



Deer Creek RV Golf & Country Club, Inc.

42749 Highway 27, Davenport, Florida 33837

PH: (863) 424-2839 FX: (863) 424-3336

September 10, 2019

Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd
Tallahassee, FL 32399-0850

Re: Docket No. 20190071-WS – Application for a Staff-Assisted Rate Case in Polk County by
Deer Creek RV Golf & Country Club, Inc.

Please find attached Deer Creek RV Golf & Country Club, Inc's. (Utility) supplemental response to Staff's Second Data Request dated July 16, 2019, in the above referenced docket.

Enclosed is a supplemental report to accompany the vendors final report on system map verification and leak detection that was provided in response to Question No. 1 of Staff's request.

If you have any questions, please do not hesitate to contact me at (863)-424-2839.

Respectfully submitted,

Jennifer Hernandez
Utility Supervisor

Deer Creek RV Golf & Country Club, Inc.

Enclosure

RECEIVED-FPSC
2019 SEP 16 AM 8:35
COMMUNICATIONS SECTION



September 4, 2019

Ms. Samantha Jewell & Board of Directors
Deer Creek RV Golf and Country Club
42749 Highway 27
Davenport, FL 33837

Subject: Summary and revision of Leak Survey Final Report – Flowline Integrity
Analysis for Deer Creek RV Golf and Country Club

Leak Detection Methods and Equipment

A review of all data related to the distribution system was conducted by our staff and the field technician. A leak detection survey was initiated and performed in two phases. The monitoring phase consisted of acquiring as many acoustical contact points on the distribution system as possible which included in this case almost every appurtenance to the system. All accessible valves, hydrants and service connections (meter curb stop or shut off valve).

During the monitoring phase UIS personnel utilized a Fuji LC2500 Correlator with both PVC and Ductile Iron Pipe sensors for larger diameter pipe, an LD-12 Subsurface Acoustical Amplifier with variable selectable filters in the 100Hz to 1200Hz ranges, a Schonstedt GA-52cx pin locator. On site were two radar units; the GSSI SIR 4000 with line trac providing the ability to locate and detect power lines, as well as the GSSI 3000, the Mini Scan XT aka as a concrete scanner with a 2.7 GHz antenna with excellent resolution down to +/- 17" to 24".

Acoustical signals were acquired, quantified with frequency and attenuations noted and plotted on a plan of the community distribution system. Once the large areas of the distribution system were monitored, a revisit to all signal locations was initiated and verification of consistent signal strengths and frequency verified.

Correlator sensors were then deployed at locations straddling the leak noise location generally within 50' to 100' depending upon the intensity and frequency of signals. The technician then input data into the correlator consisting of pipe diameter, distance of pipe between sensors and pipe material, the latter effecting velocity of sound on a



given pipe material. In the absence of accurate pipe data, the technician has the ability to confirm pipe velocity utilizing a white noise method and thereby ascertain pipe material and diameter.

This most thorough and comprehensive search revealed one major leak at 214 Partridge Pines. The leak was pinpointed on a service line before the meter and was estimated in the 3,000 gpd range. This was an estimate based on operator experience, equipment settings, attenuation settings and frequency and can easily have an error of 20% high or low. A review of available photos and video made us think 3k was low and conservative based on theoretical discharge charts and experience.

The leak survey yielded two other observations that involved water loss or waste but were not “technically” leaks.

Conclusion: All main lines, all service lines (to the homes) to the club houses and laterals to hydrants were acoustically surveilled and found to be leak free at the time of the survey.

Flow Line Integrity Analysis – Distribution System Efficiency

Estimates of “Unaccounted for Water” included three points of reference for quantifying and verifying “UAW”.

- 1.) Population estimates at the time of survey x 55 gpd per person
- 2.) Actual Source Meter Reads vs Domestic Sold Records
- 3.) Actual 24 hour reads vs Night Flow and Night flow ratio

The data from domestic billing was overlapping and incomplete and was not considered.

Multiple readings from the source meter revealed that actual purchased through the source meter was 60,626 gpd.

Actual night flow readings from the source came in at 1,400 gph and 1,238 gph.

1,400 gallons per hour was used as the basis for the “Unaccounted for Water” total.

UIS allowed .50 gallons per person per hour for allowable night flow consumption.

Population estimates was low at 284 of 816 sites occupied with a population estimate of 568.

568 x .50 gpp/ph (per person per hour) or 284 gph.



Adjusted night flow 1,400 gph – 284 gph (allowable night flow consumption) = 1,116 gph or 26,784 gpd. This number represents 44% of total daily consumption.

The areas below are individually metered and totals per day shown here are not revenue producing and are reduced from our daily consumption:

Mockingbird:	12,900 gpd
Fawn Ridge:	1,250 gpd
Regal Ridge:	4,250 gpd
3 @	<u>18,400 gpd</u>
Commercial:	3,400 gpd
Pools (4 of 7):	454 gpd
Clubhouses:	902 gpd
Irrigation:	1,375 gpd
4 @	6,131 gpd

The conservative totals of **24,531 gpd** were actual readings taken from meters that were not verified accurate. These meters “Under Register” and actually more than the low numbers that go through them on any given day.

The **24,531 gpd** identified above **represents 91.58%** of estimated Unaccounted for Water which was estimated at 26,784 gpd. The leak located and estimated at 3,000 gpd puts this at over 100% accountability of water into the system.

Conclusion: Subsequent to a comprehensive leak survey utilizing state of the art correlator technology and with the availability of close to 1,000 contact points for acoustical surveillance (average of every 75 feet or less and upon extensive review of actual metered data, UIS concludes that the integrity of the distribution system is very good. The service lines and main lines are leak free.

Water Distribution System

It was noted during the survey that there were valves in the closed position or frozen and could not be cycled.

It was discovered that some of the valves are closed for the purpose of isolating certain subdivisions of the distribution system for metering and billing purposes.



Utilizing the GSSI 4000 (ground penetrating radar) UIS investigated strategic locations throughout the community to identify any “unauthorized tap” or cross connection. Special attention was given to the perimeter on the west side, commercial areas, Osprey, Mockingbird Ridge and Regal point. A grid pattern was laid out in some intersections to verify existing assets and to attempt to identify any other unknown utilities that may be present.

Radar results are subject to interpretation and experience of the operators and results are often inconclusive depending upon soil conditions and target depth. Soil conditions were considered to be good and targets identified coincided with existing known utilities and there was a good confidence level by the operator. Targets were identified in pool structures at the request of maintenance supervisor.

Conclusions:

- UIS could not identify any cross connections during this survey.
- UIS concludes that the production data from all meters does not suggest the presence of any clandestine connections or unauthorized users.
- Asset locations valves, hydrants and service connections and the use of the correlator in certain situations gives us confidence in the accuracy of the existing plans. Pipe velocities correspond with pipe diameters and materials on plan.
- UIS did not find evidence of or do we believe there are any cross connections between sanitary and or irrigation systems.

Thank you and Best Regards,

Earl King

Earl King