56	79.55
5	23.69	63.48	95.05	86.72	91.71	54.45	81.73	79.86
6	23.80	63.13	95.32	86.49	91.59	53.88	81.23	79.85
7	22.69	62.67	95.34	86.41	91.57	53.71	81.26	79.79
8	20.81	63.11	96.87	88.76	93.53	54.43	84.17	80.53
9	21.01	62.43	96.47	88.30	93.60	53.82	83.94	80.11
10	22.00	62.73	96.37	88.22	93.44	54.09	83.62	80.28
11	23.52	62.89	95.11	86.69	91.62	53.76	81.58	79.70
12	23.28	62.71	95.36	87.07	92.18	53.75	82.50	79.63
13	24.55	63.15	95.15	86.35	91.39	53.77	81.06	79.78
14	24.20	63.10	94.70	86.45	91.14	53.74	80.46	79.71
15	25.08	63.67	94.80	86.63	91.05	54.63	81.28	79.80
16	25.90	63.88	94.61	86.17	90.79	54.21	80.56	79.81
17	27.49	64.28	93.67	85.08	89.72	54.11	79.03	79.56
18	25.78	63.48	94.20	85.89	90.58	53.86	80.44	79.67
19	24.94	63.58	94.67	86.75	91.41	54.30	81.55	79.89
20	26.54	63.78	93.80	85.24	89.87	54.07	79.43	79.68
21	26.28	64.15	94.18	86.01	90.49	54.73	79.93	80.07
22	25.19	64.35	94.83	86.81	91.43	55.11	81.70	80.33
23	25.05	63.84	94.55	86.47	91.08	54.47	81.49	79.85
24	26.91	64.10	93.10	85.01	89.60	54.44	79.14	79.34
25	26.83	64.11	93.59	84.17	89.74	54.21	79.39	79.51
26	25.94	63.41	93.91	85.71	90.42	54.18	80.48	79.49
27	29.81	65.20	91.63	82.26	87.09	54.29	75.88	78.99
28	28.89	64.35	91.91	83.25	87.78	53.68	76.63	78.67
29	28.33	64.60	92.82	84.20	88.85	54.42	78.73	79.03
30	26.65	64.55	93.73	85.17	89.93	54.34	79.46	79.69
31	27.33	64.80	93.04	84.46	88.74	54.56	77.90	79.78
Maximum	29.81	65.20	96.87	88.76	93.60	55.11	84.17	80.60
Minimum	20.81	62.43	91.63	82.26	87.09	53.68	75.88	78.67
Average	24.98	63.61	94.55	86.15	90.97	54.20	80.81	79.77
Total	774.36							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	21.86	63.27	91.48	70.25	91.82
2	22.06	63.21	91.49	70.28	91.84
3	23.09	62.47	89.91	69.13	91.84
4	24.87	63.51	87.98	67.75	88.46
5	23.69	63.48	89.18	68.60	89.51
6	23.80	63.13	88.59	68.16	89.16
7	22.69	62.67	88.48	67.95	88.89
8	20.81	63.11	91.72	70.23	91.88
9	21.01	62.43	91.59	70.01	91.81
10	22.00	62.73	91.16	69.95	91.60
11	23.52	62.89	88.89	68.55	89.37
12	23.28	62.71	89.96	68.89	90.32
13	24.55	63.15	88.44	68.06	88.95
14	24.20	63.10	87.72	68.35	88.40
15	25.08	63.67	88.66	68.55	89.10
16	25.90	63.88	87.89	68.06	88.41
17	27.49	64.28	86.22	67.05	86.90
18	25.78	63.48	87.81	67.83	88.54
19	24.94	63.58	89.15	68.83	89.63
20	26.54	63.78	86.85	67.25	87.35
21	26.28	64.15	87.24	67.90	87.86
22	25.19	64.35	89.23	68.91	89.73
23	25.05	63.84	88.98	68.42	89.77
24	26.91	64.10	86.50	67.13	87.27
25	26.83	64.11	86.72	67.24	87.25
26	25.94	63.41	87.95	67.84	88.41
27	29.81	65.20	82.93	64.21	83.51
28	28.89	64.35	83.82	65.84	84.41
29	28.33	64.60	86.15	66.58	86.47
30	26.65	64.55	86.88	67.26	87.25
31	27.33	64.80	85.09	66.58	85.74
Maximum	29.81	65.20	91.72	70.28	91.88
Minimum	20.81	62.43	82.93	64.21	83.51
Average	24.98	63.61	88.21	68.12	88.76
Total	774.36				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	21.86	63.27	70.59	0.00	22.07
2	22.07	63.21	70.31	0.00	22.25
3	23.08	62.47	69.54	0.00	23.27
4	24.87	63.51	69.28	0.00	25.29
5	23.69	63.48	69.76	0.00	24.03
6	23.79	63.13	69.64	0.00	24.06
7	22.69	62.67	69.54	0.00	22.92
8	20.81	63.11	70.51	0.00	20.86
9	21.00	62.43	70.16	0.00	21.21
10	22.00	62.73	70.00	0.00	22.00
11	23.52	62.89	69.46	0.00	24.06
12	23.28	62.71	69.64	0.00	23.56
13	24.55	63.15	69.71	0.00	24.83
14	24.20	63.10	69.55	0.00	24.98
15	25.09	63.67	69.52	0.00	25.73
16	25.90	63.88	69.56	0.00	26.30
17	27.49	64.28	69.14	0.00	27.93
18	25.78	63.48	69.19	0.00	25.78
19	24.93	63.58	69.66	0.00	25.18
20	26.55	63.78	69.25	0.00	26.55
21	26.29	64.15	69.65	0.00	26.63
22	25.19	64.35	70.08	0.00	25.84
23	25.05	63.84	69.57	0.00	25.32
24	26.90	64.10	68.90	0.00	27.62
25	26.83	64.11	69.10	0.00	27.31
26	25.94	63.41	68.81	0.00	26.53
27	29.81	65.20	68.65	0.00	30.00
28	28.89	64.35	68.24	0.00	29.76
29	28.33	64.60	68.67	0.00	29.08
30	26.65	64.55	69.61	0.00	27.07
31	27.33	64.80	69.35	0.00	28.26
Maximum	29.81	65.20	70.59	0.00	30.00
Minimum	20.81	62.43	68.24	0.00	20.86
Average	24.98	63.61	69.50	0.00	25.36
Total	774.35				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.21	26.94	42.79	0.00	0.97	0.54
2	0.17	26.71	42.39	0.00	0.00	0.54
3	0.19	26.33	41.33	0.00	0.00	0.54
4	0.42	25.98	39.81	0.02	1.35	0.54
5	0.35	25.61	40.79	0.00	0.00	0.54
6	0.26	24.45	40.26	2.15	0.00	0.54
7	0.23	23.76	39.83	0.00	1.81	0.54
8	0.05	27.40	42.57	0.00	0.00	0.54
9	0.21	24.72	42.45	1.67	0.00	0.54
10	0.01	27.49	42.07	0.00	0.00	0.54
11	0.52	25.54	40.64	0.00	3.87	0.52
12	0.28	24.35	41.08	0.00	0.00	0.52
13	0.28	24.18	39.79	0.00	0.18	0.52
14	0.77	24.63	40.29	0.00	2.79	0.52
15	0.63	24.98	39.63	0.00	2.16	0.52
16	0.39	25.94	39.66	0.00	2.95	0.52
17	0.44	25.82	38.04	0.00	2.26	0.73
18	0.01	27.34	39.75	0.00	0.00	0.73
19	0.25	24.29	41.02	0.00	0.00	0.52
20	0.00	27.42	38.90	0.00	0.00	0.52
21	0.33	26.35	39.76	0.00	0.00	0.48
22	0.66	25.02	41.06	1.75	3.33	0.48
23	0.26	26.40	40.30	0.00	0.00	0.48
24	0.71	24.50	39.02	0.00	5.47	0.44
25	0.47	22.18	39.12	0.00	2.49	0.44
26	0.60	20.38	39.40	0.00	0.20	0.44
27	0.19	24.78	35.42	0.00	1.44	0.61
28	0.86	23.51	36.86	0.00	6.71	0.80
29	0.74	23.90	37.02	0.00	1.97	0.69
30	0.41	25.79	38.77	0.00	0.00	0.69
31	0.91	23.09	37.95	0.00	7.03	0.56
Maximum	0.91	27.49	42.79	2.15	7.03	0.80
Minimum	0.00	20.38	35.42	0.00	0.00	0.44
Average	0.38	25.15	39.93	0.18	1.52	0.55
Total				5.59	46.98	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **August, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **64,623**	Total Population Served at End of Month: **187,510**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Other Operators:	**Crossman Earl**	**A**	**8599**	**Rotation**
	Fred Eger	**A**	**7812**	**Rotation**
	Nathaniel Ford	**C**	**14575**	**Rotation**
	Jody Gilbert	**A**	**5379**	**Weekdays**
	Dave Harmon	**A**	**5089**	**Evenings**
	Linda Ivines	**A**	**2770**	**Weekdays**
	Lawrence Keith	**A**	**6533**	**Rotation**
	Lucas Tim	**C**	**13827**	**Rotation**
	Blake Misura	**B**	**3220**	**Nights**
	Dale Smith	**A**	**5539**	**Days**
	Susan Wellons	**A**	**6898**	**Weekdays**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

	Richard J. Davis	**A1635**
Signature and Date	Printed or Typed Name	License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of: **August, 2011**

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)

☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	23,325,000	24,800,000									0.54	
2	X	24.0	23,859,167	25,940,000									0.54	
3	X	24.0	24,070,417	27,110,000									0.54	
4	X	24.0	26,023,333	29,510,000									0.54	
5	X	24.0	25,653,333	28,230,000									0.54	
6	X	24.0	25,607,083	29,230,000									0.54	
7	X	24.0	25,610,833	24,990,000									0.54	
8	X	24.0	23,408,333	27,070,000									0.54	
9	X	24.0	21,864,167	25,490,000									0.54	
10	X	24.0	24,602,500	26,210,000									0.54	
11	X	24.0	24,537,083	27,460,000									0.52	
12	X	24.0	24,892,500	25,380,000									0.52	
13	X	24.0	24,345,833	27,540,000									0.52	
14	X	24.0	26,539,583	31,280,000									0.52	
15	X	24.0	25,988,750	31,270,000									0.52	
16	X	24.0	27,856,250	29,910,000									0.52	
17	X	24.0	28,412,917	36,950,000									0.73	
18	X	24.0	27,785,000	34,010,000									0.73	
19	X	24.0	24,925,833	27,770,000									0.52	
20	X	24.0	27,762,083	31,070,000									0.52	
21	X	24.0	27,362,500	30,320,000									0.48	
22	X	24.0	26,036,667	30,170,000									0.48	
23	X	24.0	26,633,750	31,320,000									0.48	
24	X	24.0	28,489,167	33,230,000									0.44	Replaced Santa Fe Chlorine Analyzer
25	X	24.0	27,568,750	32,640,000									0.44	Replaced Santa Fe Chlorine Analyzer
26	X	24.0	25,379,583	29,600,000									0.44	Replaced Santa Fe Chlorine Analyzer
27	X	24.0	32,502,917	32,230,000									0.61	
28	X	24.0	29,403,750	34,350,000									0.80	
29	X	24.0	30,787,083	33,370,000									0.69	
30	X	24.0	27,917,500	33,700,000									0.69	
31	X	24.0	29,494,583	35,750,000									0.56	
Total			818,646,250											
Average			26,407,944											
Maximum			32,502,917											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

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PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**August, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO4 or mg/L of silicate as SiO2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	23,325,000	1.19	1.30	0.54	
2	X	24	23,859,167	1.21	1.33	0.54	
3	X	24	24,070,417	1.20	1.04	0.54	
4	X	24	26,023,333	1.15	1.15	0.54	
5	X	24	25,653,333	1.21	1.27	0.54	
6	X	24	25,607,083	1.15	1.10	0.54	
7	X	24	25,610,833	1.22	1.07	0.54	
8	X	24	23,408,333	1.14	1.29	0.54	
9	X	24	21,864,167	1.20	1.02	0.54	
10	X	24	24,602,500	1.23	1.28	0.54	
11	X	24	24,537,083	1.21	1.13	0.52	
12	X	24	24,892,500	1.22	1.12	0.52	
13	X	24	24,345,833	1.20	1.33	0.52	
14	X	24	26,539,583	1.23	1.15	0.52	
15	X	24	25,988,750	1.20	1.22	0.52	
16	X	24	27,856,250	1.11	1.02	0.52	
17	X	24	28,412,917	* 1.14	1.02	0.73	* Post Chlorine Analyzer Replaced
18	X	24	27,785,000	* 1.25	1.02	0.73	* Post Chlorine Analyzer Replaced
19	X	24	24,925,833	* 1.21	1.23	0.52	* Post Chlorine Analyzer Replaced
20	X	24	27,762,083	1.18	1.10	0.52	
21	X	24	27,362,500	1.20	1.28	0.48	
22	X	24	26,036,667	1.17	1.38	0.48	
23	X	24	26,633,750	1.23	1.23	0.48	
24	X	24	28,489,167	1.20	1.39	** 0.44	** Santa Fe Chlorine Analyzer replaced
25	X	24	27,568,750	1.20	1.18	** 0.44	** Santa Fe Chlorine Analyzer replaced
26	X	24	25,379,583	1.18	1.26	** 0.44	** Santa Fe Chlorine Analyzer replaced
27	X	24	32,502,917	1.29	1.21	0.61	
28	X	24	29,403,750	1.13	1.24	0.80	
29	X	24	30,787,083	1.11	1.35	0.69	
30	X	24	27,917,500	1.21	1.22	0.69	
31	X	24	29,494,583	1.19	1.07	0.56	
Total			818,646,250				
Average			26,407,944				
Maximum			32,502,917				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **1.11** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **1.02** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **YES**

    If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service? **YES**
    - Date the equipment failed: **8/17/2011**
    - Date the equipment was returned to service: **8/19/2011**

Only plants providing DEP-approved 4-log virus treatment must provide this information.

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: August, 2011

A. Public Water System (PWS) Information

PWS Name: Gainesville Regional Utilities	PWS Identification Number: 2010946
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: Gainesville Regional Utilities	
Contact Person: Richard J. Davis	Contact Person's Title: Water Plant Manager
Contact Person's Mailing Address: PO Box 147117 MS 43	City: Gainesville; State: Florida; Zip Code: 32614
Contact Person's Telephone Number: (352) 393-6512	Contact Person's Fax Number: (352) 334-2891
Contact Person's E-Mail Address: DavisRJ@gru.com	

B. Water Treatment Plant Information

Plant Name: Dr. Walter E. Murphree Water Treatment Plant	Plant Telephone Number: (352) 393-6512
Plant Address: 1600 NE 53 Ave.	City: Gainesville; State: Florida; Zip Code: 32614

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Check Sample Results for the Month/Year: August, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.714
Distribution Sample 2	Bouleware		0.706

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fluoride Data fro the Month/Year: **August, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	23,325,000	349	0.46	0.68
2	24.0	23,859,167	399	0.48	0.67
3	24.0	24,070,417	400	0.50	0.73
4	24.0	26,023,333	418	0.48	0.74
5	24.0	25,653,333	410	0.48	0.74
6	24.0	25,607,083	410	0.48	0.76
7	24.0	25,610,833	403	0.49	0.73
8	24.0	23,408,333	374	0.49	0.73
9	24.0	21,864,167	367	0.50	0.72
10	24.0	24,602,500	395	0.48	0.76
11	24.0	24,537,083	391	0.48	0.71
12	24.0	24,892,500	340	0.42	0.67
13	24.0	24,345,833	385	0.48	0.75
14	24.0	26,539,583	383	0.46	0.77
15	24.0	25,988,750	380	0.44	0.70
16	24.0	27,856,250	419	0.45	0.73
17	24.0	28,412,917	411	0.45	0.75
18	24.0	27,785,000	388	0.43	0.73
19	24.0	24,925,833	394	0.43	0.72
20	24.0	27,762,083	425	0.45	0.75
21	24.0	27,362,500	391	0.45	0.78
22	24.0	26,036,667	401	0.45	0.70
23	24.0	26,633,750	408	0.47	0.77
24	24.0	28,489,167	468	0.48	0.76
25	24.0	27,568,750	406	0.43	0.74
26	24.0	25,379,583	378	0.43	0.72
27	24.0	32,502,917	523	0.48	0.70
28	24.0	29,403,750	466	0.48	0.73
29	24.0	30,787,083	447	0.46	0.78
30	24.0	27,917,500	405	0.45	0.78
31	24.0	29,494,583	435	0.45	0.74
Total	744.0	818,646,250	12,570	14.34	22.75
Average	24.0	26,407,944	405	0.46	0.73

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
August, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	1.25	4.16	0.00	1.99	0.00	0.00	2.37	4.05	0.00	0.00	0.00	0.00	0.00	0.00	7.04	0.00	20.86
2	1.24	4.28	0.00	4.62	0.00	0.00	0.00	4.07	0.00	0.00	0.00	0.00	0.00	3.43	7.05	0.00	24.70
3	1.25	4.33	0.00	1.67	0.00	0.00	0.55	4.13	0.00	0.00	0.00	0.00	0.00	6.65	7.07	0.00	25.63
4	1.25	4.33	0.00	0.00	0.06	0.00	3.24	3.20	0.00	0.00	1.77	0.00	0.00	6.65	7.06	0.00	27.56
5	1.23	4.31	0.00	0.00	0.00	0.00	3.23	4.16	0.00	0.00	0.00	0.00	0.00	6.67	7.03	0.00	26.63
6	1.22	4.30	0.00	0.00	0.00	0.00	3.25	4.16	0.00	0.00	0.00	0.00	0.00	6.64	7.02	0.00	26.59
7	1.23	4.31	0.00	0.00	0.00	0.00	3.23	4.18	0.00	0.00	0.00	0.00	0.00	6.65	7.00	0.00	26.60
8	1.22	4.34	0.00	0.00	0.00	0.77	1.56	2.94	0.00	0.00	0.00	0.00	0.00	6.63	7.00	0.00	24.47
9	4.18	1.08	0.00	3.69	0.00	2.63	1.19	0.00	0.00	0.00	0.00	0.00	4.57	1.64	1.73	0.00	20.71
10	5.04	4.15	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	0.00	0.00	6.64	7.00	0.00	24.46
11	5.04	1.33	0.00	0.53	0.92	1.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	6.62	6.98	0.00	24.82
12	5.04	0.00	0.00	2.31	0.00	1.20	0.00	0.00	2.81	0.00	0.00	0.00	2.33	2.91	6.98	0.00	23.59
13	5.04	0.00	0.00	3.92	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	6.02	0.00	6.97	0.00	22.24
14	4.57	0.87	0.00	4.87	0.00	2.64	0.00	0.00	0.00	0.00	0.00	0.00	4.74	0.84	6.93	0.00	25.46
15	1.66	4.28	0.00	3.85	0.00	2.65	0.52	0.00	0.31	0.00	0.00	0.00	0.00	5.50	6.92	0.00	25.71
16	5.04	4.04	0.00	2.58	0.00	2.16	0.19	0.00	0.00	0.00	0.00	0.00	1.01	3.03	6.94	0.00	24.99
17	5.04	3.37	0.00	4.42	0.00	0.00	0.00	0.00	2.03	0.00	0.00	0.00	3.34	1.12	6.90	0.96	27.19
18	5.04	0.00	0.00	4.86	0.00	0.44	0.00	0.00	4.58	0.00	0.00	0.00	0.00	5.50	6.90	0.00	27.33
19	5.04	0.00	0.00	4.62	0.00	2.63	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	6.97	0.00	23.81
20	5.04	0.00	0.00	4.85	0.00	0.40	0.00	0.00	4.53	0.00	0.00	0.00	0.00	5.68	6.91	0.00	27.41
21	5.04	0.00	0.00	4.88	0.00	0.77	0.00	0.00	4.55	0.00	0.00	0.00	0.00	4.62	6.92	0.00	26.78
22	5.04	0.00	0.00	4.02	0.00	0.98	0.00	2.51	3.79	0.00	0.00	0.00	1.01	0.00	6.94	0.00	24.29
23	5.04	0.00	0.00	3.18	0.00	0.00	0.00	4.09	0.00	0.00	0.00	0.00	6.00	0.00	6.87	0.00	25.18
24	5.04	0.00	0.00	0.00	0.00	1.27	0.00	4.13	4.15	0.00	0.00	0.00	4.76	1.32	6.88	0.00	27.54
25	5.04	0.00	0.00	0.00	0.00	0.33	0.38	4.14	4.58	0.00	0.00	0.00	5.22	0.00	6.90	0.00	26.59
26	3.73	0.00	0.00	0.00	0.00	2.64	2.97	4.07	4.47	0.00	0.00	0.00	0.00	0.00	6.94	0.00	24.83
27	5.04	0.00	0.00	2.67	0.00	0.16	2.91	4.02	4.42	0.00	0.00	0.00	0.00	4.32	6.87	0.00	30.40
28	4.19	1.16	0.00	4.15	0.00	0.74	2.89	3.98	4.41	0.00	0.00	0.00	1.38	0.00	4.86	0.00	27.76
29	1.30	4.04	0.00	4.71	0.00	2.53	2.96	3.92	4.43	0.00	0.00	0.00	6.02	0.00	0.00	0.00	29.91
30	1.30	4.07	0.00	1.38	0.00	1.16	2.97	2.45	4.44	0.00	0.00	0.00	4.86	1.27	0.00	0.00	23.89
31	1.30	4.10	0.00	1.59	0.00	2.19	2.97	3.92	4.45	0.00	2.70	0.00	0.00	0.90	6.01	0.00	30.13
Total	107.71	66.83	0.00	75.35	0.97	29.58	38.98	68.13	64.89	0.00	4.47	0.08	51.28	95.20	193.64	0.96	798.05

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

August, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

WELL	STATUS	8/1	8/2	8/3	8/4	8/5	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15
1	ON									5:00						22:00
	OFF														21:00	
2	ON										1:00				19:00	
	OFF									5:00		8:00				
3	ON															
	OFF															
4	ON									5:00			11:00			
	OFF			8:00						23:00						
5	ON											8:00				
	OFF											12:00				
6	ON								17:00			8:00		21:00		
	OFF									23:00			11:00			
7	ON			20:00						15:00						20:00
	OFF	18:00							12:00		12:00					
8	ON				14:00											
	OFF				8:00				17:00							
9	ON											12:00				20:00
	OFF												15:00			22:00
10	ON															
	OFF															
11	ON				9:00											
	OFF				15:00											
12	ON															
	OFF															
13	ON									5:00			15:00			
	OFF									23:00					19:00	
14	ON		12:00							23:00					21:00	
	OFF									5:00			11:00			20:00
15	ON									23:00						
	OFF									5:00						
16	ON															
	OFF															

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

August, 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

WELL	STATUS	8/16	8/17	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25	8/26	8/27	8/28	8/29
1	ON												23:00		
	OFF											15:00		19:00	
2	ON													17:00	
	OFF		20:00												
3	ON														
	OFF														
4	ON												5:00		
	OFF								17:00						
5	ON														
	OFF														
6	ON			20:00			17:00			9:00	21:00			17:00	
	OFF	20:00				4:00		9:00		20:00			1:00		
7	ON										21:00				
	OFF	2:00													
8	ON							9:00							
	OFF														
9	ON		13:00							2:00					
	OFF							21:00							
10	ON														
	OFF														
11	ON														
	OFF														
12	ON														
	OFF														
13	ON	20:00						20:00		13:00				19:00	
	OFF		13:00							9:00	21:00				
14	ON	2:00	20:00			4:00				9:00			1:00		
	OFF	12:00		20:00			17:00			13:00			17:00		
15	ON														
	OFF													17:00	
16	ON		8:00												
	OFF		13:00												

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
August, 2011

Permit Number:

Issued To: Gainesville Regional Utilities

WELL	STATUS	8/30	8/31
1	ON		
	OFF		
2	ON		
	OFF		
3	ON		
	OFF		
4	ON		
	OFF		8:00
5	ON		
	OFF		
6	ON		3:00
	OFF	11:00	
7	ON		
	OFF		
8	ON	20:00	
	OFF	11:00	
9	ON		
	OFF		
10	ON		
	OFF		
11	ON		8:00
	OFF		17:00
12	ON		
	OFF		
13	ON		
	OFF	19:00	
14	ON	19:00	
	OFF		3:00
15	ON		3:00
	OFF		
16	ON		
	OFF		

DR. WALTER E. MURPHREE

WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	61,248	Estimated
Total Customer Served at End of Month:	177,717	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	13603	13782	27385	26485	30910	20000
2	24.0	0	14414	14389	28803	26559	31210	20440
3	24.0	0	14669	14735	29405	27546	33860	21030
4	24.0	0	14032	14083	28115	25970	32280	19560
5	24.0	0	12677	12728	25405	24415	30430	18030
6	24.0	0	12070	12158	24228	22756	27850	19050
7	24.0	0	12345	12200	24545	23651	29260	17670
8	24.0	0	13116	13222	26338	24891	29100	19170
9	24.0	0	11869	11972	23840	23730	27520	19620
10	24.0	0	13491	13460	26952	25947	30630	19700
11	24.0	0	14008	14186	28194	27269	32310	20040
12	24.0	0	14011	13938	27948	25614	32290	18940
13	24.0	0	13488	13418	26906	26055	32070	20020
14	24.0	0	14644	14735	29380	28359	36410	21810
15	24.0	0	14780	14827	29608	27612	34230	16850
16	24.0	0	13678	13551	27228	27387	32220	23860
17	24.0	0	15559	15566	31125	28513	33350	22130
18	24.0	0	14015	14048	28062	28100	33570	20790
19	24.0	0	14219	14265	28484	26265	33470	19950
20	24.0	0	12778	13014	25792	24375	30020	18420
21	24.0	0	11531	11730	23261	24078	30330	18520
22	24.0	0	13396	13269	26665	24157	30930	18680
23	24.0	0	12225	12145	24370	24034	27070	19280
24	24.0	0	13541	13470	27011	25250	31260	17920
25	24.0	0	13118	13061	26179	24643	28370	17360
26	24.0	0	12378	12290	24668	23385	28690	16090
27	24.0	0	12423	12474	24897	24134	29440	18670
28	24.0	0	13387	13308	26695	26103	35770	19440
29	24.0	0	14161	14167	28328	26853	32240	20470
30	24.0	0	13267	13357	26623	26588	31190	20300
Total	720.0	0	402893	403547	806440	770722		
Maximum	24.0	0	15559	15566	31125	28513		
Minimum	24.0	0	11531	11730	23261	22756		
Average	24.0	0	13430	13452	26881	25691		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	252	24	2	482.91
2	96	252	24	3	481.66
3	96	252	24	4	482.91
4	96	252	24	5	487.91
5	96	252	24	6	485
6	96	0	0		0
7	96	0	0		0
8	96	190	79	1	483.75
9	96	0	0		0
10	96	0	0		0
11	96	0	0		0
12	96	253	89	2	481.66
13	96	253	26	3	480.08
14	96	253	24	4	485
15	96	253	24	5	487.08
16	96	253	24	6	484.58
17	96	0	0		0
18	96	0	0		0
19	96	244	71	1	483.75
20	96	187	29	2	482.91
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	251	71	3	479.58
25	96	251	23	4	481.25
26	96	252	24	5	484.58
27	96	252	24	6	468.75
28	96	0	0		0
29	96	0	0		0
30	96	255	72	1	485.41
Maximum	96	255	89		487.91
Minimum	96	0	0		0

SumWashed:
8688.77

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	27267	3748	91	418.3	4000
2	28029	4462	99	414.8	4000
3	28506	4120	99	443.9	5000
4	26606	4234	87	435.3	5000
5	24770	3710	90	403.0	4000
6	22592	3822	93	375.9	4000
7	22982	4000	93	375.7	3000
8	25678	4247	91	256.8	4000
9	24096	3195	98	351.7	3500
10	28110	4157	112	404.5	3500
11	28275	4602	101	418.6	4500
12	27777	3782	90	408.7	5000
13	26210	3782	115	382.5	4000
14	28592	4750	118	423.7	4000
15	28519	4898	111	424.5	4000
16	27005	4614	109	394.7	4000
17	30708	5126	104	480.1	4000
18	28518	4700	102	397.0	4000
19	30237	4713	103	388.2	4000
20	25876	4138	99	378.3	4000
21	23650	3837	72	328.2	5000
22	26610	4289	89	399.4	4000
23	24697	3972	115	366.3	3000
24	28270	4296	100	384.4	3000
25	26859	4001	84	363.2	5000
26	25083	3689	100	354.3	4000
27	25801	3910	102	366.9	4000
28	26613	3736	104	382.2	5000
29	28966	3998	105	416.3	5000
30	27294	4075	121	382.5	4000
Total	804196	124603	2998	11720.2	123500
Maximum	30708	5126	121	480.1	5000
Minimum	22592	3195	72	256.8	3000
Average	26807	4153	100	390.7	4117

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	119.5	16.4	0.41	0.45	17.5
2	116.7	18.6	0.45	0.42	16.7
3	116.5	16.8	0.43	0.45	20.4
4	114.2	18.2	0.40	0.45	21.3
5	117.4	17.4	0.44	0.48	18.9
6	112.0	18.9	0.49	0.46	19.8
7	112.5	19.6	0.47	0.46	14.7
8	107.6	17.5	0.44	0.27	18.2
9	121.9	16.1	0.49	0.45	17.6
10	125.4	18.6	0.52	0.45	15.6
11	120.4	19.6	0.45	0.43	19.1
12	119.2	16.1	0.42	0.43	21.5
13	117.2	16.9	0.53	0.42	17.8
14	116.7	19.4	0.50	0.44	16.3
15	115.4	19.8	0.49	0.44	16.2
16	119.1	20.4	0.48	0.43	17.6
17	118.4	19.8	0.44	0.45	15.4
18	121.9	20.1	0.44	0.41	17.1
19	127.4	19.9	0.47	0.41	16.8
20	120.4	19.2	0.49	0.43	18.6
21	96.8	17.6	0.36	0.33	25.8
22	119.7	19.2	0.44	0.44	18.0
23	121.6	19.5	0.57	0.46	14.8
24	125.6	19.1	0.48	0.43	13.3
25	123.0	18.3	0.41	0.42	22.9
26	121.8	17.9	0.51	0.40	19.4
27	124.4	18.7	0.50	0.43	19.3
28	119.2	16.6	0.48	0.42	22.5
29	122.5	16.8	0.47	0.42	21.2
30	123.0	18.4	0.55	0.42	18.0
Maximum	127.4	20.4	0.57	0.48	25.8
Minimum	96.8	16.1	0.36	0.27	13.3
Average	118.6	18.4	0.47	0.43	18.4

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.64	182	282	5	<2	0.35
2	7.67	188	271	5	<2	0.34
3	7.64	189	259	5	<2	0.36
4	7.62	185	273	5	<2	0.35
5	7.60	192	263	5	<2	0.37
6	7.63	182	273	5	<2	0.35
7	7.72	181	276	5	<2	0.35
8	7.63	190	284	5	<2	0.37
9	7.63	196	272	5	<2	0.34
10	7.64	190	263	5	<2	0.34
11	7.64	186	256	5	<2	0.37
12	7.62	188	278	5	<2	0.38
13	7.61	182	280	5	<2	0.37
14	7.61	184	277	5	<2	0.35
15	7.62	187	286	5	<2	0.36
16	7.63	184	285	5	<2	0.33
17	7.66	185	277	5	<2	0.35
18	7.66	187	280	5	<2	0.37
19	7.55	185	277	5	<2	0.38
20	7.62	183	266	5	<2	0.35
21	7.59	182	282	5	<2	0.36
22	7.60	185	295	5	<2	0.35
23	7.61	187	281	5	<2	0.35
24	7.61	180	263	5	<2	0.34
25	7.59	178	263	5	<2	0.40
26	7.62	183	259	5	<2	0.37
27	7.63	185	279	5	<2	0.35
28	7.61	176	281	5	<2	0.38
29	7.59	189	289	5	<2	0.35
30	7.61	191	297	5	<2	0.38
Maximum	7.72	196	297	5	<2	0.40
Minimum	7.55	176	256	5	<2	0.33
Average	7.62	185	276	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.10	29	48	167
2	10.12	28	48	149
3	10.02	28	48	142
4	10.13	27	47	150
5	10.08	28	47	141
6	10.14	27	44	158
7	10.14	27	44	164
8	10.15	27	47	165
9	10.06	27	47	147
10	10.12	29	48	151
11	10.11	27	45	142
12	10.09	26	46	155
13	10.05	26	43	166
14	10.07	26	43	163
15	10.06	24	42	166
16	10.06	26	41	165
17	10.03	25	42	163
18	10.07	26	43	160
19	10.03	24	43	159
20	10.18	29	46	158
21	10.06	25	44	172
22	10.11	28	45	176
23	10.05	26	45	163
24	10.10	25	43	146
25	10.07	25	43	144
26	10.14	29	47	150
27	10.02	26	43	162
28	10.11	25	43	169
29	10.01	29	50	168
30	10.04	26	43	165
Maximum	10.18	29	50	176
Minimum	10.01	24	41	141
Average	10.08	27	45	158

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.69	4	40	176	1.27	<1
2	8.71	4	43	158	1.26	<1
3	8.70	6	44	158	1.19	<1
4	8.65	4	42	149	1.21	<1
5	8.63	3	44	146	1.18	<1
6	8.63	4	38	155	1.22	<1
7	8.70	5	38	159	1.19	<1
8	8.69	8	44	166	1.26	<1
9	8.68	5	43	153	1.14	<1
10	8.66	6	44	148	1.16	<1
11	8.64	3	42	145	1.17	<1
12	8.67	3	41	150	1.16	<1
13	8.67	4	39	167	1.17	<1
14	8.68	6	39	166	1.11	<1
15	8.64	4	41	164	1.08	<1
16	8.63	6	39	163	1.12	<1
17	8.61	4	38	164	1.12	<1
18	8.64	3	40	163	1.10	<1
19	8.62	3	40	161	1.09	<1
20	8.65	3	40	160	0.98	<1
21	8.65	5	41	175	0.94	<1
22	8.62	4	39	177	1.11	<1
23	8.60	4	39	174	1.19	<1
24	8.64	4	41	155	1.17	<1
25	8.66	3	39	148	1.12	<1
26	8.64	3	43	150	1.05	<1
27	8.62	3	40	161	1.04	<1
28	8.63	4	37	171	1.04	<1
29	8.62	4	42	167	1.00	<1
30	8.61	4	41	162	1.01	<1
Maximum	8.71	8	44	177	1.27	<1
Minimum	8.60	3	37	145	0.94	<1
Average	8.65	4	41	160	1.13	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.74	0.14	0.00
2	0.71	0.14	0.00
3	0.72	0.13	0.00
4	0.68	0.13	0.00
5	0.71	0.13	0.40
6	0.76	0.12	1.25
7	0.77	0.12	0.00
8	0.64	0.13	0.00
9	0.65	0.13	0.00
10	0.75	0.13	0.00
11	0.74	0.13	0.00
12	0.77	0.13	0.00
13	0.78	0.15	0.00
14	0.78	0.13	0.00
15	0.77	0.13	0.00
16	0.79	0.15	0.00
17	0.79	0.16	0.00
18	0.74	0.16	0.00
19	0.73	0.13	0.10
20	0.73	0.12	0.00
21	0.73	0.12	0.30
22	0.75	0.12	0.10
23	0.76	0.12	0.10
24	0.75	0.16	0.00
25	0.70	0.13	0.00
26	0.66	0.11	0.30
27	0.70	0.15	0.00
28	0.76	0.16	0.00
29	0.75	0.16	0.00
30	0.77	0.17	0.00
Maximum	0.79	0.17	1.25
Minimum	0.64	0.11	0.00
Average	0.74	0.14	0.09
Total			2.55

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	26.48	64.41	93.24	84.88	89.41	54.40	78.60	79.59
2	26.56	64.45	93.38	85.03	89.76	54.45	79.53	79.59
3	27.55	65.13	93.71	84.55	89.38	54.67	78.05	79.96
4	25.97	64.24	93.75	85.14	89.62	54.35	78.77	79.85
5	24.41	63.28	94.38	86.48	90.93	54.29	81.03	79.75
6	22.76	62.58	95.19	87.18	92.26	53.60	86.25	79.59
7	23.65	62.36	94.47	86.54	91.49	53.33	81.76	79.14
8	24.89	63.25	94.30	86.09	90.87	53.91	80.64	79.63
9	23.73	62.78	95.10	86.91	91.92	53.79	82.14	79.59
10	25.95	63.65	93.77	85.22	90.13	53.91	79.85	79.59
11	27.27	64.30	93.14	84.72	89.09	54.10	78.42	79.48
12	25.62	64.20	94.47	86.42	90.99	54.76	80.84	80.08
13	26.01	64.11	94.26	86.20	90.78	54.27	80.58	79.81
14	28.36	64.97	93.03	84.27	88.81	54.50	77.74	79.78
15	27.43	64.54	92.72	83.98	88.45	54.08	77.38	79.53
16	27.39	64.01	92.66	84.32	88.70	54.35	78.01	79.24
17	28.52	64.93	92.26	83.47	87.87	54.34	76.39	79.54
18	28.10	65.03	94.83	87.34	91.56	55.68	81.65	80.77
19	26.27	64.47	94.48	86.33	91.11	54.88	80.97	80.27
20	24.38	63.16	94.96	86.91	91.89	52.14	82.08	79.81
21	24.08	62.46	93.86	86.03	90.65	53.04	80.65	79.16
22	24.15	63.56	95.34	87.39	92.09	54.65	81.88	80.32
23	24.03	63.19	94.81	86.57	91.60	54.09	81.83	79.94
24	25.25	63.49	93.97	85.55	90.26	54.07	79.68	79.76
25	24.64	63.11	94.17	85.74	90.52	54.01	79.99	79.41
26	23.38	64.21	95.87	88.05	92.64	55.10	83.01	80.64
27	24.14	63.74	95.47	87.39	92.22	54.85	82.44	80.33
28	26.10	64.06	94.01	86.01	90.63	54.20	80.53	79.71
29	26.85	64.15	93.58	85.77	90.22	54.66	79.95	79.70
30	26.58	64.42	93.96	85.78	90.58	54.95	80.51	79.97
Maximum	28.52	65.13	95.87	88.05	92.64	55.68	86.25	80.77
Minimum	22.76	62.36	92.26	83.47	87.87	52.14	76.39	79.14
Average	25.68	63.87	94.10	85.88	90.55	54.25	80.37	79.78
Total	770.50							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	26.48	64.41	85.75	67.10	86.53
2	26.56	64.45	86.91	67.22	87.48
3	27.55	65.13	85.20	66.47	85.75
4	25.97	64.24	86.03	66.83	86.57
5	24.41	63.28	88.53	68.35	89.07
6	22.76	62.58	90.44	69.04	90.63
7	23.65	62.36	89.44	68.47	89.89
8	24.89	63.25	88.25	67.92	88.75
9	23.73	62.78	89.95	68.86	90.31
10	25.95	63.65	87.27	67.28	87.70
11	27.27	64.30	85.61	66.56	86.31
12	25.62	64.20	88.42	68.29	88.78
13	26.01	64.11	88.09	68.05	88.38
14	28.36	64.97	84.92	66.37	85.60
15	27.43	64.54	84.54	66.12	85.15
16	27.39	64.01	85.39	66.24	85.88
17	28.52	64.93	83.50	65.52	84.17
18	28.10	65.03	89.38	69.35	89.90
19	26.27	64.47	88.56	68.32	88.90
20	24.38	63.16	89.81	68.81	90.01
21	24.08	62.46	88.22	67.99	88.72
22	24.15	63.56	89.53	69.07	89.89
23	24.03	63.19	89.44	68.71	89.81
24	25.25	63.49	87.08	67.25	87.37
25	24.64	63.11	87.44	67.49	87.74
26	23.38	64.21	90.69	69.85	90.96
27	24.14	63.74	90.06	69.24	90.51
28	26.10	64.06	88.03	67.94	88.48
29	26.85	64.15	87.44	67.88	87.83
30	26.58	64.42	88.19	67.81	88.33
Maximum	28.52	65.13	90.69	69.85	90.96
Minimum	22.76	62.36	83.50	65.52	84.17
Average	25.68	63.87	87.74	67.81	88.18
Total	770.50				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	26.48	64.41	69.34	0.00	27.23
2	26.56	64.45	69.31	0.00	26.83
3	27.55	65.13	69.65	0.00	27.98
4	25.97	64.24	69.47	0.00	26.60
5	24.41	63.28	69.27	0.00	24.89
6	22.76	62.58	69.54	0.00	22.97
7	23.65	62.36	68.92	0.00	23.65
8	24.89	63.25	69.26	0.00	25.18
9	23.73	62.78	69.39	0.00	23.73
10	25.95	63.65	69.24	0.00	25.95
11	27.27	64.30	69.22	0.00	27.61
12	25.62	64.20	69.73	0.00	26.19
13	26.01	64.11	69.59	0.00	26.61
14	28.36	64.97	69.19	0.00	29.26
15	27.43	64.54	68.79	0.00	28.46
16	27.39	64.01	68.67	0.00	27.39
17	28.52	64.93	69.05	0.00	28.75
18	28.10	65.03	69.46	0.00	28.83
19	26.27	64.47	69.69	0.00	26.50
20	24.38	63.16	69.50	0.00	24.65
21	24.08	62.46	68.72	0.00	24.19
22	24.15	63.56	69.81	0.00	24.43
23	24.03	63.19	69.49	0.00	24.03
24	25.25	63.49	69.35	0.00	25.25
25	24.64	63.11	69.24	0.00	24.89
26	23.38	64.21	70.69	0.00	23.68
27	24.14	63.74	70.05	0.00	24.47
28	26.10	64.06	69.45	0.00	26.36
29	26.85	64.15	69.13	0.00	27.60
30	26.58	64.42	69.50	0.00	26.59
Maximum	28.52	65.13	70.69	0.00	29.26
Minimum	22.76	62.36	68.67	0.00	22.97
Average	25.68	63.87	69.39	0.00	26.03
Total	770.50				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.74	24.62	39.08	0.00	2.55	0.58
2	0.26	26.87	38.95	1.80	0.30	0.60
3	0.42	26.68	37.96	0.00	3.05	0.46
4	0.62	24.95	38.60	0.00	3.95	0.48
5	0.48	25.28	40.19	0.00	0.00	0.44
6	0.21	26.76	41.34	0.00	0.00	0.48
7	0.01	27.40	40.47	0.00	0.00	0.61
8	0.29	26.35	39.91	0.00	2.22	0.85
9	0.00	27.55	40.89	0.00	0.00	0.77
10	0.00	27.57	39.31	0.00	0.00	0.77
11	0.33	26.32	38.08	0.00	2.60	0.67
12	0.57	25.49	40.17	0.00	4.03	0.51
13	0.55	25.74	39.83	0.00	0.38	0.54
14	0.88	23.35	37.58	0.00	15.45	0.83
15	0.84	23.47	37.70	0.00	3.02	0.59
16	0.00	27.34	37.54	0.00	0.00	0.95
17	0.24	25.47	37.62	0.00	0.00	0.81
18	0.71	23.95	38.22	0.00	5.60	0.71
19	0.23	26.60	39.29	0.00	0.00	0.71
20	0.27	26.39	40.27	0.00	2.23	0.61
21	0.13	26.05	39.96	0.89	0.00	0.58
22	0.29	26.64	40.72	0.00	0.00	0.52
23	0.00	27.48	40.71	0.00	0.00	0.52
24	0.00	27.40	38.93	0.00	0.00	0.73
25	0.25	26.89	39.09	0.00	0.00	0.46
26	0.29	26.61	42.38	1.60	0.00	0.46
27	0.33	24.55	41.18	0.00	2.72	0.42
28	0.25	26.72	39.56	0.00	0.00	0.46
29	0.74	24.73	39.01	0.00	2.72	0.50
30	0.00	27.36	39.65	0.00	0.00	0.71
Maximum	0.88	27.57	42.38	1.80	15.45	0.95
Minimum	0.00	23.35	37.54	0.00	0.00	0.42
Average	0.33	26.09	39.47	0.14	1.69	0.61
Total				4.29	50.82	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **September, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** | PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **61,248** | Total Population Served at End of Month: **177,717**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** | Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** | Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** | Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** | City: **Gainesville** | State: **Florida** | Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** | Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Richard J. Davis Printed or Typed Name	A1635 License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant
III. Daily Data for the Month/Year of:	September, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	27,385,000	30,910,000									0.58	
2	X	24.0	28,802,500	31,210,000									0.60	
3	X	24.0	29,404,583	33,860,000									0.46	
4	X	24.0	28,114,583	32,280,000									0.48	
5	X	24.0	25,405,417	30,430,000									0.44	
6	X	24.0	24,228,333	27,850,000									0.48	
7	X	24.0	24,545,000	29,260,000									0.61	
8	X	24.0	26,337,917	29,100,000									0.85	
9	X	24.0	23,840,417	27,520,000									0.77	
10	X	24.0	26,951,667	30,630,000									0.77	
11	X	24.0	28,193,750	32,310,000									0.67	
12	X	24.0	27,948,333	32,290,000									0.51	
13	X	24.0	26,906,250	32,070,000									0.54	
14	X	24.0	29,379,583	36,410,000									0.83	
15	X	24.0	29,607,500	34,230,000									0.59	
16	X	24.0	27,228,333	32,220,000									0.95	
17	X	24.0	31,124,583	33,350,000									0.81	
18	X	24.0	28,062,083	33,570,000									0.71	
19	X	24.0	28,484,167	33,470,000									0.71	
20	X	24.0	25,792,083	30,020,000									0.61	
21	X	24.0	23,260,833	30,330,000									0.58	
22	X	24.0	26,665,000	30,930,000									0.52	
23	X	24.0	24,370,417	27,070,000									0.52	
24	X	24.0	27,011,250	31,260,000									0.73	
25	X	24.0	26,179,167	28,370,000									0.46	
26	X	24.0	24,667,917	28,690,000									0.46	
27	X	24.0	24,896,667	29,440,000									0.42	
28	X	24.0	26,695,417	35,770,000									0.46	
29	X	24.0	28,328,333	32,240,000									0.50	
30	X	24.0	26,623,333	31,190,000									0.71	
31														
Total			806,440,417											
Average			26,881,347											
Maximum			31,124,583											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	**September, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C. Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*: Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	27,385,000	1.22	1.25	0.58	
2	X	24	28,802,500	1.23	1.2	0.60	
3	X	24	29,404,583	1.16	1.46	0.46	
4	X	24	28,114,583	1.14	1.26	0.48	
5	X	24	25,405,417	1.16	1.28	0.44	
6	X	24	24,228,333	1.17	1.37	0.48	
7	X	24	24,545,000	1.16	1.52	0.61	
8	X	24	26,337,917	1.04	1.14	0.85	
9	X	24	23,840,417	1.09	1.15	0.77	
10	X	24	26,951,667	1.13	1.36	0.77	
11	X	24	28,193,750	1.14	1.41	0.67	
12	X	24	27,948,333	1.13	1.28	0.51	
13	X	24	26,906,250	1.12	0.93	0.54	
14	X	24	29,379,583	0.99	1.27	0.83	
15	X	24	29,607,500	0.98	1.29	0.59	
16	X	24	27,228,333	1.05	1.32	0.95	
17	X	24	31,124,583	1.08	1.23	0.81	
18	X	24	28,062,083	1.06	1.07	0.71	
19	X	24	28,484,167	1.02	1.3	0.71	
20	X	24	25,792,083	0.91	1.11	0.61	
21	X	24	23,260,833	1.02	1.15	0.58	
22	X	24	26,665,000	1.01	1.27	0.52	
23	X	24	24,370,417	1.14	1.32	0.52	
24	X	24	27,011,250	1.14	1.4	0.73	
25	X	24	26,179,167	1.03	1.19	0.46	
26	X	24	24,667,917	1.03	1.22	0.46	
27	X	24	24,896,667	0.98	1.26	0.42	
28	X	24	26,695,417	0.96	1.32	0.46	
29	X	24	28,328,333	0.96	1.23	0.50	
30	X	24	26,623,333	0.98	1.24	0.71	
31							
Total			806,440,417				
Average			26,881,347				
Maximum			31,124,583				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **0.91** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **0.93** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **NO**
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

Only plants providing DEP-approved 4-log virus treatment must provide this information.

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of:	**September, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**		PWS Identification Number: **2010946**	
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive			
PWS Owner: **Gainesville Regional Utilities**			
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**		
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville**	State: **Florida**	Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**		
Contact Person's E-Mail Address: **DavisRJ@gru.com**			

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**		Plant Telephone Number: **(352) 393-6512**	
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville**	State: **Florida**	Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

	Richard J. Davis	**A1635**
Signature and Date	Printed or Typed Name	License Number

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**
III. Check Sample Results for the Month/Year:	**September, 2011**

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	**Westside**		**0.790**
Distribution Sample 2	**Bouleware**		**0.742**

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	2010946	Plant Name:	Dr. Walter E. Murphree Water Treatment Plant

IV. Daily Fruoide Data fro the Month/Year: **September, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	27,385,000	418	0.45	0.74
2	24.0	28,802,500	415	0.42	0.71
3	24.0	29,404,583	444	0.45	0.72
4	24.0	28,114,583	435	0.45	0.68
5	24.0	25,405,417	403	0.48	0.71
6	24.0	24,228,333	376	0.46	0.76
7	24.0	24,545,000	376	0.46	0.77
8	24.0	26,337,917	257	0.27	0.64
9	24.0	23,840,417	352	0.45	0.65
10	24.0	26,951,667	405	0.45	0.75
11	24.0	28,193,750	419	0.43	0.74
12	24.0	27,948,333	409	0.43	0.77
13	24.0	26,906,250	382	0.42	0.78
14	24.0	29,379,583	424	0.44	0.78
15	24.0	29,607,500	424	0.44	0.77
16	24.0	27,228,333	395	0.43	0.79
17	24.0	31,124,583	480	0.45	0.79
18	24.0	28,062,083	397	0.41	0.74
19	24.0	28,484,167	388	0.41	0.73
20	24.0	25,792,083	378	0.43	0.73
21	24.0	23,260,833	328	0.33	0.73
22	24.0	26,665,000	399	0.44	0.75
23	24.0	24,370,417	366	0.46	0.76
24	24.0	27,011,250	384	0.43	0.75
25	24.0	26,179,167	363	0.42	0.70
26	24.0	24,667,917	354	0.40	0.66
27	24.0	24,896,667	367	0.43	0.70
28	24.0	26,695,417	382	0.42	0.76
29	24.0	28,328,333	416	0.42	0.75
30	24.0	26,623,333	383	0.42	0.77
31					
Total	720.0	806,440,417	11,720	12.77	22.07
Average	24.0	26,881,347	391	0.43	0.74

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
September, 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	1.30	2.42	0.00	0.00	2.51	1.13	2.24	3.13	4.54	0.00	0.00	0.00	3.85	0.92	3.72	2.03	27.78
2	1.30	4.24	0.00	0.00	0.00	2.69	3.03	0.00	4.50	0.00	0.00	0.00	5.97	0.00	6.94	0.00	28.67
3	3.64	4.09	0.00	0.00	0.00	1.72	2.93	0.00	4.44	0.00	0.00	0.00	0.25	5.01	6.95	0.00	29.03
4	3.16	4.12	0.00	0.00	0.00	1.99	2.96	0.00	4.45	0.00	0.00	0.00	3.73	0.00	6.93	0.00	27.35
5	3.40	0.96	0.00	0.00	0.00	1.44	3.03	0.00	4.51	0.00	0.00	0.00	4.52	0.00	6.97	0.00	24.82
6	5.03	4.05	0.00	0.00	0.00	1.96	1.12	0.00	4.51	0.00	0.00	0.00	0.00	0.00	7.00	0.00	23.67
7	3.18	4.12	0.00	0.00	0.00	2.67	2.97	0.00	4.44	0.00	0.00	0.00	0.00	0.00	7.00	0.00	24.38
8	4.76	1.01	0.00	1.99	0.00	0.32	2.74	2.76	1.09	0.00	0.00	0.00	0.80	4.52	6.21	0.00	26.20
9	5.04	0.00	0.00	0.00	0.00	0.00	3.18	1.96	0.00	0.00	0.00	0.00	0.00	6.09	6.97	0.00	23.24
10	5.04	3.34	0.00	4.64	0.00	0.00	3.09	0.00	0.00	0.00	0.00	0.00	0.00	3.50	6.99	0.00	26.59
11	4.98	3.96	0.00	4.79	0.00	0.00	2.88	0.45	3.60	0.00	0.00	0.00	0.00	0.00	6.96	0.00	27.63
12	2.39	4.01	0.00	4.73	0.00	1.57	2.95	3.90	2.68	0.00	0.00	0.68	4.15	0.00	0.00	0.00	27.07
13	1.29	4.16	0.00	4.81	0.00	1.79	2.44	1.32	0.00	0.00	0.00	4.06	1.09	1.40	1.97	0.00	24.33
14	1.29	4.15	0.00	4.00	0.00	2.30	2.14	0.00	4.06	0.00	0.00	4.04	0.00	0.00	6.95	0.00	28.93
15	1.29	4.18	0.00	4.59	0.00	2.18	0.00	2.07	4.59	0.00	0.00	3.99	0.00	0.00	6.94	0.00	29.82
16	1.29	4.22	0.00	2.72	0.00	0.00	0.00	4.03	4.62	0.00	0.00	3.99	0.00	0.00	6.92	0.00	27.79
17	1.29	4.13	0.00	4.20	0.00	0.00	2.39	3.97	4.48	0.00	0.00	3.99	0.00	0.00	6.95	0.00	31.40
18	2.43	4.16	0.00	0.00	0.00	0.00	2.09	4.06	4.50	0.00	0.00	3.99	0.00	0.00	6.90	0.00	28.13
19	5.04	3.23	0.00	0.00	0.00	0.00	0.00	4.02	4.54	0.00	0.00	3.99	0.00	0.00	6.92	0.00	27.74
20	5.04	2.99	0.00	0.00	0.00	0.55	0.00	1.19	4.57	0.00	0.00	4.03	0.00	0.00	6.91	0.00	25.28
21	2.32	3.23	0.00	2.22	0.00	1.71	0.00	2.85	2.86	0.00	0.00	2.51	0.00	0.00	4.88	0.00	22.57
22	1.29	4.16	0.00	2.50	0.00	2.59	0.00	3.28	4.60	0.00	0.00	4.05	0.00	0.00	2.18	0.00	24.65
23	1.28	4.14	0.00	4.80	0.00	1.46	0.00	3.46	4.61	0.00	0.00	4.07	0.00	0.00	0.00	0.00	23.82
24	4.82	3.95	0.00	3.19	0.00	0.00	0.00	3.95	4.50	0.00	0.00	4.08	0.00	0.00	0.00	0.00	24.48
25	5.02	2.61	0.00	4.76	0.00	0.00	0.00	3.77	4.52	0.00	0.00	4.06	0.00	0.00	0.00	0.00	24.75
26	5.04	0.00	0.00	4.61	0.00	0.94	0.00	3.66	4.57	0.00	0.00	4.06	0.00	0.00	0.00	0.00	22.88
27	5.04	0.00	0.00	1.53	0.00	2.16	0.00	2.67	4.57	0.00	0.00	4.05	0.00	0.00	2.24	0.00	22.26
28	5.04	0.00	0.00	0.00	2.96	1.84	0.00	1.64	3.65	0.00	0.00	1.38	1.19	3.02	3.71	0.96	25.38
29	4.41	2.10	0.00	0.00	6.10	0.96	0.49	2.52	4.57	0.00	0.00	0.00	3.78	2.47	0.00	0.00	27.39
30	1.29	4.11	0.00	0.00	6.11	0.00	3.08	3.91	1.60	0.00	0.00	0.00	6.01	0.00	0.00	0.00	26.11
Total	97.73	91.82	0.00	60.05	17.67	33.98	45.75	64.57	110.14	0.00	0.00	61.05	35.39	26.92	136.09	2.99	784.15

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

September , 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

WELL	STATUS	9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15
1	ON			2:00	9:00	11:00		23:00	8:00							
	OFF			16:00	21:00			12:00	6:00				8:00			
2	ON	19:00				20:00					4:00					
	OFF	9:00				2:00			6:00							
3	ON															
	OFF															
4	ON								4:00		1:00					
	OFF								16:00							
5	ON	9:00														
	OFF	19:00														
6	ON	19:00		22:00		11:00	20:00						9:00		20:00	
	OFF	5:00		14:00	20:00		14:00		3:00					2:00		20:00
7	ON	19:00							9:00					13:00		
	OFF	13:00					9:00							8:00	17:00	
8	ON								8:00			21:00				11:00
	OFF	19:00								11:00				8:00		
9	ON											5:00			2:00	
	OFF								6:00				15:00			
10	ON															
	OFF															
11	ON													9:00		
	OFF													17:00		
12	ON												20:00			
	OFF															
13	ON	9:00			9:00				3:00				8:00			
	OFF			1:00		18:00			6:00					9:00		
14	ON	5:00		4:00					8:00	5:00				9:00		
	OFF	9:00		22:00						3:00	13:00			14:00		
15	ON	19:00							9:00					17:00		
	OFF	8:00							6:00			1:00				
16	ON	9:00														
	OFF	19:00														

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

September , 2011

Permit Number: 2-001-006NGM **Issued To:** Gainesville Regional Utilities

WELL	STATUS	9/16	9/17	9/18	9/19	9/20	9/21	9/22	9/23	9/24	9/25	9/26	9/27	9/28	9/29	9/30
1	ON			17:00						1:00						
	OFF						7:00								20:00	
2	ON					7:00	12:00								11:00	
	OFF				19:00		7:00				16:00					
3	ON															
	OFF															
4	ON	23:00					12:00	20:00								
	OFF	14:00	20:00					15:00					9:00			
5	ON													13:00		
	OFF															
6	ON					15:00	3:00					15:00	20:00	20:00		
	OFF					20:00			14:00				16:00	13:00	9:00	
7	ON		5:00												20:00	
	OFF			17:00												
8	ON					20:00	12:00								8:00	
	OFF					3:00	8:00							13:00		
9	ON						11:00							13:00		
	OFF						6:00							8:00		9:00
10	ON															
	OFF															
11	ON															
	OFF															
12	ON						11:00									
	OFF						6:00							8:00		
13	ON													8:00	9:00	
	OFF													13:00		
14	ON													13:00		
	OFF														9:00	
15	ON						14:00						16:00			
	OFF						7:00	8:00						13:00		
16	ON													8:00		
	OFF													13:00		

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	61,248	Estimated
Total Customer Served at End of Month:	177,717	Estimated

Lead Operator's Signature : ____________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	14730	14770	29500	27559	31500	21910
2	24.0	0	14168	14053	28220	27502	31210	21680
3	24.0	0	14035	14031	28066	25808	29800	19430
4	24.0	0	12903	12915	25818	25983	30290	21140
5	24.0	0	13829	13998	27827	27911	33780	20640
6	24.0	0	13910	13995	27905	26829	34050	21070
7	24.0	0	12158	12292	24450	24547	28740	19920
8	24.0	0	12548	12517	25065	23864	31940	15890
9	24.0	0	11448	11448	22896	22237	29380	15290
10	24.0	0	11742	11956	23698	21943	26790	15840
11	24.0	0	11505	11419	22924	22549	27320	17740
12	24.0	0	11886	11971	23857	23725	29860	18930
13	24.0	0	12465	12593	25058	23923	28730	19000
14	24.0	0	11714	11462	23176	23130	26810	18520
15	24.0	0	12400	12593	24993	23761	28250	16540
16	24.0	0	12351	12383	24733	24692	30600	16550
17	24.0	0	12625	12543	25168	23785	29810	15310
18	24.0	0	12101	12144	24245	23281	29000	18830
19	24.0	0	11389	11507	22896	24378	32870	18820
20	24.0	0	13103	13124	26228	23544	28510	18370
21	24.0	0	11648	11709	23357	23085	26790	17860
22	24.0	0	12861	12894	25755	23692	28480	17690
23	24.0	0	11602	11707	23309	24160	27020	16780
24	24.0	0	12825	12803	25627	23578	29040	15220
25	24.0	0	11963	12122	24085	24050	28250	19040
26	24.0	0	13563	13643	27205	25918	33520	18700
27	24.0	0	12722	12533	25255	25400	32940	18770
28	24.0	0	11832	11853	23685	23778	26760	18750
29	24.0	0	12127	12200	24328	22319	25930	17300
30	24.0	0	10623	10717	21340	21910	28500	14700
31	24.0	0	11437	11476	22913	21776	27040	15240
Total	744.0	0	386213	387369	773582	750617		
Maximum	24.0	0	14730	14770	29500	27911		
Minimum	24.0	0	10623	10717	21340	21776		
Average	24.0	0	12458	12496	24954	24213		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings Total	Maximum	Minimum	Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
1	96	249	24	2	527.91
2	96	0	0		0
3	96	183	73	4 5	966.66
4	96	229	22	6 3	700.41
5	96	0	0		0
6	96	0	0		0
7	96	0	0		0
8	96	0	0		0
9	96	0	0		0
10	96	0	0		0
11	96	252	168	1	485.83
12	96	254	26	2	486.25
13	96	206	22	3	483.33
14	96	252	24	4	480.83
15	96	273	26	5	483.33
16	96	277	22	6	83.33
17	96	0	0		0
18	96	0	0		0
19	96	0	0		0
20	96	0	0		0
21	96	0	0		0
22	96	253	145	1	484.16
23	96	251	23	2	485.83
24	96	252	24	2	479.59
25	96	253	24	4	482.5
26	96	258	33	5	485
27	96	253	16	6	487.91
28	96	0	0		0
29	96	0	0		0
30	96	0	0		0
31	96	0	0		0
Maximum	96	277	168		966.66
Minimum	96	0	0		0

SumWashed:
7602.87

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	29505	4559	95	431.4	4000
2	28244	4774	109	410.9	4000
3	30368	4071	105	390.4	4000
4	28034	4142	96	390.2	3000
5	28760	4438	107	396.5	5000
6	28502	4849	104	408.1	4000
7	26413	4154	79	366.0	5000
8	27072	3916	100	355.1	3000
9	24569	3783	94	328.6	3500
10	25567	4312	94	352.1	3500
11	24094	3771	115	361.7	3000
12	24735	3562	105	359.1	4000
13	26691	3615	99	376.2	3500
14	25757	2953	106	340.1	4000
15	26450	2971	109	372.9	3500
16	24763	2816	95	349.6	4500
17	25377	2951	81	365.8	3000
18	24894	2788	81	349.8	5000
19	22443	2961	74	319.6	5000
20	25195	3469	84	391.1	4000
21	20682	3597	106	350.8	4000
22	22956	4284	110	388.1	4000
23	21492	3598	117	346.7	4000
24	24022	4112	98	362.3	4000
25	23171	3782	85	390.3	3500
26	25562	3802	90	401.7	4000
27	23833	3685	91	363.1	4000
28	22894	3368	88	353.1	4000
29	24935	3281	89	382.3	5000
30	20136	3195	89	332.4	4000
31	20657	3758	85	360.7	3000
Total	777773	115318	2981	11446.5	122000
Maximum	30368	4849	117	431.4	5000
Minimum	20136	2788	74	319.6	3000
Average	25089	3720	96	369.2	3935

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	120.2	18.6	0.41	0.42	16.3
2	119.8	20.3	0.48	0.46	17.0
3	129.8	17.4	0.49	0.42	17.1
4	118.7	16.7	0.44	0.40	13.9
5	124.4	19.2	0.46	0.44	21.5
6	122.5	20.9	0.46	0.43	17.2
7	129.7	20.3	0.39	0.45	24.5
8	129.9	18.8	0.50	0.42	14.4
9	128.7	19.8	0.51	0.43	18.3
10	129.4	21.8	0.51	0.45	17.7
11	126.3	19.8	0.61	0.47	15.7
12	124.3	17.8	0.53	0.45	20.1
13	127.6	17.4	0.49	0.44	16.7
14	133.5	15.2	0.55	0.44	20.7
15	127.3	14.2	0.55	0.44	16.8
16	120.2	13.6	0.46	0.41	21.8
17	120.9	14.0	0.41	0.45	14.3
18	123.2	13.8	0.42	0.44	24.7
19	99.4	14.9	0.37	0.34	26.2
20	115.2	15.9	0.43	0.45	18.3
21	106.1	18.6	0.55	0.46	20.5
22	107.1	19.9	0.56	0.44	18.6
23	110.4	18.3	0.58	0.44	20.6
24	113.1	19.3	0.50	0.43	18.7
25	115.6	18.8	0.42	0.48	17.4
26	112.8	16.7	0.42	0.45	17.6
27	113.2	17.5	0.43	0.43	19.0
28	116.0	17.0	0.44	0.44	20.2
29	123.0	16.1	0.48	0.46	24.6
30	113.2	17.8	0.49	0.46	22.5
31	108.1	19.7	0.47	0.46	15.7
Maximum	133.5	21.8	0.61	0.48	26.2
Minimum	99.4	13.6	0.37	0.34	13.9
Average	119.7	17.7	0.48	0.44	19.0

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.60	179	295	5	<2	0.39
2	7.64	181	303	5	<2	0.36
3	7.66	192	298	5	<2	0.37
4	7.72	197	295	5	<2	0.40
5	7.68	197	295	5	<2	0.36
6	7.72	183	296	5	<2	0.33
7	7.71	187	270	5	<2	0.34
8	7.72	189	257	5	<2	0.37
9	7.72	183	267	5	<2	0.38
10	7.67	185	307	5	<2	0.34
11	7.63	190	307	5	<2	0.35
12	7.65	185	291	5	<2	0.36
13	7.63	193	279	5	<2	0.35
14	7.64	202	261	5	<2	0.35
15	7.67	198	246	5	<2	0.36
16	7.66	195	251	5	<2	0.39
17	7.64	198	254	5	<2	0.39
18	7.65	202	235	5	<2	0.37
19	7.65	188	253	5	<2	0.38
20	7.62	198	271	5	<2	0.36
21	7.64	187	308	5	<2	0.36
22	7.66	186	303	5	<2	0.36
23	7.69	190	278	5	<2	0.40
24	7.71	184	296	5	<2	0.38
25	7.66	187	289	5	<2	0.37
26	7.66	192	268	5	<2	0.37
27	7.67	199	270	5	<2	0.34
28	7.67	194	262	5	<2	0.31
29	7.72	194	256	5	<2	0.36
30	7.73	187	262	5	<2	0.33
31	7.70	183	281	5	<2	0.33
Maximum	7.73	202	308	5	<2	0.40
Minimum	7.60	179	235	5	<2	0.31
Average	7.67	190	277	5	<2	0.36

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.04	26	43	171
2	10.03	23	39	182
3	10.07	24	42	178
4	10.09	30	50	175
5	10.11	27	44	179
6	10.03	25	42	182
7	10.06	26	45	160
8	10.12	28	45	140
9	10.10	26	43	154
10	10.12	25	40	187
11	10.09	25	41	183
12	10.08	25	41	166
13	10.07	26	46	158
14	10.06	31	53	142
15	10.18	31	53	132
16	10.14	29	52	128
17	10.08	30	54	122
18	10.09	35	61	123
19	10.10	31	54	138
20	10.12	29	48	157
21	10.07	26	41	180
22	10.05	26	41	185
23	10.24	29	44	164
24	10.09	24	39	178
25	10.13	25	41	174
26	10.02	27	47	156
27	10.08	29	48	151
28	10.06	29	51	146
29	10.13	32	53	134
30	10.26	27	43	142
31	10.18	26	41	166
Maximum	10.26	35	61	187
Minimum	10.02	23	39	122
Average	10.10	27	46	159

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.65	4	37	169	1.01	<1
2	8.67	3	37	178	1.00	<1
3	8.69	4	35	180	1.01	<1
4	8.74	5	40	173	1.09	<1
5	8.64	6	44	179	1.05	<1
6	8.64	3	40	182	1.02	<1
7	8.68	4	38	170	1.22	<1
8	8.69	5	41	152	1.26	<1
9	8.68	4	38	159	1.26	<1
10	8.65	2	37	168	1.26	<1
11	8.60	3	35	184	1.32	<1
12	8.65	3	38	177	1.28	<1
13	8.70	4	36	165	1.33	<1
14	8.70	7	48	150	1.35	<1
15	8.73	6	49	141	1.36	<1
16	8.75	4	47	132	1.28	<1
17	8.70	3	49	129	1.28	<1
18	8.69	4	54	126	1.33	<1
19	8.66	5	53	135	1.25	<1
20	8.65	4	46	149	1.31	<1
21	8.63	4	42	161	1.34	<1
22	8.65	4	35	186	1.33	<1
23	8.72	4	39	173	1.29	<1
24	8.69	2	38	174	1.24	<1
25	8.67	3	35	178	1.23	<1
26	8.67	3	40	165	1.24	<1
27	8.64	4	43	159	1.25	<1
28	8.63	4	44	152	1.33	<1
29	8.66	4	48	139	1.34	<1
30	8.68	3	46	142	1.31	<1
31	8.70	3	38	155	1.29	<1
Maximum	8.75	7	54	186	1.36	<1
Minimum	8.60	2	35	126	1.00	<1
Average	8.67	4	42	161	1.24	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.71	0.17	0.00
2	0.71	0.17	0.00
3	0.73	0.15	0.00
4	0.73	0.20	0.00
5	0.73	0.16	0.00
6	0.74	0.12	0.20
7	0.73	0.12	0.00
8	0.73	0.12	0.00
9	0.68	0.12	0.00
10	0.66	0.12	2.25
11	0.71	0.14	0.00
12	0.74	0.14	0.00
13	0.72	0.18	0.00
14	0.72	0.19	0.00
15	0.76	0.18	0.00
16	0.70	0.19	0.00
17	0.70	0.19	0.10
18	0.71	0.19	0.10
19	0.75	0.19	0.00
20	0.76	0.19	0.00
21	0.73	0.19	0.00
22	0.72	0.16	0.00
23	0.72	0.13	0.00
24	0.70	0.13	0.00
25	0.73	0.18	0.00
26	0.77	0.20	0.00
27	0.73	0.17	0.00
28	0.70	0.14	0.00
29	0.69	0.14	0.00
30	0.71	0.14	0.00
31	0.69	0.14	0.00
Maximum	0.77	0.20	2.25
Minimum	0.66	0.12	0.00
Average	0.72	0.16	0.09
Total			2.65

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	27.56	63.82	92.90	84.48	89.11	53.73	78.42	78.98
2	27.51	63.94	92.86	84.19	88.68	53.59	77.46	79.19
3	25.81	63.70	93.94	85.77	90.70	54.08	80.42	79.53
4	25.99	63.37	93.95	85.23	90.14	53.93	79.76	79.44
5	27.91	64.91	93.77	84.94	89.71	52.42	78.58	80.08
6	26.83	64.53	93.78	84.95	89.73	54.51	78.81	79.83
7	24.54	63.91	95.39	87.39	92.28	54.69	82.42	80.50
8	23.86	64.58	95.23	87.57	92.77	55.25	82.10	81.33
9	22.24	63.16	95.77	87.64	92.58	54.26	82.63	80.30
10	21.94	62.73	96.02	89.75	93.30	54.19	83.61	80.37
11	22.55	62.52	95.57	90.59	92.75	54.05	83.03	80.09
12	23.73	63.35	95.28	91.19	92.09	54.31	82.10	80.25
13	23.92	63.36	95.50	91.51	82.28	54.08	82.34	80.11
14	23.13	63.09	95.62	92.31	93.08	54.14	83.40	80.24
15	23.76	63.06	95.43	91.53	92.02	54.08	81.72	80.05
16	24.69	63.51	94.96	91.08	91.34	54.26	81.04	80.08
17	23.78	63.70	95.46	92.32	92.29	54.78	82.39	80.30
18	23.29	62.85	95.68	92.83	92.57	54.32	82.87	80.20
19	24.36	63.51	95.52	92.41	92.01	54.35	81.77	80.33
20	23.55	63.78	96.30	93.40	93.01	54.65	82.85	80.64
21	23.08	62.99	95.62	92.63	92.19	53.92	82.15	79.84
22	23.69	63.41	95.78	92.36	92.12	54.12	81.59	80.37
23	24.16	62.03	94.02	90.91	90.52	53.06	79.67	79.23
24	23.58	63.10	95.53	92.84	92.20	54.06	82.31	80.01
25	24.05	63.19	95.50	92.97	92.22	54.04	82.24	79.99
26	25.92	64.16	94.53	91.51	90.72	54.34	80.00	79.96
27	25.40	63.83	94.52	91.38	90.70	54.07	79.70	79.93
28	23.78	63.08	95.10	93.29	92.09	53.97	82.14	80.04
29	22.31	62.77	96.35	93.25	92.86	54.13	82.74	80.35
30	21.92	62.25	96.01	93.99	92.64	53.55	82.40	79.93
31	21.77	62.58	96.04	94.10	93.21	53.89	83.34	80.23
Maximum	27.91	64.91	96.35	94.10	93.30	55.25	83.61	81.33
Minimum	21.77	62.03	92.86	84.19	82.28	52.42	77.46	78.98
Average	24.21	63.38	95.09	90.33	91.42	54.09	81.48	80.06
Total	750.59							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile LS151	SFCC LS135	Quarries LS136
	mgd	psi	psi	psi	psi
1	27.56	63.82	85.89	66.36	86.26
2	27.51	63.94	84.64	66.23	85.33
3	25.81	63.70	87.90	67.93	88.36
4	25.99	63.37	84.25	66.85	87.41
5	27.91	64.91	85.75	66.62	86.20
6	26.83	64.53	86.02	66.69	86.63
7	24.54	63.91	90.01	69.37	90.44
8	23.86	64.58	89.54	69.54	89.91
9	22.24	63.16	90.30	69.42	90.58
10	21.94	62.73	91.41	69.61	91.68
11	22.55	62.52	90.71	69.41	91.04
12	23.73	63.35	89.84	69.15	90.20
13	23.92	63.36	89.93	69.12	90.22
14	23.13	63.09	91.32	69.82	91.44
15	23.76	63.06	89.20	68.71	89.65
16	24.69	63.51	88.42	68.49	88.80
17	23.78	63.70	90.24	69.30	90.63
18	23.29	62.85	90.55	69.44	90.85
19	24.36	63.51	89.36	68.85	89.74
20	23.55	63.78	90.48	69.55	90.88
21	23.08	62.99	89.84	68.92	90.03
22	23.69	63.41	89.20	68.64	89.52
23	24.16	62.03	87.08	67.15	84.52
24	23.58	63.10	90.00	68.97	90.22
25	24.05	63.19	89.93	69.13	90.29
26	25.92	64.16	87.18	68.06	87.95
27	25.40	63.83	87.00	67.21	87.44
28	23.78	63.08	89.93	69.47	90.14
29	22.31	62.77	90.36	69.67	90.86
30	21.92	62.25	90.17	69.61	90.38
31	21.77	62.58	90.95	69.74	91.20
Maximum	27.91	64.91	91.41	69.82	91.68
Minimum	21.77	62.03	84.25	66.23	84.52
Average	24.21	63.38	88.95	68.61	89.32
Total	750.59				

KELLY PUMP STATION REPORT

Date	DSFR mgd	DSPS psi	JKPS psi	JKFR mgd	Repumps plus DSFR mgd
1	27.56	63.82	68.55	0.00	27.94
2	27.50	63.94	68.84	0.00	27.98
3	25.81	63.70	69.25	0.00	26.27
4	25.98	63.37	68.98	0.00	26.66
5	27.91	64.91	69.56	0.00	28.61
6	26.83	64.53	69.58	0.02	27.42
7	24.55	63.91	70.13	0.00	24.55
8	23.86	64.58	71.29	0.00	23.88
9	22.24	63.16	70.35	0.00	22.51
10	21.94	62.73	70.05	0.00	22.14
11	22.55	62.52	69.60	0.00	23.12
12	23.73	63.35	69.93	0.00	24.03
13	23.92	63.36	69.83	0.00	24.21
14	23.13	63.09	70.06	0.00	23.14
15	23.76	63.06	69.85	0.00	24.03
16	24.69	63.51	69.82	0.00	25.42
17	23.79	63.70	70.09	0.00	23.95
18	23.28	62.85	69.76	0.00	23.45
19	24.38	63.51	70.10	0.00	24.86
20	23.54	63.78	70.63	0.00	23.83
21	23.09	62.99	70.00	0.00	23.09
22	23.69	63.41	70.30	0.00	23.88
23	24.16	62.03	68.78	0.00	24.62
24	23.58	63.10	69.76	0.00	23.87
25	24.05	63.19	69.87	0.00	24.48
26	25.92	64.16	69.95	0.00	26.32
27	25.40	63.83	69.80	0.00	25.99
28	23.78	63.08	69.87	0.00	24.00
29	22.31	62.77	70.38	0.00	22.53
30	21.92	62.25	69.93	0.00	22.10
31	21.77	62.58	70.20	0.00	21.86
Maximum	27.91	64.91	71.29	0.02	28.61
Minimum	21.77	62.03	68.55	0.00	21.86
Average	24.21	63.38	69.84	0.00	24.54
Total	750.61				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.37	24.51	37.74	0.00	2.75	0.58
2	0.46	25.28	38.01	0.00	0.00	0.50
3	0.46	25.62	39.15	0.00	3.67	0.50
4	0.65	23.55	38.43	2.88	0.00	0.50
5	0.68	24.68	38.15	0.00	2.71	0.52
6	0.57	25.20	38.76	0.00	2.58	0.63
7	0.01	27.40	41.24	0.00	0.00	0.72
8	0.01	27.50	41.56	0.00	0.00	0.85
9	0.27	26.38	41.69	0.95	1.11	0.56
10	0.20	26.78	42.18	0.00	0.00	0.54
11	0.57	25.42	41.29	0.00	0.00	0.54
12	0.30	26.44	41.08	0.00	0.00	0.56
13	0.28	26.55	40.99	0.00	2.32	0.56
14	0.01	27.43	41.85	0.00	0.00	0.77
15	0.28	26.50	40.40	0.00	0.00	0.54
16	0.70	24.70	39.80	0.00	2.78	0.61
17	0.17	26.98	41.28	0.00	0.00	0.61
18	0.17	26.95	41.38	0.00	0.00	0.61
19	0.47	23.94	40.90	0.00	2.11	0.61
20	0.28	26.62	40.86	0.00	0.00	0.52
21	0.01	27.36	41.17	0.00	0.00	0.73
22	0.19	26.13	40.48	0.00	0.00	0.44
23	0.46	25.70	38.81	0.00	3.58	0.48
24	0.28	26.49	40.49	0.00	0.00	0.60
25	0.42	25.54	41.02	0.00	0.00	0.56
26	0.46	26.19	39.28	0.00	0.00	0.56
27	0.59	25.50	39.63	0.00	2.20	0.63
28	0.22	24.76	41.55	0.00	0.00	0.63
29	0.21	26.66	41.69	1.72	0.00	0.52
30	0.19	26.71	41.85	0.00	1.15	0.58
31	0.09	26.91	42.49	0.00	0.67	0.58
Maximum	0.70	27.50	42.49	2.88	3.67	0.85
Minimum	0.01	23.55	37.74	0.00	0.00	0.44
Average	0.32	26.01	40.49	0.18	0.89	0.59
Total				5.55	27.63	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **October, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** — PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **61,248** — Total Population Served at End of Month: **177,717**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** — Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** — City: **Gainesville** — State: **Florida** — Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** — Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** — Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** — City: **Gainesville** — State: **Florida** — Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** — Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Rotation
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Days
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: October, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	29,500,000	31,500,000									0.58	
2	X	24.0	28,220,417	31,210,000									0.50	
3	X	24.0	28,066,250	29,800,000									0.50	
4	X	24.0	25,817,917	30,290,000									0.50	
5	X	24.0	27,826,667	33,780,000									0.52	
6	X	24.0	27,905,417	34,050,000									0.63	
7	X	24.0	24,450,417	28,740,000									0.72	
8	X	24.0	25,065,000	31,940,000									0.85	
9	X	24.0	22,896,250	29,380,000									0.56	
10	X	24.0	23,698,333	26,790,000									0.54	
11	X	24.0	22,924,167	27,320,000									0.54	
12	X	24.0	23,856,667	29,860,000									0.56	
13	X	24.0	25,057,917	28,730,000									0.56	
14	X	24.0	23,175,833	26,810,000									0.77	
15	X	24.0	24,992,500	28,250,000									0.54	
16	X	24.0	24,733,333	30,600,000									0.61	
17	X	24.0	25,167,500	29,810,000									0.61	
18	X	24.0	24,244,583	29,000,000									0.61	
19	X	24.0	22,895,833	32,870,000									0.61	
20	X	24.0	26,227,500	28,510,000									0.52	
21	X	24.0	23,357,083	26,790,000									0.73	
22	X	24.0	25,755,000	28,480,000									0.44	
23	X	24.0	23,309,167	27,020,000									0.48	
24	X	24.0	25,627,083	29,040,000									0.60	
25	X	24.0	24,085,417	28,250,000									0.56	
26	X	24.0	27,205,000	33,520,000									0.56	
27	X	24.0	25,255,417	32,940,000									0.63	
28	X	24.0	23,685,417	26,760,000									0.63	
29	X	24.0	24,327,500	25,930,000									0.52	
30	X	24.0	21,340,000	28,500,000									0.58	
31	X	24.0	22,912,500	27,040,000									0.58	
Total			773,582,083											
Average			24,954,261											
Maximum			29,500,000											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	October, 2011

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*: Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	29,500,000	0.99	1.35	0.58	
2	X	24	28,220,417	0.98	1.24	0.50	
3	X	24	28,066,250	0.98	1.51	0.50	
4	X	24	25,817,917	0.85	1.36	0.50	
5	X	24	27,826,667	0.96	1.24	0.52	
6	X	24	27,905,417	0.90	1.39	0.63	
7	X	24	24,450,417	0.90	1.24	0.72	
8	X	24	25,065,000	1.25	1.31	0.85	
9	X	24	22,896,250	1.23	1.28	0.56	
10	X	24	23,698,333	1.24	1.12	0.54	
11	X	24	22,924,167	1.28	1.24	0.54	
12	X	24	23,856,667	1.21	1.28	0.56	
13	X	24	25,057,917	1.28	1.31	0.56	
14	X	24	23,175,833	1.28	1.21	0.77	
15	X	24	24,992,500	1.30	1.12	0.54	
16	X	24	24,733,333	1.22	1.24	0.61	
17	X	24	25,167,500	1.23	1.22	0.61	
18	X	24	24,244,583	1.28	1.28	0.61	
19	X	24	22,895,833	1.00	1.22	0.61	
20	X	24	26,227,500	1.27	1.15	0.52	
21	X	24	23,357,083	1.30	0.90	0.73	
22	X	24	25,755,000	1.29	1.04	0.44	
23	X	24	23,309,167	1.22	1.16	0.48	
24	X	24	25,627,083	1.20	1.24	0.60	
25	X	24	24,085,417	1.20	1.10	0.56	
26	X	24	27,205,000	1.20	1.23	0.56	
27	X	24	25,255,417	1.23	1.28	0.63	
28	X	24	23,685,417	1.28	1.39	0.63	
29	X	24	24,327,500	1.31	1.24	0.52	
30	X	24	21,340,000	1.28	1.22	0.58	
31	X	24	22,912,500	1.27	1.45	0.58	
Total			773,582,083				
Average			24,954,261				
Maximum			29,500,000				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **0.85** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **0.90** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **NO**
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: October, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 393-6512**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

PWS Identification Number: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Check Sample Results for the Month/Year: October, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.695
Distribution Sample 2	Bouleware		0.661

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Fluoride Data fro the Month/Year: **October, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	29,500,000	431	0.42	0.71
2	24.0	28,220,417	411	0.46	0.71
3	24.0	28,066,250	390	0.42	0.73
4	24.0	25,817,917	390	0.40	0.73
5	24.0	27,826,667	396	0.44	0.73
6	24.0	27,905,417	408	0.43	0.74
7	24.0	24,450,417	366	0.45	0.73
8	24.0	25,065,000	355	0.42	0.73
9	24.0	22,896,250	329	0.43	0.68
10	24.0	23,698,333	352	0.45	0.66
11	24.0	22,924,167	362	0.47	0.71
12	24.0	23,856,667	359	0.45	0.74
13	24.0	25,057,917	376	0.44	0.72
14	24.0	23,175,833	340	0.44	0.72
15	24.0	24,992,500	373	0.44	0.76
16	24.0	24,733,333	350	0.41	0.70
17	24.0	25,167,500	366	0.45	0.70
18	24.0	24,244,583	350	0.44	0.71
19	24.0	22,895,833	320	0.34	0.75
20	24.0	26,227,500	391	0.45	0.76
21	24.0	23,357,083	351	0.46	0.73
22	24.0	25,755,000	388	0.44	0.72
23	24.0	23,309,167	347	0.44	0.72
24	24.0	25,627,083	362	0.43	0.70
25	24.0	24,085,417	390	0.48	0.73
26	24.0	27,205,000	402	0.45	0.77
27	24.0	25,255,417	363	0.43	0.73
28	24.0	23,685,417	353	0.44	0.70
29	24.0	24,327,500	382	0.46	0.69
30	24.0	21,340,000	332	0.46	0.71
31	24.0	22,912,500	361	0.46	0.69
Total	744.0	773,582,083	11,446	13.58	22.29
Average	24.0	24,954,261	369	0.44	0.72

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
October, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	3.20	2.05	0.00	0.00	6.12	0.00	1.55	3.90	2.28	0.00	0.00	0.00	1.70	3.58	4.96	0.00	29.33
2	5.04	0.00	0.26	0.00	6.10	0.00	0.93	3.87	4.49	0.00	0.00	0.00	0.00	0.00	6.99	0.00	27.68
3	4.13	1.29	0.27	0.00	6.06	0.38	0.57	3.87	2.78	0.00	0.00	1.53	0.00	3.84	2.97	0.00	27.69
4	4.13	0.00	0.00	0.39	5.07	0.00	0.00	3.50	0.00	0.00	0.00	3.54	3.15	2.08	3.95	0.00	25.81
5	4.17	0.00	0.00	0.00	4.52	0.71	0.00	3.96	3.82	0.00	0.00	1.25	1.37	1.38	5.47	1.21	27.87
6	5.04	0.00	0.00	0.00	6.15	0.00	0.00	2.83	4.48	0.00	0.00	2.12	0.00	0.00	6.96	0.00	27.58
7	5.04	0.00	0.00	0.00	0.74	0.00	0.00	2.69	4.53	0.00	0.00	4.04	0.00	0.00	6.96	0.00	24.00
8	5.04	1.52	0.60	4.19	0.86	0.00	0.00	0.00	4.51	0.00	0.00	2.35	0.00	0.00	6.98	0.00	26.05
9	4.43	0.00	1.51	4.87	1.15	0.43	0.00	1.42	4.56	0.00	0.00	0.00	0.00	0.00	7.03	0.00	25.40
10	1.31	0.00	0.13	4.84	1.24	2.60	0.00	3.98	4.60	0.00	0.00	0.00	0.00	0.00	7.05	0.00	25.76
11	1.33	0.00	0.00	0.89	1.27	2.66	0.00	4.08	4.62	0.00	0.00	0.00	0.00	3.53	7.01	0.00	25.39
12	1.29	1.95	0.00	0.00	1.28	2.68	0.76	4.08	4.58	0.00	1.20	1.83	1.02	2.58	2.58	0.00	25.82
13	1.30	4.19	0.00	0.00	1.27	2.65	1.76	4.02	4.41	0.00	0.00	1.31	0.00	4.56	0.00	0.00	25.48
14	1.29	4.22	0.00	0.00	1.28	2.69	1.51	1.45	4.43	0.00	0.00	0.00	0.00	6.67	0.00	0.00	23.53
15	4.51	3.42	0.00	0.00	1.32	2.70	2.95	0.00	4.35	0.00	0.00	0.00	0.00	6.67	0.00	0.00	25.93
16	5.03	0.00	0.00	0.00	1.38	2.48	2.97	0.00	4.39	0.00	0.00	2.37	0.00	6.64	0.00	0.00	25.25
17	5.04	0.00	0.00	0.00	1.38	1.37	1.86	0.00	4.40	0.00	0.00	4.04	0.00	6.60	0.00	0.00	24.68
18	5.04	0.00	0.00	0.00	1.34	0.45	2.62	0.00	4.42	0.00	0.00	4.04	0.00	6.60	0.00	0.00	24.51
19	2.47	1.46	0.00	2.47	0.77	1.03	0.25	2.63	3.69	0.00	0.00	3.23	0.00	5.38	0.00	0.00	23.37
20	1.33	0.00	0.00	1.75	1.18	0.96	3.02	3.90	4.47	0.00	0.00	2.48	1.01	4.04	3.88	0.00	28.03
21	1.33	0.00	0.00	0.00	4.33	0.00	1.01	4.10	4.58	0.00	0.00	0.00	1.97	0.00	6.96	0.00	24.28
22	1.33	0.00	0.00	4.30	6.13	0.00	1.59	1.83	4.51	0.00	0.00	0.00	0.00	0.00	7.01	0.00	26.71
23	1.33	0.70	0.00	4.06	3.48	0.43	2.17	0.00	4.44	0.00	0.00	0.00	0.00	0.00	7.07	0.00	23.68
24	1.33	4.17	0.00	0.00	6.19	1.18	1.54	0.00	4.45	0.00	0.00	0.55	0.00	0.00	7.07	0.00	26.48
25	3.52	4.15	0.00	0.00	6.26	0.51	0.00	0.00	4.50	0.00	0.00	0.00	0.18	0.00	5.36	0.00	24.48
26	3.64	4.05	0.00	0.00	6.19	0.00	1.95	0.00	4.36	0.00	0.00	0.00	6.07	0.00	0.00	0.00	26.26
27	1.29	4.20	0.21	0.00	6.30	0.00	3.07	0.00	4.39	0.00	0.00	0.00	6.03	0.00	0.00	0.00	25.49
28	1.29	4.22	1.03	0.00	1.99	2.54	3.03	0.00	4.40	0.00	0.00	0.00	6.02	0.00	0.00	0.00	24.52
29	1.29	4.20	0.00	4.07	0.00	1.49	3.03	0.00	4.41	0.00	0.00	0.00	5.59	0.00	0.00	0.00	24.09
30	1.29	3.61	0.00	4.01	0.00	2.21	1.74	0.00	4.41	0.00	0.00	0.00	0.00	0.00	2.54	0.00	19.83
31	1.29	0.00	0.00	4.88	0.00	2.66	1.78	0.00	4.46	0.00	0.00	0.00	0.00	0.00	7.00	0.00	22.08
Total	89.09	49.39	4.00	40.72	91.34	34.82	41.68	56.11	128.70	0.00	1.20	34.72	34.13	64.14	115.82	1.21	787.07

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

October, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	10/1	10/2	10/3	10/4	10/5	10/6	10/7	10/8	10/9	10/10	10/11	10/12	10/13	10/14	10/15
1	ON	12:00		20:00		6:00										3:00
	OFF			14:00	21:00					20:00						
2	ON			14:00					2:00				13:00			
	OFF	12:00		22:00					11:00							20:00
3	ON															
	OFF															
4	ON				6:00				3:00							
	OFF				7:00							4:00				
5	ON				10:00	13:00										
	OFF				7:00	8:00		3:00								
6	ON			16:00						20:00						
	OFF			20:00												
7	ON		15:00										18:00			
	OFF	12:00		5:00												
8	ON				10:00			6:00		15:00						
	OFF				7:00		17:00	21:00							9:00	
9	ON	12:00				4:00										
	OFF			15:00												
10	ON															
	OFF															
11	ON												9:00			
	OFF												13:00			
12	ON			15:00	10:00		11:00						13:00			
	OFF				7:00	8:00			14:00					8:00		
13	ON				11:00								9:00			
	OFF	7:00				6:00							13:00			
14	ON	7:00		10:00		8:00						11:00		8:00		
	OFF	20:00			8:00	13:00							9:00			
15	ON	7:00			10:00	13:00										
	OFF			10:00		8:00							9:00			
16	ON					8:00										
	OFF					13:00										

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

CONDITION COMPLIANCE

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

October, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	10/16	10/17	10/18	10/19	10/20	10/21	10/22	10/23	10/24	10/25	10/26	10/27	10/28	10/29
1	ON										10:00				
	OFF				8:00							15:00			
2	ON				12:00				20:00						
	OFF				17:00										
3	ON														
	OFF														
4	ON				12:00			2:00							1:00
	OFF					9:00			20:00						
5	ON					9:00	8:00		11:00						
	OFF					13:00		23:00						8:00	
6	ON	4:00		20:00	20:00				20:00		18:00			1:00	
	OFF	2:00	12:00		7:00	9:00				11:00	23:00				1:00
7	ON							11:00				8:00			
	OFF				2:00					12:00					
8	ON				12:00										
	OFF							11:00							
9	ON				12:00										
	OFF				7:00										
10	ON														
	OFF														
11	ON														
	OFF														
12	ON	10:00			12:00					20:00					
	OFF				7:00	15:00				23:00					
13	ON					20:00					23:00				
	OFF						8:00								22:00
14	ON				12:00										
	OFF				7:00	15:00									
15	ON					15:00									
	OFF										18:00				
16	ON														
	OFF														

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
October, 2011

Permit Number: 2-001-006NGM   **Issued To:** Gainesville Regional Utilities

WELL	STATUS	10/30	10/31
1	ON		
	OFF		
2	ON		
	OFF	21:00	
3	ON		
	OFF		
4	ON		
	OFF		
5	ON		
	OFF		
6	ON	5:00	
	OFF		
7	ON		
	OFF		
8	ON		
	OFF		
9	ON		
	OFF		
10	ON		
	OFF		
11	ON		
	OFF		
12	ON		
	OFF		
13	ON		
	OFF		
14	ON		
	OFF		
15	ON	15:00	
	OFF		
16	ON		
	OFF		

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	60,915	Estimated
Total Customer Served at End of Month:	176,750	Estimated

Lead Operator's Signature : ____________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Days
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Rotation
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	10814	10830	21644	21906	27120	17410
2	24.0	0	12127	12209	24336	23300	29430	16750
3	24.0	0	11731	11917	23648	23403	28530	17730
4	24.0	0	11194	11182	22376	22147	27960	18510
5	24.0	0	12064	12301	24365	23163	27820	17700
6	24.0	0	11932	12051	23983	23513	30700	17260
7	24.0	0	11186	11248	22435	22488	26220	17840
8	24.0	0	11164	11271	22435	22634	26230	18280
9	24.0	0	12318	12484	24802	24135	26500	19290
10	24.0	0	12125	12219	24344	23153	26980	18650
11	24.0	0	11373	11451	22823	22243	26780	18630
12	24.0	0	11550	11694	23244	23113	28350	18980
13	24.0	0	11922	12237	24159	24019	28040	19090
14	24.0	0	12308	12344	24652	23698	27060	18310
15	24.0	0	12031	11608	23639	23511	28400	17010
16	24.0	0	13015	12998	26013	24785	27570	20330
17	24.0	0	11217	11338	22555	22662	26750	20150
18	24.0	0	11415	11525	22940	21844	26660	17080
19	24.0	0	11720	11828	23548	23472	27040	19150
20	24.0	0	11516	11919	23435	23767	29480	18090
21	24.0	0	11737	12157	23894	23675	27060	20260
22	24.0	0	11846	11867	23713	22770	26310	19080
23	24.0	0	11113	11117	22230	21803	25360	18580
24	24.0	0	9583	9583	19166	18543	24710	15400
25	24.0	0	9335	9393	18728	19350	23420	15130
26	24.0	0	11422	11563	22985	21968	27360	16330
27	24.0	0	11467	11613	23079	22741	26590	19220
28	24.0	0	10829	10967	21796	21126	25290	17300
29	24.0	0	10704	10813	21517	19963	24130	16850
30	24.0	0	11592	11465	23056	21911	25530	17910
Total	720.0	0	344347	347190	691537	676803		
Maximum	24.0	0	13015	12998	26013	24785		
Minimum	24.0	0	9335	9393	18728	18543		
Average	24.0	0	11478	11573	23051	22560		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings Total	Maximum	Minimum	Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
1	96	0	0		0
2	96	251	143	1	470
3	96	252	24	2	489.58
4	96	253	24	3	484.16
5	96	252	24	4	481.66
6	96	245	24	5	485.83
7	96	252	24	6	483.75
8	96	0	0		0
9	96	0	0		0
10	96	0	0		0
11	96	0	0		0
12	96	0	0		0
13	96	253	144	1	485
14	96	253	24	2	965
15	96	235	29	3	0
16	96	253	19	4	480
17	96	252	24	5	485.83
18	96	252	24	6	482.08
19	96	0	0		0
20	96	0	0		0
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	252	144	1	482.5
25	96	252	24	2	484.58
26	96	270	24	3	483.33
27	96	253	25	4	842.5
28	96	253	23	5	482.91
29	96	252	24	6	483.33
30	96	0	0		0
Maximum	96	270	144		965
Minimum	96	0	0		0

SumWashed:
9052.04

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	20440	3520	75	366.0	3000
2	22263	3569	82	412.4	4000
3	22877	2963	86	379.2	3000
4	19816	3117	80	371.2	3500
5	20883	3588	80	424.5	3000
6	21275	3602	83	407.1	4500
7	21895	3113	69	379.9	3000
8	24100	3002	84	377.0	3500
9	25778	3550	85	431.0	3500
10	23098	2929	44	409.8	3000
11	21576	2752	13	375.5	4000
12	22153	2815	8	389.7	4500
13	22396	3458	5	393.5	4500
14	23352	3811	4	397.8	4500
15	23163	3421	19	393.6	3500
16	25801	3871	26	445.0	3000
17	22934	3245	2	388.9	4000
18	22918	2858	8	368.8	4000
19	22632	3345	62	431.9	3000
20	22936	3681	21	412.8	4000
21	24567	3769	11	395.5	3500
22	25486	3589	13	404.2	4000
23	23262	2861	31	390.2	3000
24	20443	2439	5	334.5	2500
25	18881	2346	11	319.4	3000
26	22435	3048	34	399.6	4000
27	22754	3329	36	399.2	2500
28	22543	2801	18	382.4	3500
29	21682	3103	31	384.1	3000
30	22353	3414	8	412.6	4000
Total	676692	96907	1136	11777.2	106000
Maximum	25801	3871	86	445.0	4500
Minimum	18881	2346	2	319.4	2500
Average	22556	3230	38	392.6	3533

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	113.1	19.5	0.41	0.48	16.6
2	110.0	17.6	0.42	0.51	19.7
3	116.2	15.1	0.44	0.49	15.2
4	106.2	16.7	0.43	0.51	18.8
5	102.9	17.6	0.42	0.51	14.8
6	106.4	18.0	0.42	0.51	22.5
7	116.6	16.7	0.37	0.50	16.0
8	126.2	16.2	0.45	0.49	18.7
9	124.9	17.1	0.42	0.52	16.9
10	114.3	14.4	0.23	0.51	14.8
11	113.2	14.5	0.07	0.48	21.0
12	114.6	14.5	0.04	0.51	23.2
13	111.1	17.1	0.03	0.50	22.3
14	113.4	18.6	0.02	0.48	21.9
15	104.6	15.6	0.10	0.42	17.8
16	119.1	18.0	0.13	0.53	13.8
17	121.9	17.3	0.01	0.51	21.3
18	120.0	15.0	0.05	0.46	20.9
19	116.1	17.1	0.32	0.54	15.3
20	117.5	18.8	0.11	0.53	20.5
21	123.3	18.9	0.06	0.48	17.6
22	129.4	18.2	0.07	0.50	20.2
23	125.8	15.4	0.17	0.51	16.2
24	128.3	15.2	0.03	0.53	15.6
25	120.9	15.0	0.07	0.54	19.2
26	117.3	15.9	0.19	0.51	20.9
27	118.2	17.3	0.19	0.51	13.0
28	125.2	15.6	0.10	0.52	19.3
29	121.0	17.3	0.19	0.53	16.7
30	116.4	17.8	0.04	0.54	20.8
Maximum	129.4	19.5	0.45	0.54	23.2
Minimum	102.9	14.4	0.01	0.42	13.0
Average	117.1	16.7	0.20	0.51	18.4

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.69	183	272	5	<2	0.32
2	7.72	185	284	5	<2	0.32
3	7.69	184	268	5	<2	0.35
4	7.70	186	277	5	<2	0.33
5	7.72	187	277	5	<2	0.33
6	7.70	191	276	5	<2	0.33
7	7.69	189	277	5	<2	0.34
8	7.59	196	291	5	<2	0.32
9	7.65	195	288	5	<2	0.33
10	7.66	198	260	5	<2	0.33
11	7.68	197	252	5	<2	0.33
12	7.72	202	248	5	<2	0.35
13	7.69	185	271	5	<2	0.33
14	7.68	185	270	5	<2	0.33
15	7.66	190	270	5	<2	0.32
16	7.66	190	268	5	<2	0.32
17	7.64	196	283	5	<2	0.32
18	7.62	196	268	5	<2	0.33
19	7.65	190	282	5	<2	0.32
20	7.66	186	297	5	<2	0.32
21	7.66	180	290	5	<2	0.32
22	7.64	185	272	5	<2	0.32
23	7.64	187	250	5	<2	0.33
24	7.63	198	250	5	<2	0.35
25	7.60	199	264	5	<2	0.34
26	7.69	188	255	5	<2	0.33
27	7.71	183	259	5	<2	0.33
28	7.67	183	279	5	<2	0.32
29	7.69	184	269	5	<2	0.31
30	7.67	186	289	5	<2	0.32
Maximum	7.72	202	297	5	<2	0.35
Minimum	7.59	180	248	5	<2	0.31
Average	7.67	189	272	5	<2	0.33

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.15	25	42	161
2	10.05	26	44	170
3	10.08	30	51	150
4	10.10	28	45	159
5	10.06	27	44	158
6	10.10	25	41	157
7	10.04	26	44	158
8	10.16	26	44	157
9	10.12	28	46	158
10	10.14	31	54	135
11	10.20	32	54	123
12	10.12	31	55	122
13	10.10	28	46	152
14	10.10	28	46	156
15	10.07	27	47	154
16	10.13	28	46	148
17	10.12	27	44	158
18	10.10	29	50	141
19	10.10	28	46	155
20	10.14	28	44	172
21	10.10	27	45	171
22	10.07	25	44	156
23	10.12	29	49	134
24	10.23	29	50	138
25	10.11	28	49	139
26	10.16	29	48	138
27	10.19	26	43	148
28	10.12	26	46	167
29	10.20	27	43	154
30	10.10	25	42	163
Maximum	10.23	32	55	172
Minimum	10.04	25	41	122
Average	10.12	28	46	152

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.66	3	38	165	1.29	<1
2	8.68	4	40	164	1.29	<1
3	8.71	5	42	158	1.24	<1
4	8.68	5	41	161	1.24	<1
5	8.69	5	40	160	1.26	<1
6	8.70	3	39	161	1.28	<1
7	8.67	4	40	157	1.28	<1
8	8.64	3	42	158	1.32	<1
9	8.62	3	40	163	1.33	<1
10	8.70	4	42	153	1.26	<1
11	8.74	4	51	134	1.24	<1
12	8.75	5	48	128	1.23	<1
13	8.75	4	48	136	1.28	<1
14	8.71	5	44	144	1.31	<1
15	8.70	3	40	164	1.23	<1
16	8.71	4	44	151	1.20	<1
17	8.65	4	40	162	1.25	<1
18	8.65	6	44	151	1.23	<1
19	8.67	5	45	148	1.21	<1
20	8.67	4	41	167	1.21	<1
21	8.66	3	39	171	1.21	<1
22	8.68	3	38	169	1.21	<1
23	8.70	4	39	151	1.16	<1
24	8.69	4	47	139	1.11	<1
25	8.71	4	45	140	1.14	<1
26	8.76	5	46	139	1.12	<1
27	8.72	4	42	145	1.10	<1
28	8.70	3	41	157	1.18	<1
29	8.69	5	43	163	1.23	<1
30	8.67	4	38	162	1.19	<1
Maximum	8.76	6	51	171	1.33	<1
Minimum	8.62	3	38	128	1.10	<1
Average	8.69	4	42	154	1.23	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.67	0.14	0.00
2	0.71	0.16	0.00
3	0.71	0.16	0.00
4	0.69	0.17	0.10
5	0.69	0.14	0.00
6	0.69	0.11	0.00
7	0.72	0.14	0.00
8	0.74	0.13	0.00
9	0.71	0.13	0.00
10	0.71	0.13	0.00
11	0.71	0.13	0.00
12	0.71	0.13	0.00
13	0.72	0.18	0.00
14	0.71	0.19	0.00
15	0.70	0.16	0.00
16	0.71	0.16	0.00
17	0.71	0.15	1.50
18	0.69	0.15	0.00
19	0.67	0.14	0.00
20	0.73	0.14	0.00
21	0.73	0.14	0.00
22	0.73	0.14	0.00
23	0.71	0.14	0.00
24	0.77	0.16	0.00
25	0.71	0.16	0.00
26	0.69	0.19	0.00
27	0.70	0.21	0.00
28	0.70	0.16	0.30
29	0.71	0.18	0.00
30	0.70	0.20	0.00
Maximum	0.77	0.21	1.50
Minimum	0.67	0.11	0.00
Average	0.71	0.15	0.06
Total			1.90

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	21.91	62.40	95.71	91.94	92.59	53.77	82.71	80.10
2	23.31	62.85	96.08	93.46	92.62	54.13	82.25	80.45
3	23.40	63.30	95.95	93.81	92.84	54.40	82.55	80.58
4	22.14	62.86	96.64	94.15	93.21	54.15	83.46	80.57
5	23.16	63.18	96.16	93.73	92.85	54.03	82.46	80.41
6	23.52	62.17	94.48	91.73	90.80	52.46	80.18	78.66
7	22.49	62.41	95.49	93.44	92.12	53.93	82.12	79.85
8	22.64	62.67	95.98	93.95	92.81	54.23	82.78	80.07
9	24.12	63.37	95.88	93.74	92.55	54.62	82.38	80.48
10	23.15	63.68	95.73	93.17	92.17	54.32	81.70	80.50
11	22.23	63.07	96.88	94.60	93.64	54.25	83.56	80.47
12	23.11	63.22	96.14	93.88	92.80	54.20	82.28	80.56
13	24.02	62.90	94.82	92.34	91.08	53.76	80.30	79.86
14	23.70	63.41	95.45	93.55	92.16	54.38	82.03	80.27
15	23.52	62.53	94.64	92.43	91.33	53.59	81.34	79.46
16	24.78	63.69	94.93	92.86	91.60	54.53	81.36	80.32
17	22.66	62.95	95.92	94.28	92.83	54.19	82.99	80.26
18	21.84	62.26	95.97	94.07	92.86	53.75	83.31	80.06
19	23.47	63.41	95.93	93.90	92.37	54.40	82.07	80.51
20	23.76	62.87	94.74	92.97	91.23	53.85	80.58	79.68
21	23.68	63.43	95.62	93.58	92.18	54.70	82.18	80.47
22	22.77	63.41	96.54	95.00	93.58	54.91	93.73	80.95
23	21.87	63.05	96.95	94.92	93.63	52.12	83.41	80.82
24	18.54	62.32	99.18	97.27	96.43	54.24	86.34	81.51
25	19.34	62.02	97.59	95.53	94.87	53.44	84.98	80.41
26	21.97	63.20	96.52	94.62	93.42	54.18	83.02	80.53
27	22.75	62.08	95.04	92.69	91.40	53.41	80.83	79.64
28	21.13	60.73	94.77	93.14	91.96	52.54	81.86	78.90
29	19.96	62.50	96.65	95.42	94.05	53.83	84.24	80.29
30	21.89	63.34	96.86	95.08	93.72	54.26	84.05	80.63
Maximum	24.78	63.69	99.18	97.27	96.43	54.91	93.73	81.51
Minimum	18.54	60.73	94.48	91.73	90.80	52.12	80.18	78.66
Average	22.56	62.84	95.97	93.84	92.72	53.95	82.90	80.24
Total	676.84							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	21.91	62.40	90.42	69.26	90.45
2	23.31	62.85	89.88	69.51	90.10
3	23.40	63.30	90.10	70.10	90.45
4	22.14	62.86	91.19	70.12	91.42
5	23.16	63.18	90.01	69.46	90.21
6	23.52	62.17	87.84	67.76	87.95
7	22.49	62.41	89.79	69.38	90.09
8	22.64	62.67	90.54	69.80	90.65
9	24.12	63.37	90.05	69.88	90.51
10	23.15	63.68	89.24	68.88	89.56
11	22.23	63.07	91.43	70.12	91.48
12	23.11	63.22	89.95	69.70	90.24
13	24.02	62.90	87.78	68.39	88.05
14	23.70	63.41	89.73	69.58	89.92
15	23.52	62.53	88.34	68.80	89.29
16	24.78	63.69	88.96	69.07	89.35
17	22.66	62.95	90.72	70.06	90.93
18	21.84	62.26	91.21	70.09	91.30
19	23.47	63.41	89.36	69.52	89.80
20	23.76	62.87	88.15	68.86	88.60
21	23.68	63.43	89.86	69.47	90.22
22	22.77	63.41	91.57	70.73	91.82
23	21.87	63.05	91.12	70.46	91.48
24	18.54	62.32	94.11	72.10	94.16
25	19.34	62.02	92.81	71.01	92.80
26	21.97	63.20	90.63	69.93	91.01
27	22.75	62.08	88.20	68.18	88.54
28	21.13	60.73	89.84	68.77	89.95
29	19.96	62.50	92.20	70.77	92.15
30	21.89	63.34	91.99	70.42	92.06
Maximum	24.78	63.69	94.11	72.10	94.16
Minimum	18.54	60.73	87.78	67.76	87.95
Average	22.56	62.84	90.23	69.67	90.48
Total	676.84				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	21.91	62.40	70.07	0.00	22.37
2	23.31	62.85	69.89	0.00	23.61
3	23.40	63.30	70.28	0.00	23.89
4	22.14	62.86	70.45	0.00	22.15
5	23.16	63.18	70.33	0.00	23.16
6	23.52	62.17	69.11	0.00	23.51
7	22.49	62.41	69.74	0.00	23.06
8	22.64	62.67	69.94	0.00	22.91
9	24.12	63.37	70.28	0.00	24.41
10	23.15	63.68	70.48	0.00	23.50
11	22.23	63.07	70.70	0.00	22.24
12	23.11	63.22	70.47	0.00	23.11
13	24.02	62.90	69.68	0.00	24.58
14	23.70	63.41	70.19	0.00	24.14
15	23.52	62.53	69.23	0.00	24.13
16	24.78	63.69	69.98	0.00	24.79
17	22.66	62.95	70.26	0.00	22.97
18	21.84	62.26	69.82	0.00	21.96
19	23.47	63.41	70.51	0.00	23.47
20	23.76	62.87	69.69	0.00	24.24
21	23.68	63.43	70.31	0.00	24.07
22	22.77	63.41	70.72	0.00	22.77
23	21.87	63.05	70.87	0.00	21.97
24	18.54	62.32	71.60	0.00	18.84
25	19.34	62.02	70.98	0.00	19.55
26	21.97	63.20	70.75	0.00	21.97
27	22.75	62.08	69.44	0.00	23.22
28	21.13	60.73	68.69	0.00	21.50
29	19.96	62.50	70.60	0.00	20.32
30	21.89	63.34	70.83	0.00	21.96
Maximum	24.78	63.69	71.60	0.00	24.79
Minimum	18.54	60.73	68.69	0.00	18.84
Average	22.56	62.84	70.20	0.00	22.81
Total	676.84				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.46	22.89	42.02	0.00	0.00	0.56
2	0.30	26.60	41.02	0.00	2.51	0.77
3	0.49	25.73	41.42	0.00	1.40	0.77
4	0.00	27.38	42.38	0.00	0.00	0.77
5	0.00	27.40	41.68	0.00	0.00	0.77
6	0.00	27.40	40.12	0.00	0.00	0.77
7	0.56	25.43	41.45	2.35	0.00	0.50
8	0.26	26.49	41.80	0.00	2.20	0.61
9	0.49	23.86	41.85	0.00	1.58	0.58
10	0.34	26.28	41.26	0.00	0.00	0.63
11	0.05	27.40	42.58	0.00	0.00	0.85
12	0.07	27.40	41.66	0.00	0.00	0.85
13	0.56	22.36	40.15	0.00	2.39	0.54
14	0.43	24.16	41.38	1.87	0.00	0.69
15	0.62	21.07	40.75	0.00	0.00	0.91
16	0.00	27.53	40.85	0.00	0.00	0.91
17	0.30	26.80	42.25	0.00	0.00	0.67
18	0.11	27.26	42.23	0.00	0.00	0.67
19	0.00	27.40	41.91	0.00	0.00	0.89
20	0.46	22.63	41.13	0.00	3.78	0.65
21	0.38	24.65	41.27	1.37	0.00	0.60
22	0.00	27.60	42.84	0.00	0.00	0.81
23	0.17	26.03	42.83	0.00	0.00	0.81
24	0.29	26.74	44.40	0.00	1.57	0.81
25	0.19	25.38	43.95	1.57	0.00	0.81
26	0.00	27.56	42.14	0.00	0.00	0.81
27	0.47	22.87	40.45	3.80	0.00	0.60
28	0.38	26.62	40.84	0.00	0.00	0.54
29	0.35	26.13	43.23	0.00	2.83	0.75
30	0.05	27.32	42.88	0.00	0.31	0.61
						0.00
Maximum	0.62	27.60	44.40	3.80	3.78	0.91
Minimum	0.00	21.07	40.12	0.00	0.00	0.00
Average	0.26	25.81	41.82	0.37	0.62	0.69
Total				10.96	18.57	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: November, 2011

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
Number of Service Connections at End of Month: **60,915**	Total Population Served at End of Month: **176,750**
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 393-6512**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 334-3400 ext. 6403**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water	
Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**	
Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I**	Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Days
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Rotation
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

	Richard J. Davis	A1635
Signature and Date	Printed or Typed Name	License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: November, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	21,643,750	27,120,000									0.56	
2	X	24.0	24,335,833	29,430,000									0.77	
3	X	24.0	23,647,917	28,530,000									0.77	
4	X	24.0	22,375,833	27,960,000									0.77	
5	X	24.0	24,364,583	27,820,000									0.77	
6	X	24.0	23,983,333	30,700,000									0.77	
7	X	24.0	22,434,583	26,220,000									0.50	
8	X	24.0	22,435,417	26,230,000									0.61	
9	X	24.0	24,802,083	26,500,000									0.58	
10	X	24.0	24,343,750	26,980,000									0.63	
11	X	24.0	22,823,333	26,780,000									0.85	
12	X	24.0	23,243,750	28,350,000									0.85	
13	X	24.0	24,159,167	28,040,000									0.54	
14	X	24.0	24,652,083	27,060,000									0.69	
15	X	24.0	23,639,167	28,400,000									0.91	
16	X	24.0	26,012,500	27,570,000									0.91	
17	X	24.0	22,554,583	26,750,000									0.67	
18	X	24.0	22,940,417	26,660,000									0.67	
19	X	24.0	23,547,917	27,040,000									0.89	
20	X	24.0	23,435,000	29,480,000									0.65	
21	X	24.0	23,893,750	27,060,000									0.60	
22	X	24.0	23,712,500	26,310,000									0.81	
23	X	24.0	22,229,583	25,360,000									0.81	
24	X	24.0	19,165,833	24,710,000									0.81	
25	X	24.0	18,727,500	23,420,000									0.81	
26	X	24.0	22,985,000	27,360,000									0.81	
27	X	24.0	23,079,167	26,590,000									0.60	
28	X	24.0	21,795,833	25,290,000									0.54	
29	X	24.0	21,516,667	24,130,000									0.75	
30	X	24.0	23,056,250	25,530,000									0.61	
31														
Total			691,537,083											
Average			23,051,236											
Maximum			26,012,500											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: **2010946**	Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year: **November, 2011**

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:*
☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration
☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	21,643,750	1.26	1.31	0.56	
2	X	24	24,335,833	1.27	1.30	0.77	
3	X	24	23,647,917	1.18	1.03	0.77	
4	X	24	22,375,833	1.20	1.20	0.77	
5	X	24	24,364,583	1.21	1.39	0.77	
6	X	24	23,983,333	1.25	1.34	0.77	
7	X	24	22,434,583	1.24	1.32	0.50	
8	X	24	22,435,417	1.26	1.34	0.61	
9	X	24	24,802,083	1.30	1.38	0.58	
10	X	24	24,343,750	1.18	1.53	0.63	
11	X	24	22,823,333	1.20	1.48	0.85	
12	X	24	23,243,750	1.21	1.59	0.85	
13	X	24	24,159,167	1.17	1.61	0.54	
14	X	24	24,652,083	1.24	1.64	0.69	
15	X	24	23,639,167	0.94	1.43	0.91	
16	X	24	26,012,500	1.17	1.50	0.91	
17	X	24	22,554,583	1.21	1.43	0.67	
18	X	24	22,940,417	1.14	1.26	0.67	
19	X	24	23,547,917	1.17	1.26	0.89	
20	X	24	23,435,000	1.18	1.56	0.65	
21	X	24	23,893,750	1.18	1.52	0.60	
22	X	24	23,712,500	1.16	1.56	0.81	
23	X	24	22,229,583	1.00	1.59	0.81	
24	X	24	19,165,833	1.08	1.65	0.81	
25	X	24	18,727,500	1.12	1.56	0.81	
26	X	24	22,985,000	1.07	1.62	0.81	
27	X	24	23,079,167	1.07	1.38	0.60	
28	X	24	21,795,833	1.09	1.39	0.54	
29	X	24	21,516,667	1.19	1.42	0.75	
30	X	24	23,056,250	1.14	1.56	0.61	
31							
Total			691,537,083				
Average			23,051,236				
Maximum			26,012,500				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: 0.94 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: 1.03 mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? NO If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? YES
  - Did the equipment fail during the month? NO
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: November, 2011

A. Public Water System (PWS) Information

PWS Name: Gainesville Regional Utilities	PWS Identification Number: 2010946
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: Gainesville Regional Utilities	
Contact Person: Richard J. Davis	Contact Person's Title: Water Plant Manager
Contact Person's Mailing Address: PO Box 147117 MS 43	City: Gainesville; State: Florida; Zip Code: 32614
Contact Person's Telephone Number: (352) 393-6512	Contact Person's Fax Number: (352) 334-2891
Contact Person's E-Mail Address: DavisRJ@gru.com	

B. Water Treatment Plant Information

Plant Name: Dr. Walter E. Murphree Water Treatment Plant	Plant Telephone Number: (352) 393-6512
Plant Address: 1600 NE 53 Ave.	City: Gainesville; State: Florida; Zip Code: 32614

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	A1635

PWS Identification Number: 2010946 Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Check Sample Results for the Month/Year: November, 2011

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.689
Distribution Sample 2	Bouleware		0.711

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Flruoide Data fro the Month/Year: **November, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	21,643,750	366	0.48	0.67
2	24.0	24,335,833	412	0.51	0.71
3	24.0	23,647,917	379	0.49	0.71
4	24.0	22,375,833	371	0.51	0.69
5	24.0	24,364,583	425	0.51	0.69
6	24.0	23,983,333	407	0.51	0.69
7	24.0	22,434,583	380	0.50	0.72
8	24.0	22,435,417	377	0.49	0.74
9	24.0	24,802,083	431	0.52	0.71
10	24.0	24,343,750	410	0.51	0.71
11	24.0	22,823,333	375	0.48	0.71
12	24.0	23,243,750	390	0.51	0.71
13	24.0	24,159,167	394	0.50	0.72
14	24.0	24,652,083	398	0.48	0.71
15	24.0	23,639,167	394	0.42	0.70
16	24.0	26,012,500	445	0.53	0.71
17	24.0	22,554,583	389	0.51	0.71
18	24.0	22,940,417	369	0.46	0.69
19	24.0	23,547,917	432	0.54	0.67
20	24.0	23,435,000	413	0.53	0.73
21	24.0	23,893,750	395	0.48	0.73
22	24.0	23,712,500	404	0.50	0.73
23	24.0	22,229,583	390	0.51	0.71
24	24.0	19,165,833	334	0.53	0.77
25	24.0	18,727,500	319	0.54	0.71
26	24.0	22,985,000	400	0.51	0.69
27	24.0	23,079,167	399	0.51	0.70
28	24.0	21,795,833	382	0.52	0.70
29	24.0	21,516,667	384	0.53	0.71
30	24.0	23,056,250	413	0.54	0.70
31					
Total	720.0	691,537,083	11,777	15.16	21.26
Average	24.0	23,051,236	393	0.51	0.71

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
November, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	1.40	0.00	0.00	4.93	0.00	0.61	1.68	1.04	4.47	0.00	0.00	0.00	0.00	0.00	7.00	0.00	21.14
2	5.04	0.69	0.00	2.91	0.39	2.20	1.08	1.03	3.83	0.00	2.69	0.00	0.00	1.76	2.48	0.00	24.10
3	5.04	1.35	0.00	2.11	0.00	1.10	0.00	4.08	4.49	0.00	0.00	0.14	1.35	2.35	0.00	1.31	23.30
4	5.04	0.00	0.00	0.87	0.00	2.65	0.00	4.04	4.50	0.00	0.00	4.10	0.00	0.00	0.00	0.00	21.20
5	5.04	0.00	0.00	2.92	1.05	2.62	0.00	4.02	4.48	0.00	0.00	4.08	0.00	0.00	0.00	0.00	24.20
6	5.03	1.23	0.00	0.00	1.00	2.64	1.52	4.07	4.38	0.00	0.00	4.07	0.00	0.00	0.00	0.00	23.96
7	5.02	0.00	0.00	0.00	1.87	2.65	1.48	3.42	0.45	0.00	0.00	4.07	0.00	3.44	0.00	0.00	22.40
8	5.02	0.00	0.00	0.00	6.01	2.58	0.92	0.00	0.00	0.00	0.00	0.98	0.00	6.54	0.00	0.00	22.05
9	5.04	0.00	0.00	0.00	6.22	1.63	1.81	0.00	0.12	0.00	0.00	0.00	0.00	6.68	2.98	0.00	24.48
10	5.04	0.00	0.00	0.00	3.02	0.00	2.97	0.70	2.95	0.00	0.00	2.13	0.00	6.67	0.00	0.00	23.48
11	5.04	2.09	0.00	0.00	0.00	0.00	3.07	1.31	0.00	0.00	0.00	4.04	0.00	6.60	0.00	0.00	22.15
12	5.04	4.16	0.00	0.00	1.52	0.00	0.00	0.00	3.88	0.00	0.00	3.49	0.00	5.78	0.00	0.00	23.87
13	5.04	4.01	0.00	3.03	2.33	0.72	0.00	1.40	4.45	0.00	0.00	2.56	0.00	0.00	0.00	0.00	23.53
14	2.15	4.11	0.00	3.97	1.62	0.96	0.00	4.03	4.51	0.00	0.00	4.08	0.00	0.00	0.00	0.00	25.43
15	3.81	3.39	0.00	0.00	3.89	0.63	0.12	0.89	3.74	0.00	0.00	3.30	0.00	3.33	0.00	0.00	23.09
16	4.58	4.02	0.00	0.00	6.21	0.32	0.00	0.00	4.46	0.00	0.00	4.06	0.00	1.70	0.00	0.00	25.35
17	1.29	4.28	0.00	0.00	2.14	2.20	0.00	0.68	4.57	0.00	1.50	4.06	0.00	2.80	0.00	0.00	23.51
18	1.29	4.34	0.00	0.00	0.35	0.39	1.53	4.20	2.42	0.00	0.00	4.06	0.00	5.67	0.00	0.00	24.24
19	1.29	4.23	0.00	3.18	2.52	0.44	1.67	4.11	1.25	0.00	0.00	2.84	0.00	3.65	0.00	0.00	25.19
20	4.61	4.03	0.00	0.00	6.11	0.00	0.00	3.98	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.21
21	4.97	3.94	0.00	0.00	6.06	0.00	0.00	3.96	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.38
22	4.98	3.97	0.00	0.00	3.02	0.00	0.00	4.04	4.47	0.00	0.00	2.76	0.00	0.00	0.00	0.00	23.24
23	5.04	4.09	0.00	0.40	0.00	0.33	0.00	1.38	4.51	0.00	0.00	1.37	3.50	0.00	0.00	0.00	20.61
24	3.64	4.19	0.00	0.00	0.00	0.44	0.00	1.70	2.98	0.00	0.00	0.00	5.27	0.00	0.00	0.00	18.23
25	0.00	4.36	0.00	0.00	0.00	2.74	0.00	0.00	4.65	0.00	0.00	0.00	5.27	0.00	0.00	0.00	17.02
26	4.89	4.04	0.00	4.24	0.62	0.42	0.00	2.11	4.53	0.00	0.00	0.00	1.42	0.65	0.00	0.00	22.93
27	4.96	3.94	0.00	4.69	0.71	0.41	0.00	4.03	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.22
28	2.21	4.03	0.00	4.70	0.00	1.57	0.00	4.01	4.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.03
29	4.95	3.99	0.00	4.76	0.00	0.43	0.00	4.07	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.07
30	5.03	3.98	0.00	4.72	0.22	1.02	0.00	4.04	0.00	0.00	0.00	3.58	0.00	0.00	0.00	0.00	22.59
Total	121.53	82.45	0.00	47.43	56.87	31.69	17.85	72.34	100.90	0.00	4.19	59.79	16.79	57.60	12.50	1.31	683.22

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
November, 2011

Permit Number: Permit N2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	11/1	11/2	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14	11/15
1	ON	23:00														2:00
	OFF														6:00	8:00
2	ON		20:00				10:00					12:00				12:00
	OFF			8:00			17:00									9:00
3	ON															
	OFF															
4	ON			14:00		3:00								9:00		
	OFF		15:00		4:00	17:00									20:00	
5	ON							20:00					21:00		20:00	17:00
	OFF										11:00			9:00		8:00
6	ON	23:00		14:00										9:00	15:00	
	OFF	5:00	18:00							15:00				16:00		17:00
7	ON						11:00		17:00							7:00
	OFF		9:00					12:00		11:00						8:00
8	ON	17:00	18:00								20:00			16:00		
	OFF	23:00						20:00				7:00				5:00
9	ON		6:00							23:00			3:00			12:00
	OFF		3:00					3:00			16:00					8:00
10	ON															
	OFF															
11	ON															
	OFF															
12	ON		6:00	23:00							11:00			9:00		13:00
	OFF		18:00						6:00				21:00			8:00
13	ON			8:00												
	OFF			14:00												
14	ON		18:00					12:00								12:00
	OFF			8:00									21:00			
15	ON									2:00						
	OFF		9:00							11:00						
16	ON			8:00												
	OFF			14:00												

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

November, 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	11/16	11/17	11/18	11/19	11/20	11/21	11/22	11/23	11/24	11/25	11/26	11/27	11/28	11/29	11/30
1	ON					3:00						1:00				
	OFF									16:00						
2	ON															
	OFF															
3	ON															
	OFF															
4	ON				2:00				4:00			3:00				
	OFF				17:00				6:00							
5	ON				17:00											
	OFF		8:00					12:00								
6	ON	21:00		21:00					20:00	20:00			20:00		20:00	
	OFF		20:00		4:00				23:00			4:00		15:00		10:00
7	ON			13:00												
	OFF				13:00											
8	ON		20:00							10:00		12:00				
	OFF								8:00	20:00						
9	ON				17:00					9:00						
	OFF			13:00						1:00					15:00	
10	ON															
	OFF															
11	ON		9:00													
	OFF		14:00													
12	ON							12:00								3:00
	OFF				17:00				8:00							
13	ON								8:00							
	OFF											7:00				
14	ON		14:00		4:00							4:00				
	OFF	6:00		21:00	17:00							6:00				
15	ON															
	OFF															
16	ON															
	OFF															

DR. WALTER E. MURPHREE
WATER PLANT OPERATION REPORT

Name of Plant:	Dr. Walter E. Murphree Water Treatment Plant			
Utility Company:	Gainesville Regional Utilities			
Plant Address:	1600 NE 53 Ave.	Gainesville	Florida	32614
Mailing Address:	PO Box 147117 MS 43	Gainesville	Florida	32614
County:	Alachua			
PWS I.D. Number:	2010946			
Consumptive Use Permit:	11339			
SJWMD Well Permit:	2-001-006NGM			
Telephone No. :	(352) 393-6512			
Fax Number:	(352) 334-2891			
E-Mail Address:	DavisRJ@gru.com			

Total Metered Services at End of Month :	61,114	Estimated
Total Customer Served at End of Month:	177,328	Estimated

Lead Operator's Signature : ______________________________

Lead Operator:	**Richard J. Davis**	**A**	**1635**	**Weekdays**
Operators Names :	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Days
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Rotation
	Susan Wellons	A	6898	Weekdays

Number of Operators : 12

FLOW INFORMATION IN THOUSANDS OF GALLONS

Date	Plant Operation (hr:min)	Basin 1 Total Flow	Basin 2 Total Flow	Basin 3 Total Flow	Total Raw Water Pumped	Total Treated Water Pumped Leaving Plant	Peak Treated Water Pumped Leaving Plant	Min. Treated Water Pumped Leaving Plant
1	24.0	0	11026	11019	22045	21536	24880	18000
2	24.0	0	10609	10757	21366	21219	26160	17900
3	24.0	0	12426	12490	24917	22381	26810	18470
4	24.0	0	11642	11862	23504	23077	28890	18250
5	24.0	0	11179	11228	22407	21900	25260	17520
6	24.0	0	11528	11947	23475	21747	26170	17860
7	24.0	0	11209	11418	22627	21983	25060	18350
8	24.0	0	11230	11183	22413	20805	22860	14870
9	24.0	0	10661	10667	21328	20532	22850	17410
10	24.0	0	11439	11584	23023	20670	25320	16570
11	24.0	0	10715	10813	21528	21467	26840	18690
12	24.0	0	9888	9989	19877	19226	26840	11260
13	24.0	0	9977	10148	20125	20234	27400	14810
14	24.0	0	10633	10779	21412	21227	26630	15120
15	24.0	0	11759	11879	23638	21255	26240	16870
16	24.0	0	10838	11000	21838	20877	26430	17160
17	24.0	0	11265	11353	22618	21049	28060	17150
18	24.0	0	9691	9820	19511	20480	26380	17140
19	24.0	0	10553	10607	21160	19922	26930	15540
20	24.0	0	9855	10004	19859	18649	25850	12460
21	24.0	0	10905	10966	21871	21145	25250	16890
22	24.0	0	10134	10297	20431	20741	25260	17120
23	24.0	0	10793	10894	21686	20332	24830	17480
24	24.0	0	9740	9792	19531	19540	22530	16010
25	24.0	0	9467	9653	19120	18818	21810	16220
26	24.0	0	8995	9198	18193	18323	21940	14680
27	24.0	0	9827	9903	19730	19078	21560	16620
28	24.0	0	9077	8978	18055	19058	21630	16080
29	24.0	0	10275	10244	20520	19102	21930	15600
30	24.0	0	8857	8812	17668	19110	22440	16280
31	24.0	0	10428	10444	20871	20208	24760	16510
Total	744.0	0	326620	329728	656348	635690		
Maximum	24.0	0	12426	12490	24917	23077		
Minimum	24.0	0	8857	8812	17668	18323		
Average	24.0	0	10536	10636	21173	20506		

FILTER INFORMATION

Date	Hours: Filter Runs Between Washings			Filter No. Washed Filter	Total Wash Water (Thousands of Gallons)
	Total	Maximum	Minimum		
1	96	0	0		0
2	96	0	0		0
3	96	0	0		0
4	96	0	0		0
5	96	253.8	145	1 2	958.75
6	96	0	0		0
7	96	258	52	3	481.67
8	96	250	19	4	480.83
9	96	250	24	5	485.83
10	96	250	24	6	450.83
11	96	0	0		0
12	96	0	0		0
13	96	0	0		0
14	96	0	0		0
15	96	229	120	1	771.67
16	96	250	21	2	486.66
17	96	224	21	3	479.58
18	96	230	25	4	485.41
19	96	229	24	5	485
20	96	228	23	6	484.58
21	96	0	0		0
22	96	0	0		0
23	96	0	0		0
24	96	0	0		0
25	96	0	0		0
26	96	252	144	1	483.33
27	96	252	24	2	484.17
28	96	253	24	3	480.41
29	96	254	24	4	480.83
30	96	254	24	5	469.58
31	96	254	24	6	480.83
Maximum	96	258	145		958.75
Minimum	96	0	0		0

SumWashed:
8929.96

CHEMICAL USE IN POUNDS

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	21197	3300	16	382.4	3500
2	20659	3203	9	381.8	3500
3	24352	3418	25	447.8	3500
4	22807	3333	36	412.3	3000
5	22366	2788	2	219.6	3000
6	23998	3200	1	107.8	3500
7	24565	3061	25	60.7	4000
8	23362	3066	42	232.4	4000
9	22728	2973	36	372.8	2000
10	26292	2955	28	398.1	3000
11	23954	2643	49	350.6	3500
12	20895	2646	12	352.8	4000
13	20036	2812	23	336.6	2500
14	21353	3049	30	368.4	3000
15	23139	3264	33	404.9	3000
16	19874	2692	4	376.4	4000
17	24344	2552	14	371.5	3000
18	24659	2113	26	329.2	3500
19	27091	2438	7	362.3	3500
20	23091	2321	5	337.2	3500
21	24832	2689	3	374.4	3500
22	23424	2539	5	355.9	3000
23	23616	2896	24	366.5	4000
24	21576	2555	15	333.1	3000
25	19983	2506	23	321.6	3500
26	19452	2620	37	308.8	2500
27	21075	2832	54	327.2	2500
28	20115	2503	50	290.7	2500
29	22458	2847	51	345.9	3500
30	20102	2457	58	307.3	3000
31	24176	2945	67	358.7	3500
Total	701571	87215	809	10295.8	101000
Maximum	27091	3418	67	447.8	4000
Minimum	19452	2113	1	60.7	2000
Average	22631	2813	26	332.1	3258

CHEMICAL DOSAGES IN MG/L

Date	Lime	Chlorine (Pre)	Chlorine (Post)	Fluoride	Carbon Dioxide
1	115.3	18.0	0.09	0.51	19.0
2	115.9	18.0	0.05	0.53	19.6
3	117.3	16.5	0.13	0.52	16.8
4	116.6	17.1	0.19	0.52	15.3
5	119.9	14.9	0.01	0.32	16.1
6	122.7	16.3	0.01	0.13	17.9
7	130.3	16.2	0.14	0.08	21.2
8	125.5	16.4	0.24	0.33	21.4
9	127.8	16.7	0.21	0.51	11.2
10	136.9	15.4	0.16	0.53	15.6
11	133.6	14.7	0.27	0.47	19.5
12	91.9	12.8	0.07	0.38	24.1
13	82.1	10.8	0.13	0.32	14.9
14	88.3	12.1	0.17	0.36	16.8
15	117.9	16.7	0.19	0.51	15.2
16	105.4	14.2	0.02	0.49	22.0
17	129.1	13.5	0.08	0.52	15.9
18	151.5	13.0	0.15	0.49	21.5
19	153.6	13.8	0.04	0.51	19.8
20	137.9	14.1	0.03	0.52	21.1
21	136.2	14.7	0.02	0.51	19.2
22	138.0	14.9	0.03	0.52	17.6
23	130.6	16.0	0.14	0.51	22.1
24	132.7	15.7	0.09	0.50	18.4
25	125.3	15.8	0.14	0.51	21.9
26	128.1	17.3	0.24	0.51	16.5
27	128.1	17.2	0.34	0.51	15.2
28	133.6	16.6	0.31	0.48	16.6
29	131.2	16.6	0.32	0.50	20.5
30	136.4	16.7	0.37	0.50	20.4
31	138.9	16.9	0.40	0.48	20.1
Maximum	153.6	18.0	0.40	0.53	24.1
Minimum	82.1	10.8	0.01	0.08	11.2
Average	125.1	15.5	0.15	0.45	18.5

RAW WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	M.Alk	Total Hardness	CO2 Calc	Color Units	F-
1	7.69	186	278	5	<2	0.34
2	7.66	189	277	5	<2	0.32
3	7.66	190	274	5	<2	0.33
4	7.67	188	276	5	<2	0.33
5	7.67	199	274	5	<2	0.34
6	7.61	199	278	5	<2	0.32
7	7.64	192	274	5	<2	0.31
8	7.72	183	261	5	<2	0.33
9	7.72	185	265	5	<2	0.32
10	7.62	194	272	5	<2	0.33
11	7.63	196	264	5	<2	0.34
12	7.62	191	273	5	<2	0.35
13	7.65	182	294	5	<2	0.32
14	7.73	183	282	5	<2	0.52
15	7.73	184	270	5	<2	0.31
16	7.74	186	266	5	<2	0.33
17	7.66	193	253	5	<2	0.32
18	7.63	196	262	5	<2	0.36
19	7.59	196	268	5	<2	0.35
20	7.62	188	276	5	<2	0.35
21	7.64	192	285	5	<2	0.32
22	7.64	194	265	5	<2	0.34
23	7.65	179	257	5	<2	0.32
24	7.69	188	241	5	<2	0.33
25	7.69	184	241	5	<2	0.35
26	7.60	184	272	5	<2	0.35
27	7.67	187	268	5	<2	0.35
28	7.67	186	270	5	<2	0.34
29	7.67	181	286	5	<2	0.35
30	7.67	192	271	5	<2	0.33
31	7.69	186	262	5	<2	0.33
Maximum	7.74	199	294	5	<2	0.52
Minimum	7.59	179	241	5	<2	0.31
Average	7.66	189	269	5	<2	0.34

SETTLED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk	M.Alk	Total Hardness
1	10.13	26	44	155
2	10.13	27	44	157
3	10.06	26	45	153
4	10.12	29	49	150
5	10.12	29	48	147
6	10.04	29	50	146
7	10.14	28	45	151
8	10.05	26	46	147
9	10.13	26	44	146
10	10.01	29	47	147
11	10.11	30	49	138
12	10.11	27	46	150
13	10.15	27	44	177
14	10.15	28	46	162
15	10.21	26	42	156
16	10.12	29	46	138
17	10.02	30	53	128
18	10.01	29	53	134
19	10.06	29	49	135
20	10.14	28	50	145
21	10.09	28	47	153
22	10.13	29	48	144
23	10.12	28	46	137
24	10.17	29	49	124
25	10.12	30	48	130
26	10.10	27	43	151
27	10.14	26	44	146
28	10.12	28	45	152
29	10.11	29	44	163
30	10.13	27	43	149
31	10.12	29	46	143
Maximum	10.21	30	53	177
Minimum	10.01	26	42	124
Average	10.11	28	46	147

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS IN MG/L

Date	pH	P.Alk.	M.Alk.	Total Hardness	Residual Chlorine	Color Units
1	8.72	5	41	158	1.16	<1
2	8.67	4	40	155	1.16	<1
3	8.68	4	39	156	1.17	<1
4	8.68	3	40	156	1.16	<1
5	8.69	3	42	152	1.19	<1
6	8.63	5	45	147	1.22	<1
7	8.65	4	46	147	1.15	<1
8	8.64	3	46	148	1.16	<1
9	8.70	3	41	148	1.15	<1
10	8.68	4	40	146	1.08	<1
11	8.70	4	44	147	1.05	<1
12	8.73	5	46	140	1.10	<1
13	8.71	4	43	165	1.07	<1
14	8.77	5	41	170	1.02	<1
15	8.78	7	40	160	1.18	<1
16	8.73	4	38	154	1.37	<1
17	8.72	6	47	135	1.44	<1
18	8.66	5	52	134	1.43	<1
19	8.69	3	48	141	1.38	<1
20	8.71	7	48	142	1.41	<1
21	8.72	4	44	148	1.49	<1
22	8.69	4	44	151	1.39	<1
23	8.69	4	42	145	1.43	<1
24	8.71	4	43	137	1.42	<1
25	8.67	3	44	130	1.47	<1
26	8.61	3	43	143	1.28	<1
27	8.70	4	41	143	1.21	<1
28	8.66	3	38	150	1.19	<1
29	8.65	4	38	159	1.20	<1
30	8.67	3	39	157	1.20	<1
31	8.68	4	38	148	1.19	<1
Maximum	8.78	7	52	170	1.49	<1
Minimum	8.61	3	38	130	1.02	<1
Average	8.69	4	43	149	1.24	<1

FINISHED WATER CHEMICAL AND PHYSICAL RESULTS

Date	Fluoride as F- (MG/L)	Turbidity (NTU)	Rainfall (Inches)
1	0.72	0.20	0.00
2	0.71	0.20	0.00
3	0.70	0.20	0.00
4	0.69	0.20	0.00
5	0.70	0.17	0.00
6	0.38	0.15	0.00
7	0.28	0.17	0.00
8	0.28	0.16	0.00
9	0.56	0.13	0.00
10	0.69	0.14	0.00
11	0.70	0.14	0.00
12	0.72	0.16	0.50
13	0.70	0.26	0.00
14	0.71	0.24	0.00
15	0.69	0.19	0.00
16	0.69	0.19	0.00
17	0.61	0.16	0.00
18	0.72	0.14	0.00
19	0.71	0.13	0.00
20	0.73	0.18	0.00
21	0.72	0.19	0.00
22	0.72	0.19	0.00
23	0.73	0.19	0.00
24	0.71	0.19	0.00
25	0.73	0.19	0.00
26	0.72	0.19	0.00
27	0.72	0.18	0.10
28	0.70	0.18	0.00
29	0.69	0.15	0.00
30	0.67	0.13	0.00
31	0.70	0.18	0.00
Maximum	0.73	0.26	0.50
Minimum	0.28	0.13	0.00
Average	0.66	0.18	0.02
Total			0.60

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Bivens LS30	Newberry LS19	Sonnys LS93	Turkey Ck LS87	Archer Rd LS156	ESHS LS120
	mgd	psi	psi	psi	psi	psi	psi	psi
1	21.54	62.10	96.10	94.30	92.98	53.43	83.08	79.88
2	21.24	62.28	96.08	94.32	93.15	53.67	83.45	79.91
3	22.40	62.10	95.16	92.69	91.67	52.34	79.86	78.92
4	23.08	62.27	95.26	93.09	91.71	53.48	82.73	79.48
5	21.90	62.14	95.63	93.76	92.61	53.34	82.75	79.62
6	21.74	62.15	95.77	93.67	92.85	53.43	83.24	79.53
7	21.98	61.98	94.54	92.63	91.42	52.68	81.60	78.88
8	20.81	63.10	97.16	95.45	94.57	54.81	84.68	80.66
9	20.55	60.74	95.57	93.91	92.77	52.82	84.41	79.62
10	20.68	61.33	95.74	93.64	93.42	52.83	83.10	80.19
11	21.47	61.70	95.58	93.75	92.26	52.85	82.31	79.14
12	19.23	58.92	94.98	94.15	93.31	51.95	83.01	78.46
13	20.23	59.31	94.33	92.43	90.97	52.62	81.73	77.53
14	21.23	60.54	94.36	92.98	91.67	52.14	81.86	78.41
15	21.26	62.19	96.56	94.89	93.58	53.95	84.60	80.08
16	20.88	62.37	96.73	95.30	94.05	54.04	83.97	80.57
17	21.05	61.81	96.61	94.51	93.84	52.92	84.35	79.88
18	20.48	61.37	96.77	94.14	93.86	53.06	83.78	80.02
19	19.92	60.94	96.70	95.16	93.99	52.97	84.26	78.85
20	18.60	62.28	97.39	96.08	94.72	53.45	85.41	80.06
21	21.14	62.19	96.85	95.15	93.54	53.05	82.70	80.60
22	20.74	62.15	97.15	95.55	94.66	53.15	84.07	80.27
23	20.33	62.88	97.97	96.56	95.27	53.84	84.31	81.47
24	19.54	60.28	96.30	94.45	93.56	51.82	83.35	78.24
25	18.82	60.50	97.46	94.94	95.09	52.81	84.58	79.54
26	18.33	59.86	97.15	95.68	95.12	51.93	84.70	78.72
27	19.08	62.12	98.49	96.52	95.56	53.27	85.71	80.92
28	19.05	60.39	96.93	95.80	94.35	52.46	84.09	79.70
29	19.09	60.87	97.48	95.76	94.11	52.62	85.22	80.42
30	19.11	60.55	96.33	94.32	93.75	51.79	84.24	78.77
31	20.21	60.14	95.53	93.66	92.67	52.25	82.79	82.63
Maximum	23.08	63.10	98.49	96.56	95.56	54.81	85.71	82.63
Minimum	18.33	58.92	94.33	92.43	90.97	51.79	79.86	77.53
Average	20.51	61.40	96.28	94.49	93.45	52.96	83.55	79.71
Total	635.70							

SYSTEM FLOW AND PRESSURE REPORT

Date	DSFR	DSPS	Haile	SFCC	Quarries
			LS151	LS135	LS136
	mgd	psi	psi	psi	psi
1	21.54	62.10	90.82	69.60	91.10
2	21.24	62.28	91.31	69.72	91.44
3	22.40	62.10	88.88	68.07	89.33
4	23.08	62.27	89.19	68.60	89.30
5	21.90	62.14	90.54	69.33	90.68
6	21.74	62.15	91.00	69.50	91.30
7	21.98	61.98	88.97	68.40	89.23
8	20.81	63.10	98.67	69.55	92.64
9	20.55	60.74	98.08	69.95	90.94
10	20.68	61.33	92.36	71.08	93.09
11	21.47	61.70	85.85	68.47	86.21
12	19.23	58.92	94.96	69.66	91.02
13	20.23	59.31	90.08	64.32	89.73
14	21.23	60.54	87.86	69.51	89.12
15	21.26	62.19	88.96	72.10	92.86
16	20.88	62.37	94.55	72.27	93.56
17	21.05	61.81	91.93	70.36	92.36
18	20.48	61.37	87.41	70.56	94.08
19	19.92	60.94	90.71	69.39	91.72
20	18.60	62.28	93.94	71.08	93.55
21	21.14	62.19	90.12	68.04	88.41
22	20.74	62.15	90.53	70.73	93.46
23	20.33	62.88	93.65	70.34	92.11
24	19.54	60.28	90.59	69.10	89.64
25	18.82	60.50	87.36	69.62	87.67
26	18.33	59.86	93.96	72.20	93.67
27	19.08	62.12	87.16	71.58	92.75
28	19.05	60.39	96.65	71.25	93.65
29	19.09	60.87	87.19	66.83	87.29
30	19.11	60.55	94.19	70.59	94.19
31	20.21	60.14	94.25	68.56	92.65
Maximum	23.08	63.10	98.67	72.27	94.19
Minimum	18.33	58.92	85.85	64.32	86.21
Average	20.51	61.40	91.35	69.69	91.25
Total	635.70				

KELLY PUMP STATION REPORT

Date	DSFR	DSPS	JKPS	JKFR	Repumps plus DSFR
	mgd	psi	psi	mgd	mgd
1	21.54	62.10	69.78	0.00	21.78
2	21.22	62.28	69.94	0.00	21.39
3	22.38	62.10	69.43	0.00	22.38
4	23.08	62.27	69.36	0.00	23.51
5	21.90	62.14	69.58	0.00	22.31
6	21.75	62.15	69.62	0.00	21.78
7	21.98	61.98	69.22	0.00	22.19
8	20.80	63.10	70.84	0.00	20.93
9	20.53	60.74	68.66	0.00	20.53
10	20.67	61.33	69.46	0.00	21.04
11	21.47	61.70	69.52	0.00	21.48
12	19.23	58.92	68.28	0.00	19.71
13	20.23	59.31	67.62	0.00	20.84
14	21.23	60.54	68.45	0.00	21.82
15	21.26	62.19	70.22	0.00	21.26
16	20.88	62.37	70.51	0.00	20.88
17	21.05	61.81	70.16	0.00	21.15
18	20.48	61.37	69.93	0.00	20.80
19	19.92	60.94	69.71	0.00	19.94
20	18.65	62.28	70.93	0.00	18.76
21	21.15	62.19	70.57	0.00	21.34
22	20.74	62.15	70.77	0.00	21.08
23	20.33	62.88	71.64	0.00	20.46
24	19.54	60.28	69.49	0.00	19.99
25	18.82	60.50	70.02	0.00	18.82
26	18.32	59.86	69.41	0.00	18.80
27	19.08	62.12	71.42	0.00	19.09
28	19.06	60.39	69.67	0.00	19.37
29	19.10	60.87	70.08	0.00	19.18
30	19.11	60.55	69.70	0.00	19.21
31	20.21	60.14	68.82	0.00	20.53
Maximum	23.08	63.10	71.64	0.00	23.51
Minimum	18.32	58.92	67.62	0.00	18.76
Average	20.51	61.40	69.77	0.00	20.72
Total	635.69				

SANTA FE PUMP STATION REPORT

Date	SFFR Mgd	SFHD Ft	SFPS Psi	SF1RT Hrs	SF2RT Hrs	SFCL2 Mg/L
1	0.24	25.50	41.69	0.00	0.38	0.61
2	0.16	26.84	41.99	1.30	0.00	0.69
3	0.00	27.60	40.68	0.00	0.00	0.83
4	0.43	26.21	40.15	0.00	1.75	0.56
5	0.40	26.13	41.48	1.51	0.00	0.77
6	0.03	27.40	41.79	0.00	0.00	0.77
7	0.21	26.36	40.70	0.00	0.00	0.77
8	0.12	27.50	42.90	0.00	0.00	0.77
9	0.00	27.50	41.03	0.00	0.00	0.77
10	0.37	26.05	41.67	0.00	0.00	0.42
11	0.02	27.27	41.10	0.00	0.00	0.54
12	0.49	24.39	40.99	0.00	3.83	0.54
13	0.59	21.80	39.78	0.00	4.58	0.70
14	0.58	22.00	40.11	0.00	4.55	0.75
15	0.00	27.48	42.34	0.00	0.00	0.75
16	0.00	27.60	42.97	0.00	0.00	0.75
17	0.09	26.40	42.27	0.00	0.75	0.67
18	0.31	26.13	41.41	2.62	0.00	0.67
19	0.02	27.43	42.30	0.00	0.00	0.67
20	0.11	27.31	43.64	0.00	0.00	0.50
21	0.19	26.58	42.47	0.00	0.00	0.50
22	0.33	26.03	42.74	0.00	0.00	0.56
23	0.13	26.94	43.92	1.03	0.00	0.77
24	0.45	21.86	42.33	0.00	0.00	0.56
25	0.00	26.77	41.73	0.00	0.00	0.56
26	0.47	23.58	42.58	1.97	0.00	0.54
27	0.01	27.45	43.78	0.00	0.00	0.68
28	0.31	26.29	42.57	0.00	0.55	0.48
29	0.08	27.56	42.92	0.00	0.00	0.68
30	0.10	27.60	42.53	0.00	0.00	0.69
31	0.32	22.26	41.03	0.00	2.50	0.48
Maximum	0.59	27.60	43.92	2.62	4.58	0.83
Minimum	0.00	21.80	39.78	0.00	0.00	0.42
Average	0.21	26.06	41.92	0.27	0.61	0.65
Total				8.43	18.89	

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

See page 4 for instructions.

Page 1 - For DEP Form 62.555.900(3) Alternate

I. General Information for the Month/Year of: **December, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities** PWS Identification Number: **2010946**

PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive

Number of Service Connections at End of Month: **61,114** Total Population Served at End of Month: **177,328**

PWS Owner: **Gainesville Regional Utilities**

Contact Person: **Richard J. Davis** Contact Person's Title: **Water Plant Manager**

Contact Person's Mailing Address: **PO Box 147117 MS 43** City: **Gainesville** State: **Florida** Zip Code: **32614**

Contact Person's Telephone Number: **(352) 393-6512** Contact Person's Fax Number: **(352) 393-6512**

Contact Person's E-Mail Address: **DavisRJ@gru.com**

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant** Plant Telephone Number: **(352) 334-3400 ext. 6403**

Plant Address: **1600 NE 53 Ave.** City: **Gainesville** State: **Florida** Zip Code: **32614**

Type of Water Treated by Plant: ☑ Raw Ground Water ☐ Purchased Finished Water

Permitted Maximum Day Operating Capacity of Plant, gallons per day: **54,000,000**

Plant Category (per subsection 62-699.310(4), F.A.C.): **Catergory I** Plant Class (per subsection 62-699.310(4), F.A.C.): **Class A**

Licensed Operators	Name	License Class	License Number	Day(s)/Shift(s) Worked
Lead/Chief Operator:	Richard J. Davis	A	1635	Weekdays
Other Operators:	Crossman Earl	A	8599	Rotation
	Fred Eger	A	7812	Days
	Nathaniel Ford	C	14575	Rotation
	Jody Gilbert	A	5379	Weekdays
	Dave Harmon	A	5089	Evenings
	Linda Ivines	A	2770	Weekdays
	Lawrence Keith	A	6533	Rotation
	Lucas Tim	C	13827	Rotation
	Blake Misura	B	3220	Nights
	Dale Smith	A	5539	Rotation
	Susan Wellons	A	6898	Weekdays

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the provided in this report is true and accurate to the best of my knowledge and belief. I certify that all drinking water treatment chemicals used at this plant conform to NSF International Standard 60 or other applicable standards referenced in subsection 62-555.320(3), F.A.C. I also certify that the following additional operations records for this plant were prepared each day that a licensed operator staffed or visited this plant during the month indicated above: (1) records of amounts of chemicals used and chemical feed rates; and (2) if applicable, appropriate treatment process performance records. Furthermore, I agree to provide these additional operations records to the PWS owner so the PWS owner can retain them, together with copies of this report, at a convenient location for at least ten years.

Signature and Date	**Richard J. Davis** Printed or Typed Name	**A1635** License Number

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

Page 2 - For DEP Form 62.555.900(3) Alternate

PWS Identification Number: 2010946 | Plant Name: Dr. Walter E. Murphree Water Treatment Plant

III. Daily Data for the Month/Year of: December, 2011

Means of Achieving Four-Log Virus Inactivation/Removal: * ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Ozone ☐ Combined Chlorine (Chloramines)
☐ Utlraviolet Radiation ☐ Other (Describe:

Type of Disinfectant Residual Maintained in Distribution System: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

					CT Calculations, or UV Dose, to Demonstrate Four-Log Virus Inactivation, if Applicable*									
					CT Calculations						UV Dose			
Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, gal	Peak Flow Rate, gpd	Lowest Residual Disinfectant Concentration (C) Before or at First Customer During Peak Flow, mg/L	Disinfectant Contact Time (T) at C Measurement Point During Peak Flow, minutes	Lowest CT Provided Before or at First Customer During Peak Flow, mg/min/L	Temp. of Water, °C	pH of Water, if Applicable	Minimum CT Required, mg-min/L	Lowest Operating UV Dose, mW-sec/cm2	Minimum UV Dose Required, mW-sec/cm2	Lowest Residual Disinfectant Concentration at Remote Point in Distribution System, mgL	Emergency or Abnormal Operating Conditions; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24.0	22,045,000	24,880,000									0.61	
2	X	24.0	21,366,250	26,160,000									0.69	
3	X	24.0	24,916,667	26,810,000									0.83	
4	X	24.0	23,503,750	28,890,000									0.56	
5	X	24.0	22,407,083	25,260,000									0.77	
6	X	24.0	23,475,000	26,170,000									0.77	
7	X	24.0	22,627,083	25,060,000									0.77	
8	X	24.0	22,413,333	22,860,000									0.77	
9	X	24.0	21,328,333	22,850,000									0.77	
10	X	24.0	23,023,333	25,320,000									0.42	
11	X	24.0	21,527,917	26,840,000									0.54	
12	X	24.0	19,876,667	26,840,000									0.54	
13	X	24.0	20,124,583	27,400,000									0.70	
14	X	24.0	21,411,667	26,630,000									0.75	
15	X	24.0	23,638,333	26,240,000									0.75	
16	X	24.0	21,837,917	26,430,000									0.75	
17	X	24.0	22,617,917	28,060,000									0.67	
18	X	24.0	19,511,250	26,380,000									0.67	
19	X	24.0	21,160,000	26,930,000									0.67	
20	X	24.0	19,859,167	25,850,000									0.50	
21	X	24.0	21,871,250	25,250,000									0.50	
22	X	24.0	20,430,833	25,260,000									0.56	
23	X	24.0	21,686,250	24,830,000									0.77	
24	X	24.0	19,531,250	22,530,000									0.56	
25	X	24.0	19,119,583	21,810,000									0.56	
26	X	24.0	18,192,917	21,940,000									0.54	
27	X	24.0	19,730,000	21,560,000									0.68	
28	X	24.0	18,055,417	21,630,000									0.48	
29	X	24.0	20,519,583	21,930,000									0.68	
30	X	24.0	17,668,333	22,440,000									0.69	
31	X	24.0	20,871,250	24,760,000									0.48	
Total			656,347,917											
Average			21,172,513											
Maximum			24,916,667											

* Refer to the instructions for this report to determine which plants must provide this information.

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification Number: 2010946	Plant Name: Dr. Walter E. Murphree Water Treatment Plant

IV. Summary of Use of Polymer Containing Acrylamide, Polymer Containing Epichlorohydrin, and Iron or Manganese Sequestrant for the Year:	December, 2011

A. Is any polymer containing the monomer acrylamide used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the acrylamide level in the polymer are as follows:

Polymer Dose, ppm =	Acrylamide Level, %† =

B. Is any iron or manganese sequestrant used at the water treatment plant? ☑ No ☐ Yes and the polymer dose and the epichlorohydrin level in the polymer are as follows:

Polymer Dose, ppm =	Epichlorohydrin Level, %† =

C.Is any polymer containing the monomer epichlorohydrin used at the water treatment plant? ☑ No ☐ Yes and the type of sequestrant, sequestrant dose, etc., are as follows:

Type of Sequestrant (polyphosphate or sodium silicate):
Sequestrant Dose, mg/L of phosphate as PO_4 or mg/L of silicate as SiO_2 =
If sodium silicate is used, the amount of added plus naturally occurring silicate, in mg/L as SiO_2 =

* Complete and submit Part IV of this report only with the monthly operation report for December of each year and only for water treatment plants using polymer containing acrylamide, polymer containing epichlorohydrin, and/or an iron and manganese sequestrant.

† Acrylamide and epichlorohydrin levels may be based on the polymer manufacturer's certification or on third-party certificatio

MONTHLY OPERATION REPORT FOR PWSs TREATING RAW GROUND WATER OR PURCHASED FINISHED WATER

PWS Identification No: **2010946** | Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Daily Data for the Month/Year of:

Means of Achieving Four-Log Virus Inactivation/Removal:* ☑ Free Chlorine ☐ Chlorine Dioxide ☐ Combined Chlorine (Chloramines) ☐ Ozone ☐ Ultrafiltration ☐ Nanofiltration ☐ Reverse Osmosis ☐ UV Light Disinfection ☐ Conventional Filtration, including Lime Softening ☐ Other (Describe):

Type of Disinfectant Residual Maintained in Distribution Sysytem: ☑ Free Chlorine ☐ Combined Chlorine (Chloramines) ☐ Chlorine Dioxide

Day of the Month	Days Plant Staffed or Visited by Operator (Place "X")	Hours Plant in Operation	Net Quantity of Finished Water Produced, (gallons)	Compliance Monitoring for Systems Using Chemical Disinfection for Virus Inactivation*: Lowest Residual Disinfectant Concentration at End of Disinfection Segment 1, (mg/L)	Lowest Residual Disinfectant Concentration at End of Disinfection Segment 2, (mg/L)	Lowest Residual Disinfectant Concentration at Remote Point in Distribution Sysytem, (mg/L)	Emergency or Abnormal Operation Condition; Repair or Maintenance Work that Involves Taking Water System Components Out of Operation
1	X	24	22,045,000	1.13	1.61	0.61	
2	X	24	21,366,250	1.13	1.68	0.69	
3	X	24	24,916,667	1.11	0.53	0.83	
4	X	24	23,503,750	1.13	1.34	0.56	
5	X	24	22,407,083	1.13	1.54	0.77	
6	X	24	23,475,000	1.16	1.56	0.77	
7	X	24	22,627,083	1.13	1.43	0.77	
8	X	24	22,413,333	1.15	1.46	0.77	
9	X	24	21,328,333	1.11	1.53	0.77	
10	X	24	23,023,333	1.02	1.42	0.42	
11	X	24	21,527,917	1.02	1.53	0.54	
12	X	24	19,876,667	1.04	1.23	0.54	
13	X	24	20,124,583	1.00	0.71	0.70	
14	X	24	21,411,667	0.96	1.47	0.75	
15	X	24	23,638,333	0.98	1.56	0.75	
16	X	24	21,837,917	1.29	1.34	0.75	
17	X	24	22,617,917	1.41	1.49	0.67	
18	X	24	19,511,250	1.36	1.48	0.67	
19	X	24	21,160,000	1.35	1.56	0.67	
20	X	24	19,859,167	1.32	1.36	0.50	
21	X	24	21,871,250	1.35	1.24	0.50	
22	X	24	20,430,833	1.35	1.36	0.56	
23	X	24	21,686,250	1.38	1.62	0.77	
24	X	24	19,531,250	1.37	1.53	0.56	
25	X	24	19,119,583	1.41	1.49	0.56	
26	X	24	18,192,917	1.22	1.52	0.54	
27	X	24	19,730,000	1.17	1.35	0.68	
28	X	24	18,055,417	1.17	1.35	0.48	
29	X	24	20,519,583	1.18	1.46	0.68	
30	X	24	17,668,333	1.17	1.47	0.69	
31	X	24	20,871,250	1.18	1.48	0.48	
Total			656,347,917				
Average			21,172,513				
Maximum			24,916,667				

Disinfection Segment 1

- DEP-specified minimum residual disinfection concentration at end of segment: **0.96** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

Disinfection Segment 2

- DEP-specified minimum residual disinfection concentration at end of segment: **0.53** mg/L
- Was the disinfection residual concentration at the end of the segment ever less than the DEP-specified minimum during the reporting month? **NO** If yes . . .
  - Was it monitored at least every 4 hours until it returned to a value equal to or greater than the DEP-specified minimum?
  - Was it ever less than the DEP-specified minimum for more than 4 consecutive hours? If yes . . .
    - What was the date and duration of this **treatment technique violation?** (date) (duration in hours)

On-Line Disinfectant Analyzers

- Was the continuous residual disinfectant monitoring equipment used during reporting month? **YES**
  - Did the equipment fail during the month? **NO**
  - If yes . . .
    - Were grab samples collected every 4 hours until the equipment was returned to service?
    - Date the equipment failed:
    - Date the equipment was returned to service:

**Only plants providing DEP-approved 4-log virus treatment must provide this information.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

See page 3 for instructions.

I. General Information for the Month/Year of: **December, 2011**

A. Public Water System (PWS) Information

PWS Name: **Gainesville Regional Utilities**	PWS Identification Number: **2010946**
PWS Type: ☑ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Consecutive	
PWS Owner: **Gainesville Regional Utilities**	
Contact Person: **Richard J. Davis**	Contact Person's Title: **Water Plant Manager**
Contact Person's Mailing Address: **PO Box 147117 MS 43**	City: **Gainesville** State: **Florida** Zip Code: **32614**
Contact Person's Telephone Number: **(352) 393-6512**	Contact Person's Fax Number: **(352) 334-2891**
Contact Person's E-Mail Address: **DavisRJ@gru.com**	

B. Water Treatment Plant Information

Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**	Plant Telephone Number: **(352) 393-6512**
Plant Address: **1600 NE 53 Ave.**	City: **Gainesville** State: **Florida** Zip Code: **32614**

II. Certification by Lead/Chief Operator

I, the undersigned water treatment plant operator licensed in Florida, am the lead/chief operator of the water treatment plant identified in Part I of this report. I certify that the information provided in this report is true and accurate to the best of my knowledge and belief.

Signature and Date	Printed or Typed Name	License Number
	Richard J. Davis	**A1635**

PWS Identification Number: **2010946** Plant Name: **Dr. Walter E. Murphree Water Treatment Plant**

III. Check Sample Results for the Month/Year: **December, 2011**

Sample Name/Number	Sample Location	Fluoride Concentration in Sample per Analysis by Authorized Representative of PWS, mg/L	Fluoride Concentration in Sample per Analysis by DOH Laboratory or Laboratory Certified by DOH, mg/L
Distribution Sample 1	Westside		0.730
Distribution Sample 2	Bouleware		0.745

** Complete Part III of this report only for PWSs not using a certified laboratory to perform all daily measurements of fluoride concentration in the finished water from each of the PWS's treatment plants.*

MONTHLY OPERATION REPORT FOR PWSs FLUORIDATING WATER

PWS Identification Number:	**2010946**	Plant Name:	**Dr. Walter E. Murphree Water Treatment Plant**

IV. Daily Fluoide Data fro the Month/Year: **December, 2011**

Type of Fluoride Chemical Used: ☐ Sodium Fluoride ☐ Sodium Fluorosilicate (Silicofluride) ☑ Fluosilicic (Hydrofluosilicic) Acid

Commercial Purity of Fluoride Compound Used (per the chemical supplier), % = **22.50**

Day of the Month	Hour Plant in Operation	Net Quantity of Finshed Water Produced, gallons	Quantity of Fluoride Chemical Fed, pounds (or gallons for Fluosilicic Acid)	Fluoride Dose, mg/L	Fluoride Concentration in Finished Water at Entry to Distribution System, mg/L
1	24.0	22,045,000	382	0.51	0.72
2	24.0	21,366,250	382	0.53	0.71
3	24.0	24,916,667	448	0.52	0.70
4	24.0	23,503,750	412	0.52	0.69
5	24.0	22,407,083	220	0.32	0.70
6	24.0	23,475,000	108	0.13	0.38
7	24.0	22,627,083	61	0.08	0.28
8	24.0	22,413,333	232	0.33	0.28
9	24.0	21,328,333	373	0.51	0.56
10	24.0	23,023,333	398	0.53	0.69
11	24.0	21,527,917	351	0.47	0.70
12	24.0	19,876,667	353	0.38	0.72
13	24.0	20,124,583	337	0.32	0.70
14	24.0	21,411,667	368	0.36	0.71
15	24.0	23,638,333	405	0.51	0.69
16	24.0	21,837,917	376	0.49	0.69
17	24.0	22,617,917	371	0.52	0.61
18	24.0	19,511,250	329	0.49	0.72
19	24.0	21,160,000	362	0.51	0.71
20	24.0	19,859,167	337	0.52	0.73
21	24.0	21,871,250	374	0.51	0.72
22	24.0	20,430,833	356	0.52	0.72
23	24.0	21,686,250	367	0.51	0.73
24	24.0	19,531,250	333	0.50	0.71
25	24.0	19,119,583	322	0.51	0.73
26	24.0	18,192,917	309	0.51	0.72
27	24.0	19,730,000	327	0.51	0.72
28	24.0	18,055,417	291	0.48	0.70
29	24.0	20,519,583	346	0.50	0.69
30	24.0	17,668,333	307	0.50	0.67
31	24.0	20,871,250	359	0.48	0.70
Total	744.0	656,347,917	10,296	14.06	20.49
Average	24.0	21,172,513	332	0.45	0.66

ST. JOHN'S WATER MANAGEMENT DISTRICT
Dept. of Resource Management
<u>C O N D I T I O N   C O M P L I A N C E</u>

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD
December, 2011

Permit Number: **2-001-006NGM** **Issued To:** **Gainesville Regional Utilities**

Date	1 mgd	2 mgd	3 mgd	4 mgd	5 mgd	6 mgd	7 mgd	8 mgd	9 mgd	10 mgd	11 mgd	12 mgd	13 mgd	14 mgd	15 mgd	16 mgd	Sum mgd
1	3.28	4.10	0.00	4.80	1.12	0.00	1.49	4.09	0.00	0.00	0.00	4.14	0.00	0.00	0.00	0.00	23.00
2	1.30	4.21	0.00	4.82	0.62	0.00	1.72	4.13	0.00	0.00	0.00	4.14	0.00	0.00	0.00	0.00	20.93
3	1.30	4.14	0.00	4.78	0.00	1.95	3.14	4.06	0.00	0.00	0.00	1.20	0.00	4.77	0.00	0.00	25.34
4	1.30	3.04	0.00	4.84	0.00	0.00	3.14	4.14	0.00	0.00	0.00	4.11	0.00	3.42	0.00	0.00	23.97
5	1.24	0.00	0.00	4.93	0.00	0.00	3.25	4.20	0.00	0.00	0.00	2.73	0.00	6.71	0.00	0.00	23.06
6	0.00	0.00	0.00	4.15	0.00	0.42	3.26	4.21	0.00	0.00	0.00	4.07	0.00	6.68	0.00	0.00	22.79
7	2.08	1.62	0.00	1.97	0.00	1.77	3.18	4.16	0.00	0.00	0.00	3.06	1.24	2.33	0.00	0.00	21.41
8	4.36	3.96	0.00	4.72	0.00	0.00	3.02	4.03	0.54	0.00	0.00	0.97	0.00	0.00	0.00	0.00	21.60
9	1.30	4.15	0.00	4.78	0.00	0.00	2.10	4.07	4.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.82
10	1.30	4.19	0.00	3.56	0.00	0.00	0.30	4.11	4.57	0.00	0.00	0.00	0.00	6.07	0.00	0.00	24.09
11	1.30	4.27	0.00	0.00	0.00	0.00	1.57	4.21	4.57	0.00	0.00	0.00	0.00	6.69	0.00	0.00	22.61
12	1.91	3.10	0.00	1.19	2.07	0.00	1.18	3.04	1.84	0.00	0.00	0.00	0.00	4.91	1.75	0.00	21.00
13	3.80	2.71	0.00	1.89	1.17	0.00	0.87	2.37	0.00	0.00	0.00	0.93	0.87	1.27	4.22	0.00	20.08
14	3.63	2.86	0.00	3.33	0.00	0.00	0.81	2.56	0.29	0.00	0.00	0.64	2.50	0.00	4.36	0.00	20.98
15	5.04	1.04	0.00	4.77	0.98	0.00	0.00	0.91	2.08	0.00	1.47	0.00	1.20	0.00	5.69	0.00	23.18
16	4.46	1.26	0.00	1.07	0.00	1.69	2.05	0.00	4.14	0.00	0.00	0.00	0.00	4.22	2.17	0.00	21.05
17	5.04	0.00	0.00	0.00	0.00	2.68	2.96	0.00	4.39	0.00	0.00	0.00	0.00	6.74	0.00	0.00	21.81
18	5.04	0.00	0.00	0.00	0.00	2.71	0.00	0.00	4.58	0.00	0.00	0.00	0.00	6.72	0.00	0.00	19.05
19	5.04	0.00	0.00	0.00	0.00	2.02	0.00	2.24	4.59	0.00	0.00	0.00	0.00	6.67	0.00	0.00	20.56
20	2.15	1.84	0.00	0.00	0.00	0.74	0.00	4.20	4.64	0.00	0.00	0.00	0.00	6.37	0.00	1.42	21.36
21	1.34	4.26	0.00	0.00	0.00	2.00	0.00	4.14	4.67	0.00	0.00	0.00	0.00	6.63	0.00	0.00	23.03
22	2.88	2.77	0.00	0.21	1.10	0.67	0.00	2.44	4.36	0.00	0.00	1.32	1.71	1.66	0.00	0.00	19.12
23	4.93	4.03	0.00	0.00	2.91	0.06	2.88	0.00	4.41	0.00	0.00	2.21	0.00	0.00	0.00	0.00	21.43
24	4.30	4.19	0.00	0.00	0.00	0.53	1.71	0.00	4.52	0.00	0.00	4.09	0.00	0.00	0.00	0.00	19.34
25	3.56	4.16	0.00	0.00	0.00	0.78	2.89	0.00	3.14	0.00	0.00	4.09	0.00	0.00	0.00	0.00	18.62
26	1.30	4.37	0.00	0.00	0.00	1.00	1.08	0.00	2.95	0.00	0.00	4.09	0.00	0.00	4.48	0.00	19.27
27	1.30	4.37	0.00	0.00	0.00	0.00	0.00	0.70	4.72	0.00	0.00	4.09	0.00	0.00	5.87	0.00	21.04
28	1.30	4.36	0.00	0.00	0.00	0.45	0.00	4.23	4.71	0.00	0.00	4.09	0.00	0.00	0.00	0.00	19.14
29	1.30	4.26	0.00	0.00	0.00	2.65	0.00	4.16	4.69	0.00	0.00	4.09	0.00	0.00	0.00	0.00	21.15
30	1.20	4.35	0.00	0.00	0.00	0.00	0.00	4.27	4.72	0.00	0.00	4.09	0.00	0.00	0.00	0.00	18.63
31	1.20	4.27	0.00	0.00	0.00	0.00	3.04	4.23	4.55	0.00	0.00	4.09	0.00	0.00	0.00	0.00	21.38
Total	79.48	91.86	0.00	55.80	9.96	22.10	45.65	84.88	88.09	0.00	1.47	62.26	7.44	81.85	28.59	1.42	660.85

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
P.O. Box 1429
Palatka, Florida 32077

FLOW RATE RECORD

December , 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	12/1	12/2	12/3	12/4	12/5	12/6	12/7	12/8	12/9	12/10	12/11	12/12	12/13	12/14	12/15
1	ON							15:00					21:00	15:00	13:00	
	OFF	13:00							21:00					6:00	5:00	
2	ON							14:00					16:00	15:00	14:00	23:00
	OFF				17:00								10:00	6:00	6:00	5:00
3	ON															
	OFF															
4	ON							14:00				1:00		15:00	14:00	
	OFF						20:00				18:00		10:00		6:00	
5	ON												16:00			
	OFF													5:00		
6	ON			1:00			20:00									
	OFF			20:00				14:00								
7	ON	13:00										12:00		17:00		
	OFF										2:00		20:00		6:00	
8	ON												16:00	15:00	14:00	
	OFF												10:00	5:00	5:00	5:00
9	ON								21:00						3:00	13:00
	OFF												10:00		5:00	
10	ON															
	OFF															
11	ON															9:00
	OFF															14:00
12	ON			20:00		10:00		20:00						15:00	14:00	
	OFF			3:00		1:00		14:00	6:00					20:00	17:00	
13	ON							8:00						20:00	17:00	
	OFF							14:00							5:00	5:00
14	ON			3:00	12:00						2:00		16:00			
	OFF			20:00				8:00					10:00	5:00		
15	ON												18:00	16:00	15:00	13:00
	OFF													6:00	6:00	9:00
16	ON															
	OFF															

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement
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Palatka, Florida 32077

FLOW RATE RECORD

December , 2011

Permit Number: 2-001-006NGM   **Issued To:** Gainesville Regional Utilities

WELL	STATUS	12/16	12/17	12/18	12/19	12/20	12/21	12/22	12/23	12/24	12/25	12/26	12/27	12/28	12/29
1	ON	9:00						14:00							
	OFF	6:00				5:00					15:00				
2	ON					13:00		14:00							
	OFF	7:00						6:00							
3	ON														
	OFF														
4	ON							14:00							
	OFF	5:00						15:00							
5	ON							20:00							
	OFF								11:00						
6	ON	9:00				5:00		14:00			17:00			20:00	
	OFF				18:00		18:00	20:00				9:00			
7	ON	3:00								10:00					
	OFF								20:00			9:00			
8	ON				11:00								20:00		
	OFF							14:00							
9	ON	9:00						15:00				9:00			
	OFF	7:00						14:00			17:00				
10	ON														
	OFF														
11	ON														
	OFF														
12	ON							6:00	11:00						
	OFF							14:00							
13	ON							6:00							
	OFF							14:00							
14	ON	9:00													
	OFF							6:00							
15	ON											9:00			
	OFF	7:00											20:00		
16	ON					9:00									
	OFF					14:00									

ST. JOHN'S WATER MANAGEMENT DISTRICT

Dept. of Resource Management

C O N D I T I O N   C O M P L I A N C E

Division of Enforcement

P.O. Box 1429

Palatka, Florida 32077

FLOW RATE RECORD

December , 2011

Permit Number: 2-001-006NGM

Issued To: Gainesville Regional Utilities

WELL	STATUS	12/30	12/31													
1	ON															
	OFF															
2	ON															
	OFF															
3	ON															
	OFF															
4	ON															
	OFF															
5	ON															
	OFF															
6	ON															
	OFF															
7	ON															
	OFF															
8	ON															
	OFF															
9	ON															
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10	ON															
	OFF															
11	ON															
	OFF															
12	ON															
	OFF															
13	ON															
	OFF															
14	ON															
	OFF															
15	ON															
	OFF															
16	ON															
	OFF															